# News Articles Batch 3

DO NOT REMOVE THE ###ARTICLE\_START### MARKERS

## ###ARTICLE\_START### ID:1801

ARTIFICIAL INTELLIGENCE When a European company specializing in generative artificial intelligence (AI) raises $105 million just one month after its creation, its first product generates a lot of expectations and attention. Mistral AI, co-founded by three French people - Arthur Mensch, Timothée Lacroix and Guillaume Lample - aims to create a new player with a global vocation in generative AI from Europe. It just released its very first language model this Wednesday, a few months ahead of its roadmap. Unlike a ChatGPT or a Bard, this open-source model called "Mistral 7B" is aimed solely at developers, who will be able to use it, improve it and market it as they wish thanks to a very permissive license. It is a "small" model that has 7 billion parameters, far from the hundreds of billions of parameters of a GPT-4, from OpenAi, or a PaLM, from Google. "Our challenge is to show that we build the best models in terms of price-performance ratio," emphasizes Arthur Mensch, the company's CEO. Our 7B model far outperforms the best 13 billion parameter model available today, while being half the cost to use." This performance is measurable by a set of objective criteria that are tasks to be performed, such as understanding a text, reading, the ability to answer questions or the level of language used by a model to formulate its answers. However, the power of the models is not everything. The price issue will be essential for users and it will be important for companies to adapt the size of a model to the specific task to be performed. In other words, there is no need to use a bazooka to kill a fly... "The goal for a customer is to choose the least expensive model that solves their use case," explains Arthur Mensch. Mistral 7B can therefore solve a large number of tasks, such as word processing with little data, condensing texts or designing conversational agents. By releasing its first product less than five months after the company was created, Mistral wants to demonstrate its ability to move quickly. "We want to generate adoption in the developer community, and start the virtuous circle of open source, thanks to their feedback," continues the young manager, whose team will communicate with this community via the GitHub, Hugging Face and Discord platforms. "This model is a first step. We are developing a family of models that will gradually be made available over the coming months. We are already training much larger models than the 7B, which are more efficient on difficult tasks but more expensive to use. » Unlike OpenAI, Microsoft or Google, which develop proprietary models often described as "black boxes", Mistral AI is convinced that open source is the preferred approach for developing the best generative AI models. "It is very important that the control mechanisms are in the hands of the users, which is impossible to do with proprietary models", adds Arthur Mensch. And to take the problematic example of content moderation, where purely and simply censoring the use of hateful content in model training will not resolve circumventions and biases. "Open source is also an important argument for recruiting talent", adds the young manager, who points out that until 2020 all leading companies published their research papers in the field of AI, before OpenAI overturned industry standards. Mistral AI currently has 15 research engineers, 10 of whom come from Meta, Google DeepMind or Hugging Face. "Our team has extensive experience in training large language models, which allows us to move quickly. The market provides very few experts of this caliber; there are perhaps a thousand in the world. We also have great recruitment opportunities among juniors in France." The transparency advocated by Mistral AI, however, stops at the question of the data used to train its model. "We need to find a balance between our business model and the protection of our intellectual property. We do not provide details on our training methods," explains Arthur Mensch. For players in generative AI, the computing power to train and develop these models is the crux of the matter. The young French company was able to count on the support of the EuroHPC joint venture and the Leonardo supercomputer in Italy, to lend it the additional computing power it needed. "Most of our training was done on our internal cluster," explains Arthur Mensch. Thanks to the American company CoreWeave, a specialist cloud provider, Mistral AI has around a hundred H100s, Nvidia's AI chips, which have become one of the most sought-after components in the world. "Unfortunately, there is no European cloud capable of providing a similar service to date." For this first model, there is no question of monetization. The objective is above all to show what the company is capable of, to make itself known, to get feedback and to develop a community. But starting this fall, Mistral AI will market hosting and model specialization solutions for businesses. The company is following very closely the negotiations underway within the European Union on the AI regulatory project, the AI Act. "The supervision of model providers must be proportional to their size and number of users. The level of constraint must be different, depending on whether it is a major player or a start-up," argues Arthur Mensch. Our 7B model far outperforms the best 13 billion parameter model available today, while being half the cost to run ARTHUR MENSCH, CEO OF MISTRAL AI

## ###ARTICLE\_START### ID:1802

Born in Ukraine, raised in Toronto and trained in France, Sasha Luccioni chose to settle in Montreal 10 years ago. The researcher who is a Quebecer by adoption is one of the most promising minds in artificial intelligence and she is determined to use it for the environmental cause. Sasha Luccioni makes no secret of the fact that her twenties were marked by “a bit of an existential crisis.” Wanting to contribute to the world around her, the multilingual researcher found a mission: to put her expertise in artificial intelligence (AI) to work for the environment. “After entering the job market, I had a bit of a quarter-life crisis,” she recalls with a laugh. There was the climate crisis, I had a lot of concerns, I wondered how I could do something positive for the climate." After her short stint at the American bank Morgan Stanley, the scientist joined the ranks of the Quebec Institute for Artificial Intelligence (Mila), founded by Yoshua Bengio, Turing Award winner and a leading figure in the field of AI. "It was a really important experience, both professionally and humanly," explains the postdoctoral fellow in machine learning. Yoshua Bengio is truly one of the people with the biggest heart I have ever met. He has always kept his down-to-earth side, even with his status as an "international star" of AI." With Yoshua Bengio as scientific director, Sasha Luccioni worked on the project This Climate Does Not Exist. Using images generated by AI, this online tool allowed the public to see what their living spaces would look like in a world disrupted by climate change. “With this project, the idea was to use AI to show the different possible scenarios with global warming,” she says. “We wanted to shake up the public a little in order to provoke a reaction.” After spending two years at Mila, the researcher, who studied linguistics in her undergraduate degree, joined Hugging Face, a company that wants to democratize AI by promoting transparency and data sharing (open source) in the field. Educating the public In recent years, artificial intelligence has made spectacular progress. The emergence of the automated conversation tool ChatGPT has struck the collective imagination. Several experts who look into the ethical questions raised by artificial intelligence and its use argue that AI could be the key in the fight against climate change. A statement that Sasha Luccioni corroborates, but with several reservations. “The applications of AI in the environmental field are numerous,” she emphasizes. To give a concrete example, I worked with the Insectarium on an application that would allow visitors to take pictures of insects and then identify them using AI. It's a way of using technology to reconnect people with nature." However, it is difficult to escape one of the biggest drawbacks of these new technologies: their negative impact on the environment. "Yes, there is an environmental cost for any AI model, but the problem is that we now want to develop them for everything," she says, giving the example of smart refrigerators. "I'm not sure we need to talk to our fridge," says the researcher, named this year among the 35 most innovative people under 35 by the Massachusetts Institute of Technology (MIT). For the mother of two, it is clear that better education in artificial intelligence would solve part of the problem. The popularization and democratization of AI are particularly close to her heart. “AI is still very abstract for people, which is normal. Better education would help people understand that developing these technologies has real costs and that it is not magic,” she adds. The importance of diversity in AI Among all the professional and social responsibilities, Sasha Luccioni is particularly sensitive to the diversity of representation in her field. For the Montrealer, this is a crucial issue for the future development of AI. “Decisions are often made by similar people, whether they are white men or women, who rely on their conception of the world to make choices,” she explains. “A greater diversity of visions would make for better technology, more representative of the world.” Sasha Luccioni is also involved in the organization Women in Machine Learning, an organization that wants to celebrate and promote the work of women in AI. According to her, defending the place of women in science is still a daily struggle. “At conferences, it’s not uncommon to see posters where the 10 featured speakers are men, while several brilliant women participate,” says the woman who often shares her thoughts on social media. When asked if she feels optimistic about the future of the planet despite the ecological crisis, Sasha Luccioni gives a small, embarrassed smile that barely hides the complex mix of emotions she feels. “It depends on the day. Sometimes I want to join Extinction Rebellion and tie myself to a tree,” she says with a laugh. “But in general, I feel like I’ve found my ikigai [a Japanese principle meaning “reason for being”] and I know that our work is important in the search for environmental solutions.” UNPOINTCINQ.CA “Yes, there is an environmental cost to any AI model, but the problem is that we now want to develop them for everything.”

## ###ARTICLE\_START### ID:1803

This summer, investments in artificial intelligence (AI) jumped 81% worldwide. Seven unicorns were valued at more than $1 billion (€930 million), including five in generative artificial intelligence (AGI). AI raised $25 billion in the first half of 2023, according to Crunchbase, including $10 billion invested by Microsoft in OpenAI, the designer of ChatGPT. Startups, often created by former Big Tech companies, have flourished, announcing new and highly innovative products in a very short period of time. Big Tech is catching up and has launched powerful open source products in a very short time, including large language models (LLMs), the driving force behind AGI. Nvidia announced its superchip for AGI, the GH 200 Grace Hopper, for 2024. More than half of companies, according to a Fortune-Deloitte survey, are evaluating and experimenting with AGI. 79% believe that it will increase their efficiency, half (52%) that it will increase their growth opportunities. More than a third (37%) are currently implementing it to some extent. On the other hand, just under 40% of companies in the S&P 500 index mention AI when presenting their financial results, and only 16% in their regulatory financial reports. In other words, its impact remains limited for the majority of companies. Speculative bubble Because the summer of 2023 also saw the emergence of pessimistic and critical opinions on AI, speaking of “generative AI-nxiety” (Harvard Business Review). Doubts remain about Silicon Valley’s ability to produce “the next big thing,” the next disruptive innovation, due to recent previous disappointments with the metaverse and cryptocurrencies. The second-quarter financial results also showed that AGI has not yet had a clear impact, except for Nvidia, which is benefiting from its large technological lead and the shortage of AI chips. However, according to The Information, OpenAI is on track to generate $1 billion in revenue in the coming year. OpenAI currently generates about $80 million per month, after a loss of $540 million in 2022 and launched ChatGPT Enterprise, a professional version of ChatGPT, this summer. But investors remain concerned. First, there remains a lot of regulatory uncertainty about AI, in the United States and Europe. Second, having quality data is crucial to train AGIs, but the new requirement for rights holders to be paid for their data collected for free from the Internet by LLM creators destabilizes them. Finally, the drop in traffic on ChatGPT raises questions about the sustainability of its popularity. In June, traffic fell by 9.7%, then by 9.6% in July and by 3.2% in August, a drop perhaps linked to the reduced summer activity. In addition, dystopian discourses on AI destroying humanity continue to gain supporters. As a result, the valuations of AI-related start-ups such as Upstart, C3.ai Inc., Palantir, Datadog and Snowflake, which had soared, have fallen back. This volatility worries investors. Venture capitalists are ambivalent. Some of them are looking for business models that the IAG could destabilize, in order to invest in start-ups that would have the answer… They wonder who, in the current landscape, will win, and they hesitate. Because, for the moment, Big Tech holds the market, which has a very high entry ticket. They have single-handedly pulled the financial markets upwards, while no purely IAG player has yet made its IPO. The computing power of the big cloud players favors the size effect. The arrival of small LLMs and free or pseudo-free software in the IAG can facilitate the growth of new players, but their products often depend on the LLMs of Big Tech. Investors are worried about the weakness of these start-ups compared to Big Tech. The field of AI chips is attracting new competitors to the champion Nvidia. But the road will be long, given its lead, unless there is a change in the way LLMs are trained. Competition also comes from cloud giants, whose simpler “proprietary” AI chips can be combined with their data centers to offer less expensive solutions than those based on Nvidia. The frenzy around AGI is pushing some less specialized “follower” investments to stay in the game, at the risk of creating a speculative bubble. Because few companies are, for the moment, generating profits in this field. This ambient skepticism cannot hide the fact that AGI democratizes access to AI. We must expect rapid major improvements from Big Tech, start-ups and research laboratories to reduce the imperfections of certain LLMs highlighted by the Cassandras. The first wave of AGI start-ups may of course encounter obstacles, but, as we saw at the birth of the Internet, the following ones succeed with formidable services and unexpected products. Despite what the pessimists say, "this time it's different." Even if the hype around the IAG has died down a little, the revolution is well and truly underway.

## ###ARTICLE\_START### ID:1804

REGULATION Elon Musk, CEO of Tesla, SpaceX and X (ex-Twitter), Mark Zuckerberg, boss of Meta, Sundar Pichai, director of Google, Eric Schmidt, former president of the company, Bill Gates, founder of Microsoft, Satya Nadella, its current director, Arvind Krishna, boss of IBM, Jensen Huang, of Nvidia, and Sam Altman, CEO of OpenAI (ChatGPT)... All the Silicon Valley elite gathered in Washington on Wednesday for a closed-door meeting in the Senate devoted to artificial intelligence (AI). Wearing suits and ties instead of their usual T-shirts or leather jackets, the most powerful bosses of American high technology found themselves seated at the same table in one of the rooms of the Capitol, at the invitation of the leader of the Democratic majority of the Senate, Chuck Schumer. For three hours, the participants expressed their views on how their industry should be regulated by the U.S. government in front of about 60 elected officials. Bloomberg calculated that the combined wealth of the participants in the meeting was more than $550 billion. “We are embarking on an enormous, complex and vital task,” Senator Schumer told them at the opening of the meeting: “Laying the foundation for a bipartisan policy on artificial intelligence that Congress can adopt… This will be a very difficult undertaking, because AI is so complex, it will impact almost every area of life and it is constantly evolving… Congress cannot do it alone.” “That’s why we have brought you all together today: we need your input. Of course, we need the help of the developers and experts who are building the AI systems.” But we also need help from those who are asking tough questions, who care about developing safeguards to minimize the risks of AI,” the senator explained. A closed-door meeting criticized Each participant had three minutes to speak on the topic of their choice. Group discussions then took place. According to what leaked from the meeting, which was closed to the press, the top industry executives all vaguely endorsed the idea of government regulation of artificial intelligence, but did not agree on what form that regulation should take. “It was a very civilized discussion, between some of the smartest people in the world,” Elon Musk said during a break. “The bottom line was that it’s important for us to have an arbiter.” “Ultimately, everyone who was there believed that government has a role to play in regulation,” said Sen. Cory Booker, D-New Jersey, “and that’s where the challenge lies: to do the right legislative role to protect against the real problems that threaten our country and humanity.” “What most of the people who were there said was we want innovation, but we have to respect security,” said Sen. Elizabeth Warren, D-Massachusetts. Warren criticized the fact that the meeting was held behind closed doors and closed to the media and the public. “They were sitting at a big table by themselves, and senators were told to sit there and not ask questions.” On the right, Republican Sen. Josh Hawley refused to attend a meeting he called “a giant cocktail party for big tech.” “I don’t see why we would invite the world’s largest monopolies to come to Congress and give advice on how to help them make more money, and then shut the door on the public,” he said. Disclaimer Days earlier, Josh Hawley and Democratic Sen. Richard Blumenthal introduced a bill that would require tech companies to apply for licenses for high-risk artificial intelligence systems. Other concrete proposals have also been floated, including one from Democratic Sen. Amy Klobuchar, which would require disclaimers for AI-generated election ads that contain fake images and audio. Republican Sen. Mike Rounds of South Dakota, who led the meeting with Schumer, said Congress needs to get ahead of the rapid evolution of AI by ensuring it continues to develop “in a positive way” while addressing potential issues around data transparency and privacy. “AI is not going away, and it can do great things or it can be a real challenge,” Rounds said. But while senators from both parties agree that legislation is needed, there is no consensus on what to do. Some are more concerned about overregulating the industry, while others are more concerned about the potential risks of the new technology. Many Republicans are wary of following the lead of the European Union, which is set to adopt the first set of global rules for artificial intelligence by the end of the year, ranking them in four levels of risk, from minimal to unacceptable. “Are we ready to start writing AI legislation? Absolutely not,” said Sen. Mike Rounds. There was also disagreement among the panelists. Mark Zuckerberg (Meta) argued for the need to support the open-source publication of AI models, while Bill Gates stressed the dangers of putting such lines of code in the hands of malicious actors. Lack of expertise Some panelists, including Elon Musk, Eric Schmidt and Sam Altman, the creator of ChatGPT, expressed longer-term concerns, citing the possibility that humanity could lose control to advanced AI systems if adequate safeguards are not put in place. “There is a risk, greater than zero, that artificial intelligence will kill us all,” Musk warned, “the consequences of an error in analysis will be severe.” Musk also suggested that a regulatory agency was likely to be created. Since the advent of the internet and the rise of social media, the US Congress has traditionally struggled to regulate these new technologies. A lack of expertise forces elected officials to rely on the giant companies that operate them for advice on their own regulation. These companies can thus directly influence legislators, while claiming to solve the problems they raise. Artificial intelligence, which suddenly became a popular tool less than a year ago, nevertheless seems to worry even its designers. In the spring, the leading lights of the new technology, including Sam Altman, Elon Musk, and Bill Gates, signed a one-sentence statement warning of its dangers: “Addressing the extinction risk posed by artificial intelligence should be a global priority alongside other risks such as pandemics and nuclear war.” But the signatories have continued to invest heavily in the new sector. President Joe Biden is expected to sign an executive order on artificial intelligence by the end of the year. The White House has already led about 15 tech companies, including all the guests at the Senate meeting, to sign a code of conduct encouraging them to build “safe, secure, and trustworthy” AI.

## ###ARTICLE\_START### ID:1805

The author keeps the exact recipe confidential. Take a few kilos of red Norwegian clay. Add the “right amount” of fertilizer, a little iron filings, silt, Vaseline, a pinch of baking soda. Maybe even a dash of cocaine. Knead. Bombard your ball with Wi-Fi waves. Place it on a bed of potting soil. Wait the necessary time while listening to a Metallica record at full volume. With a bit of luck—or is it really?—the brown dough will rise enough to transform into a curious animated puppet. Alive or almost. Such is the improbable experience at the heart of Nous sommes cinq, the sixth novel by Norwegian artist and writer Matias Faldbakken, the second to be translated into French after Le Serveur (Fayard, 2020). A delightful tale, full of mischief, which oscillates between rural comedy and science fiction, and which can be read in several ways. Its success is due first of all to its characters, endearing because of their weaknesses. Or their flaws, in the case of Tormod Blystad. When sober, this gentle and scrupulous boy is a hard worker, a model husband, a caring father of two children, and an inventive handyman. Drunk or drugged, he turns into a limitless lunatic. Especially when he meets his high school and drinking buddy Espen, the evil genius who supplies him with his white powder, and they swim together "in a perfect mixture of acute concentration and pea soup". A frightening mess Who is the real Tormod, the wise one or the crazy one? Neither can understand the inverted double that resides within him. "Each of the two Tormods was the other's monster", summarizes Faldbakken. The only certainty is that it is by combining the meticulousness of one with the bright creativity of the other that, by chance, they create their incredible modeling clay. When the dog that held the family together disappears, the newcomer takes over. He becomes the children's playmate and the parents' day laborer. Until he escapes his creator and sows frightening chaos in his family and in the village where the plot takes place, far north of Oslo. "Doll", "monster", "gnome", "troll", "old dwarf", "thinking dough", "soft robot", "scrofula", "shapeshifter"... The novelist competes in imagination to draw the contours of this "stocky, red-faced, hobbling shadow in 3D". Only one word does not appear: "golem". It is indeed this legend from the Kabbalah, however, that Matias Faldbakken revisits here. He keeps the plot, the idea of an artificial being born from a mass of inert clay, and offers a mischievous Nordic and rustic interpretation of it. Modern, too: while the divine breath of the initial version has disappeared, this new golem, which learns "exponentially" and progresses in the routine tasks it performs, poses the same questions as artificial intelligence. Useful today, is it at risk tomorrow of conquering its independence and turning against its masters? The novel can also be read as a metaphor for creation. The son of a writer and a ceramicist, Faldbakken is himself a renowned visual artist. He starts with burnt-out carcasses, bottles or revolver shells to invent three-dimensional works. Similarly, he uses a flexible and simple style like clay, incorporates a few reused materials, words such as "open source" or "heavy metal", and shapes his sentences until he brings his characters to life, then leads them along strange paths. And the readers, delighted, with them.

## ###ARTICLE\_START### ID:1806

$1.2 billion Annual recurring revenue in fiscal year 2022 SOFTWARE Daniel Dines is proud of the journey he has already accomplished. From the small Bucharest apartment where he co-founded his startup in 2005, the Romanian entrepreneur has taken UiPath to Wall Street, where it is worth more than $9 billion. The company publishes software that allows companies to automate all or part of certain processes, such as handling a refund request from a dissatisfied customer. “Technology is capable of reproducing what humans do in most operations. They only have to handle exceptions, which makes their tasks more varied and qualitative,” explains Daniel Dines. The key is productivity gains and a response to two challenges facing companies: All major countries are facing an aging population and a shortage of labor. The unemployment rate is low and productivity growth has stalled. So the global economy is not growing fast enough. Automation is the best way to increase productivity, continues the co-CEO, now a billionaire. More than 10,850 companies worldwide already use his software. Hence his enthusiasm for the potential of generative artificial intelligence (AI) technologies, which he sees as forming a “power couple” with automation. Having software that can master natural language is incredible. I think it’s probably the biggest opportunity we’ve ever had, he insists. AI will break down the barriers that currently hinder the operation of its software. One of the problems we had with our human emulation approach is that software wasn’t “smart” enough and stopped when it didn’t understand. With generative AI, the software has the context and can adapt to change, just like a human would. So that’s extremely powerful for us. » Share price surge Analysts have understood this well. After plunging with all the stocks in the technology sector in 2022, the company's share price soared at the start of the year with the craze for stocks expected to benefit the most from the AI boom. "There are already existing use cases that we will do better and faster. But also all those that we could not really handle before. In the health field, legal professions, who have to assimilate large chunks of documents, summarize hundreds of pages or find information nestled in three paragraphs," explains Daniel Dines. However, the recipes for building large language models such as ChatGPT are now available in open source and UiPath having already invested early in the field of AI, it has the necessary talents to quickly develop new products. Some were presented last June. The emergence of these AI technologies is therefore also changing his ambitions and his vision for the future of UiPath. “Before generative AI, I saw our growth continuing slowly and surely, after the exceptional period of 2018-2019. Today, I have the feeling that we may be on the path to a major breakthrough again. If we manage to achieve this combination of AI and automation well, I think we can accelerate considerably and perhaps become one of the largest companies ever created,” he believes. Daniel Dines will also devote 100% of his time to it. On January 31, 2024, he will give up his role as co-CEO to Rob Enslin, to devote himself to leading innovation. He will remain Chairman of the Board of Directors and involved in major strategic decisions. Aware of the concerns generated by the arrival of AI for jobs, Daniel Dines sees it rather as an evolution, comparable to other revolutions in history. "AI is not aware of itself. It is incapable of doing an action by itself. It is a tool, it is a huge limitation compared to humans," he recalls.

## ###ARTICLE\_START### ID:1807

Jude Law, canceled; Natalie Portman, canceled; Julianne Moore, canceled… The Deauville American Film Festival, which opens Friday, September 1, will have to do without the Hollywood stars who, beyond the films, have made its reputation since 1975. By joining the screenwriters' strike at the beginning of the summer, the powerful association of American actors, the Screen Actors Guild (SAG), has, in fact, deprived cinema of its glitter. But not only that. "It's not just that: this strike is disrupting the entire release schedule," laments French distributor and producer Michèle Halberstadt. "It comes at the worst possible time, when we had only just recovered from the pandemic-related shutdown." What will the economy of cinema look like in 2024, if American blockbusters are missing? An economic crisis, but also a political and societal one. It all started four months ago. In the absence of an agreement with the studios and streaming platforms, the 11,500 screenwriters grouped within the Writers Guild of America (WGA) are going on strike. They are demanding three things. First, guaranteed salaries while the studios are increasingly shortening their intervention and writing times, particularly on series – it's classic. Second, an overhaul of residual rights (broadcasting rights) rendered obsolete by platforms that do not communicate their viewing figures – that's more complicated. And, third, regulation in the face of the threats of artificial intelligence experienced less and less as a tool and more and more as competition – that's where things get complicated. "It's the strike of a technological rupture that reminds me of the one that took place in 1960, at the time of the appearance of television," analyzes Xavier Lardoux, long-time director of cinema and audiovisual at the National Center for Cinema and the Animated Image. The combined movement of actors and screenwriters that, for the first time, brought Hollywood to a standstill (with a certain Ronald Reagan as chief negotiator) came at the end of a decade of massive equipment in televisions. America no longer needed to go to the cinema to see movies. The result was the agreement on residual rights that the opacity of the platforms is now undermining after a decade of the rise of streaming and Gafam (Google, Apple, Facebook, Amazon, Microsoft), which is reshuffling both the cards of professions and the geography of power. The arrival of ChatGPT will have made ordinary mortals face the evidence: the algorithm, this friend who wants the best for us, has sounded the death knell for the old balances. An extraordinary conflict The entire film industry is now keeping its eyes on this extraordinary conflict. Even if the association of directors (the Directors Guild of America, DGA) quickly reached an agreement that seems to satisfy them – “The DGA has a reputation for going on strike for ten minutes,” one screenwriter jokes. “Or they haven’t yet understood that they too can be replaced by the machine” – the consensus is global. Everyone is holding their breath. Even producers like Christine Vachon at Killer Films. “We would like this to be resolved, because it is becoming difficult for everyone, including the strikers. But, condemned to wait, we are obviously on their side.” » The producer will be in Deauville with Past Lives, by Celine Song, May December, by Todd Haynes, and She Came to Me, by Rebecca Miller. Without their actors. In the absence of Peter Dinklage, the hero of She Came to Me, an outstanding actor, a terrible Tyrion Lannister in Game of Thrones, we will fall back on Emilia Clarke, the actress who played Daenerys Targaryen, the Mother of Dragons, who will be in Deauville for the presentation of The Pod Generation, by Sophie Barthes. The French director, who has been living in New York for twenty-two years, obtained, just like her actress, an exemption from the WGA because the film was made in Belgium under the English regulation, the Pact Equity. "They are granting more and more exemptions, in particular because it allows us to participate, like here, in round tables [Saturday, September 2 at 2 p.m., in partnership with Le Monde] to explain the issues of the strike," explains the director, convinced of the need to regulate technological changes, she who is preparing a series on artificial intelligence. "Technological progress is so exponential that we can quite imagine that in a very short time Marvel could ask the machine, based on its catalog, to write a completely credible Marvel script. In any case, a first "draft" that would then be reread by scriptwriters, she affirms. Similarly, from a few seconds of Emilia Clarke's voice, the algorithm is able to create its own dubbing. Emilia Clarke in French..." Enough to call into question all the financial balances of the profession. What solution to this industrial revolution in the current negotiations? Create a "made by human" label? Better protection of intellectual property in the face of the infinite reproducibility of being by artificial nothingness? And we laugh bitterly when we see that this is the whole subject of Joan Is Awful, the first episode of the last season of Black Mirror… on Netflix: endless mise en abyme. If the battle being played out in Hollywood is so violent and so long, it is because it goes beyond the framework of cinema and audiovisual. Joe Biden has taken the side of the strikers. The debates on the place of humans in the face of machines resonate all the way to Congress. How can we legislate in this world of images, where fiction and reality end up getting lost in each other? In an op-ed published on March 24 in the New York Times, Tristan Harris (ex-Google) and Aza Raskin (ex-Firefox), two founders of the very active Center for Humane Technology, write with Yuval Noah Harari (the author of the 2011 bestseller Sapiens): “Imagine you board a plane. Half the engineers who built it tell you there is a 10% chance it will crash and no one will survive. Would you still get on board? In 2022, 700 researchers working in artificial intelligence were asked whether it was potentially dangerous. Half of them said there was at least a 10% chance that it would lead to the extinction of humanity…” Concern for the Oscars On Friday, July 14, the day the 160,000 SAG actors decided to join the strike, Pierre Zandrowicz, a French director from the virtual reality world, also now based in New York, put online the short film In Search of Time (made using artificial intelligence), which he had shown at the Tribeca Film Festival. He received an avalanche of comments – “negative,” he sums up soberly. “Artificial intelligence, for all these people, is the devil, when it is very artisanal. We fantasize a lot when AI is generative, not creative, it is little more than a huge VCR in which there would be billions of things. I spent four months locked in a cellar with my co-director and a basic open-source software. It would have been easier with humans..." The fact remains that we have seen it: what is being done today was unimaginable yesterday, and AI alone perhaps knows what tomorrow will bring. Rumors are flying: "I saw a film made entirely with artificial intelligence." Except that, as soon as we look for the source, whether it is Imagine, by Anna Apter, a short film shown at the Angoulême Francophone Film Festival, or, as here, In Search of Time, the director actually only used the algorithm as a tool. We are still waiting for the film created entirely by the machine. In the meantime, negotiations are faltering. On Tuesday, August 22, the counter-proposal from the Alliance of Motion Picture and Television Producers, the organization that brings together broadcasters, studios and platforms, was seen as a snub by the screenwriters, who are on the front lines of this standoff, explaining that it boils down, according to them, to a way of "giving with one hand and taking with the other." On Wikipedia, the list of productions affected by the strike ("List of productions impacted by the 2023 Writers Guild of America strike") continues to grow. Traditional late shows have disappeared due to a lack of fighters on American networks. Events like the MTV Awards have been totally or partially canceled. And some are even starting to worry about the Oscars ceremony. "I hope it's far enough away that they won't be impacted," says the producer of Killer Films. The only thing that reassures me today is that the representatives are still sitting around the negotiating table."

## ###ARTICLE\_START### ID:1808

I learned this morning, from Le Devoir on Friday, August 25, that Quebec is preparing to award the contract for the development of the digital health record to an American company: Epic Systems Corporation, based in Wisconsin. Look for the French on their site… No one will make me believe that this type of development cannot be proposed to a Quebec firm that could, if necessary, partner with a French firm. Why always set your sights on English-language firms? No really, it’s shameful… and what about all these other ministries that do the same thing? What is Éric Caire doing? When will a digital solution be developed in French in Quebec? The $3 billion announced for this development would be much better used in the Quebec economy if we had responsible elected officials who were concerned about employing Quebec programmers under free software. When will we learn that, from now on, this type of development will be granted to Quebecers and, if necessary, in collaboration with the French? Réal Gingras Montreal, August 25, 2023

## ###ARTICLE\_START### ID:1809

IBM played the surprise card until the end, and only revealed the location of the clash of gray matter against silicon on the wire: the 35th floor of the Equitable Center, a skyscraper in the heart of Manhattan. On May 5, 1997, 500 elected officials crowded into the New York auditorium. The meeting was behind closed doors, and the venue resembled a vault. The first of six games had just ended with a victory for Garry Kasparov's neurons over Deeper Blue's processors. "If we continue to play with the same intensity, it could be difficult," grumbled the Russian. In this rematch for the computer, the spotlight was at its global climax. The world's major media, including Libération, were champing at the bit in the antechamber of the stage. With only one question: will artificial pseudo-intelligence manage to beat humanity at its own king of the game? "The brain's last stand," advertises an American magazine on the cover. "The last battle of the brain." "The future of humanity is at stake," even a grandmaster goes astray. As a perfect Promethean white knight facing a double Kubrickian black monolith, Kasparov explains that he is heading into the unknown. "This is the first time since I was 12 that I don't have any of my opponent's games in mind." Do most great players put an artificial encounter into perspective? "You can like or dislike the wind," he told us just before this historic match. "When it blows, it blows. It's a reality. Computers are there. Machines surround us. It's inevitable. We can't turn our backs on the future." The lover in The Master and Margarita, Mikhail Bulgakov's baroque masterpiece, is like a character from a novel. Summit of Olympus Youngest world champion, at 22, after defeating Anatoly Karpov, he is undefeated in matches and has reigned on the planet of 64 squares since 1985. Eight years earlier, he dismembered Deep Thought, the first offspring of "Big Blue", nickname of the American computer giant IBM. In 1996, he defeated its successor, Deep Blue. On May 5, 1997, he had just turned 34 and was riding alone at the summit of Olympus. A handful of years earlier, he had asserted, unwavering: "When will computers supplant man, even in traditional games? Never. Gaps remain in computer reasoning. There will always be moves that will overwhelm it, sacrifices that it will not understand. The nature of the game itself is stronger than it. Chess cannot be summed up as a mathematical equation, however complicated it may be." The day before the rematch, when he was found, he seemed less bravado. In front of a plate of sushi, he confided: "Last year, I was laughing. Now, I'm very nervous, very anxious. The computer sees better, further, deeper." His improved version, Deeper Blue - 1.80 meters, 1.2 tons - is a monster. Its 512 processors have doubled the computing power of its little brother: the software weighs 200 million moves per second. At a rate of 40 moves in two hours, or three minutes per move, it analyzes an average of 40 billion positions for each move. A precursor to artificial intelligence (AI), it has been boosted with hundreds of thousands of historical games. Programmed to better analyze the complexity of opponent sacrifices. Sharpened to better understand the value of positions. Murray Campbell, one of the supercomputer's tutors, who has been at the project's bedside since 1989, assured him at the time: "Deep Blue is better prepared than last year. It is more dangerous, much more dangerous." The computer scientist added: "The relationships between man and machines will be even more interdependent. The interaction already exists. Kasparov prepared himself with computers. And we, researchers, prepared Deep Blue." And he prophesied: "It's more than a chess match, it's a laboratory for the future." "I'm ashamed." And then everything changed. In the second game, Kasparov wavered. He gave up when he was holding a draw, a crack announcing a coming tear. "I gave up in a position that was probably a draw," he said, haggard. "I've been devastated ever since. Something happened that I never understood." This expression of doubt from such a peak of ego is intriguing. "I deserved to lose anyway." Exhausted, he would play three draws in quick succession. Before collapsing in the sixth and final game. "He launched into a Caro-Kann, one of the defense systems he mastered best. And, suddenly, everything crumbled," wrote these columns twenty-six years ago. "He accepted a gambit, a sacrifice offered to him by Deep Blue. His pawn mowed down the black knight. Then, he understood. He looked around wildly. Something inside him had just collapsed. The world champion gave up after barely 19 moves." Shock and earthquake. "My greatest enemy is myself," this lover of Clauzewitz and Machiavelli, for whom chess was first and foremost a battle of egos, was in the habit of saying. He was unable to project a virtual ego in front of him. He apologizes: "I'm ashamed." Gets angry: "No, no, I don't deserve your applause." Before returning for the umpteenth time to the injustice that would have shrouded this rematch in a dark veil: Deeper Blue has digested all of Kasparov's historical games, he has had access to none of his opponent's data. And to fuel the controversy over the shadow of "human" help behind the machine. A sort of fantasy of a puppet doped with silicon. Like "the mechanical Turk", this automaton created in 1769 and manipulated by players. Was it programmed, refined, to allow it to play "its moves that are so human, so incomprehensible"? He swears: "This machine has never made a definitive error. It has adjusted itself according to the pieces, the sequence of moves." IBM engineers politely retorted via Chung-Jen Tan, the team's coordinator: "We worked on speed, knowledge and flexibility. Nothing else. We didn't change anything as soon as the clock started [at the start of the game]." Kasparov blamed his secondants (the assistants of great chess players) for pushing him to prepare specifically for a computer: "I should never have ventured into that territory." Above all, "he should never have played so unnaturally, on the defensive all the time," another grandmaster rewinds today. "Distilling intelligence" Kasparov had offered a third round in the form of a belle. The technology giant was obviously quick to refuse it. And to plunge the Russian into torment. A way of sanctifying the defeat in the history books. "It was a brilliant commercial gamble," sums up the grandmaster Bachar Kouatly, "to show that microprocessors could appear more intelligent than the most intelligent of men." Kasparov was nevertheless one of the precursors in the contribution of computers to the game, its preparations, its analyses, its variations. "Since the day I met him, in 1987," recalls Dan-Antoine Blanc-Shapira, friend and former manager of the Russian, "he had this unique understanding of the role of computers. And he always showed that we could transform constraints into opportunities." Except in this present case. "He has not digested the IBM machine behind Deeper Blue," adds Blanc-Shapira. "He always tells me that he could beat any man or any machine, but not both. It's like playing tennis on both clay and grass." The firm dismantled the monolith in the process. "Deep down, given the level far from his standards, Kasparov had perhaps given up, hoping for a new challenge, just to add some spice and crazy prize money," imagines Jean-Claude Moingt, who runs Léonard, a company dedicated to developing the game. "There are few arenas where a human being and a mind can confront a computer or a robot," Kasparov would say twenty years later. "It was my blessing and my curse." At 34, the legendary player's strength was beginning to decline, and defeat against silicon or carbon, he admitted, was inevitable. He would win a few more major tournaments, but would have to give up his world crown to his compatriot Vladimir Kramnik in 2000. Five years later, he would prefer the political arena - which would turn into a dead end - to the chess labyrinth to which he had long held the keys. Even if, between two planes, Kasparov, a naturalized Croatian, fervent spokesperson for Ukraine and inexhaustible on the contribution of artificial intelligence, accepts from time to time chess demonstrations, where his genius still shines intermittently. "If you want to see what the future of AI looks like, just look at chess," said Frédéric Friedel, Kasparov's computer advisor. Deeper Blue was in a way the trailer for AI. "Because after Deeper Blue, the other big step forward, perhaps even more fascinating, is the arrival of DeepMind and its generative intelligence," summarizes Eloi Relange, president of the French Chess Federation. Created in 2010 and bought out by Google, DeepMind's mission, according to its creator, is to "try to distill intelligence into an algorithmic construction that may prove to be the best way to understand how our minds work." It was not until 2016 that DeepMind's Alpha Go software beat one of the best Go players in the world, Korean Lee Sedol. Deeper Blue, Libération summarized at the time, "calculated all possible combinations before choosing, based on criteria defined ex ante by its designers, the optimal response. AlphaGo, for its part, uses an algorithm, that is to say an automatic method called "deep learning," which is based on the activation of a convolutional system of neural networks." A year later, its successor AlphaZero literally destroyed Stockfish, the best free software in the world for the game, "after barely a week of training," marvels Eloi Relange. The general public program calculated "only" 80,000 positions per second, compared to 70 million for Google's software. The result, in 100 games: 28 wins, 72 draws, 0 losses. "I've always wondered what it would be like if a superior species landed on earth and showed us how to play chess," said one day one of the seconders of the current king of chess, the Dane Magnus Carlsen. "I think I know now." "Last year, I was laughing. Now, I'm very nervous, very anxious. The computer sees better, further, deeper." Garry Kasparov the day before the match

## ###ARTICLE\_START### ID:1810

AI Nvidia, Google, Amazon, Intel, AMD, IBM and Qualcomm. This prestigious list of champions of artificial intelligence, whether thanks to their components or their cloud capabilities, is that of the new investors of Hugging Face, one of the main players in open source AI. All of these groups participated in a funding round, announced Thursday and led by Salesforce Ventures, of $235 million. This operation more than doubles the valuation of this company, created by French people and operating between Paris and New York. It is now worth $4.5 billion. Hugging Face, named after this emoji that stretches out its arms to give a hug, was until now financed by American funds. Its last fundraising, of $100 million, dates back to May 2022. "For this new round, we wanted to bring together a large number of key players in artificial intelligence. These are groups with which we already have partnerships,” explains Julien Chaumond, co-founder and chief technology officer. In early August, Nvidia announced that Hugging Face services would be hosted on its DGX cloud, which houses supercomputers specialized in AI. “This collaboration will allow companies to take their destiny in AI into their own hands thanks to open source,” commented CEO Clément Delangue. Hugging Face has similar agreements with Amazon. But unlike some fundraisings that result in the obligation for start-ups to pay back part of the money raised in cloud hosting, Hugging Face has no spending constraints with its new investors. “And, with the exception of Salesforce Ventures, their tickets are identical,” emphasizes Julien Chaumond. Sound Ventures, the private equity firm of American actor Ashton Kutcher, is also participating in the round. Strengthening teams Unknown to the general public, Hugging Face is a sharing platform specializing in AI and machine learning. Developers from all over the world can deposit pre-trained models or datasets there, which will be reused, adapted and improved by others. Meta's AI lab, for example, chose Hugging Face to host Llama 2, its latest language model. And groups like Renault, Pfizer and Roche draw on this open-source library to design their AI-boosted services without having to start from scratch. This approach is the opposite of that of OpenAI, which sells access to the power of its GPT-4 language model but prevents companies from lifting the hood. Hugging Face engineers participate in this collaborative research. The new fundraising will allow the teams to grow. The company currently has 170 employees, 80 of whom work in France. "We have opened several small offices in the country, as well as in Europe and the United States," says Julien Chaumond. Hugging Face is successfully attracting profiles interested in the company's open source spirit. "But there is currently a lot of investment in AI start-ups," such as the $105 million raised by the French Mistral AI (see page 26), "and it is on these new projects that the competition to attract talent is being played out," continues the technical director. The money raised will also strengthen the company's cash flow and allow it to consider acquisitions. "But there are no specific plans at the moment," specifies Julien Chaumond. Hugging Face, which also sells services to businesses, does not communicate its revenues. But according to The Information, they should be $30 million for the year 2023.

## ###ARTICLE\_START### ID:1811

AI Arthur Mensch did not give up. Facing Emmanuel Macron on the Viva Tech stage on June 14, the co-founder and director of Mistral AI, a brand new start-up specializing in so-called generative artificial intelligence, did not hesitate to tackle touchy subjects. "How do France and Europe plan to enable the emergence of European champions?" in artificial intelligence, the thirty-year-old tells the tenant of the Élysée. Before telling him that the European regulation of the sector, currently being negotiated in Brussels, risks hindering the emergence of his start-up. Arthur Mensch knows what he is talking about. With his two co-founders Guillaume Lample and Timothée Lacroix, he created Mistral AI in early 2023 with the aim of making it the European champion of generative artificial intelligence, a technology that generates texts, images and videos from data. Mistral AI's ambition is to create a credible European alternative to ChatGPT (Open AI) and Bard (Google). Little "Frenchies" taking on American ogres... This refrain flatters the ego of an often proud French tech company, but rarely happens in reality. The fact remains that, according to many players in the ecosystem, Mistral AI is made of different wood. This is undoubtedly the reason that led Xavier Niel, Rodolphe Saadé, former Google CEO Eric Schmidt, Bpifrance and the Exor and La Famiglia funds to open their purse strings for the company's first fundraising. Announced the day before the opening of Viva Tech, on June 13, this round of funding raised no less than $105 million. Impressive funding for a company created a month earlier, and even the largest ever achieved by a start-up at this stage of maturity in Europe. Which did not fail to arouse jealousy. "It is the combination of a very strong enthusiasm for generative artificial intelligence on the part of investors and a unique team on the market today", analyzes Arthur Mensch to Le Figaro. This team is a trio of founders who benefited from the excellence of the French training apparatus: Polytechnique, Paris Saclay and ENS. "It turns out that the training of our engineers is one of the most adapted to do AI. It is the most mathematical training in the world. But AI is essentially mathematical concepts applied to computer programming", jokes the CEO. A "dream team" After graduating from their courses, Guillaume Lample and Timothée Lacroix were hired by Facebook (now Meta). The former notably participated in the development of LlaMa, the language model of Mark Zuckerberg's group, which makes it possible to run solutions similar to ChatGPT. Arthur Mensch, for his part, joined Google DeepMind in Paris in 2020, where he worked on key projects in the same field. But the trio, who had known each other during their academic years, had ants in their pants. "We were in large companies. We said to ourselves that we knew how to reproduce this technology, and in a more agile way. What drove us was the creation of a European alternative to a technology currently controlled by American companies. The three of us talked about it at the beginning of the year, and we put it into practice very quickly," insists Arthur Mensch. Excellent scientists do not always make good entrepreneurs. Very early on, the trio was able to count on the help of the co-founders of the insurtech Alan, Jean-Charles Samuelian and Charles Gorintin. "We had been thinking for a year about creating a European champion of generative AI. There was an alchemy between what we want to do and the values of this team of superstars in the field," says the first. Another important support: the former Minister of Digital Affairs Cédric O has become an advisor to the start-up. Contrary to the American giants who advocate a proprietary vision of this technology, Mistral AI is banking on "open source" for its future models. "We believe that to align technology with human values and to practice moderation, it is healthier to make it available as widely as possible, rather than in the hands of a few private players," argues Arthur Mensch. Saying that he is attentive to the excesses of AI, the CEO of Mistral is nonetheless wary of European regulatory ambitions with the AI Act. "These rules are poorly designed because they are coming too early. The technologies are not mature, this could slow down innovation," he believes. Located near the Gare de l'Est in Paris, Mistral AI and its twenty employees must now live up to the great promises. "We must remain very humble. The challenge is to have the best teams, access to computing power and data to train the models, to create the right product that will be the engine of growth tomorrow," notes Jean-Charles Samuelian. Arthur Mensch indicates that the start-up is targeting distribution of its solution at the end of the year, with partnerships in testing during the fall. Ultimately, Mistral AI targets two segments: companies steeped in digital culture, as well as those critical to the economy (telecoms, banks, administration) that cannot depend on American technology. "The idea is to provide them with easy-to-use technology so that they can integrate it into their software and improve productivity, while guaranteeing them control of data and intellectual property," concludes the boss of Mistral AI.

## ###ARTICLE\_START### ID:1812

What better way to make yourself known to a powerful microcosm than a party? Propelled to the rank of unicorn (valuation over $1 billion) after raising $101 million, the British start-up Stability AI chose to celebrate the event on October 17 in the beating heart of the tech industry. It was in San Francisco that it brought out champagne and petits fours at an evening attended by artificial intelligence researchers, renowned investors and even Sergey Brin, co-founder of Google. They all came to see Emad Mostaque, a complete unknown who came into the limelight a few months earlier thanks to the success of Stable Diffusion, an artificial intelligence that, like Dall-E (OpenAI) or Midjourney, can generate stunningly realistic images from a simple text description. "A large part of humanity is creatively constipated. "We're going to help them defecate rainbows," dares this Bangladeshi born in Jordan, in front of a curious assembly. Since then, the man who had only been to San Francisco once in his life has made numerous trips back and forth from London, poured out his heart to the major American media and had lunch with Jeff Bezos. But his success story was severely tarnished by two investigations published by Forbes and then Bloomberg: to better promote his company, attract media attention and raise funds, Emad Mostaque did not hesitate to embellish reality. Arriving in the United Kingdom at the age of 7, this young forty-something with Asperger's syndrome, attention deficit disorder and aphantasia (inability to visualize a mental image) does not share the usual path of the young prodigies that Silicon Valley is so fond of. After graduating in 2005 with a degree in computer science and mathematics from Oxford University (a master's degree according to Mostaque, a bachelor's degree according to Forbes), the young man did not join the world of start-ups, but that of finance and its suits and ties. For nearly fifteen years, he navigated the ecosystem of British hedge funds and delivered his analyses on emerging markets in the economic media. A series of controversies Emad Mostaque claims that he became interested in artificial intelligence thanks to his autistic son: with a team, he supposedly built a homemade AI to comb through scientific literature in order to find a suitable protocol to simplify his child's daily life. From there, he supposedly got the idea that AI could help improve the world. Having made his fortune, he left hedge funds at the end of the 2010s. His career path then became unclear with the launch of aborted projects, particularly in the cryptocurrency sector. “It’s only when the discussion turns to his career that Mostaque seems less confident,” The Times notes in a profile published in May. The only thing that’s certain is that the Briton founded Stability AI in 2019, one of whose first projects, Caiac, aimed to use AI to help government decision-making during the Covid-19 pandemic. While the UN was interested in the platform, it never took off. According to Forbes, that didn’t stop Mostaque from presenting himself as the head of the UN’s AI projects in the context of Covid-19 during his meetings with investors in the summer of 2022… That’s the year that Stability AI really took off. The former financier used his personal fortune to build a supercomputer hosted by Amazon. His idea: to allocate this phenomenal, but very expensive, computing power to other brains. He approached researchers from the University of Munich who were working on the promising but budget-impaired image-generating AI Latent Diffusion. Emad Mostaque's offering radically transformed this model, which was renamed Stable Diffusion when it was released in August 2022. It was an immediate success, with more than 10 million users per day. Stability AI hired three of the researchers behind the model to continue improving it. Two months later, the start-up raised $101 million and Emad Mostaque found himself in the spotlight. But behind the scenes, some felt that Stable Diffusion's academic origins had been erased, something the company denies. From the moment it was launched, Stable Diffusion attracted its share of controversy. The tool is the target of two lawsuits, brought by a group of artists and by the Getty photo agency, who claim that the model was trained on their works without respecting their copyright. The open philosophy of the start-up, whose models are accessible in open source, is divisive. While many praise a transparency that is lacking in the competition (OpenAI in the first place), others believe that these models could be reworked for malicious purposes to flood the internet with fake images. "It's a paternalistic and condescending posture," says Emad Mostaque. The summer of 2023 brings another batch of controversies. According to Bloomberg and Forbes, the founder highlighted to the media and financiers projects and clients that in reality did not exist. The start-up, which now has 170 employees, has launched an AI similar to ChatGPT as well as the visual editing tool DreamStudio. But at the end of June, it lost its research director, who had been poached eight months earlier from Google, as well as most of its senior executives. This is due to the lack of a clear direction for the start-up's strategy and the personality of its CEO, whose grandiloquent promises are struggling to translate into action. Not enough to shake the optimism of Emad Mostaque, for whom AI is still far from having demonstrated its full potential. "We are at the equivalent of the iPhone 3G. The take-off will take place next year," he said in mid-July during a round table with UBS analysts.

## ###ARTICLE\_START### ID:1813

MUSIC "She has golden hair and tanned skin..." At first glance, an inattentive ear might think that singer Angèle did a cover of the song Saiyan by rapper Heuss L'Enfoiré. And yet. The excerpt, published Monday on Twitter by musician Lnkhey and which has accumulated more than 1.5 million listens, was created with the help of artificial intelligence that perfectly imitates the tone of voice of the Belgian singer. The latter reacted Wednesday on TikTok by filming herself singing the same lyrics, with an almost similar result. "I don't know what to think about artificial intelligence. I think it's crazy, but at the same time, I'm afraid for my job," comments the singer. For several weeks, social networks and YouTube have been flooded with these fake covers generated by AI. Johnny Hallyday singing the theme song to the Pokémon cartoon, Freddie Mercury covering Michael Jackson's Thriller, Johnny Cash performing Barbie Girl by Aqua... While the results are more or less conclusive, they illustrate the dazzling progress of artificial intelligence capable of imitating a human voice, and outline a direct threat to performing artists. It only takes an hour for the AIs of the open-source software VRC or DiffSVC to "learn" to sing like Beyoncé or Michel Sardou. To achieve an optimal result, the Internet user must train them by feeding them high-quality audio files of the targeted artists. Rather than trying to stop this wave, the music industry seems to want to regulate it: according to information from the Financial Times, the record companies Universal Music and Warner are negotiating agreements with Google to legalize this practice. According to the British daily, the goal of these discussions is to build a tool that allows individuals to create songs with AI imitating the voice timbre of their favorite artists, against payment of royalties. This feature is reminiscent of ContentID, from the YouTube platform: any Internet user who uploads a video with protected music automatically loses their monetization, which goes back into the hands of the record companies. This system brings in more than 6 billion dollars each year to the industry. Choice of artists The majors seem to want to authorize an amateur practice, on which Internet users will not be able to earn money. Universal had on the contrary shown itself to be merciless against Heart on My Sleeve, an original song using the voices of Drake and The Weeknd without authorization and published in April on the biggest music platforms. The case "raises the question of which side of the story the players in the music ecosystem want to be on: on the side of artists, fans and creative expression, or on the side of counterfeiting, fraud and denying artists the compensation they deserve," Universal commented. "If we put the right framework in place, AI will allow fans to create covers and mashups of their own accord, and reward their favorite artists," Warner Music CEO Robert Kyncl (ex-YouTube) said Tuesday during the record label's financial results presentation. "However, artists must keep control. Some will embrace these tools, others will reject them. It must remain their choice." Robert Kyncl added that "many Warner artists are already exploring how generative AI can help them create and remix their music." Costa Rican singer Pedro Capmany released a virtual duet with his father, who died in 2001, whose voice was reconstructed with AI. Canadian singer Grimes, who self-publishes, allows the use of her voice on the condition that the revenue generated is shared 50%. "I received two really good songs. They correspond so much to what my future album could be that it's a little disturbing," she confided to Wired magazine.

## ###ARTICLE\_START### ID:1814

LE FIGARO. - The word AI has been on everyone's lips since the release of ChatGPT, but this technology is far from new... Zoubin GHAHRAMANI. - I have been an AI researcher for thirty years. For twenty years, this subject was purely academic: we thought about the theoretical aspect of machines made more intelligent, but without producing anything concrete. Everything has changed radically in the last decade. Most people have not noticed it, but AI is already present in our daily lives. For example, voice assistants would not exist if we had not made dazzling progress in voice recognition and machine understanding of language. There are also technologies to help you take better photos and edit them. All of this works thanks to AI. And how can we not mention Google Search. The vast majority of the time, the search engine understands what you are really looking for and provides the best answers. This is due to the progress in machine learning over the last ten years. More generally, if we take our smartphone, there are about a hundred tasks inside that this device can do better than a human! Do you have any examples of major advances in AI, for example in the field of health? We recently presented Med-PaLM2, a language model that was trained on advanced medical knowledge. It is capable of answering many questions and it passes the most demanding American university tests. The interest of Med-PaLM2 is to provide rapid access to very high-level medical information. It is not going to replace doctors. But there are many places in the world where many people will be delighted to have simple access to all this expertise. We are also developing the AI DermAssist. Let's imagine that I have a spot on my skin that worries me. I take a picture of it, this AI will analyze it, and it will give me the probabilities that it is a simple mole, a skin irritation, or that it is a sign of cancer. This technology is promising because almost everyone on Earth has a smartphone, but they do not necessarily have access to specialist doctors. Isn't there a risk that people will self-diagnose even more? I have an anecdote on this subject. I had gone to see my doctor telling him that I had a strange pimple on my back and that I thought it was a tick bite. I was coming back from Connecticut, where there were cases of Lyme disease. In short, I was one of these very annoying patients! But what surprised me is that my doctor did not know about this disease because there were no cases in the United Kingdom at that time. He turned to his computer and started looking for information. This anecdote demonstrates the potential of this type of AI. No one can store all the existing medical knowledge in their brain. But machines can, and they can give us access to high-quality information. Google is also working on models to predict floods and the spread of wildfires, can you tell us more? Flood forecasting is a tool that is used in 80 countries, and the alerts sent are useful because they give you time to evacuate and protect your property. But I would like to make a broader analysis. People tend to see AI as the replication of human abilities, for example language, visualization of objects, etc. But in my opinion, the most interesting uses of AI are those that use the reasoning power of the machine to solve problems that the human brain cannot handle. DNA sequencing is one example, flood forecasting is another. Twenty years ago, we would take satellite images and try to guess where floods would spread. Computers do this job much better than we do. Another example: in 2022, we published a paper in Nature where we showed how we managed to train an AI to control the plasma inside a nuclear reactor. In the long term, controlling nuclear fusion could be the source of a huge source of decarbonized energy. Which side are you on in the debate about the danger of AI for the future of humanity? I think AI is a major technology with huge potential. And I want people to be aware of the ways in which AI can help build a better future. But in my opinion, we already have a lot of very short-term risks related to AI. I can cite the quality and reliability of the information produced by these models. At Google, we do not want the internet to be drowned in misinformation and false images. There are also the prejudices that are replicated or amplified by AI and that will have a negative impact on the lives of some people. Of course, if you are a science fiction writer, you can imagine scenarios where AI will lead to disaster. But the probabilities are really very low. Isn't there a risk that AI research will become more and more closed and privatized? Google has contributed a lot to open source research. But I think it is important to measure the risks of this openness. We have seen people who have maliciously hijacked open source language models, for example to generate disinformation visuals. We want to be sure that our research is reused in a positive way. So we put safeguards in place. For example, the use of our AI by third parties is done through interconnection platforms to which we can revoke access. But these questions are complicated and there are no simple answers. Do you think AI should be regulated? We are in favour of regulation, but it is important that it is done well. It is obvious that the most dangerous concrete uses must be regulated. Nobody wants autonomous vehicles that cause accidents. AI in the medical field must also be regulated. But I think it is much more complicated to want to regulate mathematical models that are abstract by nature.

## ###ARTICLE\_START### ID:1815

LE FIGARO.- What do you think fundamentally distinguishes human intelligence from artificial intelligence? Muriel POPA-FABRE.- The arrival of the talking machine questions the fundamentals of intelligence: it shakes the linguistic primacy of man. We can no longer reduce man, his thought or his intelligence, to simple language production, although he remains linguistically astonishing: at 2 and a half years old a child begins to speak after hearing in the best case 11 million words per year; GPT-3 has received hundreds of billions of them. This anthropological disruption launches us to the rediscovery of the human. The question of human intelligence is already a real scientific challenge, and its measurement in the machine is highly debated. ChatGPT passes cognitive psychology tests for children or the bar, but these computational performances consist of recovering information relating to these tests present in its training data, what is called data contamination. The lack of tests to evaluate generative AI is real. Some propose a new Turing test: starting with $100,000 to generate $1 million on the internet. Although the slot machine shortcut - "I win therefore I think" - may raise a smile, this test, aimed at proving the machine's agency, challenges it on the ground of experience. For a long time, and in a formalized way with Galileo, we have believed that we verify facts through experience. Without developing philosophically, the very natural interest we have in knowing who is the author of a piece of writing demonstrates that we find that the work of plowing through experience is essential in intelligence. The same goes when we find ourselves frustrated by the absence of ChatGPT sources. In a sentence: artificial intelligence is information without experience. Proving that it can do more than compressed information will not really bring it closer to the deep capacities that experience develops in humans. We know Gabor's law: everything that is technically possible will necessarily be achieved. Is it really possible to stop technological progress, to set limits on it? Reinforcing the bed of a river allows it to go to the sea without causing damage and without stopping its progress. The limit is a catalyst for technological progress. The limits imposed by human reinforcement on ChatGPT have made it ergonomic and successful, just as the brakes on a car allow speed, because they allow safety. The question that arises in AI is to find the mechanisms that allow the control of dynamics that necessarily occur on a large scale. How can we accelerate without having the free mind to be able to maintain control? Are we going to restrict the engines, or create a road network with speed limits and brakes? Computing capacities, talents, data, quickly adopted products are not the only ingredients for success in AI: user trust is the decisive competitive advantage of an AI whose limits are governed. Developments in artificial intelligence could threaten democracy. What form could these threats take? In presenting the AI Regulation ("AI Act") to the press, the President of the European Parliament warned in June of the danger of mass disinformation as elections approach, but recalled the upcoming entry into force of the Digital Services Act, which requires digital platforms to moderate illicit content. Without limiting democracy to the election period, one form of threat would indeed be that of the automated, large-scale generation of content whose plausibility will make critical thinking an even more essential component of our daily lives. Added to this voice is that of the UN Security Council, which highlighted for the first time on July 18 that the risks of disinformation, polarization, and new dimensions in the manipulation of human behavior could lead to large-scale instability threatening peace. Today, can we say that the main AI tools such as ChatGPT are ideologically biased? The ideological cardinal points of Silicon Valley are quite far from our categories, their temporal vision is not the same. Long-termists, transhumanists, effective altruists, extropianists, rationalists or supporters of the singularity, all "see things on a scale", that of the history of humanity. This ideological substrate - the Tescreal - projects itself into the future on a scale that we only glimpse in Europe in certain ecological concerns. Adopting this focus makes it possible to contextualize alerts to existential risks. Technically, it is the question of algorithmic bias that arises at different levels: upstream through training on representative data, downstream through human reinforcement, and in extremis through human critical sense. The question of bias hides that of the power of conviction of ChatGPT. Cornell researchers tested the effect of GPT-3 on the opinion of 1,500 users tasked with writing a paragraph on the impact of social networks on society. In this, they were assisted by a writing assistance system trained on data oriented towards the benefits or dangers of social networks. The result shows that the training bias of GPT-3 influences the content of the writings evaluated by 500 people, and modifies the initial opinion of the participants. The economic and geopolitical challenge of a sovereign AI is coupled with a dimension of representation of the world. Are we going to put the world as we see it into data (human rights, democracy, etc.)? The requirement for transparency on training data could be more than a question of intellectual property. Doesn't the desire to regulate artificial intelligence risk leading to a form of standardization of freedom of expression? On what criteria? The Achilles heel of AI is that its crystal ball sees the past. Predicting the next word from data from the past is what ChatGPT does. Multimodal models (text, image, sound, video) are coming, but statistics from the past will remain a first form of AI standardization. OpenAI did not wait for regulation to corset the expression of its speech machine. Hours of human annotation were necessary to bend what its training corpus made ChatGPT say: toxic, violent or inaudible outputs. At this stage called reinforcement by human feedback, automatic response filters on sensitive subjects were added, their criteria form another type of standardization of expression. The global game that saw us, with 200 million users, try to trap ChatGPT and its political correctness allows OpenAI to retrain its algorithms for free. Will this once again shift the boundaries of what can be said? In the era of putting the world into data to train AI, what manuals should be created for "machine learning"? Shaken by the arrival of ChatGPT, the European Parliament has taken up the issue of freedom of expression by including it among the principles to be respected in Europe. Faced with the plundering of data that drives AI, some advocate data ownership. Is this a good solution? The copyright-AI debate is shaking the United States and is making its way to Senate hearings. The Federal Trade Commission (FTC) has just sent a strong signal by opening an investigation into OpenAI that could recall the action of the Italian "CNIL". However, this agency can order the destruction of algorithms fed by illegally exploited data, as in 2019 for Cambridge Analytica or in 2022 for Weight Watchers. Although society and politics are taking up the debate, it is moving to the courts, where judges are receiving an increasing number of complaints. Lawyers for developers, artists, and authors are trying to make a technical case: if ChatGPT can summarize the content of a book, it is because it has been trained on the text. In Europe, a 2019 directive regulates the mining of texts freely accessible on the internet, making it possible to oppose it since 2022. However, the problem of transparently training such data-hungry models remains. A response comes from Stanford, which is taking up the AI Act the day after the European Parliament voted for a conformity assessment of the largest models. With a score of 3 out of 4, Bloom is the copyright champion. This collaborative model, trained on the French supercomputer, concentrates in its 176 billion parameters the contribution of a thousand researchers. Ambitious innovation here rhymes with respect for the constraints proposed by the regulations currently being negotiated. The open source scientific community is showing the way: transparency of training and data sharing. A French ChatGPT could thus see the light of day. With its arrival, it is the French language and the vision of the world that it conveys that would enter the digital arena. Is this the end of the author? In fact, the question of ownership also arises on the outputs of the machine. What to do with automatically generated children's books that arrive on the market? Can they legally claim to be works of the mind? An anthropological disruption resurfaces: what is an author? Or, to put it more figuratively, when the Little Prince simply says "Draw me a sheep", can he claim to be the author? We often oppose the American and Chinese civilizational models, one based on freedom, the other on surveillance. Regarding new technologies, should we really oppose these models? Can Europe and its civilizational corpus offer a third way to defend in the artificial intelligence revolution? The regulatory rush on AI seems to be uniting global efforts in a common direction: finding a governance path without stifling innovation. More incentive-based approaches sit alongside and complement the more regulatory approaches of the EU and China in an attempt to provide a rapid and pragmatic response to the pace of adoption of generative AI. Although England says it does not want to regulate, it is launching its market authority this summer on the “ChatGPT” competition, and is organizing the first global summit on AI regulation in the fall. The White House, for its part, is acting immediately to secure the voluntary commitment of the main players. While the Senate is busy, it is promoting an unprecedented initiative in mid-August: a mass hacking campaign of ChatGPT and its competitors, the results of which will certainly influence opinion. In addition to fearing mass disinformation, global initiatives seem to want to reinject values into the machine. The G7 targets democratic principles for its AI governance. The Council of Europe's AI Convention focuses on human rights and the rule of law. The European Parliament is providing the AI Act with elements that also go in this direction, while China is requiring generative AI to be a vector of socialist values from mid-August. In AI, we literally see things on a large scale, a global governance response could therefore seem reasonable. However, can there be empty chairs at the table of global AI governance? Europe surely has a role to play, because it is de facto the first to decide to shape all uses of AI by law with its civilizational corpus. How will it now be able to "embody" this AI in the service of humanity? This is the challenge and responsibility of every European: from the developer to the user. \* Expert at the Council of Europe, she works on issues of regulation of artificial intelligence (AI) and data protection. "The economic and geopolitical challenge of a sovereign artificial intelligence is coupled with a dimension of representation of the world

## ###ARTICLE\_START### ID:1816

Linda Codega started 2023 with a scoop like few of her colleagues have the chance to publish once in their lives. This thirty-something journalist defines herself as "queer, non-binary Southerner living in Yankeeland" and works for Gizmodo, an Internet magazine dedicated to new technologies. Her exclusive information had the effect of a Watergate in the small world of Dungeons & Dragons (D&D) fans: the publisher of the first role-playing game in history was preparing to revoke the Open Game License (OGL). Inspired by free software, this free license has allowed third parties to produce content for the most famous role-playing game since 2000, without paying royalties to its owner, the publisher Wizards of the Coast (WOTC). At first reading, the terms of the free license seem unequivocal: once granted, unless the licensee violates the terms, it is perpetual. The idea of touching this sacrosanct principle, revealed by Linda Codega, was experienced as an offense by the fans of the game. Since its origins, the popularity of D&D has, in fact, been based on the creativity of its fans and their more or less scrupulous respect for intellectual property. They are the ones who ruin themselves to collect everything related to their passion, they are the ones who recruit other players and therefore new customers. And if they are often divided on all sorts of subjects, they find themselves there to oppose what they consider to be a betrayal of WOTC, so much has this license become, in their eyes, consubstantial with the hobby. It is rare for the CEO of a company to admit in public that it has gone astray. However, this is what Chris Cocks ended up conceding on March 31, on the microphone of the site The Verge, after having retreated in the face of the threat of a boycott by his customers. Mr. Cocks has headed Hasbro, the parent company of the D&D publisher since 1999, which earned $1.3 billion (€1.2 billion) in 2021, or about 20% of the group’s revenue and half of its profits. D&D generates only a modest 10% of this turnover, but Cynthia Williams, president of WOTC since 2022, has a model in mind for him, that of Disney and Marvel. She says she is convinced that the game is an underexploited nugget. Fans, for their part, are quick to see in this greedy certainty the driving force behind the offensive against their beloved OGL. There is a good fairy in every children’s story worthy of the name. The one in D&D is called Peter Adkison. She has the features of a sixty-year-old whose availability seems limitless when he shows people around Seattle, the capital of the television series Grey's Anatomy, but also the headquarters of the publisher WOTC since 1990. Founder of the company, Peter Adkison is a unique personality in the role-playing game world: no one says anything bad about him. As much as D&D's creators, Gary Gygax (1938-2008) and Dave Arneson (1947-2009), are the subject of discord, he is hailed for having saved the game in the late 1990s. And when it comes to the Open Game License, it is towards him that fans turn their eyes, since he presided over the destiny of D&D when it was promulgated in 2000. Asphyxiating the competition Three years earlier, WOTC had bought its publisher, TSR, for 30 million dollars, the amount of its debts. At that time, the dragon was in a bad way. Its turnover declined year after year and relied on a core of already aging loyalists. This did not stop Peter Adkison from starting a third edition of the basic rules in 1998, which was very well received by fans, who adopted it – and therefore bought it. It was in this context that the game bet on the free license. More Machiavellian than altruistic, the maneuver consisted of suffocating the competition from other games. And the strategy proved profitable. Themselves faced with a bear market, WOTC's rivals launched into publishing for D&D in the hope of attracting its large clientele. Since its promulgation, the OGL has allowed Dungeons & Dragons to remain the most popular role-playing game. Why abandon this winning strategy? The rise of crowdfunding could provide an explanation. Nonexistent when the OGL was launched, crowdfunding has become a pillar of the gaming industry for the past ten years. "30% of the sums collected on Kickstarter benefit this sector, or 2 billion euros invested since 2009," estimates Alexandre Boucherot, founder of Ulule, a rival platform. This pre-financing allows WOTC's rival publishers to prosper by publishing content compatible with D&D under OGL: scenarios, that is to say, ready-to-play adventures, fictional universes covering multiple creative niches. Enough to encourage Hasbro to attempt this risky maneuver? It's plausible. Enough to alarm fans, furious at the idea of losing this editorial wealth, that's for sure. Contacted by Le Monde, WOTC did not wish to comment on this episode. For the D&D publisher, this commercial damage is all the more silly since it had rather well tackled the other major subject threatening its reputation. The rise of decolonial and gender studies has led to a critical rereading of Dungeons & Dragons, to say the least. The debate has fractured the fan community with, in a very simplified way, on one side those called "grougnards", who judge that we can no longer play anything with these reading grids, on the other the "deconstructed", who see micro-aggressions everywhere. Faced with this polarization, WOTC walks a tightrope. Since 2020, the publisher has placed warnings at the forefront of reissues of content deemed shocking by its recent clientele. Similarly, it is making an assault on inclusivity in its communication, while being careful not to offend too much the proponents of "it was better before". Exoticism and sexism Originally, D&D was based on an imaginary of the 1930s where the dominant culture was Western and macho – the bedside book of the game's creator Gary Gygax, Conan the Barbarian, by Robert Howard, was published in 1932. The other has the features of a racialized monster who is massacred, or a scantily-clad witch who is pulled by the hair. In 1997, John Holland, artistic director at TSR, estimated, on the American public channel PBS, that the key to D&D's success lies in the universally shared desire to be a hero. But, for Gary Gygax, women do not cultivate this thirst for adventure that gnaws at the male, and his vision of elsewhere is always adorned with exoticism. These cultural biases rooted in a medieval-fantasy, Anglo-Saxon imagination largely explain the commercial failure of the game in Japan, according to Bounthavy Suvilay, author of Indie Games (Bragelonne, 2022). It is probably no coincidence that Ed Greenwood, author of Forgotten Realms, the most popular fictional universe developed for Dungeons & Dragons, cites The Hero with a Thousand Faces (J'ai Lu, 2013) as a source of inspiration for his work. This work by mythologist Joseph Campbell, published in the late 1940s, is a best-seller popularizing the theories of philosopher Mircea Eliade and psychoanalyst Carl Gustav Jung. Its main thesis: humanity is based on archetypes, beyond cultural differences. Each archetype brings together the ancestral experience of man in typical situations, summarizes Gilles Hiéronimus, a specialist in Bachelard and Jung. The hero, whether knight or messiah, is one of the main ones, which would explain the thirst for fiction and religion. Critics of these universalist theories, however, point out that the theses of Jung and Eliade are Eurocentric and contemporary with the rise of fascism and Nazism. In The Privilege of Play (MITT Press, 2023), Aaron Trammell, a specialist in games and cultural bias, attacks the iconic and usually sympathetic figure of the geek, the core of D&D's clientele. This archetype of an adolescent who is uncomfortable in his own skin, although far removed from Aryan supermen, is nothing less than an incarnation of "white privilege," the author suggests. It is the result of the "white flight", this migration of the American white bourgeoisie to non-mixed suburbs, from the 1950s. He practices role-playing in a segregated manner in all good conscience, without questioning his biases of perception. The game does not convey archetypes but stereotypes, concludes Aaron Trammell. Libertarian origin This militant reading bristles, as one might expect, the guardians of the temple. But not only that, as when it poses the question of what can or cannot be played, that is to say a fundamental questioning of the principles of role-playing. Can we interpret another without falling into cultural appropriation, wonder the most critical role-players? A sociologist specializing in cultural industries, Olivier Caïra is worried about this questioning of fiction: "There is a risk of identity confinement if works of the imagination are not based on an exploration of otherness. » Historian William Blanc, author of Winter is Coming: A Brief Political History of Fantasy (Libertalia, 2019), considers reductive any reading that omits the game's libertarian origins with its collaborative mechanisms and its original, quasi-revolutionary scenario: chasing the lord of his dungeon. While it seems obvious that barriers of race and gender have contaminated the hobby, the class barrier remains the most important in the historian's eyes. D&D has remained, for fifty years, a leisure activity for wealthy, predominantly white youth, because it is based on a book culture, more accessible to the privileged. Virtual as it may be, the game is nonetheless dependent on reality. In its half-century of existence, the invention cobbled together by two lovers of medieval-fantasy literature in a remote corner of Wisconsin has been criticized in turn for being unsaleable and cryptic, then for misleading young people and threatening traditional values, and finally for stigmatizing minorities and promoting the stereotypes of a racist, belligerent and gendered culture. But at the same time, its followers object, it has allowed tens of millions of people to escape, stimulate their imagination and test the limits of their personality. "D&D is like the English language, imperial and imperfect, but everyone continues to play it," laughs historian Jon Peterson. "And no game has managed to dethrone it, just as Esperanto has not supplanted English," he says, as a challenge for the next half-century.

## ###ARTICLE\_START### ID:1817

Bank fraud, rigged elections, biological attack… Montreal researcher Yoshua Bengio said he was “encouraged” by the reaction of American senators who heard him list the risks that artificial intelligence could bring if it is not properly regulated on Tuesday. “We are moving in the right direction.” The senators present “understand the challenges and the risk” posed by the generative AI that we are seeing emerging these days, added Mr. Bengio on Thursday afternoon, when reached by telephone by Le Devoir. Mr. Bengio was invited to present his point of view before a subcommittee of the American Senate supposed to formulate the principles by which Washington could legislate on the development and use of AI. The chairman of the subcommittee, Senator Richard Blumenthal, said he hopes that the process will lead to “real regulation — with teeth.” “The future is not science fiction. In fact, it is not even the future.” "It's now," added the Democratic representative from Connecticut, who fears the slowness of government mechanisms while the evolution of AI never stops. This is also part of the problem raised about AI by the three witnesses invited by American elected officials. Worst-case scenarios Considered by many to be one of the founding fathers of AI, Yoshua Bengio has joined a large group of experts and specialists in artificial intelligence in recent months who fear a catastrophic loss of control of this technology. In addition to Yoshua Bengio, Dario Amodei, CEO of the Californian company Anthropic, and computer science professor Stuart Russell of the University of California, Berkeley, also participated in this Senate subcommittee. They discussed several “worst-case scenarios”: that programmers would get hold of an open-source AI and use it to perform malicious or fraudulent activities; that a state would use an AI to rig an enemy regime’s elections; that an AI itself would become sophisticated enough to surpass its own limitations. The example that seemed to get the most reaction from senators was that of a nuclear bomb that could be operated by anyone, like open-source software. “If nuclear bombs were software, would you allow open-source nuclear bombs?” Bengio asked. This example seemed to be a dig at Meta. His research center, FAIR, released a second generation of its own AI, called Llama 2, just 10 days ago, which can be downloaded for free and modified almost at will — in the same way as open source software. Llama 2 may not have the capacity to become a real threat, but Mr. Bengio still fears the potential impact of future, open-source versions of AI like it, which would be much more powerful and potentially damaging. An international effort required The United States is in an uncomfortable position with regard to the emergence of AI. The most successful models are the brainchild of American companies: OpenAI, Google and Meta. But its government is hamstrung by the power-sharing between the Democratic and Republican parties, and any new legislation will take time to pass, if it ever does. Result: President Joe Biden has been able to do no better to date than to publish a series of guidelines that AI companies are invited to follow voluntarily. For their part, OpenAI, Alphabet (Google), Meta, Anthropic, Amazon and Microsoft, among others, have promised to implement a series of protection measures, such as a digital watermark on the content generated by their AI, and to test their models more rigorously before publishing them. But self-regulation doesn't work, reminds Yoshua Bengio. "There is a conflict of interest, that's obvious. It's good that these companies are getting involved, but each can have its own interpretation," he says. As for the bills in Canada and Europe, they were drafted before the arrival of ChatGPT, which changes the situation considerably. There is therefore an urgent need to legislate, but also to take into account the future scope of this technology. "Above all, China and the United States would have to agree on what dangerous systems are — and eventually all the other countries, because computing doesn't really know borders," says Yoshua Bengio. "Eventually, we'll have to come up with treaties that cover the planet."

## ###ARTICLE\_START### ID:1818

SOCIAL MEDIA Mark Zuckerberg can smile again. While his group, Meta, experienced its first financial setbacks in 2022, which led to the layoff of 21,000 employees, the king of social networks, whose services are now used by half of humanity (3.8 billion users per month), is once again on the rise. Its advertising revenues are back in the green with sustained growth of 11% over the April-June period ($32 billion), something never seen since the end of 2021. Add to that a 16% surge in net profits ($7.8 billion) to win the applause of Wall Street, which sent Meta shares soaring 10% at the opening of trading on Thursday. Its price now exceeds $300, compared to $90 last November... This comeback is largely linked to artificial intelligence (AI). Thanks to the new content suggestion engine (including short-form Reels videos), time spent on Facebook has increased by 7%. And advertisers are benefiting from new monetization tools, performance prediction and automated assistance in creating advertising visuals. Mark Zuckerberg is making an appointment at the Meta Connect conference in September to unveil new products and services boosted by AI. Heavy investments “This is the most exciting roadmap we’ve had in a while,” he promises financial analysts. “It’s good to see that our decisions are starting to pay off,” he adds, citing the fanfare launch of Threads (100 million downloads in 5 days), Meta’s answer to Twitter. The application was created quickly by a small group of people, “an example of how our reorganization allows us to build high-quality products quickly.” Monetization of Threads will come later, unlike the Llama 2 language model. While the latter will be distributed via free open source licenses, large groups with more than 700 million active customers will have to pay up. "If you are a Microsoft, an Amazon or a Google and you are going to resell services (built on Llama 2), it is normal that we get our share," justifies the CEO. Meta is investing heavily in its AI-related infrastructure, but also in its metaverse plan, which it is not giving up on. Its Reality Labs division recorded a net loss of $3.7 billion in the last quarter. "This is a very long-term bet and I understand investors' discomfort. I can't guarantee that I will be right," emphasizes Mark Zuckerberg. "But I still think that in the long term, we will be happy to have taken this path."

## ###ARTICLE\_START### ID:1819

Q When the service is free, you are the product. The adage is well known. And it made Facebook successful. With its new suite of artificial intelligence tools Llama 2, Meta is trying again and this time trying to seduce businesses. Many have joked: maybe Mark Zuckerberg, Meta’s big boss, should rename his company Llama, to distance himself a little more from a disappointing metaverse and bet on what is perhaps his next big growth vector. Because Llama 2 could be big. The family of artificial intelligence applications launched at the end of July will be free for third parties to use. It targets application developers, website managers, and companies or retailers who dream of adopting an AI like ChatGPT, but who do not want to share their data with OpenAI (or Google). Llama 2 comes in several flavors. None of them come close to the proficiency of GPT-4, the language engine that powers ChatGPT Plus, the subscription-based version of OpenAI’s AI. Nvidia, which makes the processors that power all of these AIs, compares Llama 2 in its beefiest form to GPT-3.5, a language engine that came out last year. PaLM 2, the suite of AI applications that Google launched last spring, is also said to be more versatile. A commercial and… reliable AI? What really sets Llama apart from its rivals is its open-source availability, and last week’s addition of a commercial license that will allow anyone willing to adopt the model for their own AI applications. Often, for free. Meta’s license is a reworked version of a typical open-source software license. It allows for commercial use and a fair amount of customization of its code. The software itself is free to use, but Meta will charge for hosting these applications on partner cloud platforms. Microsoft is the first of these partners. Amazon would be next. A special feature of Llama 2 is that it benefits from the research and academic work done on Llama tout court, its predecessor. Thanks to this, Llama 2-Chat, the text generation and understanding application derived from Llama 2, would be, according to Meta, more factual and less likely to generate errors or falsehoods — what experts call “hallucinations.” The percentage of toxicity in chat functions based on Llama 2-Chat is reduced “to almost 0%,” claims Meta in its documentation. “This is the lowest level of toxicity of all comparable models,” continues the Californian company, which congratulates itself on the high level of “truthfulness” of its system. Meta assures that this will avoid having to constantly check the accuracy of the information produced by its chat tool, a healthy habit to adopt when interacting with ChatGPT or Bard — for those who bypass Google's AI blocking in Canada. Obviously, that's Meta who says it. It should be taken with a healthy dose of critical thinking, since the former Facebook is responsible for more than its fair share of all the misinformation circulating on the Internet. The American organization Center for AI Safety quickly reacted to the launch of Llama 2 by stating that "Meta is still ignoring the potential for misuse of its AI, or is betting that short-term misuse will strengthen the safety of its AI in the longer term." As usual, Meta is offering a poisoned chalice: it will be its users, if not the entire public, who will pay the price for any possible slip-up in its technology, if there is a slip-up. OpenAI's antithesis Meta defends itself by saying that this is the price to pay to accelerate the democratization of its technology. It must be said that AI research at Meta is led by a confirmed techno-optimist. French researcher Yann Le Cun leads the development of Llama within a division called FAIR. He sees in generative AI the same thing that Gutenberg saw in the printing press: an inevitable revolution. Le Cun is also the "third musketeer": with Yoshua Bengio and Geoffrey Hinton, they are recognized as the founding fathers of modern AI. He stands out from his two cronies by not believing that AI threatens humanity in the same way as a nuclear weapon or a possible new pandemic. His position is simple: AI is just a tool. It is what we do with it that should be judged good or bad. The license that every Llama 2 user must read and sign will prohibit any form of malicious application that would help harass, defraud, or mislead the public, Meta also hopes. Still, malicious applications are to be expected. Llama 2’s code can be customized at will. It’s like leaving knives lying around on the counter and hoping you won’t have to get out the Band-Aid when the kids start playing with them. It’s risky. But for now, Meta is doing pretty well: Analysts and investors already saw Llama as the best way to counter OpenAI, Google, and the rest in the still-nascent generative AI market. Llama 2 reinforces that approach. And Meta’s stock price continues to soar. After all, what could go wrong? As usual, Meta is offering a poisoned chalice: it will be its users, if not the entire public, who will pay the price for any possible slippage of its technology, if there is a slippage.

## ###ARTICLE\_START### ID:1820

A "trilogue" meeting on the Artificial Intelligence (AI) Act was on the agenda for Tuesday, July 18. In this institutional ritual specific to Brussels, the European Parliament, the Commission and the Council, which represents the Member States, are seeking to find a compromise on a legislative project, in this case the European regulation on artificial intelligence. This negotiation phase, scheduled to last several months, is opening at a time when, for several weeks, criticism has been heard, particularly in France, of the latest version of the AI Act, which is considered too restrictive. "As it stands, the regulation has a high risk of hindering innovation in Europe," declared Arthur Mensch, the founder of Mistral AI, a start-up that raised 105 million euros to build language processing models that compete with those of the Americans Google, Meta or OpenAI, the creator of the chatbot ChatGPT, on June 14 at the VivaTech trade show. Significantly, Emmanuel Macron, present on stage, echoed this sentiment: "I share your concern," declared the President of the Republic. The criticisms concern the obligations added to the AI Act, in the version voted by Parliament on June 14, in order to regulate AI models that do not fall under a specific use (the rest of the text regulates software according to the risk posed, considered greater for a medical or automobile application than for an interface advising a customer on an e-commerce site). For "general purpose" artificial intelligence, capable of producing text for a poem, but also computer code for a nuclear power plant, manufacturers are required to assess and mitigate potential risks to health, safety, fundamental rights or democracy. In the same spirit, "generative" AI interfaces, which, like ChatGPT or Midjourney, offer the public the opportunity to create text or images, must be transparent about the data used for their training, by specifying the content subject to copyright. "Lobbying exercise" "The text applies to language processing models the obligations reserved for the riskiest applications, without taking into account their use or power", regrets Cédric O, former Secretary of State for Digital Affairs who became founder and advisor to Mistral AI, whose models will, according to him, be classified as general purpose. At LightOn, another French creator of large language models, the founder, Laurent Daudet, also says he is "worried". The German Aleph Alpha has judged that complying with the AI Act could take too much time for the managers of start-ups and dissuade certain investors. These criticisms were supported by a platform signed by researchers such as Yann Le Cun, from Meta (Facebook, Instagram), but also by 150 companies, including the French defense artificial intelligence start-up Helsing or large groups such as Carrefour, Renault or Orange. The AI Act is "likely to threaten the competitiveness and technological sovereignty of Europe", they wrote in Les Echos on June 30. However, for the co-rapporteur of the text in the European Parliament, Dragos Tudorache, this platform is "more of a lobbying exercise than a good faith attempt to improve the law". The Renew MP believes that "you would have to have not seen what has happened in the world in the last six months" to ask not to regulate generative AIs like ChatGPT. "Open to compromise", Mr. Tudorache nevertheless points out in passing that the European deputies, including the French, voted "massively" for the text. And that France had, in 2022, pushed to include in the Council text general-purpose AI, absent from the Commission's initial proposal, formulated in 2021, well before the launch of ChatGPT. On the Commission side, divergences are acknowledged, while seeking to put them into perspective: "There are a few points where Parliament goes further than the Commission and the Council. This is a completely normal stage of the process. There is a general desire to find common ground," assures a European official. But how can a compromise be found on general-purpose AI and generative AI? "Everyone agrees that specific measures are needed," the Commission responds. The open questions are: what data and information, with what degree of detail, should the manufacturer share? What obligations of high-risk systems should be applied to general-purpose or generative AI systems? » « Game of negotiation » Another option: modulate regulation according to the size of the players or models. The National Pilot Committee for Digital Ethics had proposed distinguishing between models put on the market and those published in open access, in open source, without an interface directly usable by the general public or businesses. "The European negotiation game will be played," explains Jean-Noël Barrot's office. The Minister Delegate for Digital Affairs claims to be "very vigilant about the fact that generative AI is not integrated into the text and considered a high-risk application." These negotiations will be complicated by other debates, such as that on copyright, while media or artists accuse AI of feeding off their content to produce other content. Member states, including France, will also have to arbitrate on another of their own demands: they want to reintroduce exceptions into the AI Act allowing law enforcement to use biometrics in real time in public spaces to identify perpetrators of terrorist acts or serious crimes. Despite these disagreements, Internal Market Commissioner Thierry Breton hopes to conclude the AI Act trilogues by the end of 2023. "It is feasible," concludes Mr Tudorache.

## ###ARTICLE\_START### ID:1821

We have a tradition of first looking for uses, then finding ways to monetize them." Jack Krawczyk, responsible for the development of the chatbot Bard at Google, explains the absence, for the time being, of any source of income for this conversational robot launched this Thursday, July 13 in France. If successful, adds the manager, the search giant will have a range of available means to make this competitor of ChatGPT profitable: targeted advertising, subscription, paid mobile application, sales based on volume of activity aimed at companies, etc. This anecdote shows that the business of generative artificial intelligence (AI) - capable of creating texts and images - is not stabilized. However, the choice of economic model will define the future of the sector. Of course, the time when OpenAI, the creator of ChatGPT, presented itself as a purely non-profit project is long gone. Similarly, CEO Sam Altman no longer says, as he did in 2019, that he “has no business model” and will “ask AI” to create one for him. Since then, OpenAI has accepted more than $10 billion in investment from Microsoft and has called into question the publication of its AI models as “open source.” Launched as a free version in November, ChatGPT set up a paid subscription in February at $20 per month, which guarantees the service even in the event of congestion. OpenAI’s text and image generation models are also marketed as application programming interfaces for companies, which can integrate them into their services for a fraction of a cent per request. Other players are trying different models. For the French LightOn, "the value is as much in the AI model as in everything that goes around it, to support client companies: deployment and refinement of the model, assistance on the written instructions to give to the model"... The start-up charges a subscription. Its compatriot Mistral AI has not communicated a business plan, but also sees its future profitability elsewhere than in the AI models themselves, because it plans to publish the latter in open access. The economic model of the sector will of course be crucial for the future of small players. How to launch a profitable chatbot if a digital giant offers a free one at a loss? There is a risk of a form of dumping to capture shares of an emerging market, as in video-on-demand platforms, cloud hosting or VTCs... Will the prices set by the market leaders cover their costs? In the long term, is there not a risk that the prices will be raised, weakening the companies that have built a service on an AI? Some also fear a potential economic dependency. A sovereignty issue The question of the model also arises for the major players. With its current model, will OpenAI be as profitable as it – and Microsoft – hopes? The company is said to have lost $540 million in 2022, according to The Information, and is forecasting $1 billion in revenue in 2024, according to Reuters. In addition, players like Meta (Facebook, Instagram), whose core business is not AI, are pushing for the publication of all models in open access. Should the other giants follow, in order to impose their platform, or, on the contrary, keep their software closed and paid for? Tomorrow, will AI models be “commodities”, standard and easily accessible to all? The economic model of generative AI will have consequences on the variety of players in the sector, and even on the safety of the services offered. For the public authorities, it is also an issue of competition and sovereignty. This is the meaning of the announcements of support for French players made in mid-June by Emmanuel Macron: investment in computing capacities, in databases, etc. Going further could include monitoring, from now on, the balance of competition in the sector. Or even the mobilization of public orders, long demanded by French digital companies.

## ###ARTICLE\_START### ID:1822

“The unpleasant truth is that we are not in a position to win this arms race, and neither is OpenAI. While we have been bickering, a third faction has been quietly eating our lunch. I am talking, of course, about open source.” Back in April, in an internal document since leaked on Discord, Google engineer Luke Sernau warned his management about the very rapid emergence of a plethora of powerful artificial intelligence models, accessible online, developed transparently and at low cost by communities of researchers and developers. How did they do it? With a helping hand from another giant, very active in artificial intelligence and not completely disinterested in the matter... On February 24, Meta, Facebook’s parent company, presented LLaMA, its own large language model (LLM), initially intended for a handful of researchers and under certain conditions. Some time later, the source code for LlaMA discreetly leaked onto the internet. Suddenly, the ingredients, their dosage, and the recipe for making a really good LLM were within everyone’s reach. “The community immediately understood the significance of what they had been given,” says one AI expert. Researchers and developers are joining forces to collaboratively overcome some of the challenges that Google and Open AI’s top experts were struggling with. “Access to a model of sufficiently high quality has led to a wave of ideas and iterations from individuals and institutions around the world,” describes Luke Sernau. Progress is rapid. Models trained with far fewer parameters—and therefore for much less money—than those that underpin ChatGPT and Bard are showing performance that comes close. “In a very short time, open source is catching up with the big commercial models,” says Stéphane Roder, founding president of the consultancy AI Builders. The landscape is going to change For $100 in training costs, the University of Berkeley, for example, has developed Koala, a language model trained on a completely open source database, with a response quality close to that of ChatGPT. The large language models proposed by Open AI and Bard produce even better quality responses and the user experience is much more refined. But for more specific uses, open source already allows for the refinement of smaller language models that work very well on a limited number of data. Enough to attract many companies looking for the best quality-security-cost ratio. "The competitive landscape of artificial intelligence will completely change in the coming months, perhaps even in the coming weeks, when there will be open source platforms that are as good as proprietary platforms," explained Yann Le Cun, scientific director for artificial intelligence at Meta, at the Rencontres économiques d'Aix-en-Provence last Saturday. Especially since hoping to keep the manufacturing secrets of proprietary models to oneself is becoming illusory, argued Luke Sernau. "We already share everything with them (Open AI) through a constant flow of poached senior researchers..." IV

## ###ARTICLE\_START### ID:1823

TECHNOLOGY This is not the big night that revolutionizes Google's search engine. But it is to date the most accomplished response from the Mountain View giant to the ChatGPT phenomenon. By launching its conversational robot Bard in 40 languages - including French - and in 230 countries and territories on Thursday, Google is this time entering the fierce competition open with Open AI and Microsoft in the field of generative artificial intelligence. A reference to the famous "Bard of Avon", the poet William Shakespeare, and his creative genius, Google's "Bard" presents itself as a separate product, quite distinct from the functionality of its search engine. "It's not just about answering questions, but above all about allowing you to develop ideas, to stimulate human imagination. It's a creative tool," insists Jack Krawczyk, product director at Google. For a query formulated by a user, Bard does not give a single definitive answer, but offers three different response formulations ("drafts"), accompanied by links to switch to Google Search. More polyglot than its competitor, the Bard system also differentiates itself by the integration of recent data from the Internet, while ChatGPT's answers are limited to the information ingested by the underlying model up to 2021. This does not prevent Bard from giving totally fanciful answers to certain current questions such as "Who won yesterday's stage of the Tour de France?". "'Hallucinations' remain an unsolved problem in the industry, which we obviously want to improve," explains Jack Krawczyk. Free "for now" Google clearly displays on the home page the limits of its new product which, he insists, remains at this stage "an experiment". The group waited several months before extending the use of this new service, launched in March in English in the United States and the United Kingdom, then expanded to Japanese and Korean. On the one hand, to comply with the requirements of the various regulations in force - such as the GDPR in Europe - but, on the other hand, to defuse as many problems as possible. "In the interests of responsibility, we also wanted to take the time to take into account the initial feedback to continue learning and improving the quality and speed of Bard's responses," adds Jack Krawczyk. A continuous process since the data of the requests made by users and their interactions with the AI system are collected. GDPR requires that citizens of the European Union are asked for their consent. "The only way for us to improve the model is to obtain the responses to the data," justifies Jack Krawczyk. Google postponed the question of monetization. Bard is free "for now", while the group sees what the best business model will be - advertising, subscription or other - to promote it. "We have a tradition at Google of first looking for uses, then finding how to monetize them", specifies the product director. Because, for Google as for OpenAI, the first challenge is clear: to establish their product as the preferred personal assistant for users. Having started in the lead in the race, ChatGPT, with its more than 170 million users, currently has a head start. But many experts agree that generative AI technologies are only in their infancy and that innovation is advancing so quickly that no position is guaranteed. This also explains the interest of many extremely well-funded start-ups in the current competitive landscape, such as Character.ai or Anthropic. In June, in the United States, OpenAI lost users for the first time, with a 10% drop in visits over a month, according to Similarweb. "The arrival of generative AI generates a lot of expectations, but people also realize all the things that don't work well yet. There are only a few use cases, like image generation, that are really ready for production," explains Olivier Pomel, CEO of Datadog. Investigation into OpenAI "People realize that these conversational agents sometimes invent things and that they may not have all the usefulness that they initially saw for them," adds Sachin Dev Duggal, CEO of the start-up Builder.ai. Several companies, worried about seeing some of their sensitive data leaked via the AI system, have also asked their employees to no longer use ChatGPT. In the United States, the Federal Trade Commission (FTC) has just opened a major investigation into the use of user data, in order to verify whether there has been a violation of consumer protection laws. So many problems to resolve for the technology giants before they can integrate these technologies more deeply into all their other products. "Bard will be integrated over time into the Google ecosystem," confirms Jack Krawczyk. Another giant is preparing to enter the race, but has chosen a different approach. Meta, Facebook's parent company, is preparing to launch a commercial version of its large language model LLaMA, aimed at start-ups and businesses. After opening the door to open source (read below), Meta is betting that providing the source code of its model to the community of researchers and developers will ultimately help it outclass the competition. "Openness is not altruism. Meta thinks it's in its interest. "The result is better products, faster innovation and a thriving market that benefits us and many others," Meta's public affairs director Nick Clegg told the Financial Times this week.

## ###ARTICLE\_START### ID:1824

37 That’s the number of private military companies listed in Russia in April, according to the open-source intelligence website Molfar. Spread across 34 different countries, most operate in Ukraine and have been growing in number since the start of the war. Their numbers range from a few dozen to thousands. “It’s too early to say, but it’s possible that another militia will take Wagner’s place,” says Lukas Aubin, research director at the Institute of International Relations. The fate of Prigozhin’s group has indeed been uncertain since its coup on Russian soil last weekend, but the system that allowed it to flourish is still in place.

## ###ARTICLE\_START### ID:1825

AI To get a taste of the impact of generative artificial intelligence on work, just open the door to IT departments. For almost two years, developers have had access to Copilot, an artificial intelligence that helps them write, complete or correct computer code. Created from the GPT language model of OpenAI, the same one that powers the famous chatbot ChatGPT, Copilot is marketed by GitHub for IT developers, whether individuals or professionals. Acquired in 2018 by Microsoft for $7.5 billion, GitHub is an open-source platform for sharing computer code used by 4 million companies, including 90 of the largest American groups. Its annual turnover exceeds $1 billion, and Copilot is preparing to represent a substantial part of it. "More than 1 million developers use Copilot, and we have more in Europe than in the United States!" "I can also announce that we now have 20,000 Copilot for Business customer companies, such as Coca Cola, General Motors and Airbnb," GitHub CEO Thomas Dohmke told Le Figaro. As its name suggests, Copilot assists the developer, but does not do all the work for them. The professional has the final say and chooses to accept, reject or correct the bits of code that the AI suggests. And the latter's performance is only increasing over time. "To date, 46% of the code written by developers using Copilot has been suggested by AI, compared to 27% in June 2022. I said last year that we would cross the threshold of 80% of computer code generated by AI within five years, but I now think it will go much faster! The more you use this AI, the more you learn to use it effectively," the German manager emphasizes. For GitHub, AI allows developers to save valuable time on boring tasks and reinvest it in creativity. "If you are frustrated with your day-to-day work, you are not going to be innovative. You have to be happy to be creative," says Thomas Dohmke. Increasing the number of developers Soon, developers will be able to communicate in their native language with Copilot to ask questions, ask it to rewrite a code or explain why there is a bug, or to look for information in the company's technical documentation. "Many newly hired employees do not dare to ask questions about internal knowledge within the company, for fear of appearing incompetent in the eyes of their new colleagues, and they waste time trying to find the answer themselves. They will be able to turn to Copilot," continues the manager. In his eyes, this foreshadows the future virtual assistants that will populate company networks. "You will no longer have teams working in silos and ignoring what others are doing. AI will tell them because this knowledge will be shared at all levels. In my opinion, AI will encourage collaboration. In fact, I prefer that we talk about assistants rather than artificial intelligence." This dialogue with AI in human language "should also allow us to have more than 1 billion developers in the world. Today, you have to master English to learn different computer languages. Tomorrow, you will be able to speak with Copilot in your language," continues Thomas Dohmke. In a study published Tuesday by the company, GitHub believes that this movement will democratize access to software development jobs for people who have little or no advanced technical knowledge. "A German industrial group decided to use Copilot to train its workers in IT development," says the manager. More generally, GitHub notes that its AI benefits the least experienced developers the most, who can thus learn more effectively than by reading documentation. This effect would also be felt on the reliability of the code produced. “On average, Copilot users write more secure code from a cybersecurity perspective. Of course, very good developers are not affected by this problem. But it is important to raise the general level and ensure that everyone improves little by little.” But Copilot also arouses the distrust of some companies. According to the Wall Street Journal, Apple has banned its employees from using this tool for fear that this AI would record and “spit out” confidential data and proprietary code. “That would absolutely not be in our interest,” responds Thomas Dohmke. “Copyright exists and we do not want to have protected code in Copilot. If that happened by accident, it means that we would have to ask OpenAI to retrain its language model, which takes time and is extremely expensive. More broadly, Microsoft also has a reputation to protect. It is because companies trust Microsoft that they host their data and emails there. We share this same mindset at GitHub and our customers' data is secure," he promises. GitHub, Microsoft and OpenAI are however being sued in the United States for intellectual property infringement. The AI was indeed trained on billions of lines of open source code, but it does not credit their authors. Opened at the end of 2022, the "class action" is continuing its course.

## ###ARTICLE\_START### ID:1826

With the arrival in Paris of Elon Musk, the boss of Tesla, SpaceX and Twitter, the VivaTech show, dedicated to new technologies, has found its star guest. There is another, more discreet one, who was also present at Porte de Versailles on Thursday, June 15, and who is revolutionizing a major part of the economy: Thomas Dohmke, the head of GitHub. The company, which became known as the leading open-access code hosting platform for developers, was bought in 2018 for $7.5 billion (€6.85 billion) by Microsoft. Since then, the company has grown from 28 million users to more than 100 million and has exceeded $1 billion in recurring revenue since October. But, over the past year, with the commercial launch of Copilot, it has also established itself as the leader in generative artificial intelligence solutions capable of autonomously creating lines of code. The result of a collaboration with Microsoft and OpenAI, a company behind the ChatGPT-4 software in which the Redmond giant is a shareholder. Copilot already has more than a million users, with very convincing results, says Mr. Dohmke. According to a survey conducted by the company, developers using Copilot manage to perform the same task 55% faster than those who do not. On average, they develop nearly 50% of their lines of code (46% exactly) using artificial intelligence. If the head of GitHub speaks of a very rapid adoption of the software – although it is paid (10 euros per month for individuals, 19 euros for professionals) – the margin for progression remains high, in a world that is becoming increasingly digital. The CEO cites in particular the example of a large German automobile group that decided to train its workers in Copilot so that they are able to develop software based on their knowledge of the profession. Class action lawsuit As in all areas where artificial intelligence is penetrating, the question of competition between jobs and machines is raised. Mr. Dohmke positions himself, unsurprisingly, on the side of the optimists. "Developers will not be replaced. If the software is called Copilot, it is to affirm that they will remain the pilots. You will always need human intelligence to be creative, to specify the systems." Relations between developers and GitHub have, however, become complicated since the latter launched Copilot. A class action lawsuit was launched in November accusing Microsoft, GitHub and OpenAI of having used billions of lines of open source code (GitHub's) to train Copilot's artificial intelligence and ultimately make it a paid service. Compensation of $9 billion in damages is requested. An accusation rejected by Mr. Dohmke: "According to American law, it is legal to work on open source bases, and we have ensured that Copilot, in its design, cannot propose to duplicate lines of code of more than 150 characters that are already offered in open access. We believe we are in compliance with the regulations." The stakes are high for GitHub. Even if the company remains focused on its primary mission - to maintain itself as the main platform for sharing open access code for developers - it already notes that Copilot takes a growing share of its revenues - without revealing the amount. "It is a healthy economic model", despite the significant expenses incurred to provide the computing power necessary to run the artificial intelligence models, says only the boss of GitHub. The users of this service are students as well as start-ups, which do not have the means to attract the best developers, or large companies, which are looking for productivity gains. GitHub also plans to gradually integrate artificial intelligence features, resulting from the work carried out in Copilot, for all of its users.

## ###ARTICLE\_START### ID:1827

On artificial intelligence, the priority is to do at the same time: regulate and innovate," declared Emmanuel Macron, in reference to his 2017 campaign slogan, on Wednesday, June 14 at VivaTech. In front of the audience won over by this Parisian technology fair, the President of the Republic especially insisted on the need to produce French "champions" who can compete in generative AI, capable of creating texts, like ChatGPT. On regulation, he suggested that the projects underway in Europe could slow down innovation. "How can we consolidate our AI champions? We will continue to invest, much more," explained Mr. Macron, hoping for a "second generation of the AI plan", launched in 2017 and endowed with 1.5 billion euros. The president announced on Wednesday funding of 500 million euros to "create five to ten clusters [regional hubs bringing together universities and businesses] on French territory and to have two or three world-class centers of excellence." More specifically, Mr. Macron said he wanted to create "large models" of language processing that compete with GPT-4 or PaLM, OpenAI or Google, the software on which conversational robots such as ChatGPT or Bard rely. "We are going to accelerate so that there are other Mistral. AI and LightOn," he said, referring to two French start-ups developing large language processing models. While Mistral. AI, founded very recently by engineers from Google-Deepmind and Meta, has already raised 105 million euros, Mr. Macron announced "a major generative AI challenge" with 40 million euros in public funding, intended to attract more private capital. "To do this, we also need to create databases in French. Otherwise, we will use models that will have biases inherited from the Anglo-Saxons," stressed the president, seeing the use of the French language in AI as a matter of sovereignty and cultural soft power. Assessing the risks To enable AI training, the State will therefore have to "open" its databases, he said. "We believe in open source," he added. Here, he joins players such as the companies Linagora, Mistral. AI or Meta (Facebook, Instagram), for whom making software accessible is better for innovation and security than keeping control of it, as OpenAI now does. Finally, the Head of State announced investments to make up for the French "delay" in the computing capacities needed to train AI models: 50 million euros to quadruple the capacities of the Jean-Zay supercomputer, then 500 million to create Exascale, at the European level, by 2025. Beyond these support measures, the President went in the direction of the actors who want less ambitious regulation. "I share your concern," he replied on the VivaTech stage to Arthur Mensch. The founder of Mistral. AI had just judged "that as it stands, the regulation has a strong risk of hindering innovation." This criticism targets the version of the European AI Act regulation amended by the European Parliament on Wednesday. This creates, for large language processing models, the obligation to assess the risks to health, fundamental rights or democracy... Some conditions are considered difficult to implement by Mistral. AI or LightOn, more favorable to the initial idea of the AI Act to regulate software according to their uses. "The British approach is good: we must work with the big companies in the tech sector, as we did for social networks," judged Mr. Macron. A reference to the future global AI summit announced by London, in association with OpenAI or GoogleDeepmind. "The right framework must not be limited to continental Europe," added Mr. Macron, imagining an international negotiation like that led by the OECD on taxation. These statements seem to mark a distancing from the European AI Act, even if he took up the idea of making it mandatory to report that content was generated by an AI. To support French Tech, Mr. Macron mentioned a second phase of the Tibi plan, launched in 2019 to mobilize funding from institutions (banks, insurance companies, etc.). The Head of State announced on Wednesday that 7 billion euros had been secured - and 10 billion targeted - for TIBI 2, or 35 to 40 billion hoped for by leverage. These will be directed towards energy and deep tech start-ups (innovation resulting from fundamental research, often industrial). Finally, the President considered "very good" the proposal of the report submitted on Wednesday by MP Paul Midy (Essonne, Renaissance) to encourage the French to invest their savings in young innovative companies. This support is very much appreciated in a period where fundraising in tech in France has, according to the British fund Atomico, fallen by 55% in the first half of the year, compared to the same period in 2022. "It is in times like these that we must hold on," he told entrepreneurs in the sector.

## ###ARTICLE\_START### ID:1828

In leading computer science and business schools, administrations, non-profit associations, internally in certain large companies (BNP Paribas, SNCF, Axa, etc.), this strange word has been proliferating for ten years, when a solution to a problem needs to be found. If the runner has his marathon, the drinker his barathon, Nefertiti his Akhenaton, the developer has his hackathon. This portmanteau word refers to the "hacker" culture, born in the early days of computer science and to running born in Greece. The first hackathons took place at the very beginning of the 21st century. Originally, they were innovation competitions, bringing together developers wishing to carry out a computer programming project together. At Facebook, which was one of the first enthusiasts of confrontations (non-violent, to be clear) between its own employees, a hackathon gave birth to the "Like" button. So let's tackle the hackathon. If the marathon is a long-distance race, here it is important to go fast: the very short time is part of the game, and you have to get a result. Most of the time, forty-eight hours is enough. Each relatively small team designs and then experiments with its solution, until it obtains a prototype of a mobile application, for example. At the end, it is white smoke: the winning project is rewarded. Confined to the middle of code and free software, the hackathon quickly went astray, becoming more of a role-playing game, a "fun" experience. We imagine all these little people brainstorming happily, animated by bursts of collective intelligence. Because the experience is social: it is an opportunity for participants with solitary or radically different professions to meet, and to keep a nice memory of this weekend without sleep or sun. Hackathons are also an opportunity for the organizing companies to promote their "employer brand", to project a youthful image, and to spot potential talent, by inviting students, start-ups or simply curious people. And, if the organizers do not recruit, or do not officially keep 95% of the ideas put forward, there is nothing to say that they will not reuse them later: indeed, with these events, the specter of free work is never far away. The American sociologist Sharon Zukin concluded in 2018, after observing seven New York hackathons, that the latter reflected an "asymmetry" in favor of the sponsoring companies. The prospect of a free snack or recognition from their peers was "enough" for the participants: a voluntary servitude therefore, in the same way as the very detailed "practical cases" to be carried out if one wishes to "win" a coveted position. The potentially cynical dimension of these events inspired the launch in Nantes in 2016 of the "Hackacon", a "resolutely absurd day of creativity to imagine and build connected objects, services, improbable and useless applications". Among the best projects, we will remember the 3D cheese printer, or "Ferme-la", an application allowing users to close subway doors more quickly, out of sadism. There are no small innovations.

## ###ARTICLE\_START### ID:1829

Regulating artificial intelligence (AI) is no longer an option. It is a necessity. The success of the chatbot ChatGPT, launched at the end of 2022 by the company OpenAI, has introduced the general public to a sample of the range of possibilities offered by this technology… for better or for worse. One of the main merits of the initiative has been to accelerate awareness of the imperative to establish a framework for the development of AI. The question now is what form this regulation should take and how it can be applied at the global level. The initiative of the British Prime Minister, Rishi Sunak, on Thursday, June 8, to organize in the coming months a first global summit dedicated to AI in the United Kingdom shows that the subject is no longer only technological, but highly political. Taking advantage of a meeting with US President Joe Biden, Mr Sunak is setting a date so as not to find himself isolated at a time when, each in their own way, the European Union (EU) and the United States are expressing their desire to regulate AI. As is often the case in matters of regulation, Brussels has taken the lead. A regulation should be adopted by the European Parliament as early as Wednesday, June 14, before being the subject of negotiations with the Council of the EU and the European Commission to reach a consensus within a few months. The American approach is at this stage more limited, focusing on a corporate responsibility approach. While the EU and the United States are trying to harmonize their positions within the Transatlantic Trade and Technology Council, warnings about the dangers of AI are multiplying. Following a letter signed in March by researchers and tech personalities calling for a "pause", a petition, bringing together 350 personalities from the AI sector, called on May 30 to make the subject "a global priority, alongside other major risks such as pandemics or nuclear war". This initiative is itself the continuation of the offensive launched in particular by OpenAI in favor of the creation of a new "global" regulation inspired by the International Atomic Energy Agency (IAEA), which would have the mission of ensuring the security and non-proliferation of the most advanced and dangerous AI systems. These hypothetical and distant risks must not be ignored. However, the establishment of such a body promises to be long and complicated on the political level, while China does not seem willing to take a multilateral approach on the subject. Above all, this idea must not serve as a distraction from the much more immediate and prosaic work of regulating AI as it exists today and not as we imagine it tomorrow. From this point of view, the path taken by the EU seems the right one. It involves prohibiting certain uses, subjecting others to obligations of transparency on data and risk assessment, particularly of discrimination. Europeans are also concerned about the copyright attached to data used by software and want to impose a label on content generated by AI in order to identify it. Our continent will also have to integrate the logic of sovereignty, mastery of technology – notably thanks to open source – and respect for the diversity of languages. Let us not wait for the creation of an “IAEA of AI” supposed to save humanity from its self-destruction to tackle much more immediate and burning issues.

## ###ARTICLE\_START### ID:1830

What if, in terms of generative artificial intelligence, the most important event was not the release, in November 2022, of the now famous talking machine from the American company OpenAI, ChatGPT? In any case, what happened on February 24 is shaking up the IT world just as much. That day, Meta, Facebook's parent company, announced the release of a strange animal, called "LLaMA". Like GPT-3, one of the building blocks of ChatGPT, this program is a language model, meaning that it is capable of generating meaningful sentences, answering questions, translating, summarizing texts, etc. Two "details" mean that in a few weeks a bunch of other digital camelids have come out, sticking their tongues out at ChatGPT, meaning doing as well as it: Vicuna, Alpaca, Vigogne, Dromadary, etc. First, LLaMA takes up less memory, it is "smaller" than GPT-3, between 2.6 and 26 times, depending on the version, for comparable or even better performance. On the other hand, it is open source. Meta has, in fact, published the details of the recipe for its algorithm, but also, under certain conditions, the precise quantities of ingredients to use, without which the recipe is of little use. Language models belong, in fact, to the category of machine learning. The details of their parameters are adjusted based on a highly repetitive task of predicting the next word in a sentence. This training phase results, as a sniper would modify his sights, in the adjustment of not one or two parameters but billions, the famous quantities of ingredients for the recipe. OpenAI jealously guards this information called "weights" of its GPT-3 and 4. Just like Apple, Amazon or Google. Meta reserved them only for research purposes. But, as early as March 3, a week after the announcement of LLaMA, its weights were found online on a forum and triggered an extraordinary craze. The company Hugging Face lists more than thirty derivatives of the different versions of Meta's model, but also others such as those of the EleutherAI association, GPT-J, or the Technology Innovation Institute of the United Arab Emirates, Falcon. But size changes everything or almost everything. "Smaller", with a few billion parameters compared to several hundred billion, these programs are less computationally intensive to use. A computer scientist, Artem Andreenko, even gave demonstrations on March 12 on a RaspberryPi computer, a microscopic machine, a star among DIY enthusiasts. More useful, the company Nomic immediately offered software, Gpt4All, which allows you to install several of the models derived from Llama on your desktop computer. This ability to run the program offline removes the reluctance to use conversational agents, which are now mainly online. Also "smaller", they can be adjusted more easily to specific tasks or specific data sets, and therefore avoid the errors so common with large models that have "read" the entire Web to train, but can respond incorrectly to questions that are too specific. Finally, "smaller", they allow the academic world to regain some control, while companies have dominated research for some time. Alpaca comes from Stanford, Koala from Berkeley, Vicuna from a collaboration between several universities… “These models have multiple interests for research, to understand them, study the role of training data, evaluate them, test scaling laws…”, lists François Yvon, CNRS researcher at the Interdisciplinary Laboratory of Digital Sciences (Paris-Saclay University), involved in one of the rare giant open source models, Bloom, a collaboration between the academic and industrial worlds. “We are entering a new period. After the bidding war between the IT giants to move towards ever larger models, these new models speak more to companies. They are less expensive to use and adjust, they are less “black boxes”, pose fewer rights issues…”, notes Julien Simon, from Hugging Face. "The market will split in two, with large, high-performance, multitasking models on one side, and a variety of small, specialized models on the other," says Laurent Daudet of LightOn, whose "turnkey" business language model is based on a Falcon user license. "We believe that the risk of concentration of these technologies among large Silicon Valley companies is high. We will then have two options. Put our trust in companies like OpenAI or Anthropic to make the right decisions about these technologies, or put it in the world population to make these choices. Since we believe in democracy, I choose this option," explains Brandon Duderstadt of Nomic, to justify the diffusion of the capabilities of generative AI to the greatest number. But what are the secrets of LLaMA or its small models? "A bunch of small optimizations" The Meta team actually started with a smaller model and took advantage of a result from its competitor Deepmind, which had shown, in March 2022, by creating Chinchilla, another animal, that overtraining, with therefore a lot of data, can compensate for size. As a result, 1,000 to 1,400 billion words were used, compared to 300 billion for the "big ones". "There are also a bunch of small optimizations which, independently, do not bring great gains, but which, put together, significantly improve the performance of the model", recalls Guillaume Lample, co-author of LLaMA. However, LLaMA alone is not very "useful". We can certainly give it a series of instructions so that it "understands" the new task to be performed before doing it tirelessly, but this is less impressive than a ChatGPT which "understands" immediately what is expected. To do this, computer scientists must fine-tune the initial language model. A now fashionable technique, proposed by a Microsoft team in June 2021, aims to freeze a large part of the billions of parameters of the model and then only touch a subset, which speeds up training. Alpaca and Vicuna thus adjusted LLaMA using only 50,000 to 70,000 conversations taken from… ChatGPT. A Meta team even showed, on May 18, that only 1,000 examples can be enough… Incidentally, all these models do without one of the very “costly” links of ChatGPT, reinforcement learning, with the use of human validators, which was put in place to avoid moral, sexual or violent slip-ups by the machine. However, the performance of the “small” models compared to the “big” models is difficult to evaluate precisely and they obviously have the same flaws as their elders (bias, errors, slip-ups, etc.). And the "big ones", more generalists, plan to continue to swell with their capacity to ingest and spit out not only text, but also images, sound, videos... What fable are these little camelids writing?

## ###ARTICLE\_START### ID:1831

This Friday morning, Alphabet, Google's parent company, is holding its annual general meeting in virtual format. As usual, shareholders will demand more transparency on the search engine's algorithms, while others will try, without much success, to change the voting rules, which grant the majority of rights to the two founders while they only own 12% of the capital. Sundar Pichai, the CEO, will listen with half an ear to these fighters for shareholder democracy, because his mind is elsewhere. He wants to talk about artificial intelligence (AI). He will detail his company's response and the tremendous opportunities that these intelligent functions will offer to its search service. Ethical and existential challenges In order to accelerate the pace, to catch up with Microsoft and ChatGPT, the group decided in April to merge its two AI research entities. Its own, called Google Brain, and the one it bought in 2014, DeepMind. Based in London, this company, founded and managed by Demis Hassabis, had until now complete freedom in its research and to spend as much money as it wanted. Independence is over, even if Mr. Hassabis will take over the company, and the merger with the Californians will not be easy. But the emergence of AI poses much greater challenges to Google and its competitors. The first is ethical. Like Doctor Victor Frankenstein in Mary Shelley's novel, the parents suddenly become afraid of the creature they have engendered. Now, specialists around the world, including the creators of ChatGPT, and even Sundar Pichai, are warning of the risk of a veritable tsunami of false information and manipulation ready to sweep over the world and are calling for regulation of uses. The second challenge is existential for Google. A recent anonymous memo from an employee of the firm highlighted the risk for his company, as for Microsoft, of a dissemination of AI manufacturing tools through open source. This would result in countless specialized applications, uncontrolled and threatening the domination of American giants, notably that of the search engine. A philosophical and economic storm with the appearance of a revolution.

## ###ARTICLE\_START### ID:1832

Will artificial intelligence (AI) reshuffle the digital cards or consolidate the power of the sector's major players? The success of software capable of creating texts, such as ChatGPT, or images, such as Midjourney, from a simple written command, initially seemed to confirm the second hypothesis. If it were possible, these systems would be even more dominated by Big Tech, such as Google, Microsoft, Meta (Facebook) or Amazon, than online search, social networks, software or e-commerce... But in recent months, with the emergence of powerful AI models distributed in open source, therefore accessible to all, an alternative theory has developed: AI could weaken the digital giants. There is no shortage of evidence to support the idea of a consolidation of the power of the dominant players: OpenAI, the start-up that created ChatGPT, has been firmly anchored, through a partnership, with Microsoft since 2019, which is reportedly ready to invest $10 billion (€9.4 billion) in it. Google has invested $300 million to take a stake in the start-up Anthropic. And, thanks to their hosting and cloud services subsidiaries, Google has formed a partnership with Cohere or C3 AI and Amazon with Stability AI. The digital giants are providing computing capacity here to train gigantic models (540 billion parameters for Google's PaLM). This is a crucial and expensive resource, as the latest chips cost up to $40,000 each. This stranglehold is already attracting criticism, particularly from Elon Musk, for whom creating OpenAI was a way of not leaving AI in the hands of Google. "Big Tech's dominance of the digital economy will be sealed if regulators do not intervene," warned Sarah Myers West of the NGO AI Now Institute in the Financial Times. The FTC, the American antitrust authority, said it was "vigilant" because "AI risks reinforcing the dominance of the big digital players." Some fear that small companies and public research will depend on a handful of large AI models, just as they depend on platforms, social networks, mobile environments, etc. Added to this is economic uncertainty (these models are currently billed a few fractions of a cent per query) as well as questions of sovereignty... "Hybrid" future But for others, the tech giants would rest on feet of clay: "It is an inconvenient truth, but at Google, we are not in a position to win the speed race in AI. And neither does OpenAI… Open source is overtaking us, a Google engineer said in an internal memo leaked in early May on SemiAnalysis. Our lead is melting away at an incredible rate. Open source models are faster, more adaptable by the client, and more efficient,” the employee said, emphasizing that “no one will pay if a free alternative exists.” Now, software that is much smaller but efficient on specific tasks can be trained on simple computers, or even a smartphone, for a low cost. The memo refers to the proliferation of open source models that followed the publication online, in late March, by Internet users, of Meta’s LlaMa model. Google or OpenAI believe that their large systems will remain more efficient and better moderated against problematic content. Sam Altman, of OpenAI, envisions a “hybrid” future mixing proprietary AI and open source. But Google or OpenAI are faced with a dilemma: after having published all their research in open source, these groups have restricted their sharing policy, while saying they continue to support the principle of open source… Should they now keep their best AI, so as not to strengthen their competitors? Or publish everything (as Meta seems to want to do), in order to avoid being overtaken by open source and, also, to try to become the model used by most developers? This is what Google had done in part with its Android mobile platform.

## ###ARTICLE\_START### ID:1833

It's all about "balance"... After creating controversy by worrying about the consequences for ChatGPT of overly strict regulation of artificial intelligence (AI) in Europe, Sam Altman used much more diplomatic language on Friday, May 26, in Paris: "We need to find the right balance between regulation and innovation," argued the CEO of OpenAI, in front of a captivated audience of tech employees and entrepreneurs gathered at the Parisian start-up incubator Station F. Just before him, the Minister Delegate for Digital Affairs, Jean-Noël Barrot, had introduced the arrival of "Sam" using the same formula. A sign of the shared desire to be courteous. The tone marks a certain de-escalation compared to comments reported on Wednesday, May 24, by several British media outlets. The creator of the conversational robot ChatGPT had said he had "several" points of criticism about the AI Act, the European regulation currently under discussion. "If we can comply, we will." Otherwise, we will stop operating in Europe… There are technical limits to what is possible,” he said, according to the press. A strong reaction from Brussels was not long in coming: “Is this blackmail?” tweeted European Commissioner Thierry Breton. “The titles of the articles did not really correspond to what I wanted to say,” assured Mr. Altman on Friday, pleading a form of misunderstanding. “We will continue to operate in Europe,” he specified, adding: “We love Europe.” Beyond the subtleties of tone, Sam Altman said he agreed with the spirit of the AI Act: “An authorization regime, with security standards, is entirely relevant, that suits me very well.” But he recalled that the “details” were important and that there was “still a part of vagueness” in the text. The most recent version, from the European Parliament, requires publishers of large multi-purpose AI models, such as OpenAI, to describe the data on which these software programs were trained, to ensure their quality, and to ensure that they do not carry any risk of discriminatory bias or the publication of dangerous content. "These databases of texts and images are gigantic. If we were asked, for example, to be 100% certain that an element is not there, it would be difficult," he argued. The next step looks tense Another very sensitive point: copyright. Parliament is demanding that all protected documents and works used to train AI systems be listed. And Mr. Barrot, like the Minister of the Economy, Bruno Le Maire, is in favor of media, artists or companies holding the rights being paid. "The idea of a form of compensation seems reasonable," admitted Mr. Altman. But without giving details on the tempo or the solution, because "rights holders want different things": some want software like ChatGPT or Midjourney to "publish a link" to their work, while others want "a fund to be created and its money distributed", and still others want to "receive a share of the revenue if an AI creates an image in the style of an artist or a song in the style of the Beatles", he listed. While waiting to clarify these schemes, the current use of OpenAI is legal in the United States, thanks to fair use, he specified, while several rights holders have filed a complaint. Mr. Altman was also questioned by a tech entrepreneur on open source: OpenAI was founded, in 2015, on the idea of sharing its research to prevent tech giants from concentrating this knowledge, but then changed its doctrine, judging it risky to put its software in everyone's hands. Accused of having made this about-face for commercial reasons, the leader assured that he "remained in favor of open source" and promised to publish some software, but not the most powerful ones. And he did not give any details. The sector will be "hybrid", between large business models and open source models, he argued. Despite the calming of Mr. Altman's speech, the rest of the discussions promise to be tense. Some in Europe also find that Parliament has "toughened" the text too much on prohibited uses (such as real-time facial recognition or predictive policing), but also on the obligations of models such as ChatGPT. Google, whose CEO, Sundar Pichai, met with Mr. Breton on Wednesday, is also vigilant about the details of these measures, as well as the idea of extending them to content recommendation algorithms, on social networks such as Facebook, but also on its YouTube video subsidiary. To move forward before the AI Act comes into force, scheduled for 2025, Mr. Breton proposed a voluntary "pact" to companies. The last – and important – piece of the puzzle: the United States. Google, like Microsoft or OpenAI, are calling for harmonization of AI regulation on both sides of the Atlantic. However, the American approach is less advanced and rather less strict... Brussels and Washington will have the opportunity to debate it on Wednesday, May 31, at the Trade and Technology Council summit, a structure created to try to bring the two sides of the ocean closer together on technological issues, which are now strategic.

## ###ARTICLE\_START### ID:1834

Should we resign ourselves to a world where it is impossible to distinguish between content generated by artificial intelligence (AI) and that produced by humans? The question is more pressing every day: bluffing texts have proliferated since the launch, in November 2022, of the conversational robot ChatGPT, and misleading photos like the one of the pope in a white down jacket are set to multiply with the rise of software like Midjourney. In response, some are looking for ways to make this synthetic content detectable. The challenge is complex, but current: on Tuesday, May 23, the software giant Microsoft announced solutions in this direction and the French Minister of the Economy, Bruno Le Maire, discussed the issue in Paris with Sam Altman, the CEO of OpenAI, the creator of ChatGPT. “[Making content created with AI detectable] would help combat cheating in universities, or the mass generation of propaganda and disinformation with the aim, for example, of flooding blogs with comments in favor of the invasion of Ukraine,” argued Scott Aaronson, the researcher in charge of working on this issue at OpenAI, in a conference in November 2022. “Maintaining distinctions is an ethical imperative for reasons related to the uses of AI, in education, health or law, but also, at the philosophical level, to delimit what is the responsibility of humans and what is done by machines,” adds Alexei Grinbaum, member of the National Pilot Committee for Digital Ethics and author of Parole de machines (Humensciences, 192 p., 17.90 euros). Integrated or external tools In this spirit, Microsoft has announced the integration of an "invisible cryptographic watermark" (or watermark) in the images created by its Designer and Bing Image Creator software: by consulting the metadata of a photo or video, that is to say the information attached to this file, "the user will be able to see that it was created with an AI", says the group. Available "in the coming months", this indication of the "provenance" of a content is based on a standard called C2PA. This has also been integrated by Adobe in the image editing tool thanks to the AI available in its famous Photoshop software. OpenAI is also studying watermarking techniques for Dall E 2, its software for generating images from a text description. And its competitor Midjourney has adopted a metadata system created by the IPTC, a standardization body for the media industry. The trend is becoming more widespread: on May 10, Google said it was working to create “tools that identify synthetically generated content when you encounter it.” These “metadata and watermarks” should be included in its AI software by the end of the year. This information will also make it possible to flag synthetic content using the same standard in its search engine. Google says it wants to take this kind of measure for its sound generation models. As does OpenAI. And these efforts also extend to text. This poses a particular challenge, because sentences are not like images confined to a file, but can be copied and pasted. “The watermark must therefore be a code hidden in the text itself,” explains Mr. Grinbaum. An “ultra-simplistic” version would be to place the letter “e” every 256 characters. But this system could easily be rendered ineffective by changing a few words in the text... Since August, several researchers, notably from the University of Maryland in the United States, have been looking for more robust methods: also inspired by encryption, these introduce a "small mathematical bias into the algorithm that generates the words," says Mr. Grinbaum. Towards regulations "Basically, we want every time our models like ChatGPT create a long text, it contains a secret signal in the choice of words that can then be used to prove that it was created with one of our software," explained Mr. Aaronson. This system requires knowing the bias introduced by the AI manufacturer. Other systems - such as GPTZero, DetectGPT or Turnitin - attempt to identify synthetic texts from the outside, but their success rate is limited: the one proposed by OpenAI "identifies 26% of AI-generated texts and wrongly classifies 9% of texts written by humans," explains the company. Mr. Grinbaum and all the specialists agree: detection systems are not infallible. The watermark of a text will remain present if a few words are changed and sentences reworded, but it will not resist if another AI software is used to "paraphrase" the text, explains an academic article published in March. "A determined person will be able to bypass it," warned Mr. Altman in an interview in January. Another major challenge: some text or image generation software, for example freely accessible in open source, could not implement any watermark. And allow undetectable content to persist. "It is imperative to take regulatory decisions to impose the principle of maintaining distinctions," concludes Alexei Grinbaum. The CNPEN could raise this point in the opinion on AI that it must submit to the government at the end of June. According to Mr. Grinbaum, a simple "standard" should also be imposed, in order to avoid having to use several software programs from different manufacturers to detect the origin of content. The traceability of synthetic content is also advocated in the letter requesting a "pause" in AI research, signed on Tuesday, March 28, by thousands of personalities, including Tesla CEO Elon Musk. The implementation of watermarks is also defended by the NGO DAIR. Such an obligation is not included in the AI Act, the European regulation currently under discussion in Brussels. But Bruno Le Maire pleaded on Tuesday for "systematic reporting" of images generated by AI, or even for "banners" crossing out texts. Patrick Kuban, co-founder of the association of actors Les Voix, also hopes that the user will be "warned" if they listen to a synthetic voice in an audio book or a dubbed film. "Everything generated by AI must be reported," European Commissioner Thierry Breton argued on April 3 on Franceinfo. However, discussions on the AI Act promise to be long. Mr. Breton hopes to see them concluded by the end of the year, he said during an interview on Wednesday with Google CEO Sundar Pichai.

## ###ARTICLE\_START### ID:1835

Computers have invaded cars. There can be up to a hundred of them per vehicle. And we no longer know where to install the boxes. Under the hood, of course, but also inside the doors or the trunk and even in the ceiling. For manufacturers, the time has come to limit their number. Not only to save space and weight, but also because the integration of fewer and more powerful computers is essential to approach a new era. The one that will make the automobile a smartphone on wheels, which requires simplifying its software architecture. The future is not only electric vehicles. The car of the 2030s will also have to evolve constantly, thanks to updates carried out remotely. To modify the power of the engine or the adjustment of the suspensions, install new driving aids, or even prevent the occurrence of breakdowns. Not to mention the possibility of taking out insurance, the amount of which will be directly linked to the driving style, or of automating payment at the charging stations. So many interventions that will be possible without modifying the physical elements of the vehicle. Resale value At the beginning of May, Renault announced the development, by 2026, of an architecture called SDV for Software Defined Vehicle, in other words a vehicle designed around its IT infrastructure. "We will do as well as Tesla," promise those responsible for this project. The American firm was the first to equip itself with supersoftware that allows, among other things, to watch series on Netflix or play video games when the car is stationary at a charging station, but also to advance in small steps, thanks to updates made remotely, towards increasingly autonomous driving. Instead of having to manage an electronic controller for each function - with the difficulty of making them communicate with each other - future Renaults will be equipped with two high-performance processors (one for infotainment, the other for vehicle operation) and three or four additional computers. "We will be able to reduce costs and reduce the development time for new applications from two years to three or six months," says Thierry Cammal, who heads the brand's Software Factory, which has some 2,800 engineers on the SDV project in France, Spain, Romania, India, South Korea and Brazil. Relying on a centralized architecture also has the advantage of being able to use the latest generation of more advanced electronic chips that equip smartphones and are less sensitive to shortages. In 2026, the first vehicle tasked with testing the SDV infrastructure will be a small utility vehicle. The particularity of the approach taken by Renault is to closely associate partners who, for the moment, come from non-automotive backgrounds, such as Google and its Android operating system, and Qualcomm, which specializes in processor design. The SDV project should help to promote Ampère, Renault's future 100% electric entity, in which Qualcomm could become a shareholder. It also involves reducing research and development costs by €1.5 billion by 2030, thanks to the ability to integrate the same software platform into different vehicles without having to carry out costly reprogramming operations. According to Renault, the ability to continuously enhance the performance of its vehicles should improve their resale value, an issue that has become central with the rise of long-term rental. It could also increase the proportion of buyers who will continue to have their vehicle serviced in the network after the warranty expires. Manufacturers are already considering offering paid services. Tesla, for example, charges €3,800 for an option that can be activated automatically, which allows the Model 3 to overtake on a fast lane without driver intervention, or to park itself. A double-edged sword: in San Francisco, a group of Model S and Model X owners have just launched a class action against the manufacturer, which they accuse of having programmed an update that had the effect of reducing the autonomy of their car by 20%. Bridge between brands "In the automobile industry, there is no standard platform. The manufacturer that is able to bring together the largest community of developers around its own solution will have won the game, but it is a very ambitious bet", underlines Eric Kirstetter, partner at the Roland Berger firm. By registering its project in an "open source" environment, Renault would like to make its software architecture a reference for other brands tempted to have a proven IT infrastructure, without having to invest in long-term development to achieve a comparable result. The Volkswagen group, which has chosen to develop its software solutions in-house and is struggling with the difficulties encountered by its specialized subsidiary Cariad, is reportedly in talks to integrate Huawei software in China. A rapprochement denied on Wednesday, May 15 by the firm's CFO. At the same time, the automobile industry is also seeking to build bridges between brands, through the Eclipse Foundation, which strives to facilitate software interoperability and was joined in April by General Motors. With this new situation, equipment manufacturers have a lot to lose. They will have fewer computers to provide and software to write for manufacturers. "Everyone must be able to get their share of the pie on data sharing and by developing new equipment," argues Olivier Barrée, responsible for the development of intelligent products and services at ZF. The German firm has developed sensors capable of reporting urbi et orbi available parking spaces or the presence of potholes. It plans to increase the share of its 26,000 engineers responsible for developing software for future vehicles from 40% to 70% by 2030. Chinese brands, which started from scratch to design their electric vehicles, are also investing in centralized software architectures. "The Geely and SAIC groups appear to be the most advanced in this area. They are all convinced that tomorrow, the value of a vehicle, like its ability to differentiate itself, will reside more in digital services than in driving sensations," assures Mr. Kirstetter.

## ###ARTICLE\_START### ID:1836

Tech hype is a cycle. Some call it bubbles. The metaverse, the virtual and augmented universe so dear to Mark Zuckerberg, has certainly just come full circle in its own hype cycle. It must be said that Meta is well placed to benefit from the next big technological wave, that of generative artificial intelligence (AI). Don't think that Meta is going to change its name just yet. This name was acquired in 2021 when Mark Zuckerberg, CEO of Facebook, unveiled his futuristic vision: the construction of a metaverse, an immersive digital environment in which, according to him, a billion people would live, work or have fun by 2030 at the latest. Given the economic and social weight of Meta, Zuckerberg has drawn many people into his movement. This new digital frontier, a sort of fusion of the real and virtual worlds, had been hailed by some as the next logical step for the Internet. But, in 2023, Zuckerberg's dream crashed. Even within Meta, the metaverse is no longer popular. Meta is expected to invest $19 billion in its metaverse this year alone. Its plan was to invest tens of billions of dollars each year by the end of the decade to make the metaverse a reality. Whether that will stick is anyone’s guess. Smokescreen Because Zuckerberg has since changed his mind. In the wake of the emergence of generative AIs, such as OpenAI’s ChatGPT, and to explain massive layoffs, he announced a major shift for his company. Starting today, “[Meta’s] most significant investment will be in evolving artificial intelligence and integrating it into absolutely every product and service,” he said in L last March. Andrew Bosworth, Meta’s metaverse boss, later said the company had stopped pitching its metaverse to its business partners. Critics who thought Zuckerberg threw himself into the metaverse as a smokescreen for his antics involving manipulating personal information and slowing adoption of his social network by younger users may have been right, after all. Ironically, experts think Meta may fare better on the AI side than it did in its metaverse. Its strategy to differentiate itself from Google, OpenAI and the rest has been to offer its AI tools to the open-source community. The public is free to use them at no cost. It’s a cheap way for Meta to offload the R&D effort to the tinkering community who will want to build their own AI applications based on its technology. Maybe that’s what the company should have done with the metaverse: let its user base build their own virtual universes first. As the saying goes, you don't pull on a flower because you want it to grow faster... A three-stage collapse At least three reasons explain the collapse of the metaverse. User distrust of Meta's management of personal data hurts the most. The company has been criticized several times for its questionable privacy practices. The promise of the metaverse, which requires even more massive and intrusive data collection, has thus aroused strong mistrust. The public, increasingly aware of the importance of protecting their data, has not adhered. The technical aspect has also weighed in the balance. Building a metaverse requires complex technology in virtual and augmented reality. However, even if Meta invests billions in these technologies, the results have not lived up to expectations. The headsets attract few buyers. The applications are poorly put together and not very welcoming. Problems of accessibility, performance and interactivity have slowed the adoption of the metaverse. The issue of social equity has also been raised. Access to the metaverse requires high-speed Internet and expensive equipment, which excludes a significant portion of the world’s population. This digital divide has sparked debate over the ethics of building a space that is accessible only to a privileged minority. In addition, regulation has played a significant role. Governments, faced with the magnitude of the challenges posed by the metaverse in terms of security, intellectual property, and liability, have hardened their stance. Laws have been passed to regulate the metaverse, making Meta’s task even more difficult. Competition has not helped this failure. Other companies, such as Microsoft and Epic Games, have also invested — with equally mixed success — in building their own metaverses, setting up more open and cooperative environments that have won over users. Unless Meta changes its mind, it will pay the price for a long time to come, since it is written in its name. It’s a reminder that even the biggest tech dreams can run into the reality of their implementation. The metaverse outside of Meta isn’t dead and will likely continue to evolve, but it will look different than Zuckerberg imagined. Meanwhile, the rise of generative AI is kicking off a new hype cycle, with all the tech giants who swore the metaverse would be the next great thing since sliced bread jumping in. Let’s see how long this new cycle lasts…

## ###ARTICLE\_START### ID:1837

Mountain View (California) - special correspondent - Google is trying to remain a leader in the rapidly growing field of artificial intelligence (AI). On Wednesday, May 10, at its annual developer conference, I/O, held in Mountain View (California), its CEO, Sundar Pichai, made a series of announcements about integrating tools for creating text or images into its services, including its search engine. "We are entering a new era," he said, planning to "reinvent most of [its] products." This new communication extends a strategy that has been deployed for several months, while the group is facing stiff competition, particularly from OpenAI, the creator of the conversational robot ChatGPT, supported by Microsoft, which invested 10 billion dollars (9.1 billion euros) in this start-up. "We must be ambitious and responsible," said Mr. Pichai. On Wednesday, Google gave details on the integration, announced in February, of a conversational robot in its king service: the search engine. As on ChatGPT or Bard (the equivalent launched by Google), the user will be able to ask questions (for example: "which of such and such a park is the most suitable for a family walk with a dog?") or give instructions ("create a quiz on dogs"). He will receive a text response, of a few paragraphs, under the search field. Below, he will have access to the classic list of links to websites. A few links, with images, will also be offered to the right of the text written by the AI. The Internet user, specifies Google, will be able to continue his search "in conversation mode", by asking to specify one point or another. This new version will however only be accessible for the moment on a waiting list, for Internet users in the United States. Another announcement, Google is extending the use of Bard, now available without a waiting list, in 180 countries, in English, Korean and Japanese. Forty other languages should follow "soon". Also "soon", this tool will integrate images into its answers. And in questions, Internet users will be able to use Google Lens, a service that allows searches from a photo or a document. The integration of applications from external developers into Bard is also announced. Bard is also "improved", because it uses PaLM 2, Google's latest language processing model. This is more "multilingual" and now capable of writing, correcting or commenting on computer code (like competing tools from OpenAI, Microsoft or Amazon). In addition, Bard and AI tools will "soon" be accessible in the Gmail or Docs applications, to help write emails or texts, in Sheets, to create tables, or Meet, to transcribe and summarize video conferences. This integration is extended to the Workspace office suite, where an assistant called "Duet AI" will be permanently accessible. The waiting list to test these developments, reserved for professional customers, has been "expanded". Within the cloud business services branch (cloud computing), customers will have access to Google's generative AI: PaLM 2, but also tools allowing them to refine these models on their own data, or to create services using the generation of text, images, code or... voice. This series of announcements is a response to Microsoft, which, with OpenAI, unveiled a similar arsenal, in its Bing search engine, its office software or the cloud. It also reflects a strategic shift, decided in December 2022. At the time, employees had asked CEO Sundar Pichai why Google had not made its AI tools public earlier. Internal changes He had justified his caution by a "reputational risk". Indeed, the internal publication of its conversational robot Lamda had caused controversy, after an employee had judged it to be endowed with conscience. Google was afraid of integrating tools into its search engine that could still provide incorrect or discriminatory answers… or of calling into question the place of advertising, the heart of its economic model. The impetus given by Mr. Pichai was accompanied by internal changes, including the recall of founders Sergey Brin and Larry Page, who had handed over the reins of Google in 2019. Above all, Google merged its AI teams, including Google Brain, with those of its subsidiary DeepMind at the end of April. This start-up was created in 2010 with the support of Elon Musk and Peter Thiel, the founders of PayPal… who then created OpenAI in response to Google's acquisition of DeepMind in 2014. Based in London, its founders, including Demis Hassabis, had negotiated a certain independence. They were focused on research projects, including AlphaGo, which became a champion of the game of Go. The merger creates Google-DeepMind, which will be led by Demis Hassabis, "supported" by Jeff Dean, former director of AI research at Google, and James Manyika, a former McKinsey and Obama administration executive, to manage the ethical and regulatory aspects of artificial intelligence. With these announcements, Google is exposing itself even more to criticism from those who regret the "race" engaged in AI by the digital giants. "Our approach will always be responsible," insisted Mr. Pichai. While some point out the factual errors and discriminatory biases of generative artificial intelligence, Google specifies that it is only deploying Bard "gradually." To combat "disinformation," Mr. Manyika said he is working on ways to make images created by AI "identifiable." Google will also have to face criticism from site publishers, worried that the integration of AI will make their links less visible on the search engine. Or the fears of content producers used to train AI models, some of whom are demanding compensation. Finally, an employee raised a final challenge: in an internal memo leaked by the media outlet SemiAnalysis, he states that “Google is not in a position to win the race in AI… and neither is OpenAI.” The biggest threat would be “open source,” which “democratizes” artificial intelligence by making increasingly powerful models freely available that require fewer and fewer computing resources.

## ###ARTICLE\_START### ID:1838

The big news is called PaLM 2, and it’s a generative AI similar to OpenAI’s A secret memo leaked online a week before the annual Google I/O conference set the scene: Without a serious change in direction, Google’s survival is in doubt. Unsurprisingly, then, CEO Sundar Pichai delivered his response on stage Wednesday morning, in the form of an artificial intelligence (AI) embedded in most of Google’s existing products. The big news is called PaLM 2, and it’s a generative AI similar to OpenAI’s ChatGPT in what it lets its users do. Its reasoning speed has been increased to better understand natural language and up to twenty computer programming languages. It can correct faulty bits of code and solve complex puzzles in seconds, then explain its approach in a clear manner like a student taking a ministry exam. PaLM 2 will be available to third-party publishers of all types of applications through traditional Web service integration tools called APIs. Applications of all types Google illustrates the versatility of PaLM 2 with a variant focused on medical research that can analyze at a glance an image of a part of the human body obtained by X-ray. It can detect anomalies that the most seasoned radiologist might not see. It can produce a readable and understandable summary of medical reports laboriously written by health specialists. It is so effective and consumes so little, Google says, that it can stand relatively autonomously on a single latest-generation smartphone. This second generation of a technology that encompasses the AI research and development done by Google since 2012 will be immediately grafted to about twenty applications used every day by its many customers around the world. This includes Gmail, the Google Workspace office suite, the Android mobile operating system and the new online chat service Bard. Bard is also expanding: this Web tool, halfway between an automated chat tool and a search engine, will now be available in 180 countries and will include some forty languages, including Japanese and Korean. The explanations, answers and text produced by Bard can be sent in one click to the recipient of your choice by email or on Google Docs. In fact, all you have to do is ask Bard to write an entire email or text document. In a few weeks, Bard will support images, which can be submitted to it or generated by it, to help answer visual questions ("What are the historical sites to visit in Old Quebec?"). Code of Ethics All these new features do not fail to raise questions related to ethics and the proper management of sensitive information and data, among other things. Especially since Google lost, not ten days ago, the services of Geoffrey Hinton, considered the grandfather of modern AI, and who slammed the door of Google's labs to better resonate his fear that this new technology would be misused. At Google, a spokesperson was keen to point out that "our policy and code of ethics are known to the public" and that these principles "dictate how we develop our AI and integrate it into our other products". "We know that such tools can be used for malicious purposes and we do what we can internally to ensure that our tools are only used in the right way. We still welcome the public conversation on this subject, we believe that it is essential for society as a whole to be able to deal with this technological evolution." The Rival Out of Nowhere It remains to be seen whether all this will dispel the strange cloud hanging over the 2023 edition of the Google I/O conference, a shadow that some of Google’s top executives are suddenly dreading. New open-source generative AIs, they say, threaten its business model. These generative AIs are similar in their operation to ChatGPT, from the Californian lab OpenAI, but they are royalty-free (open source) and can be used for free. Worse still, if they turn out to be a little less powerful or precise than ChatGPT or even Bard and PaLM 2 — the two faces of a single Google AI — they are more agile and well suited to the needs of the general public, independent programmers or start-ups devoid of the corporate rigidity of a multinational like Google. Some can even be installed and live comfortably on a smartphone as easily accessible as a Samsung Galaxy S23. Ironically, concludes the now-not-so-secret note, the main beneficiary of this mass adoption of AI rivals to those of Google and OpenAI could be Meta, to whom we owe their existence in large part. Unless Bard, PaLM 2 and the other new features presented on stage in Mountain View on a sunny day in May are enough to convince Internet users and companies to pay a premium each month to adopt similar technology already integrated into productivity tools like the Google Workspace suite. This report was produced thanks to the invitation of Google Canada. Google CEO Sundar Pichai on stage in Mountain View to open the Google I/O 2023 conference ALAIN McKENNA LE DEVOIR

## ###ARTICLE\_START### ID:1839

A wind of rebellion is blowing in computer science laboratories regarding the environmental consequences of their activity. A handful of researchers dream of leading an entire community with them towards a different digital future. "The numbers don't add up," was one of the leitmotifs of these rebels, repeated during the Green Days in Lyon on March 27 and 28, a national academic conference bringing together specialists in digital and environmental issues. The numbers don't add up, because the amount of greenhouse gases emitted by the digital sector is increasing by 6% per year. When, to comply with the Paris agreements, they would have to be reduced annually by around 7%, recalled for example Guillaume Urvoy-Keller, professor at the Côte-d'Azur University, using a graph from the Intergovernmental Panel on Climate Change (IPCC) to support his claim. In its latest estimate, the Arcep-Arcom digital hub, which brings together telecoms and audiovisual regulators, estimates that the carbon footprint of digital technology is expected to increase by 45% between 2020 and 2030 in France. New mindset According to the event's co-organizer, Anne-Cécile Orgerie, a CNRS researcher at the Institute for Research in Computer Science and Random Systems (Irisa) in Rennes, "digital technology is part of the problem and not just the solution." Enough to reframe the triumphalist speeches of the promoters of digital technologies set to revolutionize health, transportation, agriculture, the environment, etc. Anne-Laure Ligozat, a professor at the National School of Computer Science for Industry and Business (Ensiie) in Essonne, also referring to the IPCC graphs, went a step further by mocking the optimistic reports of consulting firms. In one, produced by Accenture, on behalf of the Global Enabling Sustainability Initiative (GESI), which brings together industrialists, it is written for example "that the information and communication technology sector can finally decouple economic growth from the growth of [greenhouse gas] emissions". Even in 2015, the date of the report, the irrationality of this sentence was obvious. "The answer to environmental issues is not only technological. It must be more global and systemic", observes Laurent Lefèvre, researcher at the National Institute for Research in Digital Science and Technology (Inria), in Lyon, pioneer of this new state of mind and co-organizer of these eleventh Green Days. Two visions coexist, according to Anne-Cécile Orgerie. The classic one, of the search for less energy-intensive systems, and that of the supporters of greater sobriety, therefore of the reduction of uses. Sometimes, this last position does not go down well. One of the groups in which the researcher is involved, EcoInfo, a federation of engineers and researchers supported by the CNRS, for example wrote in its analysis of the deployment of 5G published at the end of 2022 that "we will not be able to control the energy consumption and environmental impacts of mobile networks without imposing a form of limitation on usage." Which earned her a mocking tweet from Yann LeCun, scientific manager of artificial intelligence (AI) at Meta, Facebook's parent company, projected on the conference screen by Guillaume Urvoy-Keller: "Medieval obscurantism at the EcoInfo group of the CNRS." Atmosphere. "It's up to everyone to manage these tensions," says Denis Trystram, a professor at the University of Grenoble-Alpes, who shares his own experience: "I worked to achieve performance gains of 30% to 40% for various optimization calculations, but it was like fighting windmills, because we are doing more and more calculations... It's a headlong rush. We should review all of this in a systemic way." In the Green Days lecture hall, a young lecturer even publicly expressed his current distress, because he can no longer stand working on optimization systems for technologies that are so harmful to the environment. He hopes to quickly find an activity that has more meaning and coherence. "France is at the forefront of moving towards an alternative sustainable future," says Benjamin Ninassi, a research engineer at Inria in Rennes. And indeed to cite a good number of actors, academic, like EcoInfo, associations, like GreenIT or the Shift Project, or institutions, with groups at the Environment and Energy Management Agency (Ademe), the Regulatory Authority for Electronic Communications, Posts and Press Distribution (Arcep)… There is no shortage of work for researchers. Let's take one of the essential questions: the share of digital technology in greenhouse gas emissions. The reference study, by Charlotte Freitag (Lancaster University, United Kingdom), in 2021, estimates it between 2.1% and 3.9% of the global total, the equivalent of air traffic. This study is based on other, previous studies, whose range went from 1.8% to 2.8%. If the figures are higher, it is because the team tried to take into account the life cycle analysis (manufacturing, use, recycling, etc.), which is difficult to assess because it involves a complex chain of actors and products. And "these estimates are summary with a significant degree of uncertainty," the authors insist. The impact of emails Do we know more about a more common and emblematic object on this subject, emails? How much "carbon" does it weigh? In 2011, according to Ademe, the estimate was 19 grams of CO2 equivalent. In 2018, Mike Berners-Lee, a frequently quoted specialist, said it would be more like 4 grams. Before preferring to put forward a range of between 0.3 and 26 grams in 2020, if we take into account in particular the terminal on which we consult, desktop computer or telephone for example. Above all, it depends again on the life cycle analysis. One of the mistakes with emails is to confuse "attributional and consequential analysis," explains an EcoInfo post. The first studies the sole effect of emails, the second takes into account the weight of the infrastructure allowing their delivery. "To simplify, the fact of not sending an email will not make your computer, nor the network nor the servers disappear, and if in addition you stay in front of your screen daydreaming, or worse, watching a video instead of reading an email, at best, it changes nothing, at worst, it will have more impact," specifies the EcoInfo note. In addition, the time spent cleaning out email boxes has an impact, or even ultimately more negative effects than positive. At Green Days, the difficulty of measurements, which take on the appearance of an equation with a large number of unknowns, was omnipresent. As with watching videos, by far the largest use of data in networks, 80% according to the Shift Project. The company Quanteec has explained that, according to three methods, consumption associated with the consumption of "streamed" videos can be obtained varying almost from 1 to 10! The path towards correct estimates of the impacts of all uses is going to be long. For example, the methodology that operators will have to apply to comply with the Anti-waste law for a circular economy (AGEC), promulgated more than three years ago, is still under discussion. In the meantime, a simplified approach is authorized, which leads to applying the same footprint, 3.95 kilograms of CO2 per month, to all users of fixed networks, regardless of their data consumption, but above all regardless of the quality of their box, and whether it is on or off... "The most annoying thing is not there, however. It is the "greenwashing" that this induces", criticizes the computer scientist Frédéric Bordage, founder of the GreenIT collective. And to recall the latest study by Ademe, according to which the effects on resources (metals and fossils) concentrate 52% of the digital footprint in France, greenhouse gas emissions only 11%. "We therefore focus on a small part and not on the main one, even though the operators have this information, he observes. This unfortunately avoids talking about the subjects that cause irritation, such as over-equipment, switching on boxes, obsolescence..." The Jevons paradox Another "oversight", well known to researchers, the rebound effect. According to the Jevons paradox, its more scholarly name, improving the energy efficiency of a product or service leads to an increase in the consumption of this product... And the examples abound, in particular that of data centers that host the cloud, on-demand and delocalized IT services. Progress in the management of their energy has been considerable. In fact, the operation of the infrastructure (with ventilation, surveillance, etc.) only consumes 10% to 20% more energy than the servers that make it up. It was almost 100% twenty years ago. But their number has increased… Guillaume Urvoy-Keller cited other examples in his presentation at Green Days. Self-driving cars? Why not, but they can generate more empty journeys, for example. Teleworking? It can encourage urban sprawl. The researcher actually found only a “positive” rebound effect: vending machines for drinks and snacks in Japan, although they have become more energy efficient, have not multiplied. In summary, many of the figures circulating are still fragile. We must always question their methodology and scope. Is the life cycle taken into account and in what sense, attributional or consequential? Are we talking about uses, infrastructures, upstream work? What environmental footprint are we talking about, "carbon", "water", "matter"...? Otherwise, "greenwashing" risks instrumentalizing this data. There are many avenues for scientists to explore, according to the presentations made at the Green Days in Lyon. For data centers, they are studying operating modes that would allow machines to be completely turned off to take into account demand but also the intermittency of renewable energies. Scenarios are being evaluated where the center would be autonomous in electricity, thanks to storage batteries to compensate for intermittency. Data center management plans are being developed that take into account energy mixes on a global scale, day and night. Protocols are being created for sensors powered intermittently, or even calculations that can themselves stop and restart. The size of large neural networks is being reduced to perform the same calculations, or almost, as large ones. Software is being "trimmed" to make it lighter and therefore less demanding. We are developing tools to measure the consumption of each software on a phone or computer to help the user choose the most ecologically efficient ones. We are praising the importance of open source to combat the too rapid obsolescence of machines, since modifying programs can extend the life of equipment. We are pleased to see manufacturers offering to extend their warranties to seven years instead of five. We are trying to run algorithms on old machines, or even on very small processors. Or we are taking a step back, calling on design to the rescue not to play on electricity consumption, but to limit usage by better informing the user. "Thinking about the practice of research" Seeing this hectic mobilization of academic actors, industrialists and association or political leaders is both reassuring and worrying. Reassuring, because there is a convergence of diverse interests in filling the gaps in knowledge, including in the hope of preserving an economic model. Worrying, because, like other technologies, this useful and necessary work is done downstream, once the massive deployments have been carried out. The subject therefore clearly creates tension between the various stakeholders, some of whom want to go further than the continuation of "research as usual". At the Green Days, Guillaume Urvoy-Keller put his foot down by recalling an opinion of the CNRS ethics committee of December 2022, according to which "environmental responsibility requires us to think about the practice of daily research and the subjects and avenues of research", implying that not all research is perhaps good to conduct. "What research do we want to do in these times of global warming?" asks Anne-Laure Ligozat. Every researcher must ask themselves the question. "Stop everything", "question", "dismantle", Denis Trystram does not use these injunctions, but he has heard them in the labs. By inviting his colleagues to delve into the techno-critical philosophers of the 1970s like Ivan Illich, he suggests that he is not against more radicalism. He is not the only one to defend this opening towards the human and social sciences. "We must think in a systemic and interdisciplinary way and not focus on a system with only a technical point of view," insists Anne-Laure Ligozat. "Sobriety comes up against difficulties that computer scientists do not have all the keys to, notes Anne-Cécile Orgerie. Everything has to be built." "We must open the debate to go beyond the sole optimization of our calculations and limit the internal dissonances that inhabit us," adds Denis Trystram, who concluded his presentation with a comic strip from Asterix where the famous bard is muzzled while the other villagers feast. A way of showing that he sees himself as belonging to a minority. But without a false note.

## ###ARTICLE\_START### ID:1840

The French researcher, one of the fathers of artificial intelligence, head of Facebook's AI research lab, calls for accelerating research to improve the reliability of systems, and lead to a "new Age of Enlightenment". You say that ChatGPT is not a revolution. Why? It is a good product whose capabilities may seem surprising, but it is not revolutionary because the technologies it uses have been known for several years. Like other large language systems, its artificial neural networks are trained using enormous quantities of texts, on the order of a trillion words, almost all the texts that exist on the Internet. The machine has learned to handle the language. We can even say that it has acquired a certain level of reasoning, in any case it can adapt what it has read to the question asked of it. These capabilities give the impression that the system is intelligent, but in fact they remain superficial. ChatGPT is not intelligent as a human can be. It is a prediction tool, which associates words that appear most likely in the corpus that was used to train it, in order to continue a text. No one can guarantee that what comes out of the machine is factual, non-toxic, understandable. In November 2022, the company Meta, for which you work, was forced to disconnect its own language system, Galactica. What lessons did you learn from this? Galactica is a system quite similar to ChatGPT, but trained specifically on texts from the scientific literature, in order to help scientists write their articles. It was made available to the public, not as a product but as a demonstration for researchers. It was attacked on social networks because it was accused of jeopardizing scientific publications by allowing the production of false and very similar articles. This fear was unfounded, but the demo was withdrawn, because this campaign gave bad publicity to Meta. The public's attitude towards these new tools depends a lot on the company that produces them. A system that talks nonsense is always dangerous for a large company that has a reputation to defend. Meta has experienced this, as has Google, which has had difficulty releasing its system because its reputation is at stake. This is not the case for OpenAI, which is a small outsider company. When it released ChatGPT, a few weeks after Galactica, the application was welcomed like the messiah. What do you say to those who are alarmed by the possible excesses of these tools? I understand that this can be worrying. It is clear that these systems are neither very reliable nor very controllable. They can invent false information, refer to documents that do not exist. If we ask them to talk for too long, they end up becoming incoherent. And we are not able to control them. We only know how to retrain them using humans who assign scores to their answers, a complicated and expensive process that requires collecting a lot of data and that does not work very well. But that does not justify, for me, their ban. These are very useful tools for speeding up the writing of texts, in particular computer code. They can improve the productivity of many professionals, such as programmers, or doctors who want to write their consultation reports more quickly. We just need to inform users of the limits of the application: they cannot be used as search engines, nor rely on the information it produces without verifying it. Aren't you afraid of an amplification of disinformation, which would further destabilize democracies? What is at issue in the phenomena of disinformation is less the volume of production of problematic content than its capacity to be disseminated. The far-right conspiracy movement QAnon has spread widely in the United States from a small number of people. Production does not contribute to dissemination. I am convinced that the public will become more suspicious of the information they receive. Those who grew up with the Internet already know that what circulates there is not necessarily reliable. I am also confident that technologies will emerge to trace the process of creating information. What will happen is what happened with spam in our messaging systems, for which protection systems have been developed. The technique will probably not be very different from the tools that equip many social networks today. Thanks to AI, Facebook's content moderation systems automatically delete 80% of hate speech, compared to 38% at the beginning of 2018 [the figure was 95% and more in 2020-2021, and has since gone down]. When it comes to disinformation, AI is not the problem but the solution. What do you think about the fear that artificial intelligence systems could one day match or surpass human intelligence? I am convinced that machines will one day be at least as intelligent as humans in all the areas where humans are intelligent. But I do not fear that AI will escape our control and lead to the destruction of humanity. This type of apocalyptic scenario, in my opinion, is based on erroneous assumptions. It is not because a machine will be super intelligent that it will automatically want to dominate humanity. In the human species, the most intelligent are not necessarily those who want to become leaders and kill everyone else. In fact, it is often the opposite! Why would things be different with artificial intelligence? I am one of those who believe that progress, whether scientific or social, depends closely on intelligence. The more educated, knowledgeable, and able to reason and anticipate what will happen, people can make decisions that are beneficial in the long term. With the help of AI, human intelligence will be amplified, not only that of all humanity, but also the intelligence and creativity of each and every person. This can lead to a renaissance of humanity, a new Age of Enlightenment. Several thousand personalities and researchers are calling for a six-month pause on the development of systems like ChatGPT. What do you think? When a new technology appears and makes people smarter, we take a risk in wanting to limit its use. The Catholic Church wanted to ban the printing press so that the Bible could not be read without the mediation of priests. And we have seen that the spread of the printing press contributed to a new phase of human development and led to rationalism, the philosophy of Enlightenment and democracy. The very idea of wanting to slow down AI research seems, to me, to be a new obscurantism. A pause risks slowing down the progress that is essential for these technologies to work more reliably and be used for the common good. On the contrary, we need to speed up! If I am not in favor of a pause, it is also because I do not believe in it. It is unrealistic, no one is going to stop AI research for six months. Should we regulate these new applications? And how? There is no doubt in my mind that the deployment of AI must be regulated. This applies to language systems like ChatGPT, but also to all intelligent systems that are required to perform actions. From the moment AI is used to help with medical diagnosis or automatic driving of cars, we need regulations that guarantee that the products are not dangerous for the public. My priority, as a researcher, is to find a way to make these systems controllable. A first step is to design them so that they cannot escape the constraints that are set for them. We do not know how to do this today, but I have no doubt that we will be able to create AIs that reason according to given objectives. A second step will be to specify the constraints that we want to impose on these systems to guide them towards beneficial actions. This is what we call “alignment” with human values, an issue that is not very different from what we do when we legislate to supervise companies or groups of people. Finally, the third step will be to secure these systems by testing them thoroughly before making them available to the greatest number of people, just as airplanes and drugs are tested before being put on the market. The existing model of international standardization bodies can help with this. Is there a risk that a small number of companies will control access to these tools? Only a few American companies have the computing capacity needed today to train them. But the benefits of AI deployment should not be reserved for this small group of companies. They should be shared widely. Until now, the field of AI research and development was rather collaborative. Large companies like Meta, Google or Microsoft published their work. Since OpenAI decided not to publish its results while using those of others, everyone is wondering: should we continue open research? As far as I am concerned, the answer is "yes". However, it is likely that others will publish less and less because of this new competitiveness. What could be the governance of these new tools? AI will be, in the future, an important resource for the industry. It is desirable that there exists an open AI infrastructure, and governments can help. In the same way that all the operating systems of the Internet servers run on the open source Linux system, we should, in the long term, have open AI platforms that serve everyone, and to which everyone can contribute. Governments can encourage the development of these open systems, while at the same time providing for control bodies to ensure the reliability of products derived from these systems.

## ###ARTICLE\_START### ID:1841

SEMICONDUCTORS This is a drastic change that has been underway at Arm for the past six months. According to the Financial Times , the chip designer has set up a team to manufacture advanced chip prototypes. Since its creation, Arm has always been a very early player in the semiconductor value chain: like an architect, it draws and designs the plans for chips that are then manufactured by others. For the manufacturing phase that it does not control, the company will team up with industrial partners. The stated objective of this strategic move is to be able to show these "showcase" prototypes to a greater number of customers, and thus convince them to use its capabilities and services. While chips designed on Arm architecture are omnipresent among smartphone manufacturers, the company must conquer market share in growing sectors, such as data centers, automobiles, connected objects, etc. However, Arm is under strong pressure from its owner, Softbank, to increase its revenues in the short and medium term, and attract investors, with a view to its upcoming IPO on the New York Stock Exchange. Softbank is counting on this operation to restore its financial health, which it would like to complete before the end of this year, depending on the stock market environment. With this same objective, the company mentioned a few weeks ago a change in its billing model. Until now, its customers pay it a license fee for the plans, and a commission on each chip sold. Arm would like this commission to now be calculated on the price of the terminal in which it is used, much to the dismay of manufacturers. Rising to power By developing prototypes itself, Arm is arousing legitimate concern among its main customers in the semiconductor industry, who fear head-on competition with their activities. To lead this new team, Arm hired Kevork Kechichian, a former NXP Semiconductors and Qualcomm employee, in February. But Arm must also think about its long-term growth. While the British company has long reigned almost unchallenged in processor design, a competitor is rising to power. Some of its customers are turning more to RISC-V, a free architecture, accessible as open source on the Internet, originally developed by the University of Berkeley. "We really don't see RISC-V as a significant competitor for us in the data center space. They are more appropriate for niche applications," said Chris Bergey, a senior Arm executive, last September. Niche? Earlier this year, Google announced that it wanted to "diversify" its technical base and allow Android to support the RISC-V architecture. NASA and the European Space Agency (ESA) are also beginning to rely on this new architecture. In its annual report published on April 12, Arm lists as one of its main risks the “significant concentration” of its customer base. In 2022, 86% of Arm’s revenues were based on its twenty largest customers. “The loss of a small number of key customers can have a significant impact on the group’s growth,” it acknowledges.

## ###ARTICLE\_START### ID:1842

THIS AMOUNT WAS GIVEN JUST AFTER CANADA BANNED THE CHINESE GIANT FROM ITS TERRITORY In May 2022, like several other countries, including the United States, the federal government banned the use of Huawei Technologies' services and equipment for the development of the 5G network. Canadian Prime Minister Justin Trudeau explained at the time that this decision was aimed at "protecting Canadians," as the company, close to Beijing, is suspected of being able to spy through its telecommunications equipment. However, in June 2022, barely a month after the federal government's announcement, Concordia University received a donation of $128,000 from Huawei. The sum was allocated to a research project. "The project is related to the analysis and assurance of the quality of code in open source software. "It's also about proposing techniques to improve the quality of the code," said university spokesperson Colin Danby. Concordia University told us that there was no quid pro quo for Huawei in exchange for the donation. While doing business with Huawei is not strictly prohibited, several academic and national security experts have long warned universities about the risks associated with companies that are close to the Chinese government. "As soon as we're talking about an authoritarian country that is openly hostile to Canada, any investment by companies from that country, especially for technologies that can also be used from a military perspective, is highly problematic," said Christian Leuprecht, a professor at the Royal Military College of Canada and Queen's University. WARNINGS The Canadian Security Intelligence Service (CSIS) has also warned universities about this in recent years, including during meetings with educational institutions. “Using various means [scholarships, sponsored trips, visiting professorships], [China] is working to advance [its] objectives. This threat does not come from the Chinese population, but from the Chinese Communist Party, which is executing a strategy aimed at making geopolitical gains,” CSIS spokesperson Eric Balsam commented by email. DIFFERENT SENSITIVITIES In Quebec, sensitivity to the threat differs from one university to another, we noted after contacting all the institutions. While some universities have reduced or ceased their activities with Huawei, others still have research projects underway. Only one institution told us that it had recommended ceasing all its activities with Huawei, namely the École de technologie supérieure (ÉTS). “The position of the ÉTS and its research management is to advise against any research or initiative with Chinese companies and interests,” spokesperson Jean-Alexandre D'Etcheverry told us. Furthermore, all the other universities contacted by Le Journal told us that they had not received a donation from Huawei in the last two years. The last donation from Huawei recorded was an amount of $100,000 to Université Laval spread over two years (2021 and 2022) for student scholarships in the field of optics and photonics. We tried to contact Huawei, but the company did not respond. \*\*\*\*\* Université de Montréal keeps its donation Université de Montréal has finally decided to keep the half-million dollar donation offered by two Chinese billionaires. In 2016, two Chinese businessmen, Zhang Bin and Niu Gensheng, had offered $550,000 and $140,000 respectively to Université de Montréal and the Pierre Elliott Trudeau Foundation. In February, the Canadian daily Globe and Mail reported that Chinese authorities were behind these two donations, according to a conversation intercepted by the Canadian Security Intelligence Service. Since then, the entire board of directors of the Trudeau Foundation has resigned and the organization has reimbursed the donation received. For its part, the Université de Montréal announced Friday that it will keep the donation and reallocate the funds to other projects, stating that it would be difficult to reimburse, particularly for tax reasons. Last week, our Bureau of Investigation reported that the former vice-rector of international affairs and Francophonie Guy Lefebvre, who orchestrated the donation from the two businessmen, has several ties to Chinese institutions and has apparently deleted these mentions from his page on the Université de Montréal website, including the awards and medals received in recent years.

## ###ARTICLE\_START### ID:1843

It's not just buildings: the street is also an "essential lever for adapting cities" to climate change, believes engineer-architect Franck Boutté. The 2022 Grand Prix de l'urbanisme, distinguished "for its pioneering approach to the environmental engineering of urban projects", has just published a guide for elected officials, "La Rue commune". In co-production with the urban planning agency Richez Associés and Leonard, Vinci's prospective platform, it follows a "call for commons" launched by the Agency for Ecological Transition (Ademe) in 2021 to promote the "resilience of territories". Rich in graphics, cross-sections and examples inspired by foreign countries, this 400-page methodological document is based on an observation: "The ordinary street today remains largely impermeable, sparsely planted and organized around the roadway-sidewalks-parking triptych." "In Paris, 80% of public space is dedicated to cars, while they now only represent 20% of the modal share of mobility," summarizes Franck Boutté. Beyond that, it is the entire spatial organization and developments born from the reign of the automobile that need to be rethought. "The car creates the conditions for the failure of this public space in light of contemporary issues" of combating urban heat islands and loss of biodiversity, continues the engineer, who was interviewed by elected officials of the "Paris at 50 °C" mission. BRISE It is not a question of banning cars: they will be able to continue to drive, but at a walking pace, at a speed of 5 km/h - no doubt the prospect of an entirely pedestrian street would have put off local residents, fearing all types of nuisances, particularly noise. The idea is to share the space, and to bring together urban functions that were previously separate. The common street will therefore be devoid of a sidewalk. Above all, in the perspective of more frequent and more intense heat peaks, this model of a street freed from the influence of cars "can help mitigate the effects by adapting public spaces to make them more comfortable during these episodes", the engineer believes. To do this, there are two levers: shade, which can reduce the temperature by up to 15°C, and the cooling generated by the evapotranspiration of water on the surface of leaves. Two elements which, combined with the wind, create a refreshing breeze. This is why the guide suggests, with diagrams to support it, "systematically reinforcing the presence of plants and water, in particular thanks to the space freed up by the absence of parking, and the reduction in the space for cars". Each street is different, and the presence or absence of underground networks and pipes can be a barrier to greening. "First, we propose a diagnosis of all the constraints, including mapping the networks. For example, shrub heights will vary depending on the possibilities, explains the engineer. The goal is of course to find as much open ground as possible, but there is no ratio, and we can even consider planting vegetation on the surface if there is no other possibility." Other characteristics to take into account are the orientation of the street and its exposure to sunlight. "On an east-west street, for example, it is the north bank of the street that will be sunny. In this case, it is this bank that will need to be protected first." Not all streets are intended to become "communes": only secondary roads without a bus line and located 10 minutes' walk from public transport will be eligible. The guide is inspired by several experiments carried out in Milan, Brussels and Barcelona. For example, the Catalan municipality has been experimenting with the Superblock programme in the Diagonale district since 2016, which aims to transform one in three streets. STROLL In Paris, the "school streets" offer a prefiguration of this. To date, more than a hundred are closed to traffic, of which around forty have been landscaped: planting and laying a light-colored surface on the ground, to better reflect light and prevent it from storing heat. But the potential for streets eligible for a more radical transformation is much greater, according to the guide: 38% in the Greater Paris metropolis, or 13,650 kilometers of roads where you can stroll with your nose in the air, without constantly turning your head right and left. Where children can kick a ball around, like during lockdown, and adults can chat on the doorstep without constantly monitoring them. In short, the world of tomorrow is coming soon. When will there be shared streets in the capital, then? This guide "is first and foremost a common, a tool shared in open source. "It is available and appropriate for all," eludes Franck Boutté, who says he has brought together "a whole community of stakeholders, elected officials, technical services, associations, mobility experts" around this approach. And assures that he is in discussion "with several metropolises" ready to try the experiment.

## ###ARTICLE\_START### ID:1844

Can we call for a "pause" in the development of artificial intelligence (AI) and at the same time launch our own start-up in the field? This paradox does not seem insurmountable for Elon Musk: the boss of Tesla and SpaceX filed the articles of incorporation of a company called X.AI and based in the state of Nevada in March, noted the Wall Street Journal and AFP on Friday 14 and Saturday 15 April. On 28 March, Mr. Musk was one of the most visible signatories of an open letter calling for a six-month suspension of the "uncontrolled race to develop and deploy ever more powerful digital brains, which no one - not even their creators - can reliably understand, predict or control". His new company should join the AI laboratories targeted by the call: OpenAI (the creator of the chatbot ChatGPT), Google, Microsoft, Meta, Anthropic, Stability AI and Amazon, which has just launched its Bedrock offering. As early as late February, The Information reported on Elon Musk's intentions to create a rival to the leaders in the field. To do so, the entrepreneur recruited Igor Babuschkin, a former employee of DeepMind (the AI subsidiary of Google's parent company) and OpenAI, and Manuel Kroiss, who also worked for DeepMind. Mr. Musk is said to have attracted half a dozen engineers, the Financial Times wrote on Friday. Blurred outlines According to the daily, Mr. Musk is in discussions with investors from his car and space companies, Tesla and SpaceX, to finance the project. According to the media outlet Business Insider, he is said to have acquired 10,000 GPUs, processors specialized in the enormous calculations needed to train large language processing models such as "GPTs," on which ChatGPT is based. This is not Elon Musk's first ambiguity: in 2014, he considered this discipline "potentially more dangerous than nuclear bombs", but in 2015 he co-founded OpenAI, with the aim of "advancing digital intelligence so that it benefits humanity". In 2018, however, he left the project. The reasons are not entirely clear: according to sources cited by the Financial Times, disagreements with management concerned the "security" policy around software. But the conflict was also a matter of competition and ego: Mr. Musk acknowledged a conflict of interest linked to the recruitment of AI engineers for Tesla. And, according to the Semafor website, the entrepreneur left after OpenAI refused his offer to take the helm of the structure, which he considered to be overtaken by certain competitors, including Google. The recent success of ChatGPT is said to have made him furious. Since OpenAI has been in the spotlight, Elon Musk has sharply criticized his former company. The project “was created as a non-profit and open source structure,” it is now “closed” and “profitable,” he tweeted in February, criticizing the “control” of Microsoft, which invested in OpenAI. ChatGPT has also been accused by the Tesla boss of being woke, that is, of filtering conservative opinions. Can Mr. Musk thus return to the forefront of the AI scene? The purpose and contours of the start-up are for the moment unclear. As is its imbrication with Twitter (which would have bought the GPUs, according to Business Insider, and whose data could train X.AI’s AI, says the Financial Times) and Tesla (which has a supercomputer, Dojo). This mix could be a strength, and a weakness: X.AI is one more grand design for Mr. Musk, who was already said to be scattered with Twitter, Tesla, SpaceX, Neuralink and The Boring Company.

## ###ARTICLE\_START### ID:1845

The criticism is unanimous: Storyteller is too short a game. Admittedly, the game by Argentinian Daniel Benmergui is over in two short hours. But in a world of the attention economy where every series, show or social network aspires to keep its users captive, this modesty is almost a sign of quality. No, in reality, Storyteller's fault is quite different: it provokes such a rush that it struggles to live up to the expectations that blossom in the minds of players as the game is revealed, a true workshop of potential. Its principle is wonderfully simple and intuitive: the player has boxes (three, four, six) on which he must slide places and characters, and manage to reconstruct a strip that fits the title of the story: "Eve dies with a broken heart", "the detective arrests an innocent", "Hatey kills the father and marries the mother" By relying on a simple finger movement to slide the characters from one scene to another, from one place to another, by digging into the arrangement of the boxes, the sequential narration, this little puzzle game works on the dynamics that make and unmake a story. It is absolutely brilliant. So dazzling that we can't help but dream big. Very big, as long as we imagine an encounter with the creations of Oubapo. We hope that these simple pages will gradually come to compose a great tale, that the strips will explode the formats until they reach a fragmentation of the page in the style of Chris Ware. It is thought that Storyteller could introduce purely playful comic strip processes such as narrative loops, upside-downs, palindromes. But this game is not happening. It is a bit heartbreaking. Which should not make us forget the incredible material stirred by the creation we have before our eyes, a formidable intuition that has turned into a way of the cross for its developer. Because Daniel Benmergui has been battling with this game since 2010, the beginning of the golden age of indie gaming. A project so old, on the scale of video games, that it was initially designed for the Ouya, this opensource gaming console, designed for the indie market, which had time to die three times before the light of Storyteller reached us. Nothing prevents us from hoping for a sequel. MC Storyteller on PC and Switch.

## ###ARTICLE\_START### ID:1846

Ledger specializes in securing digital assets for individuals and businesses. Its CEO explains the revolution that decentralized technologies will bring to our daily lives. Le FIGARO. - What is your view on the crisis that is shaking the banking sector? Pascal GAUTHIER. - History has an unfortunate tendency to repeat itself. It was the 2008 crisis and the bankruptcy of Lehman Brothers that precipitated the birth of bitcoin, designed to create an alternative to the current monetary system. It is an electronic peer-to-peer payment network that, thanks to new open technologies, in open source, does not require having to trust third parties a priori. This means that we do not have to depend on centralized value propositions. However, the current banking crisis shows, once again, the limits of a centralized monetary system, in which no player is "too big to fail", with a domino effect and serious consequences for end consumers. Before the Bretton Woods agreements in 1944, the monetary system was the gold standard, which is more similar to the system proposed by bitcoin than to the current monetary system. Bitcoin has also been regaining value since the collapse of certain banks. Is it starting to play its role as a safe haven, which is what it was designed for? Only time will tell. The cryptoasset sector also went through a crisis in 2022... Two things happened in 2022: the collapse of the speculation part, which was not specific to the cryptocurrency sector. And the failure of centralized value propositions on which trust should not be based, as already shown in the white paper of Satoshi Nakamoto, the originator of bitcoin. In the case of FTX, it was pure and simple fraud. But the fall of platforms like Celsius, Voyager, BlockFi was not a crisis of confidence in cryptoassets. Again, it is a problem of trust in centralized entities or in protocols that were not serious like terra luna. On bitcoin (the only true decentralized system in the world today) and on decentralized technologies, there was no crisis of trust. What lessons has the cryptoasset sector learned from 2022? The ingredients for disaster still largely exist in the crypto market. All that happened in 2022 is very poor risk management, governance and security. There is still no clear segregation of roles between trading operations and custody of assets, for example, unlike what happens in traditional finance. Sam Bankman-Fried (the founder of the bankrupt FTX platform, editor's note) is a fraudster, but he was also able to do everything he did because the functions within the large exchange platforms are not "segregated" as they should be. If platforms offer a trading service, they should not also be able to ensure the custody of assets, because this can lead to risky behavior. This rule seems to me to be quite easy for regulators to implement. There is still a lot of immaturity in the sector on these issues of process security and governance. The risk is that the crypto market will start growing again without having really learned the lessons of what we have just experienced. How will these decentralized technologies change our habits? What bitcoin has revolutionized, in addition to the transfer of values, is the possession of a unique digital asset. Today, with a Spotify account for example, you buy a subscription to listen to music, but in the end, you own nothing and you can't transfer anything. However, decentralization technologies allow the individual to find this notion of ownership in the digital world. Everything that has digital value, that is unique and rare, will be "tokenized" and recorded on the blockchain. Banks are investing heavily to soon exchange their financial assets on blockchains. This will be available for different use cases, including identity. Today, it is still difficult to prove who you are digitally... Tomorrow, our identity will still be validated by the State, but it will be "tokenized", with all the necessary security elements. You will have it on you in a device that is itself secure and you will be able to cross borders. In the same way, you will own your health data, and you will be able to decide with whom you want to share it. You even talk about a societal revolution... The revolution is the regaining of control by users and their freedom of choice. You can choose to have access to your money in all circumstances, and regardless of the level of solidity of the banking system. In many countries, in Argentina, Lebanon, Zimbabwe, this system is not solid and people use cryptoassets a lot. In Europe and the United States, the question may have been less of an issue until now, but in light of recent events, some will think twice before putting all their money in a bank account. Decentralized protocols offer an alternative, but they are nascent. This also means that there is some education to be done. At the beginning of the Internet, people did not really understand the interest. And then finally, everyone found what they were looking for. But it took twenty years. Technological revolutions do not happen overnight. "The current banking crisis shows the limits of a centralized monetary system, in which no player is "too big to fail", with a domino effect and serious consequences for end consumersPASCAL GAUTHIER

## ###ARTICLE\_START### ID:1847

Magazine - What could possibly bring Russian oligarch Yevgeny Prigozhin and salmon together? Answer: a new investigative series by Arte entitled "Sources". For "open sources": that is to say documents (almost always) freely available on the Internet for those who know exactly what they are looking for and where to look. Gold mines for intelligence services and journalists, particularly during conflicts - preferably cold ones - and a way to verify and cross-check information when you suspect "fake news". At the helm, Alexandra Jousset, winner of the 2022 Albert Londres Audiovisual Prize, with Ksenia Bolchakova for the powerful documentary Wagner, Putin's Shadow Army. From the first episode, we return to the Wagner Group and its enigmatic leader and founder. Using hacked documents, the journalists deploy the Prigozhin system: his private military company and its links with the Russian state; the Lakhta project and the disinformation campaigns targeting the West; the establishment of a service responsible for monitoring political opponents and covering up war crimes committed by Wagner mercenaries. Making of in black and white The second issue is dedicated to the underside of the organic salmon that we consume in Europe. The journalists trace how European companies ravage Mauritanian fish stocks to manufacture oils and flours that will be used to feed farmed salmon – a sector supposed to preserve ocean reserves from overfishing – consumed on the Old Continent. By scouring social networks, recovering videos or photos on messaging applications, searching freely accessible databases on the Internet, satellite images or even GPS location tools for boats or planes, these journalists (at Le Monde aussi) take advantage of the astronomical quantity of data that is generated each day on the Web. For each Osint (OpenSource Intelligence) investigation, the method is described at length, a sort of making of in black and white. "We wanted people to be able to follow our journey," explains Alexandra Jousset. "We are committed to restoring trust in journalistic work." This new Arte magazine, which should have six episodes per year, emphasizes rigor, served by omnipresent graphic animation. The investigations and methods deployed, however dry some stages may be, are perfectly clear, leaving the viewer with the feeling that the investigation has unraveled before their eyes. Next issue at the end of May.

## ###ARTICLE\_START### ID:1848

AI Pope Francis walking around in a spotless designer down jacket. An elderly protester, in the hands of the police, his face covered in blood. Donald Trump resisting a violent arrest. These images generated by artificial intelligence have been going around the world in recent weeks, confusing those who have seen them: real? Fake? Their increased realism illustrates the great leap forward made in just nine months by this technology, capable of generating any type of visual from a simple text description. Appearing in the summer of 2022 and still in their infancy, these tools were eclipsed in the fall by the ChatGPT phenomenon from the American company OpenAI, a champion of automated text generation. The controversies of this spring have brought them back to the forefront. But who is behind these fake images? While OpenAI operates the Dall-E visual generation platform, the two most popular services among Internet users and communication professionals are the British Stable Diffusion, published by the company Stability AI, and the American Midjourney, from which the controversial fake photos originated. Midjourney CEO David Holz half-heartedly admitted to being overwhelmed by his creature when it is used to represent public figures. "The images are more and more realistic and the tool more and more powerful," he wrote at the end of March on the Discord platform, wondering where to place the moderation slider. "You can opt for the Fast West or be like Disney, and everything in between is painful. We are currently on this middle path and I don't know what to think about it." Opacity An illustration of this shifting moderation: while generating fake photos of heads of state is possible, the word Xi Jinping or "president of China" is blocked on Midjourney. "Political satire is not really allowed in China," David Holz justified last year, "and the fact that the Chinese can have the right to access this technology must take precedence." The platform also gradually bans certain terms, such as "arrest" (following the fake photo of Donald Trump) or "Afghan", based on user feedback. David Holz seems to be the only pilot at the controls of Midjourney, a company created in San Francisco in 2021 that claims only ten employees, the vast majority of whom are engineers. The CEO is far from being unknown in Silicon Valley: in 2011, he co-founded the start-up Leap Motion, which raised $120 million to create a motion recognition device before being bought in 2019 for $30 million by the British company UltraHaptics. Is it with this money that David Holz covers Midjourney's operating costs? The company is opaque about its funding, to say the least. The platform offers subscriptions ranging from $10 to $60 per month. It is not clear that this is enough to cover the colossal costs induced by generative AI. “Training a model costs $50,000 and you have to do it 10 to 20 times. And you need to rent servers for $20,000 to then generate the images,” he explained in August to The Verge. The son of Bangladeshi immigrants and a former analyst in investment funds, Emad Mostaque claims to have taken out of his own pocket $600,000 to train his Stable Diffusion model, used by 10 million people every day, and to spend $5 million per month on server rentals. His company Stability AI, located in London, raised $100 million in the fall from Coatue and Lightspeed Venture Partners. Rumor has it that the company, which has around a hundred employees, is looking to raise funds again to reach a valuation of $4 billion. Few safeguards Founded in 2020, the British company does not hide its ambitions: "maximize the accessibility of artificial intelligence" by relying on open source for its models for generating images, music or text, which can be distributed and reused by others around the world. It thus presents itself as an anti-OpenAI, amply funded by Microsoft, and an opponent of the takeover of AI by Gafam. "What is the governance of OpenAI? Nobody knows. Is it transparent? Not at all," said Emad Mostaque during a round table last week. This white knight stance does not prevent Stability AI from dragging skeletons in the closet. The company is being sued by Getty Images and a collective of artists for having trained Stable Diffusion on works protected by copyright. Above all, Emad Mostaque is one of those who think that technology is neutral by nature. He is therefore not convinced by the need to integrate safeguards by default, denouncing "a paternalistic and condescending attitude" that does not "trust users". "Using these tools in an ethical, moral and legal manner is an individual responsibility", he stated in September in the American press. The company has since watered down its stance and made it more difficult to create images of naked bodies, violence or realistic photos of public figures. But all it takes for malicious minds to rework the model, available in open source, is to circumvent these prohibitions.

## ###ARTICLE\_START### ID:1849

Economists like to argue about the origins of capitalism, this historical period which, between the mid-17th and mid-19th centuries, saw the emergence in concentric circles from Amsterdam and London of a new economic, but also cultural and institutional system, destined to dominate the planet. Some like to explain this "great divergence" (Kenneth Pomeranz) from the rest of the world, becalmed in low growth before being colonized, by the equation of "factors of production", mixing in arithmetic proportions the financial investment of merchants, the work of peasants and craftsmen and the technical innovations of scientists. Others, called "institutionalists" (John R. Commons), emphasize the determining role of political institutions, the fragmentation of Europe between rival states offering here an asset rather than a handicap in the face of the centralized despotism of empires. Still others insist on the "soft power" of a cultural revolution (Max Weber, Deirdre McCloskey), which shakes off the straitjacket of religions and feudal hierarchy to promote technical and intellectual innovation, individual freedom and the quest for knowledge. But all agree on the importance of law, a legacy of Roman law taken up by humanists, to regulate by law and judicial bodies the relationships between public authorities and private agents, but also between private agents, establishing commitments, responsibilities and guarantees. It is indeed the contract that allows the dimension of time to be introduced into the economy and thus brings about the essence of capitalism: investing, innovating and undertaking today so that it brings more returns tomorrow. "The dark side of the force" In Western and liberal literature, this role of the legal system is considered positive. Because it is the law, the judge and the lawyer who allow individuals to defend themselves and persevere against the arbitrariness of those more powerful than them by wealth or authority. In this, the rise of capitalism is readily associated with the extension of the notions of universality and equality of rights. The political assemblies of the 19th century were populated by lawyers, jurists and economists displaying liberal convictions against religion and despotism. The originality of the book The Code of Capital, by Katharina Pistor, professor of law at Columbia University (New York), is to tell the same story, but by focusing on describing the other side of the coin, "the dark side of the force" of law, to explain the genesis of what economists modestly call the "negative externalities" of capitalism: explosion of inequalities, crises and wars, hoarding and destruction of natural resources, existential threat to the balance of life and the planet. "Capital," she explains, "is composed of two ingredients: a good and a legal code. » In other words, an asset (land, a machine, a factory, a building, an invention, a debt, software, etc.) can only produce wealth if it is attached to a "code" (a collection of legal texts) that defines its characteristics for the benefit of its owner. The author distinguishes five: priority (the hierarchy of rights attached to the asset); durability and universality (the perpetuation of these rights in time and space); convertibility (the guarantee of the conversion of the asset into currency). It is only once these characteristics are defined that the asset can create wealth, and therefore become capital. From then on, the history of capitalism becomes that of power struggles between asset owners to obtain from institutions - generally the State - legal characteristics more favorable to their enrichment than those of their competitors. It is therefore not so much the sole right of private property – as a defense against the encroachments of public power – which would be at the origin of the rise of capitalism, but the political capacity of the owners to capture the attention of the State, or at least of the legal order, to enhance, develop, perpetuate and transmit the value of their assets. In turn in the history of capitalism, it is the holders of land (landed capitalism), then of companies (industrial), of debts (financial) and of innovations (high-tech) who have “asserted their rights” (the expression is adequate here). The major point is that of bankruptcy law, because it is when value is threatened that it is necessary to be able to preserve it. This is the root of inequality – defined as the ability to prevent any newcomer from seizing existing wealth or creating a competitor – but also of capitalism’s inability to protect the “common goods” against the encroachments of a capitalism that is always eager to valorize new assets while retaining its rents on assets that have become harmful. The author concludes, more optimistically, that a democratically designed “coding” could valorize the living, work and collective goods, on the model of open source in terms of intellectual property.

## ###ARTICLE\_START### ID:1850

We all know a Tony. Actor and playwright Maxime Brillon pays tribute to him in Tony vend des billets, a short play produced by the young company Collectif Tôle, which he co-founded. "Tony exists, the person who inspired this character exists," Brillon assures us. "He was a work colleague, who became a friend and whom I adore. And he's actually the type you find in every company: there's always a kind of Tony where, if you take him away, everything collapses. The pillar of the company, the one who really keeps the machine running, the one who will watch over his post until the end, who defends the fort." And this fort, as you will have understood, is a ticket office. Maxime Brillon worked there for eight years, while studying screenwriting and creative writing, then theater performance. In Tony Sells Tickets, "I combined eight years of work experience into a fifty-minute show, the story taking place in the ticket office in real time," with veteran Tony and apprentice ticket clerk Jazz, "who is on his first day of training." What happens to Jazz in the play, Maxime has experienced it. On his first day on the job, a musician cancels the concert he was supposed to give. "It was hell! But in my story, I grafted another thing that happened to me: the time a DJ had also canceled his performance because he had not cleared customs, but the producer had replaced him with another DJ who was going to play his songs in his place. I said to myself: "This doesn't make sense!" Fortunately, Tony was there to handle the situation, with all the mastery of someone who knows the song. "Often, when I write, I hear music or a rhythm in my head," explains Maxime Brillon. Music naturally infiltrates my work; with Carl Matthieu [Neher, musician, composer, co-founder of Tôle], we work in symbiosis. The members of the collective, including Marie-Ève Groulx [director of Tony vend des billets], we are tinkerers, all visual artists who build machines." By force of circumstance, Maxime Brillon became interested in computer coding; for Tony vend des billets, he familiarized himself with Arduino, a new technology company specializing in microcontrollers that run on its own open-source software, which is articulated using the Arduino IDE computer language, based on C++ (to roughly summarize). The tool "actually allows him to control the motor of ticket printers as [he] pleases," Brillon explains. "By speeding up or slowing down their motors, we can make them 'sing', in a way." And make them talk. In the play, each customer calling the ticket office phone number to resolve a problem is interpreted by a ticket printer. In the belly of "Ticket Faster"This theatrical and strangely musical comedy is set in an office, with this character of Tony — played by three different actors — who we guess is as resourceful as he is colorful. It brings to mind the cult series The Office, a caricature of life at work: "We're a bit in that spirit," agrees Maxime. The Office, Clerks [Kevin Smith's comedy, 1994] but less silly, except that there's a little less irony. It's heartfelt, there's hope, poetry and love, even if the machine is big and swallows us all up." Because in the subtext, Maxime Brillon takes a critical look at this essential link in the entertainment industry that is the ticket business, which the author knows intimately. He worked at the box office during the years when the promoter Evenko, then entirely owned by the Molson family, was expanding its influence over the city's concert halls. "So pretty much everyone in this business is managed from the Bell Centre. That's a lot of different places, with their own particularities, to manage at the same time — you can't manage a theatre box office like the one at L'Astral or the Métropolis," as these venues were called when Maxime printed tickets and responded to customer complaints. Because the machine creaks, he has observed, through his own experience and inspired by the book Ticket Masters: The Rise of the Concert Industry and How the Public Got Scalped, by journalists Dean Budnick and Josh Baron (Plume, 2012). "An incredible book," says Brillon. This is an in-depth investigation into the history of ticketing, its automation and the stranglehold of Ticketmaster [now owned by the multinational entertainment company Live Nation] on all stages of the production and marketing of a show. "If there is a global vision in Tony Sells Tickets, it is that the process of selling tickets is organized to make us forget that there are people behind the machine but that in the end, we will always need someone behind a counter" to respond to the customer. And the risk that an industry, that of entertainment, runs when a company has almost total control over it. "Tony frontally denounces the monopoly of "Ticket Faster" and "Live Ovation" in the show." Tony is a wise man. Tony Sells Tickets Text: Maxime Brillon. Director: MarieÈve Groulx. With Fabiola Nyrva Aladin, Justin Laramée, Joanie Martel, Dominick Rustam. At the Duceppe theater, until April 7.

## ###ARTICLE\_START### ID:1851

We are thinking about a decentralized and independent social network that allows people to share written messages in real time, a spokesperson for Meta told several media outlets on Friday, March 10. We believe there is a niche for a specific space where creators and public figures can share timely updates on their interests. "This statement has sparked curiosity, because this new social network project comes from the undisputed leader in the field, the parent company of Facebook, Instagram and the WhatsApp messaging service. Meta thus seems to want to invite itself into the lands of Twitter, the service where the text format is the most central. The scenario of an offensive by Mark Zuckerberg's company against its rival is further supported by the crisis that Twitter has been going through since its acquisition by Elon Musk in October 2022. Under the leadership of the Tesla and SpaceX boss, the company has laid off more than two-thirds of its employees and seen its turnover almost halved due to the flight of advertisers, worried that its relaxed moderation policy in the name of freedom of expression would allow problematic content to proliferate. In addition, Twitter has experienced technical bugs. The social network project confirmed Wednesday by Meta remains uncertain for the time being: the statement by the company's leaders was not a prepared communication, but a response to a leak of an internal document on the news sites Moneycontrol, then Platformer. No launch date has been given, and few details are known about this project, which is still barely advanced. According to Moneycontrol, this service would be linked to the Instagram universe, whose identifiers could be used to connect to it. Its development was overseen by Adam Mosseri, the head of the social network for photos and videos, who has just launched Notes, a format for short message texts. A crucial point is the choice of a "decentralized" architecture. Technically, this type of network relies on different servers, operated by independent actors. Known in the blockchain, a system that allows, through encryption, to authenticate digital transactions, decentralization is promoted in social networks by Mastodon, which has seen a resurgence in popularity among disgruntled Twitter users. Mastodon is based on the ActivityPub standard, defended by the open source community and NGOs defending digital freedoms such as La Quadrature du Net. Significant technical challenges This system is intended to be an alternative to the services of centralized, closed and advertising-funded digital giants. ActivityPub allows "interoperability", in other words communication with other services using it. This opening would be a solution to the confinement of users who hesitate to leave Facebook or Twitter, for fear of no longer being able to communicate with their contacts. Meta's project would be interoperable with Mastodon and similar networks. Mark Zuckerberg's company has an interest in communicating on an embryonic project and displaying its conversion to decentralization. Under pressure, Facebook and Instagram are facing strong competition from TikTok and are looking to renew themselves. In addition, interoperability is a principle advocated by the authorities: the European Digital Markets Act regulation already requires Meta and its competitors to allow communication between their messaging services. This change poses significant technical challenges, for example on encryption, used by WhatsApp or the independent messaging services Telegram or Signal. Furthermore, Mastodon is often considered more difficult to use than Twitter, due to its organization in independent servers. The network also does not have advertising revenue and its moderation relies partly on its users. Given these many questions, it is difficult, at this stage, to know whether Meta will be able to give birth to this project. However, the concept of interoperability remains a promising underlying trend, as does the idea of giving users more control over the architecture of services. Jack Dorsey, the founder of Twitter, has often mentioned the idea of "decentralizing" Twitter and has just launched Bluesky, a "federated" social network. Opening up the code of social networks would allow external developers to offer alternative recommendation systems to algorithms accused of favoring the most divisive and sensationalist content, with the aim of maximizing usage time and advertising revenue, Mr. Dorsey had argued.

## ###ARTICLE\_START### ID:1852

INNOVATION By launching ChatGPT last November, the American company OpenAI caused a small earthquake. This tool capable of conversing with the Internet user and generating any type of text on demand has made the general public aware of the galloping advances in artificial intelligence. But how does ChatGPT really work? What data did this AI use to learn to speak and write? Was it given values, and if so, what? Faced with these questions, the scientific community is hitting a wall: OpenAI, funded to the tune of $10 billion by Microsoft, refuses to open its hood. ChatGPT is a black box. The privatization of advances in artificial intelligence is a risk that Hugging Face wants to combat. This company, founded by three French people and valued at $2 billion, is unknown to the general public, but essential in the AI community. More than 10,000 companies, including Pfizer, Renault and Roche, are jostling to use its library of open-source artificial intelligence tools to then design their own services. A bit like a chef who will turn to a market gardener rather than planting and cultivating his own vegetable garden. "I believe in the fact that artificial intelligence must be a common good and that research on the subject must be shared," explains to Le Figaro, Thomas Wolf, scientific director of Hugging Face - the English name of this emoji that stretches out its arms to give a hug. It is this philosophy that led the start-up to lead in parallel the Bloom project, the largest completely open and transparent multilingual language model. It was built with the support of the CNRS and an international consortium of 1,000 researchers. "Everything is public: the code, the data set and even the work meetings. "It's a fantastic object of study," enthuses François Yvon, research director at the CNRS and specialist in automatic language processing. Trained for one hundred and seventeen days on the French public supercomputer, Jean Zay, and already downloaded for free by more than 65,000 professionals, Bloom could be the matrix of a future European ChatGPT. The beginnings of Hugging Face date back to the mid-2010s. Clément Delangue, future CEO, and Julien Chaumond, future CTO, created Talking Dog, a conversational robot for teenagers. The application flopped, but the two partners had the idea of sharing the language model behind this virtual companion in open source. The destiny of Hugging Face was set in motion in 2017, when Google researchers published a major research article on Transformer, a neural network architecture that revolutionized the field of artificial intelligence dedicated to language processing. It was this article that would lead, five years and billions of dollars later, to the design of ChatGPT at OpenAI. Cutting-edge engineers But for a typical company, moving from this theoretical article to concrete tools requires significant resources, particularly in computing capacity. "We therefore decided to make these language models easy to use by creating the open-source Transformers library," explains Julien Chaumond. Researchers, developers and companies can draw from this library of pre-trained language models for free. Hugging Face then evolved into a sharing platform specializing in automated learning (machine learning). The community of engineers deposits there, like a book box, fundamental building blocks, data sets, or pre-trained models, all in open source. Everyone can use them (1 million downloads per day), but also modify, improve, make comments... "The discussions are very active, particularly around ethics," notes Thomas Wolf. Hugging Face also employs a small team of researchers specializing in these topics, including Margaret Mitchell (ex-Google), known for her work on algorithmic bias, and the philosopher Giada Pistilli. This group notably advised the designers of Stable Diffusion, an open-source model for the automated generation of images from text. Stable Diffusion is distributed on Hugging Face. The company continues to fill its shared library itself thanks to the work of its engineers and scientists. "We could not have built a credible machine learning platform without having a team of researchers at the level of OpenAI and Gafam," emphasizes Julien Chaumond. The company's 160 employees, spread between Paris and New York, are of 30 different nationalities. "Recruitment has long been difficult, but we have gained visibility in recent years and we are attracting engineers who adhere to our vision. The French Tech visa (a simplified procedure for attracting foreign talent to France, Editor's note) has also allowed us to very easily bring in brilliant people from Mongolia or Turkey who are working on the future of AI." This attractiveness has been reinforced by the waves of layoffs in large tech groups. "We receive a lot of applications," confides the technical director, "but we control our growth." To finance itself, Hugging Face had to raise funds several times, including a final round of $100 million signed in the summer of 2022. All of them took place with American investors, including Sequoia Capital, Coatue Management and Lux Capital. "In 2016, it was impossible to raise funds in France for exploratory subjects. That's why the company's headquarters are in New York," explains Thomas Wolf. Partnership with Amazon "French funds are risk averse. However, this is a challenge if we want to build a sovereign ecosystem on AI,” believes Nicolas Gaudemet, partner in the Onepoint consulting firm. “It is also a challenge for prosperity: the value will be captured by these fundamental building blocks.” Last year, Hugging Face earned 15 million euros from the sale of various premium services for businesses, a figure that is set to grow. “The machine learning community will increase 50-fold by 2030 because software developers will get involved. We will offer them the most accessible tools possible,” promises Julien Chaumond. Hugging Face uses the main cloud providers on the market to rent the computing power needed to train its models. However, it has had a privileged partnership with Amazon since 2021. With the Bloom project, Hugging Face nevertheless wanted to prove “that it is possible to train a vast language model on European soil, and outside of the Gafam infrastructures,” explains Thomas Wolf. France agreed to support the initiative by allocating the power of the Jean Zay supercomputer for nearly four months, "an exceptional request," emphasizes François Yvon of the CNRS. Bloom was trained on a corpus of 46 languages, including English (30%), French (13%), Chinese (16%), Spanish (11%), Portuguese (5%) and Arabic (4.5%), but also Vietnamese, Catalan, Tamil, Wolof, etc. A counterpoint to ChatGPT, trained on the internet where the English language dominates. "There is a linguistic sovereignty issue around these language models," recalls François Yvon. "Are we sure that they speak English as well as French? That they have assimilated our grammar rules?" The researcher is already looking into what Bloom could bring to machine translation tools. The results between French and Chinese and French and Vietnamese are already promising.

## ###ARTICLE\_START### ID:1853

While the appearance of the ChatGPT comet rekindles all the anxieties and worries, but also healthy questions in the face of this new leap forward in artificial intelligence, reading Algocratie by Hugues Bersini (De Boeck, 160 pages, 15.90 euros) has something soothing about it. The book allows us to understand, by hanging on a little, how and why our lives, our practices and our behaviors have gradually been invaded by digital tools that deserve neither the enthusiasm nor the curses that we so readily attribute to them. Simply, the professor of computer science at the Université libre de Bruxelles explains "how it works", demystifying false complexities, pseudo-innovations, and ephemeral fads. He quite simply delivers a peaceful history of computer science. But this is not to hide the immense ethical, economic, legal and ultimately political stakes of what is happening: they are even at the heart of the book, beyond the enlightening description of digital "machines". The author does not hesitate to assert his conviction that, yes, artificial intelligence is capable of solving major problems of our existence, faced with the risk of climatic and environmental collapse - and that it is probably even the only way to get out of it when our own simply human brains are no longer capable of resolving the terrible contradiction between saving our individual lives and safeguarding our common humanity. For a "citizen coding" But not just any old way. Certainly not by entrusting the matter to private for-profit companies, even if they are created by little tech geniuses, because the search for profit can only lead to the unfair distribution of misfortunes and happinesses that digital society brings. Nor to potentate states, even if they are advised by the best "experts", because managerial technocracy never achieves collective efficiency, but rather the manipulation of brains and opinions. The author therefore calls for "citizen coding", invoking the already long history of free software. We must, counter-intuitively, overcome our reluctance to communicate our personal data, because they are essential to improving the collective good. On condition that we are capable of understanding their uses and processing, and entrusting them to trusted institutions. Hugues Bersini is precisely the facilitator, in Brussels, of the FARI institute and the Citicod project, two initiatives aimed, he explains, at reinventing a digital democracy and a citizen use of algorithms. He also presents on this occasion other initiatives of this type which, in the United Kingdom, the United States and elsewhere, are experimenting with what he calls "the new cogs of a representative democracy".

## ###ARTICLE\_START### ID:1854

INTERVIEW The Meta group (Facebook, Instagram, WhatsApp) is coming out of a difficult 2022, to say the least. The Chinese whirlwind TikTok is quickly seducing young people. Instagram's shift towards short video has sparked an outcry. And, above all, the social media giant's revenues have fallen for the first time in its history. Meta has been forced to lay off 11,000 employees, a first. Laurent Solly, general manager of Meta in France, is keen to highlight the Californian group's firepower and details its major projects in AI, the metaverse and the monetization of WhatsApp. LE FIGARO. - 2022 has been a turbulent year for Meta. What are the priorities for 2023? Laurent SOLLY. - There was a difficult context last year, but the company's fundamentals are very solid. The audience for Meta's services continues to grow with 3.7 billion users worldwide. Facebook has crossed the threshold of 2 billion users per day. WhatsApp is the world's leading messaging platform, and Instagram has exceeded 2 billion users per month. In France, we are also progressing on all our services. More than 30 million French people connect to Facebook every day, or more than one in two Internet users. We are part of the daily lives of the French. And for advertisers, we are the group that allows them to reach the people who matter to them in an unparalleled way. More than 50% of French SMEs work with us. European regulations around personal data and Apple's decisions have changed the digital advertising industry. But our investments in artificial intelligence have allowed us to improve our targeting tools and continue to offer the best audiences at the best price and with the best performance. In one year, our conversion rates have increased by 20%. And we believe that we are in a position to be a leader in building the market of tomorrow: AI, which will also impact advertising creation, the opening of WhatsApp to businesses, and of course the metaverse. Meta continues to lead the race. Has Meta France been affected by the layoff plan? As we have frozen our hiring, we have had to lay off fewer than 10 employees in a team responsible for recruitment in Europe. Is the growing success of TikTok among young people a threat to your activities? In France, according to a Médiamétrie study in December, Instagram and Facebook each bring together around 7 million 15-24 year-olds. And Gen Z is also here. But uses are changing and we anticipated this. What the competition has taught us for almost twenty years is the need to always be on the move. To remain powerful among young people, we must innovate, give them access to new writing, but also to discovery. And, in addition to access to audiences, we offer advertisers a healthy environment whose performance is measured. This is one of our comparative advantages. Instagram's updates caused controversy this summer. What is the status of the adoption of short Reels videos today? When we innovate, we do tests, and the best feedback comes from users. They responded strongly, and with passion (Smile.), to Instagram's developments. So we adjust. And since then, Reels have been viewed more than 140 billion times per day on Instagram and Facebook. And advertisers are seizing the short format, because the performance is there. It is Internet users who are imposing new ways of communicating and telling stories. We now need to accelerate the monetization of Reels. Facebook and Instagram seem to be moving away from their social network DNA... There is indeed a voluntary and significant shift in our services. We use artificial intelligence to help you discover content that will interest you. This evolution will bring more engagement. But the foundation of the social network remains our DNA. The goal is to find the right balance between these two aspects. With ChatGPT, generative AI is at the heart of discussions in the tech industry. What will Meta offer in this area? I would like to remind you how happy and proud we are to have set up the Fair in Paris nine years ago, our largest artificial intelligence laboratory outside the United States. It employs more than 100 researchers, and almost all of its publications are open source. AI has become an absolutely major element of how Meta works to recommend content, protect our services from inappropriate content, translate publications from around the world, and do predictive advertising targeting that respects personal data. Our teams are also working on generative AI. Last year, we unveiled Make-A-Scene and Make-A-Video, tools for generating images or videos from text. These AIs will be used tomorrow to create content - for example, we helped Peugeot create a Reels using AI. We are still in the early stages, but we will certainly soon arrive at videos of a few seconds executed by an AI. These tools, which are there to help creators and enhance their productions, will also benefit VSEs and SMEs, which are Facebook's first customers. How will you monetize WhatsApp? Helping companies develop conversational commerce is a major priority for the next two years. Every week in the world, 1 billion people connect to brands via WhatsApp. There is a demand to communicate with them as easily as with friends. The commercial relationship of tomorrow will go through messaging, which has many advantages: personalization, mobile use, and an immediate response from brands. Our Click to message advertising tool has already brought in 9 billion dollars. We started distributing Carrefour leaflets on WhatsApp, and customer engagement is 35% higher than sending emails. Since the beginning of February, Air France has been offering boarding passes and flight information on WhatsApp. Our goal is to accelerate and we are preparing the marketing around these offers. We will offer catalogs, product ordering, delivery tracking, etc. Last year, Meta announced the creation of 10,000 jobs in Europe to build your metaverse. Where are we? Our expansion in Europe is a long-term plan and Meta's commitment has not changed. Why Europe? Because there are many talents and companies with whom we want to form partnerships. One example is Luxottica, in Italy, with whom we manufactured our first connected glasses, the Ray-Ban Stories. We were also committed to helping the European ecosystem grow. In France, we have relaunched our Station F incubator with L'Oréal. We are supporting 5 leading start-ups on the issue of creativity in virtual reality. We have also launched the Metaverse Academy in Nice, Marseille, Montreuil, Aulnay-sous-Bois, Lyon, etc. With the Simplon school, we are training around a hundred people who will be apprentices in start-ups or large companies. What jobs are they trained for? Simplon set up the program and we provided a seed budget. We also provide Meta Quest 2 and Meta Quest Pro headsets. This is a general training course that is not intended to train future Meta employees. Two programs are offered: mixed and virtual reality technician, and developer designer. It is free, with a desire for social inclusion. Digital technology can be a social elevator. According to a Dell study, 80% of digital jobs in 2030 do not yet exist. And the metaverse is a five to ten year project. I am convinced that we have entered a new major cycle of technological disruption with AI and the metaverse. Tourism, culture, architecture, industry, health, training are being revolutionized. Today, when BMW builds a factory, it first designs it in virtual reality. The metaverse remains our long-term project, and we see around us the construction of a very dynamic ecosystem, particularly in France. The metaverse will only work if it is a global movement of the industry, as we experienced with the internet and then the mobile internet. This movement has started, and it has started quite strongly.

## ###ARTICLE\_START### ID:1855

The catastrophe is here." In a small 181-page book that looks like a raging reactionary manifesto, two CEGEP philosophy professors rail against the increasingly common use of digital technologies in schools. Let's remember that in their own time, many priests were against translating the Bible from Latin into languages that ordinary people could read for themselves... In a very pertinent caricature of Quebec in 1960, Les Cyniques, a group whose caustic humor is surprisingly relevant in 2023 and whose best clips can be listened to or watched completely freely—oh the irony!—on YouTube, were already mocking this kind of position at the time. "Reading is bad: it gives you ideas," they quipped 50 years before the birth of the iPhone. In what also seems like a caricature, despite itself, however, of the eternally scrogneugneu philosophy teacher, Éric Martin and Sébastien Mussi have signed at Écosociété Welcome to the machine. Teaching in the digital age. They talk about the end of teachers, cybernetic opportunism and, in short, the beginning of the end of human intelligence. It's big. We flirt dangerously with conspiracy. Above all, we have the impression of seeing the scenario of a bad movie described to us. Ideology Painted with slightly finer brushstrokes, the criticism would have hit the mark more. The Internet is full of falsehoods. The most recent innovations — ChatGPT and its future rivals by Google, Baidu and others — raise the risks of cheating and plagiarism to a new level. The flood of videos on Instagram and TikTok discourages mental effort lasting more than a few seconds. All of this is verifiable. Worse still: all these applications are owned by a very small number of private companies — and foreign ones — that don't give a damn about their impact on Quebec schools. However, these same applications — or their open source equivalent, which does indeed exist — if used well, can also have a beneficial effect on education and culture. ChatGPT and Wikipedia before it are sites rich in teaching potential. YouTube and Vimeo are used by the largest universities on the planet to broadcast high-level intellectual content. But by trying too hard to consider only one side of the coin, the two CEGEP teachers are turning into a bad joke what should be a constructive awareness of the high risks of digital derailment. A philosophy that only presents one side of things has a name: it's an ideology. What is technology? If we go back to the very essence of the term, everything that is used in school to transmit knowledge is a technology. The book is a technology. Chalk and slate are a technology. They are tools that we learn to master collectively. This also applies to digital technology: the Internet is a huge communication tool. Tablets and personal computers are too. A motorist who goes to have his car serviced at the garage will never hold a screwdriver or a freight elevator responsible for a botched or poorly done repair. Instead, he risks tarnishing the reputation of the mechanic, the garage, or even the manufacturer of his vehicle. The emergence of digital technologies in the education system has been going on for at least 40 years. Pointing the finger at them for all the negative things they bring to education these days is like complaining about a brand new set of screwdrivers, when the problem may be the way the mechanic uses them to do his job. Now, if the Quebec school system, as the authors conclude, is condemned by the very existence of the Internet to be nothing more than a "machine for training 'human capital'" rather than citizens or free thinkers, it is certainly not because it lacks the tools to correct the situation. Probably because its library lacks new books. No doubt because it lacks support adapted to students who are struggling to keep up. But there are schools throughout Quebec at all levels of education that have adopted digital technology in such a way that their students become better people. And that use these new tools to make up for limited access to other means of teaching. The question that is not asked in Welcome to the Machine, and which really hurts, is this: are there mechanics who repair cars without tools? No? And will teachers do their job better with or without tools? As one AI expert recently said about ChatGPT: It's not like we're going to put the toothpaste back in the tube... Now that's a book worth reading.

## ###ARTICLE\_START### ID:1856

IMAGINE a machine that can think and reason like a human being. When faced with a new problem, it would be able to take initiative and propose solutions that it has conceptualized itself, rather than repeating what computer scientists have taught it. It could help humanity solve problems, such as designing revolutionary treatments for rare diseases. The desire to create this “general artificial intelligence”, a dream worthy of science fiction stories, led to the birth in 2015 of the American company OpenAI, the originator of ChatGPT. Behind its cradle are figures from Silicon Valley: Elon Musk and Peter Thiel, who made their fortune at PayPal, Reid Hoffman (LinkedIn), Greg Brockman (Stripe) and Sam Altman, at the head of the prestigious start-up incubator Y Combinator. All of OpenAI’s first shareholders paid a total of $1 billion to launch what was then an altruistic research laboratory. OpenAI wanted to create a general AI that was "safe" - no way that, like the Skynet network in the Terminator saga, it would end up turning against humans - and "for the benefit of all humanity". Its research was to be "open source", that is to say freely accessible to scientists and companies. These ideals quickly evolved in the face of a major obstacle: OpenAI needs a lot of money to finance all the computing power necessary to design and train its automated learning models. "We cannot remain at the forefront of AI research without massively increasing our IT investment", stressed Ilya Sutskever, OpenAI's scientific director. And philanthropy will not be enough to fill its coffers. Race for disruptive innovations After the departure of Elon Musk in 2018, Sam Altman, CEO of OpenAI, therefore changed the statutes of the laboratory. While it remains supervised by a foundation, OpenAI became a "capped" for-profit company in 2019: only a portion of the profits will be returned to shareholders. The company now charges third-party companies for access to its technologies, around which they can create new services. This is a major step that initiated the rapprochement between OpenAI and Microsoft. The IT group then invested $1 billion in the San Francisco company. Its CEO, Satya Nadella, wants to make artificial intelligence and its concrete applications one of the priorities of his group, competing in the cloud with Amazon and in search engines and advertising technologies with Google. The partnership is first and foremost technological: Microsoft has designed supercomputers hosted on its Azure cloud alongside OpenAI. These are the ones on which the company's learning models are trained. OpenAI is behind astonishing advances in "generative artificial intelligence", i.e. capable of creating new content. GPT-3, the language model behind ChatGPT, has had to absorb huge masses of text from the internet, books and scientific publications. Dall-E has ingested millions of images and works of art that now allow it to design high-quality visuals. All you have to do is type a description of the desired image and Dall-E executes in a few seconds... All these AIs require massive computing power that is provided by Microsoft. The American group discreetly invested an additional 2 billion dollars in 2021, before announcing on Monday that it had once again paid "several billion dollars" to OpenAI. According to the American press, Microsoft has committed 10 billion dollars in what could be its winning ticket to lead the race for future disruptive innovations. Panic at Google Already, OpenAI's discoveries are infusing Microsoft products, from assistance in writing computer code (Github Copilot) to assistance in visual creation (Microsoft Designer). Tomorrow, ChatGPT could integrate the Bing search engine to respond naturally to Internet users' questions. Satya Nadella hopes that other concrete applications of OpenAI technologies will be quickly put on the market. Microsoft's activism is worrying at the top at Google, which has sounded the red alert. Director Sundar Pichai has called for help from its founders Larry Page and Sergey Brin, who have not held operational positions since 2019. Many services based on Google's own generative artificial intelligence should be unveiled in the spring. The AI battle is only just beginning.

## ###ARTICLE\_START### ID:1857

Somewhere in space, there is a small technological marvel. It is neither the ISS, nor the James Webb telescope, nor even Starlink. QUBIK is, on the one hand, much more modest. And on the other, much more ambitious: this satellite is based entirely on open source technologies. "We wanted knowledge of space and the use of space to be accessible to all of humanity, and not just to companies or armies, which jealously protect the technologies they develop," explains Manthos Papamatthaiou of the Libre Space Foundation. The philosophy of open source, or "free", is based on the idea that anyone can use, copy, modify software or a patent, because it is freely accessible to the public. At a time when it has become impossible to repair a connected toaster yourself, the operation of which is hidden behind "proprietary" patents, the QUBIK experiment is thought of as proof that technological feats are possible based on a completely different economic model. To understand how this satellite was able to take off, we must come down from the stars, but take a small piece of them with us to name an idea: "cosmolocalism". This banner today unites a network of engineers, sociologists, economists and citizens with diverse skills throughout Europe, who promote these alternative technologies. Forged in 1992 by environmentalist Wolfgang Sachs, a disciple of the philosopher of technology Ivan Illich, cosmolocalism designates a way of connecting local communities by sharing knowledge in open source mode, so that each is able to produce what it needs in situ. This DIY-enhanced Wikipedia is a way of giving material reality to the idea of the digital commons, which aims to revive the commons through new technologies. “OPENSOURCE MARXISM” One of the first places where cosmolocalism landed was the region of Tzoumerka, a mountain range in northern Greece, in Northern Epirus. You have to follow a winding road beaten by rain for half the year to reach the “rural makerspace” of the Tzoumakers collective, planted on the hillside. This small workshop is a former communal hall in which a grinder, press, welding station and 3D printer have been installed. Local farmers meet there several times a month to make or repair tools according to their needs, using plans made available by other communities, or by developing innovations themselves that they share with the rest of the world. "Our mantra is: global design, local production," explains Vasilis Niaros, a researcher in urban transformation at the Universitat Oberta de Catalunya and co-manager of the space. "Thanks to the Tzoumakers collective, we don't start from scratch to make a tool: we use a plan that has been made available on the Internet to the community, but we adapt it according to local needs." Northern Epirus is particularly hilly: the huge harvesters are too clumsy, and local farmers prefer smaller machines capable of maneuvering in cramped and sloping fields. Above all, the latter are much less expensive. The Tzoumakers' latest project is a set of agricultural tools, from seed to harvest shipping, that farmers could manufacture at very low cost: while high-tech agricultural machines sell for several hundred thousand euros, the idea here is to use low-tech, simpler, cheaper techniques that are easier to produce and repair. The philosophy of low-tech is itself inspired by the theses of the book Convivialité (1972), in which Ivan Illich outlined the contours of a "convivial" tool, that is to say one that is directly "at the service of the person [ ] and not of a body of specialists". For the philosopher, this tool "is a generator of efficiency without degrading personal autonomy, it does not give rise to slaves or masters, it broadens the personal scope of action". In this region, one of the poorest in the country, the Tzoumakers hope to remove the economic obstacles that prevent young people from getting into agriculture, and to help newcomers to equip themselves. Installed in a trendy café in the regional capital, Ioannina, it is another Vasilis, Vasilis Kostakis, who explains with a smile: "It is basically an update of Marxism, with an open source sauce: it is about reappropriating the means of production thanks to low-tech." About thirty years ago, the economist was on the school benches with the first Vasilis; Kostakis is today the figurehead of the development of cosmolocalism in Greece, and probably also in Europe: professor at the Polytechnic University of Tallinn (Estonia) and researcher at Harvard (United States), the forty-year-old in a hooded sweater and with a candid smile animates the entire community of researchers in the sector. "FIRST EXAMPLES OF REAL UTOPIAS" He coordinates the P2P Lab, a collective that studies and federates open source technological practices to think of a different technical trajectory than the all-high-tech model, whose social and environmental impact the collective denounces. "If we want to change a system, we must propose alternatives; cosmolocalism proposes them, on the margins of the existing world, explains Vasilis Kostakis. Here we are trying to bring about the first examples of real utopias to say: "We know what we don't want, and we also know what we do want." The researchers' efforts are not limited to tinkering together with spades and plows for the simple pleasure of making low-tech (Vasilis Kostakis, on the other hand, prefers to talk about "mid-tech"). There are many examples of these hybrid creations: beyond the satellite, we can cite the prosthetic hand from Open Bionics, the production of which costs almost ten times less than a standard high-tech prosthesis and can be made using a 3D printer and open-source plans. Vasilis Kostakis begins to dream of a "cosmolocal vaccine" against Covid, which could see the light of day if the patents on vaccines were lifted (this was a pressing request in the early hours of the pandemic) and if makerspaces like those of Tzoumakers were disseminated across the world. For the time being, the seeds of cosmolocalism have been disseminated in Europe. The Greeks of the P2P Lab are, of course, in collaboration with the Farm Hack group in the United States, but they have especially visited the Atelier Paysan movement in France on several occasions, which has developed more than a thousand patents for agricultural machinery, and are in contact with the makerspaces of Barcelona, the "Mecca of low-techs". But it is a more unlikely country that welcomes the cosmolocal diaspora: Estonia, the most northern of the Baltic States. In the small university town of Tartu, two hours from the capital, there is a makerspace animated by the spirit of the P2P Lab. There we meet Madis Vasser, a computer engineer, member of the Greens, who has worked with Vasilis Kostakis, and has great ambition: "I would like to create a kind of amusement park for mid-techs. Because to bring about change, we need places where everyone can test, build, repair, get a helping hand when they don't know how to do it, learn to use the open source resources of the Internet." FASHION FOR GEEKS OR REAL POTENTIAL? From the proliferation of these initiatives to the global diffusion of cosmolocalism, the road is long. But if international success is achieved, it will not be in the form of a multinational, its supporters hope. To the logic of growth ("scaling up") that they denounce, they prefer a model of diffusion ("scaling wide"), better able to adapt to local needs. "Because of its painful Soviet past, Estonia is allergic to the idea of "commons": it is necessary to find a vocabulary that will speak to Estonians. Farm Hack, to respond to the more individualistic logic of the United States, is structured as a "network", and not as a "cooperative", "notes Vasilis Kostakis. In the academic field, which is increasingly interested in the subject, one question particularly fuels the debates: is cosmolocalism a fad for geeks in search of ethics or does it have real transformative potential? The practice is inextricably linked to the use of the Internet, a source of pollution, a space for surveillance, and a financial windfall for the giants of the sector. But Vasilis Kostakis prefers to provide some nuance: "Certainly, the Internet was born from a project supported by the military. But it was then developed by scientists who wanted to share knowledge. Then it was taken over by hackers; then by companies who wanted to profit from it. The Internet is not just one of these things: it is a battlefield, and it is up to us to defend the freedom of knowledge there." The war of the cosmos has been declared. ? For the time being, the seeds of cosmolocalism have been disseminated in Europe. The Greeks of the P2P Lab are, of course, in collaboration with the Farm Hack group in the United States, but they have visited the Atelier paysan movement in France.

## ###ARTICLE\_START### ID:1858

Where does OpenAI come from? Who is behind this artificial intelligence (AI) company that has become famous for its ChatGPT software, which can write texts in response to a query, and for DALL-E, which can create an image from a written description? In recent weeks, Internet users have been rushing to have them produce schoolwork, sketches, imaginary paintings, decoration sketches, etc. Microsoft is reportedly ready to invest 10 billion dollars (9.2 billion euros) in OpenAI, already valued at 29 billion. "It's been twenty years since we saw a structure with young engineers developing a technology that turns out to be revolutionary. The last time, it was probably Sergey Brin and Larry Page, from Google," admires Alexei Grinbaum, physicist, philosopher and member of the national digital ethics committee of the Atomic Energy Commission. The genesis of OpenAI dates back to a dinner in June 2015 at the Rosewood, a hotel popular with the elite of Silicon Valley, the cradle of Californian "tech". That evening, the table hosted Elon Musk, the boss of Tesla and SpaceX. For several months, he has been publicly concerned about the rise of artificial intelligence, which he considered, in one of his tweets, "potentially more dangerous than nuclear bombs". With his former PayPal partner, Peter Thiel, he invested in DeepMind, a gem of the sector, since bought by Google. Among the handful of "AI" researchers invited to the dinner is a young Google star, Ilya Sutskever, who won the ImageNet image recognition challenge, thanks to software imitating the brain's neurons. The interview initiative was taken by Sam Altman. Head of the powerful start-up incubator Y Combinator, he is also a friend of Messrs. Musk and Thiel, with whom he shares a taste for futuristic discussions on extending life, universal income, survivalism or... AI. Greg Brockman has just resigned from his start-up Stripe. "Online payment did not seem like a problem that I wanted to work on for the rest of my life. Artificial intelligence, yes," says the former Harvard student, now president of OpenAI. A "break" These future co-founders are part of the small circle of people who, like the creators of DeepMind or the cosmologist Stephen Hawking, believe that the emergence of a "general artificial intelligence" is possible. “The mood at the dinner was a mixture of hope that we might be able to create machines that could solve problems that humans struggle with—limiting climate change, or even curing all diseases, or providing universal education—and an awareness of the risks,” Brockman says of the meeting, which is recounted in the book Genius Makers (Dutton, 2021) by journalist Cade Metz. “How do we bring this technology to life while ensuring that its benefits are distributed fairly and limiting the dangers?” the OpenAI president sums up. This contradictory question has become the company’s motto. Its messianic and technophile leanings, characteristic of Silicon Valley, are reinforced by the atypical form chosen at the time by OpenAI: a non-profit organization promising to share its research in “open source”, in order to avoid the monopolization of AI by Google, Facebook or “bad actors”. “At the time, talking about general AI was a dirty word”, insists Mr. Brockman. Today, it “seems a little less like pure science fiction”, says with a smile the computer scientist who, at his wedding, had the rings brought by a robotic arm. Today, 300 strong, OpenAI started in early 2016, shortly after the famous dinner, in Mr. Brockman’s apartment, with a dozen engineers, including five poached from Google. Quickly moved to a building in San Francisco—a timeshare with Neuralink, Elon Musk’s brain-machine interface project—the team is working on systems to train AIs, on a program to pilot a robot hand capable of completing a Rubik’s Cube… Its founders, including Peter Thiel, and funds have promised to invest a billion dollars. But some of the work seems unclear: researchers wonder whether it is possible to instill “human values” in an AI. OpenAI’s image is changing in 2019. Elon Musk left in 2018, following a “conflict of interest” linked to the recruitment of OpenAI engineers by Tesla, but he remains “on good terms,” says Mr. Brockman. CEO Sam Altman then decided to create a for-profit subsidiary, accept a billion dollars from Microsoft and question his open-source publishing policy for his GPT-2 language processing model. Some see it as a betrayal of its “idealism,” says Mark Nitzberg of the Center for Human Compatible AI, a lab at the University of California, Berkeley, in San Francisco: “These announcements confirmed suspicions that a charity could not create such a valuable technology.” Mr. Brockman says he changed his approach because of the risks of GPT-2 being misused to generate “disinformation.” “We also understood that we were going to have to spend billions on supercomputers to train our software.” Aided by the power of a proprietary Microsoft supercomputer, OpenAI created a “disruption” in 2020 with the launch of GPT-3, says Laurent Daudet of LightOn, a French startup developing such language processing models. With 175 billion parameters, GPT-3 is unprecedented in its size and reveals "unexpected properties": these large models can calculate, write computer code, translate, answer questions, etc. In the process, Microsoft integrated GPT-3, ChatGPT (which is derived from it), then DALL-E, into its "cloud" services for businesses. Since then, the group has even sought to improve its Word, PowerPoint, Outlook or Teams software, or even its Bing search engine, in order to challenge Google. To do this, Microsoft would be willing to invest 10 billion dollars in OpenAI: in exchange, it would receive 75% of future profits, until its investment is recovered, then 49%, up to a "ceiling" of less than 100 times its initial stake, according to Fortune. Without confirming, Mr. Brockman assures that the non-profit structure will remain independent and will always "control" its subsidiary. Within its board of directors, members interested in profits will remain "minorities". To generate revenue, OpenAI sells licenses to companies for its software, billed at a few fractions of a cent per request. On the language learning platform Duolingo, GPT-3 is used to "correct the grammar of short essays" or to "create test texts." But the road could be long: OpenAI is only forecasting a billion dollars in revenue in 2024, according to Reuters. In addition to this radical shift towards business, OpenAI is also criticized for the potential dangers of its programs. For some, the start-up stands out less for its superior technology than for its choice to make its tools accessible to the general public. Google, which invented Transformers in 2017, the technique on which language models like GPT-3 are based, has equivalents of DALL-E and ChatGPT, but restricts access to them, for fear of a "reputational risk." Indeed, these programs make factual errors and reproduce racist or sexist stereotypes contained in their training data, taken from the Web. OpenAI claims to warn users. Quest for accountability To filter inappropriate responses, the organization has also created systems trained in particular by employees of a service provider based in Kenya and India, Time magazine revealed. OpenAI deletes the accounts of abusive users and is studying ways to identify texts produced by an AI, for example using a watermark encoded in the location of certain letters in the text. A symbol of its evolution, in 2021 OpenAI hired Anna Makanju, a public affairs manager who has worked at Facebook and SpaceX, but also the Obama administration and the International Criminal Court. In early January, she met with the French Minister Delegate for the Digital Transition, Jean-Noël Barrot, in San Francisco. “We talked about regulation,” he says. And noted that OpenAI was welcoming the European regulation on AI under discussion in Brussels. "Behind this battle, another one is already looming: authors of the texts and images used to train AI are demanding royalties... Now in the spotlight, OpenAI seems to be seeking accountability. But its discourse on "general" AI remains controversial. This "revolution comparable to the agricultural, industrial and digital revolutions" will perhaps be a "gradual transition", Mr. Altman qualifies on TechCrunch, but it could occur "in the next decade", he tweeted in December 2022. Some skeptics point out that AI has experienced several booms, followed by "winters". Software like ChatGPT still cannot reason. "These are still very muscular statistical models," relativizes Julien Chaumond, of Hugging Face, a platform for publishing AI models. Superhuman general AI is almost philosophical. No one really serious believes in it for ten years. And it's a way of ignoring the real ethical issues related to the current deployment of AI, such as bias or the non-transparency of algorithms." OpenAI is already preparing GPT-4 and a version of DALL-E capable of producing videos. Several start-ups have launched similar models: Anthropic, founded by former OpenAI employees, Midjourney and Stability, an open-source project supported by Amazon, according to the Financial Times. This competition is "desirable," says Mr. Brockman. But if we add Meta (Facebook), an "arms race" is underway, observes financial analyst Dan Ives of Wedbush Securities. For Mr. Chaumond, the question of "concentration" of AI is raised. And even of "European sovereignty," believes Mr. Daudet of LightOn. We note a game of posturing to appear both cutting-edge and ethically reasonable. “We have to be careful,” warns DeepMind founder Demis Hassabis in Time, while announcing a competitor to ChatGPT and reaffirming his faith in “general” AI, a technology that “can define an era,” like electricity. “AI is much more complex than a purely technological problem. We have realized that we have to integrate the societal dimension,” philosophizes Mr. Brockman on behalf of OpenAI. And so it is.

## ###ARTICLE\_START### ID:1859

Rather than a seven-hour leg of lamb, eggs cocotte in the microwave… The energy crisis is reflected in the current culinary fads on the Internet. “Delicious recipes without cooking”, “Cooking with almost no gas or electricity”, “Recipes that require little or no electricity”… Cooking sites these days prefer lukewarm to boiling, just seared and even raw to dishes in sauce. They pack all the ingredients into a large saucepan, in the same batch. And rediscover the virtues of thermal inertia. The magic of passive cooking. Thanks to the stored heat, the pasta can finish cooking with the hob or the heat off, even an Italian Nobel Prize winner in physics suggested it – Giorgio Parisi, in September 2022, on Facebook – and Barilla confirmed it on its packages: two minutes in boiling water then twelve minutes of waiting off the heat, under cover, for the farfalle… In this game of the leanest frichti in energy, the initiates of the Norwegian pot triumph. Their ranks are swelling if we are to believe the growing offer and audience of blogs, Facebook groups, recipes and other tutorials devoted to the subject: 74,000 views on YouTube for “Make a high-performance Norwegian pot in a drawer”, 14,000 for “Cooking beef bourguignon in a survival blanket”… Norwegian pot? A story of passive cooking, again, rather than a miraculous pot invented in Scandinavia. The said pot consists of a very insulated airtight receptacle which, once boiling, holds the very hot casserole: cooking continues there without the addition of electricity or gas, for several hours. A technique readily described as ancestral, for want of being able to date it, used by the Hebrews to eat hot food during the Sabbath, by all the peasants of the world having enough hay to bury a pot, presented by the Norwegians at the 1867 Universal Exhibition in Paris (hence its name), exhumed during the two world wars, then repressed like a bad memory as soon as energy abundance returned. Until an unhappy combination of factors transforms the insulated box into the star of low-tech version 2023. The increase in energy costs, fears of power cuts, the erosion of purchasing power, and incidentally the necessary reduction in carbon emissions, are reviving stewed cooking and saving. Instead of cooking for an hour and thirty minutes, chickpeas, for example, are taken off the heat after thirty minutes for a soft three-hour stay in a Norwegian pot. A commercial offer is emerging, of course – a “culinary incubator made of sheep’s wool”, starting at 148 euros; a “Cooking Bag” from the Solar Brother brand for 99.90 euros, out of stock… But the Western version of the Thermal Cooker popular in Asia is most often cobbled together by picking from the cellar’s junk – old anoraks or duvets, wool or survival blankets, cork boards, wooden or polystyrene crates, soft or hard coolers… On Facebook, a variety of receptacles are displayed, the only common points of which are the insulating properties and the pride of their designers. Their amazement, too, at the first use. “The dish is still boiling after two hours, you need oven mitts,” says Alexandrine Maes, 53, a logistics employee who converted to the Norwegian pot more than ten years ago. “But, since we risk power cuts, people listen… Especially since it takes away a mental load. We no longer watch the cooking, no risk of it boiling over or burning. » Sandra Morin, a teacher in Vienne, uses it "for anything that cooks in juice, like cassoulet or beef bourguignon". "We only leave it on the heat for a third of the time planned for cooking. When you have two children, it's great. We arrive at noon, everything is already ready! And in the summer, in the middle of a heatwave, it's much less hot in the kitchen", boasts the forty-year-old. "Honestly, when you cook your vegetables without energy, the first time, it's incredible, remembers Valentin Castelli-Kerec, 39, an innovation consultant. You wonder why everyone doesn't do it! It just requires a little organizational effort, planning the meal three or four hours in advance." Depending on the clouds, this resident of the outskirts of Nantes alternates between a Norwegian pot and a solar oven. "Low-tech, I am 100% sure that it will be our daily life, so I prefer to anticipate, I will be ready when we only have a carbon credit of 2 tons per person, in 2050." Resisting the sirens of the Thermomix to cook with the Norwegian pot? "It's putting a first foot" in the low-tech dish, confirms Pierre-Alain Lévêque, 32-year-old engineer and president of the Low-tech Lab association: "The pot is very simple, inexpensive, can be made by anyone, can be used in both rural and urban contexts. We easily understand how it works and its interest." It satisfies the usefulness-durability-accessibility triptych that defines these low-tech objects and techniques that meet basic needs, use as few resources and energy as possible, and are easy to manufacture and repair. Authors of the book Objets low-tech du quotidien (Ulmer, 2022), founders of the association Chemins de faire, Alizée Perrin and Yoann Vandendriessche, in their early thirties, traveled across France for four years at the wheel of a fire truck converted into a workshop, before settling in Ariège. With them, the public learns about the Norwegian pot, discovers the desert fridge (which reproduces the freshness of a cellar thanks to two terracotta pots separated by wet sand), the seed germinator, bokashi (Japanese kitchen compost), the pedal blender. And even the virtues of grandmother's pantry. "The kitchen is interesting, in our Western societies, because it is one of the last places of manufacturing, of experimentation, notes Yoann Vandendriessche, an industrial designer by training. This shows that low-tech is within everyone's reach, without having to have a huge space or replace existing devices, but as a complement, to move towards a more sober lifestyle, regain autonomy, review our relationship with time. Without lowering the comfort slider. "Using a Norwegian pot, "is the way to save money without deprivation", an "illustration of the inventiveness to which we should all be called", "an eminent source of joy", argued on October 29, 2022, in a column in Le Monde, a collective with the support of former Planning Commissioner Jean-Baptiste de Foucauld. At the beginning of summer 2022, the Low-tech Lab festival attracted 15,000 visitors to Concarneau (Finistère) over nine days, all of which opened with low-tech cooking demonstrations, featuring a solar oven. Through gourmet (and low-energy) conviviality: this is how low-tech is infused, a concept born in the Anglo-Saxon world of the 1970s, long associated in France with eco-friendly engineers tinkering with ugly objects. But from his observation post at the Low-tech Lab, created at the end of 2013, Pierre-Alain Lévêque sees "the interest of the general public growing, really!". This is evidenced by the success of the tutorials put online (in open source) by the association. And the emergence of communities of enthusiasts in many cities. "In this phase of anxiety," he continues, "low-tech allows us to roll up our sleeves to take action. To forge an imaginary future." On YouTube, nearly 300,000 views were garnered in two weeks by the video "They create everyday objects that work without electricity" from the online media Brut, dedicated to Alizée Perrin and Yoann Vandendriessche. After having been "taken for raving lunatics" when they started ten years ago, they are "amazed to almost pass for saviors today", with their carefully designed objects "that can be aimed at city dwellers". Local authorities, businesses, schools, they are solicited from all sides. This is also the daily life of Paul Mouraz, in Saint-Nazaire, this young engineer and founder of L'Avant d'après, a company that designs low-tech solutions adapted to businesses - solar dehydrators, for example. Recently, the Brittany region has integrated low-tech into its innovation support strategy: it trains and experiments left, right and centre. The City of Bordeaux is studying street air conditioning made of porous clay drains, with the local Low-tech Lab. The one in Paris, like the department of Seine-Saint-Denis and the State, subsidizes the Skakti21 association which lends Norwegian pots to people staying in social hotels, so that they can start cooking real meals again. And the Agency for Ecological Transition (Ademe) promotes this "new way of innovating", now fully integrated into prospective scenarios aiming for carbon neutrality in 2050. The "eXtrême Défi" has even been launched, a call for projects for a low-tech car, an intermediate vehicle between an automobile and a bicycle. Just a little more robust than cooking chickpeas off the heat.

## ###ARTICLE\_START### ID:1860

New Delhi - Correspondence - Satya Prakash Mishra's shop, open on the side of a busy road in southern New Delhi, sees customers pass by. Here, you buy single cigarettes, matches or mints. You rarely spend more than a hundred rupees, or barely more than a euro. In the middle of this afternoon in November 2022, a bank employee on break treats himself to a cigarette for 10 rupees. He will not take out any coins or notes from his pocket, just his smartphone to scan the QR code displayed at the counter and choose the amount of the transaction. Instantly, the equivalent of 12 euro cents arrives in Satya Prakash Mishra's account. Three years ago, this 27-year-old tobacconist swore only by hard cash. Today, it is among the 50 million Indian merchants that use the Unified Payments Interface (UPI). Launched in 2016, UPI is India's real-time payment system that allows money to be transferred directly from one bank account to another: from a customer to a business, or between individuals. UPI now has 260 million users in this country of 1.4 billion inhabitants. Designed as a "digital public infrastructure" under the authority of the National Payments Corporation of India (NPCI), UPI integrates more than 300 banks to which have been added more than sixty mobile applications such as Google Pay, Amazon Pay, but also the very popular Indian Paytm and PhonePe. “The government and the public sector built the foundation of the instant payment system, in open source, on which the private sector was able to innovate and compete in the market,” says Amitabh Kant, former chairman of Niti Aayog, the government’s premier think tank, and now India’s representative to the G20, which takes over the rotating presidency of the intergovernmental forum on December 1, 2022. Demonetization policy Google had already praised this “Indian model” in 2019. At the time, the American tech giant had recommended to the Fed, the American central bank, which was working on its own instant payment system, to take inspiration from the UPI interface. “We have been pretty clear that we believe the right model to drive digital payments is through a partnership between banks, governments and tech companies through open, standards-based infrastructure like UPI,” said Caesar Sengupta, Google’s vice president of payments and the Next Billion Users initiative. While cash remains king in India, the country has made a giant leap in digitizing its economy. In six years, UPI has become the preferred digital payment method for Indians, surpassing debit and credit cards. In the second quarter of 2022, 17.4 billion transactions were made using UPI, an increase of 118% in volume over the same period last year, according to a report by Worldline, a French multinational specializing in online payments. In 2021, UPI recorded around 39 billion transactions, worth $940 billion (€881 billion), or around 31% of India's gross domestic product. From coconut sellers to rickshaw drivers to the capital's largest luxury hotel, India has adopted new mobile payment methods at a surprising speed. First, due to the demonetization policy, imposed overnight in 2016. The main banknotes had been withdrawn from circulation to combat money laundering. The decision, which had catastrophic effects on the economy, nevertheless contributed to the adoption of digital payment methods. Then the Covid-19 pandemic accelerated the movement. "I switched to UPI during the first lockdown, which began in March 2020," explains Satya Prakash Mishra. "I was losing customers because, to limit contact, they no longer wanted to use cash. So I asked other merchants in the neighborhood to explain it to me, and it's very simple." One of the great advantages of UPI is that the system is intended to be free of charge for the customer, but also for the merchant. "It's faster than paying by card, and now we're going to export it," proudly says Harsh Rai, who runs a dry cleaners in a neighboring neighborhood. India is indeed looking to develop its payment methods abroad. In 2020, NPCI set up a subsidiary dedicated to the deployment, outside the borders of the subcontinent, of UPI but also of RuPay, its domestic bank card network, similar to the Chinese UnionPay or the Russian Mir. In recent months, India has multiplied agreements with foreign partners. Around thirty countries have already expressed their interest in UPI. Money to repatriate The latest partnership was signed on October 11, 2022 with Worldline. The goal is to facilitate the acceptance of UPI and RuPay in Europe. Target markets include Belgium, the Netherlands, and Switzerland. Similar collaborations have been set up in the United Kingdom, the United Arab Emirates, and France with the Lyra payment network. “It’s primarily so that Indian tourists can pay in France. UPI is a more efficient instant transfer system than ours,” explains Christophe Mariette, sales director of the Lyra group and president of Lyra India. UPI payment is not expected to be available in France before the first quarter of 2023. For India, the development of its instant payment system abroad should also streamline the sending of money by migrant workers. No other country in the world receives as much remittance from abroad from its expatriate workers. According to the World Bank, the country is expected to have received more than $100 billion in remittances in 2022, an unprecedented amount for a single country. “Exporting UPI will enable a growing number of Indians traveling abroad to pay easily and will facilitate remittances for 32 million Indians living abroad, including 8 million in the Gulf,” said Jawed Ashraf, Indian Ambassador to France. They will now be able to send money at any time, 365 days a year, instead of going to a bank and losing a day.” India also aims to export its entire digital architecture, called the “India Stack.” This includes the UPI mobile payment system, but also a digital identification of residents, known as “Aadhaar” (“foundation” in Hindi). “Indian [digital] public goods are available to any country that needs them,” recalled Indian Finance Minister Nirmala Sitharaman in early October 2022, during a conference in the United States. There was a time when global benchmarks, global standards were what India looked up to and had to catch up with. But on digital, whether it is payments, identity, healthcare, education, and also in taking care of compliance requirements, India has actually set the standards.” New Delhi is keen to use the G20 presidency as a platform to promote its digital payments infrastructure, with a focus on developing countries. “This is an area where emerging markets like India have created a completely new and unique model,” says Amitabh Kant, noting that over 130 countries that do not have access to instant payment systems could take a leaf out of India’s book. “But if we are going to make this a global tool, we have to make sure that the platform is secure,” says Pushpa Marwal, a financial services analyst at Forrester. The Indian government has relied heavily on this architecture for direct transfers for its social programs. But the system has raised serious concerns about data protection and surveillance. It has also been heavily criticized by development economists, after many beneficiaries were excluded due to identification issues. Outside the subcontinent, Nepal will be the first country to leverage Indian infrastructure to develop its own instant payment system (the partnership was signed in February 2022). This collaboration will open the door to instant money transfers between the countries. Another partnership, between India and Singapore, is also expected to offer this possibility. The central banks of India and Singapore have announced plans to link Singapore’s mobile payment solution PayNow with UPI. Here too, users should eventually be able to make instant money transfers directly from one bank account to another between Singapore and India. "By multiplying international partnerships, UPI could become an alternative to the [interbank] Swift network, which holds the monopoly on [global] banking communication means," says Mr. Marwal. In the midst of a war between Russia and Ukraine, some see the promotion of Indian financial architecture as more than a desire for soft power. Fear of "hostage-taking" Would India, which claims its neutrality in the conflict, be able to offer an alternative to Swift for carrying out transactions between countries? In 2018, Prime Minister Narendra Modi already put forward the idea of using international payment networks as instruments of state. He had judged that the fees collected by foreign companies did not stay in India, and that, if "not everyone can go to the border to protect the country, we can use RuPay to serve the nation." “The geopolitical aspect was not initially on the minds of the Indian leadership, but with the Russia-Ukraine conflict, the concern that financial institutions are being held hostage is real,” says Trisha Ray of the Observer Research Foundation, an Indian think tank. Many African countries have expressed similar concerns about the neutrality of financial institutions.” The government, however, denies that it wants to compete with existing systems. “We are not looking to develop an alternative to the banking communication network, but we also do not want Swift to be constantly used as a tool to block access to international trade for certain countries,” says Jawed Ashraf. The goal with UPI is to democratize and universalize access to digital payments, especially for marginalized sections of society. Several Western countries and development agencies have expressed interest in this solution, particularly for countries on the African continent. "At the tobacconist's counter in the south of the capital, UPI, as a means of payment in an economy addicted to cash, is already a small revolution. FULL FRAME

## ###ARTICLE\_START### ID:1861

The past year has not been easy in the world of social media. A hotheaded billionaire bought Twitter in favor of a controversial redefinition of freedom of expression, users abandoned Meta for the first time in its history, while TikTok continued its unbridled growth… We are only just beginning to measure the consequences of these events, which will certainly have repercussions in 2023. Le Devoir therefore offers you an overview of the trends to watch this year, in particular platforms like Mastodon that are increasingly establishing themselves as alternatives to Twitter, concerns about the politicization of certain social networks and the (still) growing political pressure on the Chinese giant TikTok. Exodus from Twitter, really? Since Elon Musk bought Twitter, public figures worried about the future of the platform — Whoopi Goldberg, Jim Carrey and Elton John to name a few — have simply left it. The same story is heard among some journalists, politicians and academics who used the social network for professional purposes. "If Twitter had been bought by Facebook or Google, we would have a certain amount of distrust, but we would know what to expect," says Nadia Seraiocco, a doctoral student and lecturer at UQAM who specializes in social networks. "But the platform was bought by an eccentric billionaire who has an idea about freedom of expression that doesn't suit everyone, especially journalists." Remember that Elon Musk recently suspended journalists' accounts — before reinstating them following a survey sent to his subscribers — and that he banned all of his users from sharing links to competing sites. The exodus from the platform that many anticipated did not happen, however. The controversial owner tweeted in November that Twitter usage had reached "historic heights" since its acquisition. The Verge and the Financial Times later confirmed that the number of “daily monetizable users” has grown by more than 20%, to more than 250 million in total. Mastodon, free and decentralized Despite this upward trend — it is not yet clear whether it will last — more and more professionals and users identifying with digital subcultures are turning to Mastodon and other similar free and decentralized networks, seen as alternatives to Twitter, due to the concerns mentioned above. “There is a resurgence of interest in Mastodon,” says Seraiocco. “It is a social network similar to Twitter, but it is more of a federated community that can grow to hundreds of thousands of members.” The German platform jumped by more than a million users in November, surpassing two million active users in early December, before falling back to around 1.8 million in the first week of January. Hive Social, Cohost and CounterSocial have also seen increases in their user numbers. “Mastodon is not going to turn into what you hate about Twitter, which is that it could be sold to a controversial billionaire, it could be shut down, it could go bankrupt, etc.,” Eugen Rochko, the platform’s founder, told the Financial Times in late December. “That’s the paradigm difference [between the two platforms].” Digital literacy and politicization Seraiocco says that “digital literacy” is expected to continue to grow in 2023, and that this phenomenon could contribute to the expansion of the Mastodons of this world. “These networks are often open networks, so-called open source. They have always been traditionally difficult to access, difficult to understand. Today, it seems that we can use more effective applications with the help of more and more people.” A greater understanding of how social media algorithms work could also lead to greater dissatisfaction with traditional platforms like Facebook and Twitter in 2023 because of the growing space they give to misleading political content, according to Ms. Seraiocco. “There is an awareness today that the big social networks are business companies,” she says. These companies do not have to follow the same ethical lines as traditional media. […] They can even decide to lean in favor of the right or the left by highlighting certain content more than others. It is often the right, because we see greater emotion in relation to messages from the right, which crystallizes more engagement. So we realize that, if we want to be properly informed, we may have to find other ways.” TikTok at a crossroads? Ms. Seraiocco also notes that this awareness should go hand in hand with growing political pressure on TikTok, which has been accused of being a spying tool by the American political class. “Our governments will likely face significant lobbying efforts from Facebook and Google to hold TikTok accountable, given that these American giants have to distribute billions to media outlets and moderate their content more,” she adds. “For now, TikTok does what it wants.” In a press scrum before the holidays, Justin Trudeau had declared that “people are very concerned about Tik-Tok” and that Canadian intelligence services would monitor potential security threats. LE DEVOIR

## ###ARTICLE\_START### ID:1862

TECH A tool for generating professional-quality illustration images from a simple text description. Software capable of conducting a realistic conversation, writing a biography, writing lines of computer code, answering a university exam or composing the lyrics of a song in any language. The opening to all of the artificial intelligence tools Dall-E (image) and ChatGPT (text) will have been one of the major events in tech in 2022. These two platforms, technically impressive, will have put the words "generative artificial intelligence" on the lips. These are algorithms capable of creating new content, textual or visual, after having ingested and digested immense masses of already existing content. ChatGPT "knows" how to adopt the right language register to write an administrative letter. Dall-E "knows" how to represent a car and the Art Deco style. This tool has already been used by 3 million people and generates 4 million images per day, while ChatGPT has fueled much speculation about the threat it would pose to certain professions, or about the difficulties that await teachers in spotting exam papers written by this artificial intelligence... These two generative AIs were created by the American company OpenAI. The latter was founded in 2015 with an altruistic goal: to help develop an artificial intelligence capable of reproducing the functioning of the human brain and which would benefit humanity. The company was initially funded to the tune of $1 billion by Elon Musk (who has since distanced himself from it), LinkedIn co-founder Reid Hoffman, entrepreneur Peter Thiel and the president of the prestigious start-up incubator Y Combinator, Sam Altman. These discoveries were originally intended to be open source, that is to say freely accessible to other companies. These ideals have evolved over time. A non-profit organization, OpenAI changed its status in 2019 to become a capped-profit company. This means that only a portion of its profits can be returned to investors, who will not be able to recover more than a hundred times their initial investment. OpenAI justified this change by the need to attract capital in order to continue its research. This is how Microsoft entered the company's capital with an investment of 1 billion dollars. Microsoft as an OpenAI partner now uses the Azure cloud to host its services, which are very demanding in terms of computing power. In exchange, Microsoft has priority to incorporate technologies from OpenAI into its own products. This is how the Bing search engine and Microsoft Designer software now integrate the Dall-E image generation tool. "We are going to see progress in artificial intelligence in 2023 that we didn't think we would see before 2033. This is going to be extremely important for the future of Microsoft, but also for everyone's future," says its president, Brad Smith. According to the Wall Street Journal, Microsoft could soon be making a comeback. OpenAI is currently valued at $20 billion. According to Reuters, the company has told potential investors that it is targeting $200 million in revenue in 2023, and $1 billion in 2024. Because while its technologies can be reused by other developers, it is not free. It is thus possible to integrate Dall-E into any service, but the generation of a high-definition image is billed to the company at 2 cents per unit. 20,000 words written by ChatGPT cost one cent. This text technology is used by the start-up Jasper, which publishes a tool to help write marketing content for social networks, company blogs, promotional emails, etc. Jasper, which has 80,000 customers, is expected to generate $80 million in revenue in 2022. It raised $125 million in October. Other companies working on generative AI are attracting capital. Stability AI has raised $101 million for its Stable Diffusion tool, which creates images from text. This platform is itself used by the Lensa application, which caused a sensation at the end of the year with its automated generation of more beautiful than life selfies, sold for $6 for fifty photos... An entire ecosystem of services is thus being set up. "There are many entrepreneurs who are creating start-ups based on these technologies," an analyst from the Unusual Ventures fund points out to the media Pitchbook. Around fifty seed rounds have already taken place in the United States since this fall. After the metaverse or Web3, will artificial generative intelligence be the magic word of 2023 to attract funding? Investors could keep their checkbooks in their pockets until the legal risks have been clarified. Because these technologies open up a whole new field of intellectual property law: to learn to write and draw, these AIs had to train on the work of artists and authors. Do we have the right to market these synthetic creations? Can artists refuse to feed the cogs of these AIs? The debates are still far from over. $20 billion is the current valuation of OpenAI

## ###ARTICLE\_START### ID:1863

They take a lot of pride in it and a little bit of guilt: Data démocratie I by Lionel Dos Santos de Sousa, Florian Freyssenet and Thomas Jamet (published by Diateino) is said to be the first French book with a cover image created by Dall-E 2, the artificial intelligence (AI) image generator that has been all the rage since this summer. The authors only had to write a few words in this program - in this case a "crowd of people walking on a giant smartphone" - to see, after a few tries, an image that perfectly reflects their words. Thanks to training ("deep learning") on hundreds of millions of images, the Dall-E 2 program creates new visuals from words typed in a browser - this is what is called a "text-to-image" program. "Our book talks about the need to align interests between the State, technologies and citizens. Something was happening with the arrival of the Dall-E 2 images, we seized the opportunity, explains Lionel Dos Santos de Souza. The visual produced by the AI was put in competition with that of an illustrator, there was even talk of making two covers, one made by an illustrator and the other with the AI, then we opted for the image made by the machine because it was the best. AI makes it possible to shorten production circuits. We have become a bit of the evil that we denounce in this book" Thus, humanity is not far from a paradox. And Data démocratie is not an isolated case. Michel Lafon editions have also used Midjourney - another AI that converts text into images. "I think that many French and international publishers have already used AI. The difference is that we display it on the cover," its director, Elsa Lafon, told Livres Hebdo. "ANY NEW TECHNIQUE CREATES CONFLICTS" This summer, a small art competition - the Colorado State Fair - rewarded an image created by AI. At the same time, the press also began to publish such visuals. In June, The Economist magazine appeared with a cover created using Midjourney. Cosmopolitan followed with an image of a female cosmonaut created with Dall-E 2 and, in early December, Libération published on its cover dedicated to the AI ChatGPT, a formidable virtual interlocutor, an illustration generated with this same tool. At the end of October, algorithms illustrated 95% of a special issue of the Swiss magazine Le Temps. Commissioned to write the sentences that serve as their instructions (or prompts or scripts), photographer Mathieu Bernard-Reymond demonstrates that these revolutionary "image boxes" obediently, quickly and brilliantly execute a whole type of visuals, from drawing, from the imitation of sports "reportage" to still life and conceptual image. An earthquake in creation! Trained on images of well-known authors (photographs, paintings, drawings captured on the Internet), these programs perfectly imitate the style of Van Gogh, Salvador Dalí - who inspired the name Dall-E, a meeting of the painter's surname and the little Pixar robot, Wall-E - but also contemporary illustrators, Mike Mignola, Greg Rutkowski, Craig Mullins or even, in a photorealist style, the style of famous photographers like Annie Leibovitz. Data thus becomes forms: fun, spectacular and addictive! It only took one man - Mathieu Bernard-Reymond - and four robots (Dall-E 2, Midjourney, Stable Diffusion - open source - and Disco Diffusion, more experimental) to illustrate an entire magazine: "Everything accelerated this summer," the photographer agrees. These programs are disruptive. They will necessarily have an impact on visual communication, photography, illustration, design, styling. Any new technique creates conflicts. My students ask me: "What are we for?" So, will AI kill image creators? Will illustrators, photographers, art directors, stylists, retouchers and concept artists (creators of visual universes for video games and cartoons) be replaced by these magic boxes? If there is one field that was thought to be beyond the reach of automation, it is visual creation. But the spectacular leap in these programs thanks to artificial intelligence shows that no sector of the economy is safe. Weren't portrait painters forced to retrain when photography arrived in the 19th century? On Facebook, Instagram and professional portfolio sites, a tidal wave of images generated by AI is surging. Which naturally worries an entire sector, caught between excitement and shock. On November 28, a meeting brought together authors, illustrators, AI researchers and lawyers at ADAGP (the leading authors' society in the visual arts) under the title "Comics, illustration, AI - is it right to be afraid?" There is indeed reason to be: because it is becoming increasingly difficult to tell the difference between an image made by a machine and that of a human. Even professionals are mistaken. Among the speakers at ADAGP, the director of the League of Professional Authors, Stéphanie Le Cam, is sounding the alarm. "Anyone can improvise as an illustrator thanks to AI. A whole section of the visual industry - in the professional press, event communication, publishing - is concerned by the arrival of these programs, she specifies, reached by telephone. For example, for a symposium at the Senate on "Intellectual property and pop culture", we deliberately used an image generated by AI. There will necessarily be a loss of work for graphic artists who do institutional work to survive. This will mainly affect small structures whose first cost-cutting measures focus on communication." TENSE COMPETITION TO CAPTURE WORKS The lawyer recalls the fragility of the author's status, the difficulties in getting paid or contributing to retirement, already highlighted by the Racine report. "AI will also play a role in prices, with a negative leverage effect to negotiate lower rates from sponsors. Authors will have more and more difficulty justifying their quotes, she continues. We are looking for professional ethics." In the chaos caused by robots, artists, dispersed, are thus at the heart of a battlefield. And their creations, a gold mine, are a real stake in the fierce competition between AI companies (OpenAI, Stability.ai) to capture their works and break into the consumer market. Dall-E 2 would exceed 1.5 million users. In fact, the current use of images generated by AI mainly concerns the creation of mood boards (assembly of visuals for a project), storyboard tests by non-professionals, models or choices of textures in composite images. "Dall-E has produced magnificent images that illustrate the file of our series project," reports Malou Briand, a scriptwriter who subscribed to one of the image generators. The AI has dressed our heroine in a sequined dress. This has given us lots of ideas and it sets up a universe. It creates images that do not exist whereas until now mood boards were made up of photos or screenshots of films found on the Internet." A loss of income for illustrators and photographers? "These programs are in fact used a lot by people who do not draw. And as long as people have crappy tastes, we have nothing to fear," jokes illustrator Aseyn who regularly works for Libération. The comic strip author recognizes, however, that these new programs create a "shock" and put authors in danger. "If my clients prefer to save 500 euros and generate an image with a prompt, I will do another job. I have wanted to be an illustrator since I was 8 years old, drawing, for me, is about the intimate, about self-fulfillment. AI synthesizes images taken from sites like ArtStation or Deviant-Art. They do not create anything new." Users also criticize their biases, stereotypes and imperfections (notably a difficulty in drawing fingers). But here is the main criticism leveled at AI: they use - and have used - without authorization images of artists found on the Internet to train their programs, as if they were invited to a gigantic open bar where copyright laws would have no place. Notably via the world's largest database, LAION-5B, a large opaque box containing 5.85 billion images (with visuals that allegedly come from, among others, ArtStation, DeviantArt, Getty Images, Shutterstock, Google Images, Pinterest, Flickr, Twitter, although the platforms deny providing artists' images to AI). In September, Berliners Holly Herndon and Mat Dryhurst created Spawning, an organization of artists and developers who campaign for creators to agree to any artificial intelligence model. Together, they created the tool "Have I been trained" that allows artists to know if their works are in LAION 5-B. Thanks to this tool, everyone can choose whether or not to appear in the databases. "Optimization logic pushed to the limit" But how can we be sure that it is reliable, when images are multiplying on the Web? Paul Chadeisson, an independent concept artist and creator of impressive futuristic spaceships, found his creations there. However, the opt-out - having the choice to remove your works - is extremely complicated: "I came across multiple copies of my images. My creations were clearly used to train these machines. I could make a list to have them removed, but hey, they are everywhere. AI technology needs images to produce images. They are master copycats who hide their sources. There is no ethics. The creators of this software have developed a kind of sandbox in which everyone is currently playing and it is up to us to sort it out!" The Polish Greg Rutkowski, a virtuoso of fantasy drawings, and whose name is massively used in prompts, told Forbes magazine that there are currently more AI-generated images copying his style on the Internet than his own works. Art director in animation and video games, Florent Auguy confirms "the strange climate" created by the democratization of this software. "The promise of being able to do without artists is a godsend, it's the logic of optimization pushed to the limit. Personally, I've done a lot of tests and I can't make AI-generated images that feed on the talent of others my own. When I type a text, any notion of the pleasure of drawing has disappeared." Exasperated, the community of illustrators is wondering: how did these great image shakers, at the origin of research projects, become commercial companies? How can they have the right to monetize by-products to the general public after having plundered the talent of the authors? And the atmosphere turns to paranoia: "To think that we should pay for a tool that enriches itself with our own creations! furiously exclaims illustrator Claire Wendling. If we're just good at filling machines, nothing's going well. Before, copying from your neighbor was forbidden, and I don't like the little rhetoric that says that the machine takes inspiration, just like a human would. These software programs directly absorb the authors' images and mix them. What I see is that no one posts their images anymore. Everyone is afraid that they will be taken. However, sharing our news on the networks allows us to exist" So, how can we mobilize against this siphoning? Since mid-December, illustrators, normally not very unionized and scattered, have been posting on Facebook, Instagram and ArtStation, a logo (NoAI), hashtags #SupportHumanArtists, #CreateDont-Scrape) and a slogan ("AI art is theft, no content without consent"). They are calling on ArtStation to ban AI-generated images and take steps to stop portfolio plundering (the company responded that it would continue to allow AI-generated drawings to be published and would develop a standard for artists to opt in or out of having their work used as training data). In November, DeviantArt, a huge platform and community of visual artists, made a similar commitment. Thus, the voracity of the programs is pushing agencies, professionals, and artists to position themselves. A David versus Goliath battle At the end of September, Getty, the largest American image bank, informed its contributors (illustrators, photographers) that it would no longer accept images designed with AI. On the other hand, the competing agency, Shutterstock, opted for an opposite strategy by announcing a partnership with OpenAI - which will see Dall-E 2 directly integrated into its tool in the coming months according to the media The Verge. Wanting to be transparent, Shutterstock even launches a "fund" to compensate creators when the company sells their work to train AI On December 14, in the United States, a kitty was launched by the Concept Art Association, an organization defending entertainment artists, to assert their rights in Washington. This fight between artists and tech companies for data protection - which looks like a David and Goliath fight - has taken on the appearance of a race against time in recent weeks. The AI company Stability.ai announced the launch of Stable Diffusion version 3. And issued an ultimatum to creators: they would only have a few weeks to remove their works from LAION 5-B. Illustrators are realizing that the genie is out of the box. And this genie has a gun to their head. ? "AI will play a role in pricing, with negative leverage to negotiate lower rates from sponsors. Authors will have more and more difficulty justifying their quotes." Stéphanie Le Cam, director of the League of Professional Authors "AI technology needs images to produce images. They are copying champions who hide their sources." Paul Chadeisson, concept artist

## ###ARTICLE\_START### ID:1864

In case you don't know yet, "GPT" (Generative Pre-Trained Transformer) is an artificial intelligence (AI) software available in open source. Even if you're not a geek, make the effort to go chat with it, it's simply amazing. Go, via Google, to the openAI site, "enter" (sorry for this bad French) your email address, your name and your telephone number and in three clicks you can ask GPT to write you a text in prose or poetry on any subject. In less than ten seconds, it will write you about thirty lines on whatever you want, Balzac's Lost Illusions, Plato's theory of ideas, the Football World Cup, the structure of DNA, how RNA vaccines work, a poem for your fiancée or any other subject, all in the language of your choice! An American professor just published a desperate article about his students writing their essays based on GPT and he is dismayed that they are most of the time superior to those they would have written by themselves. To give you a real example, I have just now, to illustrate this column, asked GPT to write a few lines in French (which is not his favorite language, he is more comfortable in English...) on a fable by La Fontaine, The Ant and the Grasshopper. His answer came in less than five seconds! Here it is (I quote it in full): "The fable The Ant and the Grasshopper by Jean de La Fontaine is a short but powerful story that features two emblematic characters of nature: the grasshopper and the ant. The grasshopper is a songbird that spends its time having fun, while the ant is a hardworking creature that strives to store food for the winter. At the beginning of the fable, the grasshopper finds itself without food in the middle of winter, while the ant has enough reserves to last until spring. The grasshopper then asks the ant for help, who refuses to give it to him, reminding him that during the good days the grasshopper did not bother to work and store food for the bad days. The moral of this fable is clear: it is important to work hard and plan for the future, because you never know what can happen. If the grasshopper had bothered to work and store food during the good days, it would not have had to beg the ant to help it in winter. This story also reminds us of the importance of responsibility and autonomy, and shows that everyone must assume the consequences of their own choices. "Okay, a human could do better and the grasshopper is not a bird, but for a machine and in five seconds? Amazing! Any middle school student who is at all clever will be able to draw the basis of a perfectly decent dissertation from it, probably superior to those of his classmates, and if the teacher is unaware of the existence of this software, the deception will escape him. Great discussion with my friend Laurent Alexandre who explains to me in essence that artificial intelligence is rapidly approaching what is called a "strong AI", a conscious thought similar to that of a human. Not being a materialist, I don't believe it. It seems to me that there is a difference between imitating thought and really thinking. But Laurent has strong arguments and the truth is that in this debate, no conclusive test can decide between us. A materialist is someone who thinks that we are already machines and that consequently, there is no reason why a non-human machine could not one day also manage to think. On the contrary, I am convinced that materialism is an "unfalsifiable" thesis, therefore metaphysical, not scientific, and that a machine can have neither consciousness nor feelings. It can beat the world chess champion, sequence a genome, solve formidable mathematical problems, write an article, but it remains nonetheless a "thing" without consciousness that does not think its own thoughts. If I hit it and it cries "ouch", that does not prove that it is in pain! The debate is open, but what is certain is that artificial intelligence is progressing by leaps and bounds, that it imitates human thought in an astonishing way and that the Minister of Education would be well advised to reflect on the incredible problems that this will pose in terms of teaching content and student guidance.

## ###ARTICLE\_START### ID:1865

Essential to the digital transformation of our societies, cloud technologies make it possible to provide remote IT services by hosting them in external data centers. They are now at the heart of issues of economic competitiveness, industrial sovereignty and politics. LE FIGARO. - The digital transformation of our economies is underway. What is the role of politicians in this evolution? Octave KLABA. - The cloud is the foundation on which a digital economy is built, just like energy. Controlling these two elements is equally important to guarantee the sovereignty of a country or a continent. In the literal sense of the term, politicians manage the life and organization of the city. Cloud management is part of this prerogative. The rules must be defined, determining who has access to what data and under what conditions. The protection of sensitive data is a critical issue, but there is no answer. Policies must provide cloud players with a clear legal framework, within which the economy can develop. I am convinced that the regulations governing the cloud will become stricter, particularly with the expansion of the use of data in the world of healthcare. You associate cloud and healthcare. Why? Analyzing the data of hundreds of thousands of patients will accelerate the development of new drugs, less expensive treatments, and more generally reduce the cost of healthcare for the community. But it is still necessary to collect the data held by hospitals, pharmacies, those in patients' medical records, etc., all while there is no unified platform in France. However, for healthcare data to be usable, it must be massive and, of course, perfectly secure. A similar problem arises for banking establishments, which also hold sensitive data. For confidentiality reasons, they cannot make massive use of public cloud offerings. It is therefore necessary to quickly implement relevant and reliable solutions that address these issues. Can Europe still claim sovereignty, including in these areas? So yes, Europe can still win battles, but not by creating companies that directly compete with Gafam. For my part, I believe in free or "open source" software. The principle is simple: the code is accessible to everyone. This allows users of this software to master its operation, to ensure that there is no "back door" (a hidden door, allowing a malicious third party to enter the system, Editor's note). Free software is the only weapon Europe has to create an environment strong enough to be attractive and compete with the American cloud giants. It is also the only way for the user - company, local authority, etc. - to retain control of their data. These subjects are not monolithic, we must maintain plurality and not forget that we are in a multiregional approach. Everyone can invent their own answers. What do you mean by "multiregional"? After the Covid crisis, and in the context of the war in Ukraine, we see that all countries are seeking sovereignty. Even Switzerland needs sovereign data centers! But we need to stop thinking of Europe as an entity. There is a homogenization of laws, but countries do not speak the same language, do not have the same ambitions or the same history. Another battle is being fought in quantum... Absolutely. Quantum reshuffles all the cards. It is like going from the steam engine to the atom, exponentially. It is the upheaval of the 21st century. Everything will accelerate, our very understanding of the universe will be turned upside down. Here again, our politicians have a role to play, first of all to encourage young people to take an interest in it. If I were a student today, I would go towards quantum mathematics. Companies that do not invest in this field today are taking a risk for their future. All CAC 40 companies should invest at least 1 million euros per year in quantum. This financial contribution would allow an ecosystem to emerge. We must not wait for the technologies to be available to tackle this subject, because then it will be too late. Competitors, those who master the subject, will immediately have several years of head start. Too few European companies are interested in the subject. Is it up to private investors to take matters in hand? The State is there to initiate projects, support university research, raise awareness of the importance of new subjects. Then, to create things that do not exist, we need companies, start-ups that will come and invent new ways of exploiting these new resources. For example, in space, light travels faster than in the atmosphere, this can lead to reinventing methods of communication. My dream is to create 200 to 300 start-ups capable of exploiting data from satellites, even if in the long term, there are only about twenty of these companies left, which will have built a business around the real subject which is the observability of the Earth. The use of satellite data must go further than detecting swimming pools that have not been declared to the tax authorities! "Free software is the only weapon Europe has to create an environment strong enough to be attractive and compete with the American cloud giants

## ###ARTICLE\_START### ID:1866

She is at the forefront of the fight against cyber threats to the security of Taiwanese democracy. Having joined the government in 2016, Audrey Tang has since August headed a Ministry of Digital Affairs with expanded resources and skills, from infrastructure development to digital practices, including strengthening the archipelago's cybersecurity. An unclassifiable minister, passionate programmer and pioneering entrepreneur in open source and civic hacking, Audrey Tang is, at 41, a pillar of the "digital nation" that President Tsai Ing-wen intends to make Taiwan. "Faced with authoritarian expansionism," as she states in an interview with Libération, Audrey Tang says she has learned lessons from the war in Ukraine and recounts how, every day, the country's infrastructure faces cyberattacks "by the millions." An offensive that forces Taiwanese authorities to strengthen their security, the resilience of citizens, to find ways not to be cut off from the world in the event of an attack from China. How would you describe the scale and reality of the threats in terms of cybersecurity, propaganda and hybrid warfare that Taiwan is facing today? We are on the front lines of authoritarian expansionism. The reality is that we are subject to more than our share of cyberattacks. If a tactic works here, it is like a testing ground, there is a good chance that it will be reused in other parts of the world. Our cyber defenses are being tested, better tested, as are our shields, and this does not only concern public sector information, but also intelligence from industrial sectors such as the plans of TSMC [the global giant in the manufacture of chips and semiconductors in Taiwan, editor's note]. These are very high-value targets for industrial espionage. But how widespread are these attacks? They are millions every day, but most are blocked. In 2021, there were about 5 million per day, more than double the number from the previous year. And it continues to increase. I would like to emphasize cognitive warfare, or hybrid warfare, which combines cyberattacks and propaganda campaigns. For example, in early August, when the Speaker of the United States House of Representatives, Nancy Pelosi, came to Taiwan, there were immediately live-fire exercises but also cyberattacks. We have seen an unprecedented 23-fold increase in distributed denial-of-service attacks [which involve flooding a server with traffic to make it unusable] from abroad to disrupt the websites of the presidency, the Ministry of National Defense, the Ministry of Foreign Affairs and other ministries. What were the consequences of these coordinated attacks? People were unable to connect to these websites for several hours, during which time [Chinese] propaganda claimed that malicious hackers had successfully taken over the ministries. But it is difficult to verify official sources when websites are down. Because of this hybrid cognitive propaganda, our ministry, even though its website was not due to start operating until the end of August, issued a call for everyone to attack it to try to sink it [and test its resilience]. It's interesting because people realized that it's not the same thing to saturate a website and take control of it. But more importantly, we had a lot of support around the world (over 200,000 computers) to save our site and defend Taiwan. Would you say that the war has already started online, in cyberspace? We prefer to talk about dangers because we are a civilian ministry. All risks, of course, require resilience and so our core value is resilience for all, whether the dangers are related to nature [natural or climate disasters] or to human beings. The end result is the same: services are interrupted, people are disoriented, anxious, afraid. To combat this, we need broadband access, which is actually a human right, consistent communication to inform well, especially journalists. Resilience is a word that means everything and nothing. I guess you're thinking about digital resilience. Resilience always has to be qualified, otherwise it doesn't mean anything. For example, Taiwan suffers a lot from earthquakes. Every day, there are on average three earthquakes felt in the archipelago, because we are on the border of two tectonic plates. At the turn of the century, on September 21, 1999, we had a very powerful one - it killed 2,400 people and injured 11,000. After that, the word resilience gained popularity. In Taiwan, resilience means collaborative efforts between people from different fields, to anticipate not only future risks, but also to learn from past risks to strengthen ourselves. In the digital domain, this means learning from cyberattacks to improve our cybersecurity, adopting new architectures, such as “zero trust architecture” [i.e. no implicit trust is given to any part of a network, data, flows, applications and services are protected by software-defined micro-segmentation], organizing the redesign of our existing digital services to be more pluralistic in our sources, because a cyberattack usually targets the weakest link. If you destroy it, everything goes down the drain. So using IPFS [InterPlanetary File System, an open source peer-to-peer decentralized file system that seeks to ensure the security, confidentiality and censorship resistance of this data], also called Web 3, allows anyone - there are a multitude of sources - to help us save the domain, because it is very difficult to take down 200,000 computers around the world at the same time. Faced with these millions of attacks, what is the urgency? The urgency is to build the Internet in a way that promotes digital resilience. In April, we signed the Declaration for the Future of the Internet, with more than 60 democracies, to shape the Internet in a pluralistic and inclusive way, so that we can make collaborative diversity in the face of polarization and online hate. At the Taiwanese level, what are the antibodies to fight cyberattacks? We use the best of the best components and zero trust architecture to protect ourselves from cyberattacks. An example: when I had Covid, I was quarantined, but I was able to continue working, signing official documents on my own phone. It checks my fingerprint and the SIM card, and the connection is secure: the entire integrity of my phone is controlled. If one of these three poles is penetrated, the attacker will not be able to obtain my authorization. On the other hand, the system will detect it and will be able to resist the attack while the other two factors take over. It is practically impossible to take over these three sectors at the same time, especially since they come from different suppliers. So we intentionally work with a heterogeneity of suppliers: Microsoft, Amazon, Google, VMware, Cloudflare, etc. Taking control of all these companies at the same time is - to say the least - very difficult. How real is the threat to the 15 or so undersea cables that connect Taiwan to the rest of the world, and what can be done to prevent an internet outage? We need to prove that our existing infrastructure and systems can survive if, in an extreme scenario, all our undersea cables are cut at the same time. So, over the next two years, we have allocated around €17 million to build over 700 stations, i.e. receivers for our satellites in geostationary orbit. For example, we have launched an experiment with the Hsinchu City Fire Department [southwest of Taipei] by equipping a fire truck with a receiver to pick up a satellite in Earth orbit. If a fire destroys the communications infrastructure in one place, the fire truck can go there, connect to the satellite and transmit the 5G signal to the nearest phone. This mobile offering, whether it is mounted on a truck or a boat - I have even heard of a kite or a drone - provides unprecedented flexibility. You can build only a few strategic points in a fixed way, and all the others are mobile. The bandwidth is quite good: 50 megabits per second. Have you taken any inspiration from the situation in Ukraine and what lessons do you draw from this conflict? We are in constant contact with our partners at different levels and we learn from their experience, in particular two things. First, the importance of heterogeneity or how not to put all your eggs in one basket. We want to work with as many public cloud providers as possible. And second, on connectivity, we insist on interoperability so that even if one provider fails for some reason, we can plug in and use others without interruption of service. For the people of Taiwan, the Ukrainian experience shows the importance of connectivity against all risks. Do TSMC's expertise, know-how and market dominance protect you from an attack? We occupy a central position in a global supply chain. And when chips were in high demand, especially during the Covid-19 pandemic, when people were increasing telecommunications in their work and at school, we made every effort to increase exports. I think the real shield, the so-called "silicon shield", is the trust that our democratic partners place in the quality and safety of Taiwanese chips. Do democracies underestimate the threats, the danger? People put a lot of attention on harm prevention, mitigation, but not enough on how ordinary citizens can participate in the common defense. It's as if every country has epidemiological experts, professional institutes, research tools and vaccines, but sometimes everyone just needs to wash their hands thoroughly with soap. There is strength in plurality. There is strength in the resilience of society. ? Our ministry has issued a call for everyone to attack it to try to sink it [to test its resilience].

## ###ARTICLE\_START### ID:1867

We were familiar with the concept of the "commons" developed by political scientist Elinor Ostrom: members of a community collectively decide on the rules of use for sharing and caring for positive or desirable resources, whether they are material, like fish in a lake, or immaterial, like free software or Wikipedia. Now, in recent years, their dark side has emerged, that of the "negative commons", these residues and vestiges of two hundred years of industrial growth, which will have to be taken care of - and for a long time - without anyone really wanting to take charge of them. The notion of "negative commons" is recent and still under construction. It appeared for the first time in 2001 in the work of German sociologists Maria Mies and Veronika Bennholdt-Thomsen. In an article entitled "Defending, Reclaiming and Reinventing the Commons" (Canadian Journal of Development Studies, 2001), they examine the fate of organic waste, and point out that what is considered waste today was seen in pre-industrial societies as a simple stage in the cycle of the reproduction of life. Communities themselves ensured the elimination of this "negative common" by valorizing it. With the disappearance of community spaces and ties, this waste is now seen as residue, the management of which is delegated to companies that themselves have an interest in increasing their production in order to ensure their profitability. It took about ten years for researchers in Japan to seize this idea of "negative commons" and extend it, while the country was facing the consequences of the Fukushima disaster. In 2013, environmental science professor Hidefumi Imura proposed extending the concept to nuclear waste reprocessing plants, while his colleague, researcher Sabu Kohso, extended it in 2018 to all “waste that cannot be recycled.” Indeed, he notes, “the more capitalist societies develop, the more they lose their ability to recycle what they produce in excess, thus relegating the negative to the realm of the invisible – the air, the ocean, the subsoil, economically inferior territories.” Among these residues produced by industrial development, radioactive contamination constitutes, according to him, the “ultimate negative common,” since it is irreversible. “Antiresources” For his part, the philosopher Alexandre Monnin, who traced its history, further extended the concept in 2017 to all of what he calls the “waste of the Anthropocene.” He includes polluted soils, dry rivers, radioactive waste, but also certain cultural legacies, these "technical, managerial, economic or even logistical" realities that have led to the proliferation of non-recyclable waste, and for many still contribute to it. We find fossil fuels and smartphones there, as well as economic doctrines whose "operation constitutes the greatest danger for the habitability of the planet in the medium term", says the philosopher. He believes that "the most ruinous thing today is not open-air mines, but the devices that order them to be dug, the economic models that make them profitable, or the supply chains that ensure their export". What to do with these realities, material or immaterial, on a planet that is out of breath? First, recognize them as toxic, a "highly democratic" issue, believes the philosopher, because this perception is not always shared. Then it remains to decide what to do with them, and who is responsible for it. Like the useful "commons", "it is possible for communities to organize themselves to deal with the negative effects of these 'anti-resources'", noted in 2018 the lawyer and blogger Lionel Maurel, a specialist in "commons". If only by deciding, in a "collective and united" manner, to no longer produce them. As for the waste that already exists, it is appropriate to better share the responsibility and costs, while they are often "relegated to the poorest areas or to the depths of the earth and oceans", observes Alexandre Monnin. The most emblematic example is that of high-level and long-lived nuclear waste that we are preparing to bury 500 meters deep in France, without knowing how we will be able to warn populations of the danger. Another example concerns digital technologies whose need for metals jeopardizes the lives of those who work to extract them and the habitability of the planet. Using the notion of “commons” is a way of politicizing the subject by considering the interdependencies between territories, those who benefit from development and those who are affected by it. If the governance of “positive commons” is often local, “the recognition of the negative nature of certain “commons”” must lead to broadening the community that is confronted with them, to “recompose[…] new relationships of solidarity, between territories and populations that are more or less distant”, asserts Alexandre Monnin. Links that remain to be invented.

## ###ARTICLE\_START### ID:1868

It was December 2015, in a world before Donald Trump was in the White House, in a previous life, one might say. Elon Musk, the powerful CEO of Tesla and SpaceX, not yet dressed in the finery of the (very) right-wing Twitter troll chief, was still selling dreams - at least to those for whom colonizing Mars falls into this category - and was co-founding a new project that was causing a stir in Silicon Valley and beyond: OpenAI. A private, non-profit center for research in artificial intelligence, whose mission is to ensure that, in the more or less distant future, a so-called "general" AI, that is to say capable, more or less, of understanding and learning like a human, "benefits all of humanity." "I think the best defense against the misuse of AI is to give the power to use it to as many people as possible," Musk told American journalist Steven Levy, mixing in one go dystopian anxiety - Skynet, the all-powerful AI from Terminator, is never far away - and the concentrate of Californian "tech" ideology. Stunning images Seven years later, Musk left (since February 2018) the board of directors of OpenAI, but the other initiator of the adventure, Sam Altman, former president of the start-up incubator Y Combinator (which financed, among others, Airbnb and DropBox), remained its boss. Still based in San Francisco in the trendy Latino neighborhood of Mission, OpenAI is no longer just a non-profit organization, but also, since 2019, a so-called "capped" for-profit company, the latter being controlled by the former. In seven years, the Californian company has become a key player in artificial intelligence research. ChatGPT, the conversation application that has been all the rage for the past eight days, is the company; Dall-E, the model capable of generating stunning images from natural language commands, is the company again. Three and a half years ago, OpenAI also made headlines when its team of five "bots" managed to beat the reigning world champions of the video game Dota 2, an online "battle arena". In seven years, the project has also seen its fundamentals evolve significantly. At the end of 2015, the original version of OpenAI had been funded to the tune of $1 billion by a small group of investors including Sam Altman and Elon Musk themselves, but also the furiously libertarian Peter Thiel, co-founder of PayPal, and Amazon Web Services, the "cloud" branch of the online commerce giant. With the promise of transparency at all levels: “Researchers will be strongly encouraged to publish their work, and our patents (if any) will be shared with the world,” the statement of intent assured. In 2019, the newly created commercial company – to attract investors and set up employee profit sharing – received another billion, this time from Microsoft. The following year, the Redmond (Washington State) giant obtained the exclusive license to GPT-3 (for Generative Pre-trained Transformer), the language model that underlies ChatGPT’s performance. The goal of developing “good” AI has clearly not disappeared. The researchers explain that they have "done everything possible to ensure that [ChatGPT] refuses inappropriate requests" by blocking "certain types of dangerous content" - still fresh in our memories is the unfortunate experience, six years ago, of Tay, Microsoft's conversational AI, which multiplied hateful and racist diatribes less than twenty-four hours after being put into operation. In 2019, the OpenAI team had also decided, initially, to make public only a very light version of GPT-2, the predecessor of GPT-3, putting forward the risk that the model would be used to generate "misleading, biased or offensive speech on a large scale". Volumes of data Are these concerns enough to avoid going off the rails? Despite the efforts, ChatGPT "will sometimes respond to malicious instructions or display biased behavior", warn its designers. It is indeed difficult to fully master its conduct. "There are opacities that are not so much linked to technical issues as to volume issues," emphasizes Olivier Ertzscheid, a teacher-researcher in information and communication sciences at the University of Nantes and author of The World According to Zuckerberg (1). The volumes of data processed by these artificial intelligence technologies are becoming "unauditable" [impossible to count], including by the engineers who develop them." According to Elon Musk himself, OpenAI had, until recently, "access to Twitter's database for training" its language model, access that the new owner of the social network indicates he has "suspended." And to tackle: "OpenAI was launched as an open source and non-profit project. None of these qualifiers are yet true." All nostalgia aside, it is not impossible that the privileged partnership, for three years, between the artificial intelligence company and Microsoft weighs in this displayed distancing of one of its founding fathers. (1) Ed. C & F, 2020, 15 €.

## ###ARTICLE\_START### ID:1869

W hat has gotten into them? At the end of this year, many museums and art centres have decided to wake up the ghosts and take the skeletons out of the closet. Perhaps it is because they feel the time for taking stock is approaching as important anniversaries approach? 50 years for the CAPC in Bordeaux in 2023, 20 for the Palais de Tokyo this year, while the Pompidou Centre is waiting for its major facelift before donning its fifty-something costume in 2027. Or could it rather be the major crisis they are going through, challenged from all sides by a generation of artists, intellectuals and activists who are demanding a different narrative? The fact remains that many institutions are beginning their examination of conscience this year. And they are diving into their official archives as much as they are straining their ears to catch the rumours and other curses, real or imaginary, that have shaped them over the years. There is no nostalgia in these internal investigations, but rather a desire to clean up the land in order to cultivate it better. "Agricultural permaculture reminds us that there is no neutrality of the soil. Therefore, we do not sow before having learned to know it," recalls Guillaume Désanges, director of the Palais de Tokyo, who since his arrival in January has been working with his teams to redefine the lexical field of the institution. Thus was born the idea of an "institutional permaculture" applied to all floors of the largest contemporary art center in Europe. Before taking on its current form, it hosted none other than the 1937 Universal Exhibition (the year it opened), the first National Museum of Modern Art (before the creation of the Pompidou Center), the National Center for Photography, the Cinémathèque and the Fémis. And if you look closely, there are still many traces of this past engraved in marble, from the old curved movie theater that still bears the name of room 37, to the Capricorn gallery that was once the setting for a large painting by Max Ernst of the same name. "Summoning ghosts rather than smothering them" Another password: institutional psychotherapy. A practice born after the war in the psychiatric field, but which is linked to art. The idea is simple: we must treat individuals as much as the institutions that shelter them. Because it is sometimes the latter that weigh with all their weight on those who inhabit them. In France, François Tosquelles in Saint-Alban and Jean Oury at the La Borde clinic were the two great architects of this antipsychiatry. Within their establishments, which Tristan Tzara, Antonin Artaud and the postcolonial thinker Frantz Fanon frequented, not all for the same reasons, practices that were at the time unheard of in a hospital setting, such as collective work and artistic activity, contributed to the emergence of what was later called art brut. In doing so, they also invented art therapy ahead of its time, which is now favoured by many artists and curators. Inspired by institutional psychotherapy, cultural venues also intend to reveal a certain number of ideological and historical determinisms, as well as to treat trauma. It is with this in mind that the artist Carla Adra set up a sort of confessional in the offices of the Palais de Tokyo for three months, in which she collected testimonies from employees who claim, she says, to belong to "the great family of the palace". However, notes the artist, "the family is typically the place of neurosis, of poorly regulated affects, of crushing hierarchies or of assignments." This therapy on an institutional scale, which in the business world we will less poetically call internal audit, will give rise to a performance from December 13 to 16, during which three actresses in worn-out blouses will repeat these systemic confidences in a loop, as if to exorcise them. Therapy is also discussed at Bétonsalon, after the forced resignation of its former director accused of toxic management. Emilie Renard, who has taken over the reins of this art and research center backed by the University of Paris-VII, considers it as an aching body whose wounds must be healed. She believes that it is necessary to "warn the institution of its fixations", to reflect on "dysfunctions" in order to free itself from any risk of "petrification or hegemony". And to re-examine the operating methods within the teams while making room for sensitive programming. Like the mini-opera by Anne Le Troter presented in the spring, which brought together artists and activists from artistic Paris in the 1930s (including Louise Hervieu, painter and inventor of the "health record") with today's "art workers", all linked to the notion of care. The exhibition literally took the pulse of the place (with loudspeakers fixed to the windows) and the artist had repaired the cracks that had appeared over time on the floor of this art center opened in 2003 by pouring tin into it. This gesture recalled the Japanese art of "kintsugi", which consists of highlighting the cracks and breaks in ceramics with lacquer or gold. An accelerated healing, certainly, but above all left visible - that is the beauty of the gesture. However, for museums and art centers that are committed to repair, there is no question of hiding the fractures either. At the Magasin in Grenoble, for example, the artists and designers who accompanied the low-cost metamorphosis of the place were keen to work from materials and scraps found on site, to bring back the structure initially designed by the architect Patrick Bouchain and to rehabilitate certain uses that had gradually been erased. We are far from a tabula rasa. "Ghosts are about summoning them rather than stifling them," confirms exhibition curator Adélaïde Blanc, in charge of the first chapter of a vast program that opens on December 9 at the Palais de Tokyo. Entitled "Le Grand Désenvoûtement", it proposes using "various tools that come from therapy, critical sociology, shamanism or mediumship, to question the institution, share its determinisms, and take care of it." Concretely, this translates into a two-voice conference by Béatrice Joyeux-Prunel and Nicolas Heimendinger aimed at freeing the place from its curses, an X-ray by the artist Edith Dekyndt that probes the vibrations of the place, or the excavation of the Palais de Tokyo caravan by the fictional artist Youri Johnson, a highly symbolic object, as it has changed functions over the years. First used as a ticket office and installed in the entrance hall, it was transformed into a security post, then into a mediation space before becoming a storage location. Colossal archives The artist Hito Steyerl, also part of the event, chose the weapon of fiction, and developed twelve science fiction scenarios with a collective working on free software in the field of art and artificial intelligence. A way of saying that the archaeology of a place is not necessarily dusty, but can also be placed in prospective mode. And this is again what the cartoonist Sammy Stein proposes in a small publication that will be distributed to each visitor: a hike within the real or fictionalized bowels of the Palace. If we are to believe the program, with, among other things, an invitation to the historian Pierre Singaravélou, counterfactual history - the famous "what if" that comes from literature or the arts, but which is increasingly making its way into the field of social sciences - will also be at the heart of the vast project that the Pompidou Center has just opened with its "permanent history laboratory." The idea came from Antoine de Baecque, a cultural historian and guest of honor for the next two years, until the center closes in 2024. With around fifty students in art history or art schools, the idea is to delve into the museum's colossal archives. The group meets every Wednesday and Friday morning in the "triangle room," on the same level as the piazza, which was one of the determining elements of the architectural project that finally won in 1971: that of Piano and Rogers. Within the 3 kilometres of linear archives currently preserved under the piazza (those of the museum but also of the Institute for Research and Coordination in Acoustics/Music or the Public Information Library), we find entire boxes dedicated to the architectural competition launched at the beginning of the 70s, when the idea of a large cultural centre was germinating in people's minds. They show, for example, how Jean Prouvé, the president of the jury, had to decide between the 680 candidates, and as many projects drawn up, all preserved. The Kandinsky library and its extraordinary collection linked to the history of exhibitions will be the other mine that students will not fail to question. With a particular interest in "Les Immatériaux", a cult exhibition by the philosopher Jean-François Lyotard, which in 1985 confirmed a break between two worlds and the advent of postmodernism. "Tell me how you tell" But what interests Antoine de Baeque first and foremost is to examine the friction that the birth of this new kind of museum may have caused at the time. Between popular curiosity (if we are to believe Rossellini's last film, shot during the inauguration in 1977) and huge controversy. Urban planning controversy first and foremost, because with the Beaubourg plateau, an entire neighborhood is being transformed. Ideological then, if we remember Jean Baudrillard's little book The Beaubourg Effect, which questioned this "supermarket of culture". "The other controversy came from the artists themselves who were initially wary of this place wanted by a right-wing politician. The center was criticized for institutionalizing the avant-gardes, for making experimental art an official art," recalls de Baecque. By giving the floor to witnesses, from Jean-Hubert Martin (curator of the pivotal exhibition "Les Magiciens de la terre" in 1989, which for the first time de-Westernized the map of art), to Daniel Buren, a regular at the Pompidou Center, or Claude Mollard, puppeteer of cultural policies, it is a question of assuming a legacy. But also, beyond the rigorous and scientific investigation, of putting this history back into circulation and into motion through reenactments and performed restitutions. On December 8 and 9, speculation will also be at the heart of a seminar organized by the CAPC contemporary art museum in Bordeaux, in partnership with the Cnap. It is the philosopher Isabelle Stengers who sets the tone: "Tell me how you tell the story, I will tell you what you are participating in the construction of." Reassessing public collections, but also changing the acquisition line, as we have seen in recent years in favor of women artists, for example, is another project to be undertaken in the face of the "unprecedented cultural earthquake" that is rocking the art world even in its most solid temples. "To the extent that they are linked to ideologies, collective beliefs that came after religion, as long as these beliefs are not replaced by others, different in principle, that we do not even know how to imagine, museums will keep their central place", analyzes the philosopher and historian Krzysztof Pomian in the masterful volume 3 of The Museum, a World History published this fall. It could be that by revisiting their own story in this way, museums are taking the lead.? By taking inspiration from institutional psychotherapy, cultural places also intend to reveal a certain number of ideological and historical determinisms, as well as to treat traumas.

## ###ARTICLE\_START### ID:1870

SHERBROOKE — Radiation therapy treatment for prostate cancer will now be much safer in Estrie health care facilities. A team of medical physicists in radiation oncology at Hôpital Fleurimont recently developed new software that can track the movement of the prostate in real time and thus avoid inadvertently sending radiation to other organs or tissues. In very concrete terms, “we insert three gold grains inside the prostate, which allows us to visualize it with the software and follow its internal trajectory,” explains Patricia Bélanger, radiation oncology technologist and technical coordinator at CIUSSS de l'Estrie-CHUS, who uses this new software designed in large part by her medical physicist colleagues Mathieu Guillot and Rémi Lessard. The radiation emitted by the radiotherapy machine follows the gold grains and indicates their location using a fluoroscopy process. This means that the patient does not receive an additional dose of radiation and can be sure that the treatment will be stopped if his prostate moves too much, thus putting his other adjacent organs and tissues (bladder, rectum, etc.) at risk of being irradiated. "Generally, what is done in the majority of treatment centers is that safety margins are taken, which allows patients to be treated according to a statistical method and not personalized to the patient. So we know that so many percent of the time, the prostate moves by such an amplitude, so we take larger margins and we make sure to cover the cancer even if the prostate moves. With fluoroscopy, it is really adapted to the patient," says Mr. Lessard. Already nearly 200 patients have been able to benefit from this new method. Since its installation, all prostate cancer radiotherapy treatments have been carried out with this software. Another advantage of this software: it has been deposited on a web platform in open source code, which allows it to be used free of charge by all hospitals in the world that use compatible treatment devices. "In radiotherapy, there is a certain open source culture. For several projects, we benefit from programming libraries created by the global community," says Mathieu Guillot, while his colleague Rémi Lessard emphasizes that they wanted to make their solution "accessible." anthony.ouellet@latribune.qc.ca

## ###ARTICLE\_START### ID:1871

“We can see them, smell them, taste them, but we never hear them! I thought it was time to listen to them in the most appropriate way: music,” explains enthusiastically the electronic musician Mikael Hwang aka Psients. This Korean neurobiologist turned electro has just released an EP, Signal, in which he plays unexpected instruments because they are alive, Saccharomyces cerevisiae. This hermetic name is the scientific name of a blessed fungus since it has been used since the dawn of time to make bread and beer: yeast. Hwang unveiled his creation in May during the Paradise Art Lab festival in Incheon, Korea. “I had the idea for this project in 2015. I was preparing my doctorate in London. I was inspired by the work of two Australian researchers, Oron Catts and Ionat Zurr, but also by that of Eduardo Kac [Brazilian artist and bio art theorist, editor's note]. I had to wait several years to be able to make it a reality because it was, I think, too experimental for the usual sources of funding in the scientific world. I finally found the necessary budget by turning to the artistic community." Very design-oriented, the installation designed by Psients and the American-Korean "space" artist Jeffrey Kim consists of an obelisk that serves as an incubator for a hybrid of a polycarbonate disk and a Petri dish, a cylinder used in biology to cultivate microorganisms. Colonies of fungi were placed in the device that relays the sounds produced by the yeast. Hwang explains: "The metabolic processes of the cells make their walls vibrate. Using a local probe microscope, a device that allows nanotopography, we capture these vibrations and record them. Cells vibrate thousands of times per second, they are really very fast! I converted these vibrations into audio files and slowed them down and stretched them with software by adding beats. I divided my EP into two parts: one slow, one fast." Although very successful, the four tracks nevertheless do not differentiate themselves from the run-of-the-mill ambient (dark trend) and techno production. Nevertheless, this project at the intersection of biology, music and sound was deemed convincing enough by Universal Music for the major to sign the EP for distribution and release it on June 16, the date being chosen in reference to the sixteen chromosomes of yeast. Presented as "the first iteration to create a living instrument and the first playable living musical media", Psients' project stands out above all for its design, the intelligence of its marketing and the fact that it was signed by a major. In fact, several similar experiments had already taken place in recent years, in particular those of the Swiss collective Hackuarium. Composing Microorganisms Based in Ecublens, near Lausanne, Hackuarium is a non-profit association, a community of bio hackers whose mission is to "democratize science through public engagement." Like Psients, it was also in 2015 that Hackuarium had the idea of using microorganisms to compose music. The Living Instruments project was born from the reunion of two childhood friends, the chemist and biologist Luc Henry and the percussionist Serge Vuille, who at the time led the musical collective We Spoke. The musician remembers: "We imagined putting the natural reactions of living organisms into musical form. We developed instruments that would allow us to interact with yeast, moss and paramecia." Yeast was chosen because it is one of the areas of expertise of biologist Luc Henry. Paramecia, for their part, were selected because they could swim and because Swiss biohackers would be able to control them with electricity. Finally, moss was chosen because engineer and hybrid artist Vanessa Lorenzo had started using it while studying interactive media. Luc Henry remembers: "These organisms are easy to transport. So we could consider moving around with them to play. We also thought about other living beings like flies and worms, but they posed ethical problems. I remember attending an exhibition in Paris that invited visitors to walk around with a fly on a leash. We preferred to limit ourselves to single-celled organisms." Engineer and physicist Oliver Keller, a radioactivity specialist who quickly joined the project, explains: "The paramecia were in a small pool in which we diffused electricity. Their movements were converted into music using software. The musician manipulated a kind of joystick to somehow control the paramecia, whose movements were nevertheless unpredictable. We had long discussions to determine whether all this was not torture (laughs). Most of us decided that there was no problem because they are single-celled organisms and that they were protected in a certain way from the electric field and that consequently it could not harm them." In contrast to the Spartan design of Psients, the performances of Living Instruments recall, with their tangle of cables, test tubes and laptops, the chaos of the unfortunate scientists in John Carpenter's film Prince of Darkness. The dance of the paramecia Their truly mutant instruments answer to the sweet names of "bubble organ", "foam carpet" or "paramecia controller". Oliver Keller continues: "The bubble organ works with yeast placed in bubblers, fermentation chambers used to brew beer. The volume of CO2 produced by the yeast depended on their bubbling. Sensors recorded the movements of the bubbles and converted them into computer data and then into music." The surprising music produced evokes the visionary experiments of Bebe and Louis Barron, the electro pioneers who composed the music for the film Forbidden Planet in 1956. Designed to be played in public, the Living Instruments are also visually delightful: monitors allow the audience to admire the movements of the paramecia while Vanessa Lorenzo's caresses of the "carpet of moss" could have their place in a shamanic rite. Serge Vuille, the band's musician, remembers: "The sound universe was very similar from one performance to another, but the result varied depending on different parameters such as the heat of the room, which influenced the fermentation of the yeast, or the size of the room, on which the reactions of the foam depended. We weren't in absolute control mode; there was a real experimental and live side." For Luc Henry, playing with a living instrument implies that the musician never completely masters his music, unlike what happens with a classical instrument, which is totally controlled by its performer. Serge Vuille concludes: "The Living Instruments project is completely based on the DIY philosophy, the open source community, and hacking. Besides, if anyone wants to do the same thing, all our work is online!" After a dozen "concerts" in Europe, the Living Instruments project was put on hold because of Covid, but also because its creators are currently devoting themselves to other projects. The next generation is there, however, with more and more artists getting into bio music, generally without the live dimension of Living Instruments, but driven by ecological awareness. Canadian musician Tarun Nayar is enjoying great success on social media with his music videos made with mushrooms, a way for him to "strengthen connections with nature". In North Carolina, artist MycoLyco also works with mushrooms, this time connected to a synthesizer, while the Californian application PlantWave offers "plant music" made in particular with cannabis. As for British pioneer Mileece, who has been experimenting with plants for almost ten years, she is delighted that "scientists and the public are finally taking all this seriously". Korean Psients approves. For him, there is no doubt: "The future of music will be in biology."

## ###ARTICLE\_START### ID:1872

There is reason, these days, to be seized with dismay at the maelstrom that Twitter has been caught in since its acquisition by Elon Musk, from the drastic cuts in staff to the flight of remaining employees, from the concerns on Capitol Hill to the every-man-who-can of advertisers, from the return of suspended accounts to the abandonment of the fight against false information on Covid-19. Enough, too, to be seized with vertigo at the measurement of the gap between the place taken by the microblogging network in the public conversation and the information ecosystem, and its absolute vulnerability to the errors of a billionaire - of whom one wonders if he has a strategy, as it is difficult to find a trace of rationality in his management, and whose personal account now presents few differences from that of a standard Trumpist troll. The vertigo also comes from what we see - unsurprisingly - of a collective inability to change much: this is how the dominant social platforms are doing, private companies under American law, on which obligations can be imposed, but not conduct. The obligations are those that the European Commissioner for the Internal Market, Thierry Breton, recalled on Wednesday: to be able to operate in the European Union, Twitter will have to comply with the Digital Services Act (DSA), the regulation on digital services, applicable to very large platforms from summer 2023. And, to do this, "implement transparent usage policies, significantly strengthen content moderation and protect freedom of expression, resolutely combat disinformation, and limit targeted advertising". A warning that, in itself, symbolizes the - real - achievements and the - glaring - limits of European policies in terms of digital, on the side of the Union as well as its Member States. Over the last decade, the EU has produced three texts that the least we can say is that the American Internet giants have not welcomed with open arms: the General Data Protection Regulation (GDPR) and, most recently, the two regulations on digital markets and services. Three texts that significantly strengthen the obligations of major private players, as well as the sanctions they incur in the event of non-compliance, even if fully implementing them is no picnic, as the GDPR proves. The Old Continent, therefore, is not without resources when faced with the Silicon Valley magnates. But what it has not been able to do, and this is what Twitter's crazy sequence highlights, is promote, support, and bring out more virtuous alternatives. Lacking will, imagination or both, it has not been able to counter the model of the large social platforms, closed, hypercentralized, based on the predation of personal data: the only option left, from then on, was to set limits. Will Elon Musk's continued drift change the situation? A sign of the times: Thierry Breton published his warning not only on Twitter, but also on Mastodon, a decentralized social network that relies on free software, from a server set up in April under the aegis of the European Data Protection Supervisor.

## ###ARTICLE\_START### ID:1873

LE FIGARO. - The energy crisis has revealed the degraded situation of our nuclear fleet, which should have given us a competitive advantage in Europe. Is this degraded situation part of a long process of deindustrialization of France? How did we get here? Louis GALLOIS. - On November 18, 24 out of 57 reactors were shut down, either to deal with corrosion problems (7 reactors) or to carry out maintenance operations, delayed by the Covid crisis. EDF is thus faced with a considerable workload that it is struggling to complete on time because it lacks skills. Indeed, as its former president, Jean-Bernard Lévy, explained, EDF had to adapt its capacities to the prospect of the closure of 14 reactors planned by the 2020 Multi-Year Energy Program, which has become obsolete since the President of the Republic's relaunch speech in Belfort last February. You mention deindustrialization; it was in fact caused, in this essential sector, by the absence of new programs since Flamanville, by the underestimation of needs and by the arbitrary choice to reduce the share of nuclear power in electricity production. We can see the consequences: France, which was an exporter, now imports electricity produced abroad by gas or even coal-fired power stations at a high price. It will also have to rebuild its skills to successfully complete the new reactor program announced in Belfort. The country's reindustrialization will only be possible if we have predictable, decarbonized, competitive and sovereign electricity; only nuclear power, with hydropower, has these characteristics; it will therefore have to provide the largest share. The Covid crisis has also revealed our dependence. Is France still sovereign? A country is not sovereign when its trade balance is in deficit by 150 billion euros. Part of this deficit is due to the increase in the cost of energy and raw materials, but a significant part results from the deficit in manufactured products. This is the direct consequence of the deindustrialization of our country. The objective of reindustrialization is an objective of employment, growth, and reduction of territorial divides. But it is first and foremost an objective of sovereignty. The arbiters here are the reduction of critical dependencies and the overall external balance. Can we talk about a strategic error by some of the French "elites" who focused our economy on services? Probably. Many believed that industry was now the business of low-cost countries and that France had to specialize in design offices and services; the competitiveness of our industry was no longer an objective. The result is what I mentioned a moment ago: mass unemployment, regional tragedies, economic imbalances. In the short term, what will be the consequences of the energy crisis and inflation on French companies? Will this further accelerate deindustrialization? For the past ten years, a competitiveness policy has been implemented: reduction of social security contributions, reduction of production taxes, reform of labor law, Plan France 2030, etc. It has produced its first effects since 2015: the share of industry in the domestic product has stopped deteriorating, productive investment has resumed, the number of new factories has exceeded the number of closures. The decline has been stopped. The morale of business leaders has recovered and France has once again become an attractive country for foreign investment. Will this progress be called into question by the rise in the cost of energy? Will we fall back like the rock of Sisyphus? This is a serious and urgent question. In the United States, energy now costs five to ten times less than in Europe. There is a real risk of relocation. To protect its industry, Germany has planned to set up a tariff shield for companies, currently subject to the Commission's approval. It is set at 130 euros per MWh for 70% of the electricity consumed. In France, the same shield is set at 325 euros per MWh. Our industry risks being placed in a critical situation and the deadlines are very short term. France is rightly proposing to cap the price of gas in Europe and to amend the European price-setting mechanism. This, in fact, links the price of electricity to the price of gas, which has exploded since the war in Ukraine. In fact, it is urgent to either change this mechanism or to disregard it, as the Spanish and the Portuguese have done. You recently said: "We cannot avoid confronting the Germans at some point or another, who are not giving us any particular gifts." What do you mean by that? The insufficiency of French nuclear production has certainly played a role in the dizzying rise in the price of energy in Europe. But the main part of this rise results from the fact that Germany, closely dependent on Russian gas, had to hastily turn to the world market and buy at a high price the quantities it urgently needed. This was transmitted to the price of electricity by the mechanism I mentioned. However, Germany opposed the setting of a price ceiling for gas purchased by Europe, only accepting in the end a ceiling so high that it has little chance of being reached (350 euros/MWh, the market is currently around 100 euros). It also refuses to let France and other countries follow the path of Spain and Portugal by disconnecting the price of electricity from that of gas. In short, Germany opposed everything that France proposed even though, through an inconsistent policy of dependence on Russia, it is largely the cause of the current difficulties. This at the very least merits a clarification of Franco-German relations, which cannot be one-way. This is perhaps the reason for the postponement of the summit between the two countries decided a few weeks ago. The European Commission is currently working on the REPowerEU plan, the objective of which is to end dependence on Russian energy. In this respect, the European Parliament voted for the amendment tabled by François-Xavier Bellamy to allocate European funds from the plan to low-carbon energy (intermittent and controllable). Is this good news for France? I think so. There was no reason to make a distinction between decarbonized energy sources. French nuclear power will need very significant funding. I would remind you that nuclear power is the most decarbonized energy source after hydropower; In this respect, it is better than wind and solar. In the long term, could the new geopolitical situation, the isolation of Russia, but also of China, be an opportunity and lead us to relocate certain industries? The major American and Chinese blocs are seeking to become more independent of each other. China wants to gain technological independence from the United States and is making a huge effort to do so; the United States wants to loosen its dependence on China for consumer goods. If Europe does nothing, it will become the playground for competition between the Chinese and the Americans. We need to implement an industrial policy to regain our autonomy, at the French and European levels. This also involves a "tight" debate with China on compliance with the market rules set by the World Trade Organization and with the United States on the price of the gas they sell to Europe. The comments by Commissioner Thierry Breton and Bruno Le Maire are consistent with this. Chancellor Scholz's views on China seem more ambiguous to me! How can we combine the imperative of reindustrialisation with the ecological imperative? Green growth is possible thanks to industry; it is in every way preferable to degrowth, which leads to a drop in living standards and, above all, to inequalities. This must, of course, be accompanied by a decisive effort to reduce the carbon footprint of industrial production and, to do so, save energy and switch from fossil fuels to electricity. Industry is committed to this effort, much more than we think. The massive investments that will be necessary will have to be financed; they will result in price increases that will weigh on the competitiveness of European products compared to non-European countries that have not made the same decarbonisation efforts. To cushion the shock, a border adjustment system is currently being discussed at European level. I am not sure that it will be sufficient; Public support to limit the burden on businesses will probably be necessary. The Americans are implementing a protectionist policy against China. To reindustrialize, should Europe thoroughly review its free-trade software? It is in Europe's interest, as an exporting economy, to remain an area open to trade with countries that respect the same rules as it does. This means, on the contrary, that it must be prepared to apply the principle of reciprocity. If a country taxes European exports, abusively subsidizes its production or refuses to open its public markets, Europe must be able to limit its access to the European market. For example, it is abnormal that a Chinese shipowner can buy part of the port of Hamburg when such an operation is impossible in China for a European shipowner. The principle of reciprocity is accepted by the Commission but it often applies it late and with great caution because the interests of European countries diverge. A firmer and more systematic application of the principle of reciprocity would greatly help reindustrialization. \*La Fabrique de l'industrie is an independent think tank, dedicated to thinking about industrial prospects in France, created in 2011 by Louis Gallois and Pierre-André de Chalendar. "A country is not sovereign when its trade balance is in deficit by 150 billion euros. Part of this deficit is due to the increase in the cost of energy and raw materials, but a significant part results from the deficit in manufactured products "Europe must be ready to apply the principle of reciprocity. It is abnormal that a Chinese shipowner can buy part of the port of Hamburg when such an operation is impossible in China for a European shipowner

## ###ARTICLE\_START### ID:1874

SOCIAL NETWORK Contrary to the lightness of a blue bird, Mastodon has chosen a mammoth in a plane as its symbol. This social network for discussions and sharing was created in 2016 under the impetus of Eugen Rochko, a German software developer. From the start, the young man had one idea in mind: "To escape the condescending control of Twitter", as he explained in an interview with Time. The acquisition of the social network by billionaire Elon Musk gave a little boost to his ambition, putting Mastodon back in the spotlight. "Mastodon got over 70,000 registrations yesterday alone. Let's keep the momentum going!", the platform said in a tweet on October 30. Since October 27, Mastodon has gained over 400,000 new accounts, adding to the four million accumulated since its creation. The platform now has just over a million monthly active users. Still a long way from the 250 million active users claimed by Twitter's new owner. Operating on a completely different architecture, Mastodon is free and without advertisers. This non-profit organization has been operating on donations since its creation. "We are financially independent thanks to NLnet, Prototype Fund and Patreon donors," explains the social network's team. In its 2021 annual report, Mastodon shows a budget of just over 55,000 euros thanks to donations from Patreon and Stripe, with a base of 600 patrons on Patreon and 20 subscriptions on their personalized sponsorship portal. It also benefits from grants, such as the 45,000 euro grant from the company NLnet which supports organizations contributing to an open information society. The grant in question allows them to finance developers and designers of the user interface. Furthermore, the social network spends little. For its 2021 financial year, its expenses amounted to just over 23,000 euros. Its core team is made up of only about ten people. Because the Mastodon social network operates mainly on a decentralized and open-source architecture. It is designed as a "server federation", explains a member of Mastodon's governance. Each server is managed by one or more administrators, with its own moderation team and rules. The administrator can choose to improve his server by modifying the initial code and investing his own budget. Currently, there are just over 25,000 servers on the social network. "Microblogging" When a new user creates an account, he must join one of the servers. Mastodon's interface uses "microblogging" with the dissemination of content and short messages. These are called "pouets", the equivalent of tweets, which can contain a maximum of 500 characters. "On Mastodon, you can join discussions on different servers without being influenced by the algorithm. I find what I liked on Twitter in 2009", says a user, Xavdan. The latter administers his own instance on Mastodon composed of about twenty people. If Mastodon's audience remains very modest compared to other platforms, it is clear that, six years after its creation, the social network is still functioning and continues to welcome more and more curious people. Its source code inspired Donald Trump to create his Truth Social network, as noted by the Software Freedom Conservancy. Mastodon had already benefited from an exodus of Twitter users. In 2017, when it had only 31,000 users, it saw a wave of newcomers arrive disappointed by the developments of the product invented by Jack Dorsey. The latter want to find the "forums" and "discussions" aspect that Twitter initially offered, without having content filtered by an algorithm. In June 2018, Mastodon passed the mark of its first million users, then a second at the end of 2021. A mobile application for iOS, Apple's mobile operating system, is launched in January 2022, followed by an Android version in February. The social network hopes to capitalize on this new boost to continue to grow. Among its projects for the end of the year, a new discovery screen to highlight hashtags, news and popular messages more prominently.

## ###ARTICLE\_START### ID:1875

DATA OVHcloud stands as the champion of French digital sovereignty. "Today, data is as important as energy and agriculture," asserts Octave Klaba, founder and president of OVHcloud, recalling that his group "does not use third-party data. We have 900 internal developers who work to guarantee our technological sovereignty." OVHcloud will invest "1 billion euros by 2025 in a public, open-source cloud platform." The aim is to offer software publishers and their customers the possibility of working in a "transparent" environment and being able to develop their own technological solutions. OVHcloud sees itself as the foundation on which the European tech ecosystem will be able to build a cloud offering capable of competing with those of American (AWS, Microsoft Azure, Google Cloud) and Chinese (Alibaba Cloud and Tencent) gigatechs. Don't mention Blue or Sens to the founder of OVHcloud. These two alliances (the first between Orange Capgemini and Azure, the second between Thales and Google) make Octave Klaba and his CEO, Michel Paulin, jump out of their chairs. "We ended our partnership with Google, for lack of having obtained the guarantees we wanted," adds the latter. To escape the extraterritoriality of laws such as the American Cloud Act and its Chinese equivalent, OVHcloud - like Sens and Blue - is banking on the compartmentalization of their activities. Thus, when American software is used, for example Vmware, the installations and updates are done with USB keys or CD-Roms, within the framework of licensing contracts and not via downloads or updates managed directly from the United States. OVHcloud is also playing the "pure player" card. "We are not competitors of our customers, unlike American hyperscalers (AWS or Google in particular, Editor's note)," emphasizes Michel Paulin. This positioning even allows us to attract American customers. » Confident in OVHcloud's ability to continue its growth, the group's leaders are counting on a 25% increase in turnover by 2025, which would increase the group's revenue from 788 million euros (for its financial year ending August 31, 2022) to 1 billion euros. Around 16% of this growth should come from winning a new type of customer: administrations and companies looking for a cloud operator with SecNumCloud certification. Around thirty customers have already opted for this solution, including the French Navy, six ministries and the State Financial Information Technology Agency (AIFE). For the moment, large companies are still insensitive to the argument. OVHcloud does have a few among its customers, but indirectly, via partners who themselves sell them their services. Similarly, no local authority is a direct customer of OVHcloud's SecNumCloud offering. The Roubaix group is nevertheless banking on a rapid expansion of this market, which it still refuses to quantify. Companies that have sensitive data could be forced to choose SecNumCloud-certified storage solutions. For the moment, the State is counting on the goodwill of these companies, but if things don't move, it could legislate, as explained by the Minister of the Economy Bruno Le Maire in mid-September. OVHcloud's other battle for data sovereignty is being played out in the corridors of the European Commission. The French company has joined the complaint filed by the German Nextcloud before the Commission, accusing Microsoft of its anti-competitive practices. The two Europeans notably accuse the American company of pushing its customers to acquire more and more services under penalty of suffering significant price increases and of slowing down data portability. The group is counting on a 25% increase in turnover by 2025, to 1 billion euros.

## ###ARTICLE\_START### ID:1876

Since Elon Musk's acquisition of Twitter, some users, dissatisfied or worried about the measures announced by his new boss, have decided to migrate to other platforms. From indignation over the group's mass layoff plan to fears of a wave of extremist speeches, to opposition to the paid subscription model wanted by Mr. Musk, there are many reasons for recrimination. Where are those disappointed with Twitter fleeing to? How large is their exodus? Mastodon, the network not for sale Unknown to the general public just a few days ago, Mastodon is experiencing a spike in popularity among Internet users concerned about the future of Twitter. Created in 2016 by German developer Eugen Rochko, the site presents itself as "a free and open source decentralized social network" without any advertising. In concrete terms, it allows each user to join, according to their interests, the community of their choice, which establishes its own rules. Mastodon, which prides itself on being "not for sale," consists of a network of thousands of independent servers, also called instances. Members can interact as long as the moderation rules of their respective servers are compatible. On his personal account, Mr. Rochko claims that Mastodon reached more than a million monthly active users on Monday thanks to the addition of 1,124 servers and nearly 490,000 new users since October 27, the date of the effective acquisition of Twitter by Elon Musk. Several users tempted by the experience say, however, that they are put off by the platform's unintuitive aspect, particularly highlighting the difficulty of creating an account. Others regret that content moderation is left to the sole discretion of group administrators, pointing out the risks of arbitrary decisions. In development or established Other platforms that are potentially attractive to those who want to leave Twitter are still in the development phase. This is the case of Bluesky, the new project of Twitter co-founder Jack Dorsey, who claimed at the end of October to have registered 30,000 people on the waiting list in 48 hours, or of Cohost, which promises that its users' personal data will never be sold. Already established platforms, such as the microblogging site Tumblr or the audio conversation application Clubhouse, have experienced a resurgence in popularity in online discussions. A few other young shoots are also arousing the curiosity of Internet users, including the networks Counter Social and Tribel Social. Networks such as Gab, Parler or Truth Social, the platform launched by Donald Trump, presented themselves as conservative alternatives to Twitter even before its acquisition by Elon Musk. They are probably also hoping to win back users. A still limited effect For the time being, there is no indication that these alternatives to Twitter are able to compete, let alone surpass the network with the blue bird, which had nearly 238 million daily active users at the end of June. In a message published on the night of Monday to Tuesday, Elon Musk even assured that "the number of Twitter users had increased considerably in the world since the announcement of the agreement" of acquisition without providing any figures. "And these are the first days," continued the billionaire entrepreneur. "As Twitter will become by far the most reliable source of truth, it will be indispensable." It remains to be seen whether Twitter's most prominent personalities (singers, athletes, politicians) will continue to be active there or whether they will favor their presence on platforms with a much larger audience, such as Facebook, Instagram or TikTok. IN PARIS 490,000 This is the number of new users on the social network Mastodon since the date of the effective acquisition of Twitter by Elon Musk. The site now has more than a million monthly users, according to its developer, Eugen Rochko.

## ###ARTICLE\_START### ID:1877

His silence weighed heavily. At the time when half of his former Twitter employees were fired on Friday in waves of emails, Jack Dorsey did not let out a word. It took nearly twenty-four hours for the author of the very first tweet in history to grab his keyboard. Recognizing his responsibility for "this situation," he regretted Saturday evening: "I increased the size of the company too quickly. I apologize for that." And to this hypocritical justification, he added a honeyed touch: "I love everyone who worked at Twitter. I don't expect it to be reciprocal right now." For the entrepreneur with the air of a guru, the timing is all the more propitious for the disenchantment as it arouses suspicion. Is Jack Dorsey, this businessman who is a yoga fan and an introverted ex-punk, turning into a vulture? While his former home, bought for $44 billion by Elon Musk, was engulfed in flames, he announced on October 25 the imminent launch of a new social network. The platform with the evocative name "Bluesky" (literally, "blue sky") picked up the feathers lost by the equally blue bird. In two days, more than 30,000 Internet users - some fleeing Twitter - signed up for its waiting list. "Bromance". Everything about this timing suggests that Jack Dorsey has turned into an opportunist. The businessman seems to have already played a decisive role in the acquisition of Twitter. The story begins on March 26, when Elon Musk was still just another Twitter user. At that time, the founder of SpaceX asked himself in a tweet: "Is a new platform necessary?" Jack Dorsey, who had been away for several months to pursue his crypto dreams, seized the opportunity and wrote to him privately. The two men maintained, as Libération reported in May, an avowed "bromance." In a long text, Dorsey whispered in Musk's ear that an ideal platform should be decentralized with an open-source protocol (whose code is freely accessible), that it would not take the form of a company and would not rely on advertising. The billionaire then confided in him his desire to "fix" Twitter. After a call, the Tesla boss wrote to him again: "It's worth trying to evolve Twitter [ ] and do something new that is decentralized." In the shadows. Ten days after this exchange, Elon Musk bought 9% of Twitter's shares and became its main shareholder. And when he finally decided on April 25 to take over the entire company, Jack Dorsey exulted both in public and in private: "Thank you?", he wrote to Elon Musk in a private message embellished with a heart emoji. The next day, the two men agreed in the shadows to dismiss Parag Agrawal, Dorsey's successor. At first, the entrepreneur was convinced that Agrawal, this "incredible" engineer, would help him achieve his vision. But on April 26, Dorsey disillusioned Elon Musk: "It has become clear that you cannot work together." Musk put him down: "Parag is moving too slowly." It only took him a few hours after the official announcement of his acquisition to fire him.

## ###ARTICLE\_START### ID:1878

Tuesday, October 25 Olga: I woke up with a feeling of joy. Sasha had arrived safely in Warsaw, what a relief! We were always writing to each other when she was on the train between Kyiv [kyiv, in Ukrainian] and Warsaw. I wasn't at peace until she crossed the border. She was taking her plane to Paris at 4 p.m. I went back to the apartment, prepared the last few things, made dinner and left. I met Yanis [her partner] at Charles-de-Gaulle. We were early, waiting in front of the gates. What suspense! The plane was thirty minutes late. There she was, coming out smiling. Finally, she was by my side! Sasha: Last night, we were parked at the border for five hours. On the Polish side, the crossing is taken very seriously, the border guards check everything at length, suitcases and papers. I arrived in Warsaw at 10 a.m. I felt something that no longer exists in Ukraine: relief. The terror leaves me, it no longer inhabits me permanently. I am tired and calm at the same time. I have several hours of waiting at the airport and I am delighted. I sit down to read the news from my country. It is so strange to no longer be there. I already miss Kyiv. I decide to delete several Ukrainian media applications from my phone to take a real break. I only keep one: Monitor - a chat that gathers open source data on attacks. I even muted the alarm that alerts me to the sirens of air attacks in Kyiv. I arrive in Paris at 7 p.m., Olga and Yanis are waiting for me. I am with my family, in my second home. I feel soothed and also a little sad to have left my beloved country behind. Wednesday, October 26 Olga: We wake up, I am going to prepare breakfast, I can't even find the words to express the joy of cooking for my sister! I know that wine has become very expensive in Ukraine, I have selected a few good bottles, we will drink them later. Tonight, Sasha is supposed to accompany me to the choir. We are singing at the Sorbonne, the rooms are magnificent and I am delighted that my sister will see them. But I am starting to get a bad sinusitis, and we are forced to cancel our walk. I stay in bed. In the end, I can't go to the choir. What a shame, it's unfair! I still have the right to be in good shape when my sister is fleeing the war to come and see me for two weeks! Sasha: Today, Olga is not feeling well. I think it is due to the accumulation of stress and fatigue. I am going to the center of Paris to meet my friend S., who has been in France since April. On February 27, she crossed the border between Ukraine and Moldova on foot. We have a coffee, then we go to her place for an aperitif. S. rents a small apartment next to the École-Militaire metro station. From her window, I can see the Parisian rooftops and the dome of the Invalides. When the sun goes down, it’s incredibly beautiful. S. tells me all about her adventures in Paris. What surprises me is that she doesn’t want to know anything about my life in Ukraine. Maybe she’s built a barrier in her head. But I know that she misses Kyiv terribly. Evening comes, I rush home to find Olga. We have dinner with Yanis. We chat into the night, we show each other memes and funny videos, we can’t stop laughing. I feel very happy. Thursday, October 27 Olga: Last night, Sasha woke up suddenly, she was scared. She didn’t understand that she was at my place, safe. She also jumps every time a plane or helicopter flies over the building. Just like Mom when she came in July. I so hope they recover quickly after the war! I can't help but wonder if the rachists [contraction of "Russians" and "fascists"] will stop sending missiles when they evacuate our territories. And the drones? Will they leave people alone? Will a normal, peaceful life - the one I knew there - resume? Or will the constant threat of bombings and attacks continue? No one has the answer. The only thing I tell myself is that when Putin [Olga and Sasha chose not to capitalize "Putin", "Russian" and "Russia"] disappears, the war will end. Despite my sinusitis, I'm going to work. Tonight, we finally saw Elisa [Mignot, a journalist, keeps this diary for M]! This is the first time she and Sasha have met, although they have been communicating every day for eight months. This moment was very moving! The three of us talked a lot tonight, about everything and nothing, about life and the war. We talked about Ukraine, but also about other wars. I remembered my friend Jihad, a Franco-Syrian I met in 2011 in Nantes during a training course for FLE [French as a Foreign Language] teachers. When the war in Ukraine started, Jihad wrote to me to express his support. He told me that in Syria, his family had also suffered “Moscow’s savage policy”. He also told me about people who, “although they have the means to get well informed, take up Russian propaganda”. He warned me that I was going to be subjected to it. I started following the war in Syria in 2015, when our "dear neighbor" attacked the country in support of Bashar Al-Assad. I remember the images of Aleppo... Today, in my head, they are similar to those of Mariupol. Two cities destroyed by the bombs of the rachists. Russia means fear, death, terror for so many people in the world today. Sasha: This morning, I give my lessons by video, I am inspired and in good shape. The morning goes by quickly, the lessons follow one another. Then, I go to Fnac to discover the new products, the books and especially to choose my 2023 calendar. I love this tradition! I want one with seasonal fruits and vegetables to put in my kitchen. I walk around and join Olga in her cellar. Life seems very calm, simple, and I feel happy alongside my sister. Only one thing interrupts this feeling of happiness: the sound of planes in the sky - even if, of course, it is civil aviation - and the din of the city. I don't know why, in Kyiv, we avoid - unconsciously - making too much noise because it hurts everyone. Tonight, we are having dinner with Elisa. Olga met her after Maidan, in 2014, when they worked together to collect testimonies about the revolution. We were waiting for her at the shop when she arrived. We stayed together very late and missed the last metro. We took the last bus. Olga was tired, but I was happy to be in the city at a late hour. This had not happened to me since February 24. The city is alive, illuminated. There is no feeling of the end of the world, as in Kyiv when the curfew begins, at 11 p.m. Friday, October 28 Olga: This morning I went to a hairdresser. I didn't really know what I wanted to do and at the last minute I told her: "Cut it short." They say that hair absorbs both positive and negative vibes. I wanted to get rid of all the weight I've been carrying since the last few months of war. Sasha told me it looked great on me. In the afternoon I listened to an interview with Christo Grozev, director of the online investigative media Bellingcat and head of investigations on Russia. The site has just published the results of an investigation into Russian military engineers responsible for choosing targets and calculating the trajectory of the missiles that strike Ukraine every day. Bellingcat has identified about thirty people, whose portraits have been published. I look at the photo of these people. They are young women and men who are about the same age as Sasha and me. Their job is to transmit data that allows the rachist army to target civilians, to take the lives of people like them. But who are they? A catastrophe for humanity. Sasha: This morning, I'm lying in bed while Olga goes to the hairdresser. I don't watch the news, I just want to know if mom, dad, grandma and Dmytro [her partner] are okay. It's strange to feel how much I want to devote myself, here, to rest and this "war break". Probably because I know that, no matter what happens, I'll return to this reality made of missiles, kamikaze drones, curfews, power cuts and sirens. So what's the point of thinking about it all the time? Yanis is planning a surprise party for Olga's 35th birthday. This afternoon, we go shopping. In the evening, we're going to have dinner at some of Yanis' friends'. Olga joins us, I eat the first raclette of my life. The atmosphere is very warm, I listen to them, the topics of conversation are simple and everyday, they talk about films, sports, current events. I don't participate much, it seems to me that I have forgotten how to talk about simple things. Saturday, October 29 Olga: Today is my birthday! I wake up in a good mood, I know that I will spend the day with my sister and my boyfriend. I don't need anything else, I am fulfilled! Sasha has been coming to Paris for my birthday for five years. We usually start the day with a good breakfast and a glass of champagne. But today, we motivate ourselves: we are going to do pilates in the park next door. We have to burn off the calories after last night's raclette! You might think that we have forgotten the war. We try to distance ourselves, but the messages about the air raids bring us back down to earth. Our parents and loved ones are there. We do our best to get news from them. We planned to go to a restaurant tonight for my birthday, Yanis is picking us up after his work meeting. We have to pick up some friends first. We ring their doorbell, the door opens and there... "Surpriiiise"! Yanis has organized a surprise birthday. I am so touched, no one has ever done that for me. All my friends are there. My Sachounya also knew, but she kept it a secret. I am happy! Sasha: It's Olga's birthday, my favorite holiday. In the morning, we decide to take our time. Pretending it was work, Yanis went to prepare the party. Olga was disappointed, but my mission was to organize the best day for her. After the pilates class I gave her in the park - the weather in Paris is so summery! -, we bought ourselves some petits-fours and croissants and organized a birthday brunch just for the two of us. We toasted with crémant, listened to music, sang. What a joy to have a sister and celebrate her life! In the evening, the party lasted until 3 a.m. I hope Olga will have stored up lots of positive emotions. I discover with surprise that her friends read the newspaper that we keep and, suddenly, I tell myself that they already know quite a few things. Understanding that lots of people we don't know know us is a strange experience. Élisa told us that after last week's issue, readers asked Le Monde if I had arrived safely in France. It moved me to tears. Sunday, October 30 Olga: Today, rest. I realize that since Sasha's arrival, I don't follow the news too much, I enjoy every moment. I don't want to know what Putin says in his last speech, I don't want to know the details of the fighting in the East... Not during these two weeks. Sasha: Late morning with aspirin. We don't move from the apartment. I watch the news of the week anyway, I'm afraid of missing something or not knowing what's happening in Kyiv, on the front or in the heads of the leaders of this world. I have news from Dmytro, from Mom, and Olga and I called our grandmother. I feel like a family, safe. Without this cancer that is the war in Ukraine, which follows me everywhere and hurts me. However, this is not enough to make me not go home. Monday, October 31 Olga: I am woken up by a beep on my phone. There is a new attack on Kyiv. I write right away to Mom, Baboussia [her grandmother] and Dad. Everyone is safe and sound. The rachists have targeted strategic buildings again. There is no water or electricity in several districts of Kyiv. To think that yesterday grandma told us that it was "wonderful" to have electricity again! One thing reassures me: Sasha is next to me, safe.Sasha: We wake up with Olga because her cell phone is beeping non-stop. There is an attack on Ukraine. I learn from my neighbors' chat that the water is cut off almost everywhere. Mom still has some, she fills her bathtub. Dmytro, on the other hand, has none left. My friends hear explosions in Kyiv, there is a lot of smoke on the left bank. I was supposed to do gym this morning, but I stay glued to the cats with my friends and family. Aline Zalko for M Le magazine du Monde

## ###ARTICLE\_START### ID:1879

The famous Guyard report on sects, published in 1995 following a parliamentary commission of inquiry, helped to put words to a sprawling, dangerous and largely underestimated phenomenon. At the time, the deputies focused in particular on defining what a sect was, not through a definition, but through a collection of clues which, if they were sufficiently numerous, allowed a movement to be qualified as such. One of the clues, not the least worrying, focused on determining whether the organisation or group was trying to infiltrate public authorities. "The large sects seek to acquire power and therefore infiltrate places of power: the political, economic and health sectors", said the former right-wing deputy Georges Fenech in an interview with Le Figaro in 2012, when he was president of Miviludes. Recent example: the recording by the former Minister of Citizenship, Marlène Schiappa, of a podcast with her friend Anne Ghesquière, a businesswoman close to the "sacred feminine" movement and anthroposophical movements, which take up the controversial precepts of the Austrian occultist Rudolf Steiner. Faced with the controversy, the podcast was ultimately never put online. Another notable fact: Françoise Nyssen, appointed Minister of Culture in 2017, had founded a Steiner school three years earlier, accused of sectarian excesses. If entryism remains - the strategic establishment of the Church of Scientology in Saint-Denis, near the Stade de France in preparation for the 2024 Paris Olympics, is a fine example of political laxity - it is no longer the number one objective of sectarian movements. The new Miviludes report attests to this: today, these toxic groups are fostering a genuine desire to split from the State. Often fueled by a hatred of the power in place, a symbol in their eyes of exacerbated capitalism, these new proselytizing gurus use unbridled anti-system rhetoric, often conspiratorial, offering a new path to their future followers. A path where conflict does not exist, and where the problems inherent in our society have evaporated. Charline Delporte, president of the National Center for Family Support in the Face of Sectarian Influence (Caffes), often mentions the fact that within the bubble they create, these movements break with the Republic and its laws. It is a parallel universe, full of love and solutions. Since the Covid period, these false remedies have appeared largely in the health field; we are encouraged not to seek treatment, to eat raw, to fast for a long time, even permanently. Some even advocate feeding on... light. To cure all ills with techniques that are nevertheless dangerous and can lead to death. With the help of dubious practitioners - their listing on the Doctolib platform until recently gave them credibility. If activists in the fight against sectarian excesses today deplore the attachment of Miviludes to the Radicalization Prevention Center (CIPDR), an integral part of the Ministry of the Interior, it is clear that there are clear common points between these two phenomena. Where radical Islamism puts Koranic laws before those of the Republic, the sectarian group creates its own, presenting them as essential alternatives in the face of urgency, catastrophe, collapse, or even the Apocalypse. The One Nation conspiracy movement, which aspires to create eco-villages throughout France, declares: "Governments are failing in their mission. They care neither for human beings nor for the Earth. We no longer trust them, they have lost our respect." With an enticing proposal of "open source projects that offer an alternative to the usual instruments of power (identity, money, education, food, information, etc.)". A true "sectarian separatism". As in the phenomenon of radicalization, the mental hold is so strong that it can lead followers into a state of extreme vulnerability. The consequences are, however, a little different: scams of all kinds, sexual abuse, psychological trauma. Where the most radical Islamists call for violence against those who do not embrace their model, sectarian groups prefer to reform their flock and destroy them from within. But, in a period of multifactorial crisis, radical micro-movements are flourishing everywhere, spreading a worrying ideology. This is the case, among others, of the Brigandes, in Hérault, a music group that has become a millenarian esoteric movement. Led by the guru Joël Labruyère, they aspire to the preventive creation of a new civilization, where the "fraternal clan" opposes the "zombifying individualism" of our Westernized society. Faced with the proliferation of these micro-States in the State on the borders of communitarianism, the government remains powerless. The powers of Miviludes are almost nil since it cannot investigate. The About-Picard law of 2001 on the abuse of weakness comes up against timid judges. The gurus, even the best known like Raël, then continue to prosper, to the great displeasure of the victims of influence, who are ever more numerous. "The About-Picard law of 2001 on the abuse of weakness comes up against timid judges. Gurus, even the most famous ones like Rael, continue to thrive

## ###ARTICLE\_START### ID:1880

IT A revolt or a revolution? A wind of discontent is blowing through many local authorities. Microsoft's business practices are arousing more and more discontent. "The root of the problem is Microsoft's strategy. It is incompatible with the good management of a local authority," says Marc Sztulman, regional councilor of Haute-Garonne. Microsoft wins contracts with products at artificially attractive prices, ease of use that appeals, but then we are stuck." The straw that broke the camel's back came with a price increase of more than 20% on the American company's office suite (Word, Excel, PowerPoint, etc.). To escape this, Haute-Garonne could subscribe to new services, such as Teams, OneDrive or SharePoint. "The choice is a price increase or an increase in dependency. The only solution would be to rush headlong and leave to our successors the management of markets with out-of-control prices and a very strong dependence on a service provider," adds Marc Sztulman. Microsoft explained that its prices have remained unchanged for a decade and that it is time to review them. However, more and more communities do not see it that way. "To escape the increase, we would have to subscribe to even more services offered by Microsoft!" adds Bertrand Maes, deputy mayor of Lyon. Of course, the unit cost of each service would drop, but dependence would increase. Bertrand Maes also mentions "the political reasons for this choice". The ecological city hall wanted to reduce its dependence on the services of the American giant in the name of digital sovereignty and the protection of citizens' data. In Lyon, as in Toulouse or Grenoble, the concern is particularly about the consequences of the Cloud Act, this American law that allows Washington to access data held by American actors, as part of federal investigations. To escape American legislation, local authorities are eyeing open source solutions and/or solutions developed by French actors. French solutions The city of Lyon, supported by the Métropole, has started looking for alternative solutions. The difficulty is finding "the same quality of service as Microsoft, with easy-to-use software", Marc Sztulman tempers. However, solutions exist. Lyon has set its sights on OnlyOffice to replace Microsoft's office suite (Word, Excel, etc.), Zimbra to succeed Outlook (for emails), the Lyon-based Watcha, for videoconferencing, etc. Toulouse is testing BlueMind for emails, and is considering Wimi for videoconferencing. "The transition will be gradual, over several years, we need to plan for support for agents who use its solutions," adds Christophe Carré, technical advisor to the Lyon city hall. But the movement has begun. "We need to allow French suppliers to improve their skills, for departments to agree to serve as beta testers. Public procurement must also be a strategic tool used to promote sovereignty while respecting the rules," adds Marc Sztulman. With the idea of bringing together other local players to increase the power of local solutions. Although the political colours may not be the same, the speeches given in Toulouse or Lyon are similar to those of Bruno Le Maire. At the end of September, during the inauguration of an OVHcloud data storage centre in Strasbourg, he explained that he wanted to encourage the administration and large companies to opt for French solutions, in the name of independence and "data control". Even if, for this, the government does not rule out relying on "transition solutions", such as Bleu, a platform developed by Orange and Capgemini that will integrate Microsoft solutions, while offering - in theory - impermeability to the Cloud Act. The solution is far from unanimous before it has even seen the light of day, as illustrated by the choices made by Toulouse, Grenoble or Lyon. "Microsoft obtains markets with products at artificially attractive prices, an ease of use that seduces, but, after that, we are stuckMARC SZTULMAN, REGIONAL COUNCILOR OF HAUTE-GARONNE

## ###ARTICLE\_START### ID:1881

The camera turns on. In the distance, in front of his computer, Dmitri Tchernichev appears, ruffling his hair with one hand. “My story is quite simple,” he begins. “When the war broke out [on February 24], I spent all my time in front of my screen, I barely slept two or three hours.” A well-known blogger in Russia, this professional trainer continued to denounce the “monstrous” invasion of Ukraine until, on March 4, the police arrived at his home. First alert. Then he was arrested in the street, in Moscow, near the Mayakovskaya metro station, where he was spotted by the facial recognition system, omnipresent in the capital. “The police handed me over to the FSB [the Russian security services]. I told them that, for me, Putin had not been president since 2008, the year he usurped power. I added: ‘I served two years in the paratroopers in Chernobyl, Ukraine, between 1984 and 1986, to protect a reactor, no need to scare me.’ But fear crept in. “They started by threatening my children, then, after three hours of interrogation, a white-haired woman came, who introduced herself as a general of the SVR [foreign intelligence service]. She demanded that I put in writing my loyalty to Putin, a kind of oath. I refused. She then threatened to send me to the DNR [self-proclaimed Donetsk Republic] and tie me to a post there as an informant in the pay of kyiv. I ended up writing a paper saying that I was stopping all activity on the Internet.” A few days later, on April 17, Dmitry Chernichev flew with his wife and two children to Israel, where he now lives. Like him, well before the rush to the borders caused by Vladimir Putin's announcement on September 21 of "partial mobilization", tens of thousands of them have fled Russia since the start of the war in Ukraine triggered by the Kremlin. While Russian data is partial and subject to caution, Rosstat, the National Institute of Statistics, estimated in early September that departures in the first six months of the year were double those recorded during the same period in 2021 (419,085 departures compared to 202,562). According to other information from the FSB, which supervises the border guards, all the former Soviet republics, Armenia, Tajikistan, Uzbekistan and Kyrgyzstan, saw a spectacular increase in entries from Russia in the first half of 2022 compared to 2019 - that is, before the restrictions linked to Covid-19. Abkhazia alone, a territory that declared itself independent from Georgia after the 2008 lightning war waged by Russian forces, recorded 1.1 million entries, 13% more than in the first half of the year two years earlier. As early as March 8, economist and demographer Konstantin Sonine, a professor at the Harris School of Public Policy at the University of Chicago, who himself has been living in the United States since 2014, made this observation: "I am not comparing the plight of Russians with that of Ukrainians bombed by the Russian army, but more than 200,000 people have fled Russia in the last ten days. A tragic exodus, unseen in a century," he wrote on Twitter. Since then, this figure has continued to grow. Exile leads men, women and children to Yerevan, Tbilisi, Istanbul, where they do not need a visa (within the limit of ninety days), but also to Europe, to Belgrade, Prague or Paris, most often with temporary documents. Like their ancestors, exactly one hundred years ago. Those who are fleeing Vladimir Putin's regime today form the third Russian wave of mass emigration, after that of the early 20th century and that of the 1990s, when the fall of the USSR pushed millions of people to leave in the hope of finding a better life elsewhere. If this second wave has little to do with the current departures, the escape of today's Russians strangely resonates, on the other hand, with the exodus of intellectuals and White Russians fleeing the Bolshevik regime. An endless list In Oslo, on December 10, 2021, when he was awarded the Nobel Peace Prize, Dmitry Muratov, editor-in-chief of the independent newspaper Novaya Gazeta – banned in Russia since March – already mentioned it: “September 29 [2022] will mark the centenary of the “philosophers’ ship,” which left St. Petersburg for Stettin, Germany [now Szczecin, in Poland since 1945], one of the many ships of this kind that transported nearly three hundred eminent intellectuals from Russia, driven out by the Bolsheviks. (…) This is how the motherland said goodbye to its great citizens: “Leave your business but take your brain!” The same thing is happening today with journalists and human rights defenders. The philosophers’ ship has been replaced by the journalists’ plane. » Historian Catherine Gousseff, a specialist in Russia and in particular in Russian emigration in the 20th century, says she is struck by the abundance of references to this period, as if the current trauma revived that of the past. "The circumstances are certainly different," deciphers the author of L'Exil russe. La fabrique du réfugié apatride (CNRS éditions, 2008), "but there are also analogies: the suddenness, the routes of emigration to Armenia, Turkey and Europe, and above all its social composition. This time again, the elites, the intelligentsia, the teaching profession are very present." A brain drain that is worrying for the country, but which the authorities seem to care nothing about. "I myself have been able to observe the disarray of scientists," continues Catherine Gousseff, also treasurer of Memorial France, one of the branches created abroad of the famous Russian NGO, dissolved in December 2021 by a Moscow court. They are no longer very young, this is a generation that believed that, through its work, after the collapse of the Soviet Union, it would contribute to the emancipation of Russia and who saw all its hopes collapse in 2022. » Tens of thousands of journalists, human rights activists, teachers, researchers, students, artists, employees in the high-tech sector have thus left. More than thirty journalists from Novaya Gazeta followed Kirill Martynov to Riga, Latvia, to found a European edition of the newspaper, joining other colleagues already in exile there. Ruslan Leviev, founder of the Conflict Intelligence Team site, specializing in open-source investigations into armed conflicts in which Russia is participating, left Moscow with his entire team. Fifteen days after his departure, on March 18, the Russian services put him on the wanted list. Four hundred employees of Yandex, the Russian company that operates a popular Internet search engine and applications in the country, are also said to have packed up and left. The list is endless. It includes not only an intellectual elite, but an entire educated middle class. Anti-war. Before leaving, Ekaterina Chelganova threw a huge placard into the waters of the Fontanka River in the center of Saint Petersburg, with a single word written on it: “Mariupol.” With long brown hair and a tormented face, this 44-year-old artist has been at all the demonstrations since February 24. Arrested several times, she has had her home searched and this time risks prison for her gesture intended to draw attention to the martyred Ukrainian city. A patrol saw her. “I lied, I said I had found the placard.” » She no longer has a choice and, on April 17, she too takes the road that leads to Estonia, to the Narva border post, which she will eventually cross on foot, after hours of waiting and a Covid test carried out in a hurry. She has since managed to join a friend in Sweden. "My Saint Petersburg is empty," murmurs Ekaterina Chelganova, recalling her many friends who left like her and are now scattered. Overwhelmed, she says: "My neighbor warned me that if she saw me again, she would call the police because of the graffiti in the elevator." A teacher specializing in Scandinavian languages, herself living in Stockholm since 2008, Sonia Peresvetov-Morah belongs to a network that has helped Ekaterina and other Russian refugees, whose number she estimates since the invasion of Ukraine at "5,000 or 6,000." She is also a member of an “anti-war committee,” as has been created in several countries. On Telegram and other social networks, during meetings organized in Prague or Tbilisi, the “Putin banished” are trying to break their isolation and unite. They have even adopted a flag, with three horizontal stripes, white, blue, white – a bit like the red and white one adopted by the Belarusian opposition after the fierce repression of the protest movement that had set the country ablaze in 2020. Designed online after the start of the war, this new Russian standard is inspired by that of the 12th century Novgorod Republic, which has remained in people’s minds as the embodiment of a democratic experiment. Without the red color associated with violence, it is now mixed in with pro-Ukraine demonstrations. A way for these exiles to be accepted, everywhere confronted with the massive presence of Ukrainian refugees fleeing the war and hostile to any presence evoking the aggressor country. "At first, we hid the red stripe of the Russian flag by rolling it up," says Nadejda Koutepova, who takes part in all the demonstrations in Paris. This woman of incredible energy left Russia with her three children in July 2015, after the dissolution of her NGO which defended the victims of radioactive contamination around the Mayak plant, in the Urals, her region, site of the first civil nuclear disaster in 1957. "We are all Putin's emigrants," continues the whistleblower, who has obtained political refugee status in France. This new flag means "I am Russian, I am against Putin, against the war and for an independent Ukraine all the way to Crimea." "In our committee, we have decided to no longer call Putin a 'president' but a 'terrorist'," Sonia Peresvetov-Morah, who went to Prague in early July to attend the Forum of Free Nations of Russia, agrees from Stockholm. Still remotely, we find Dmitri Tchernichev, this time in Tbilisi. On September 14, the blogger-trainer traveled from Israel to participate in another anti-war forum in the suburbs of the Georgian capital. He too has contributed to popularizing the new flag on social networks. "The opposition needed a symbol - Russia without blood - to mark the rejection of the Soviet past, of a violent period. For me, the absence of red is the end of the imperial project." The objective of his meeting is, he says, "to reach an agreement among ourselves, to confront our ideas. And, personally, I believe that we must convince that, even if Putin loses the war and power, the FSB and Kadyrov [autocrat at the head of Chechnya] will not disappear." Hated power The opposition, for everyone, is total in the face of a hated power. At barely 16 years old, Alexander Lavut took the path of exile for Paris. "I left quickly. On March 2, I was coming home from school when my mother called me to tell me to take a PCR test. The next day, I was on a plane to Yerevan, with the son of a friend." A high school student from a family open to the world, "Sacha", as his relatives call him, has been demonstrating against the power since the age of 13, alone, with a placard, in front of the presidential administration, to protest against the lack of freedoms, the rigged elections. "According to the law, I could not be arrested, since I was too young to have an internal passport," the Russian equivalent of an identity card. His grandfather is a famous dissident: the mathematician Alexander Lavut, a figure in the fight for civil rights, participated in the writing and distribution of samizdats (clandestine writings from the time of the USSR), took up the defense of the Crimean Tatars and was imprisoned from 1980 to 1986. From Armenia, the young Lavut passed through Georgia for a few weeks - his two older brothers have been living there for several months - before obtaining a temporary visa for France, where he joined family on May 25. “My parents stayed in Russia because of the real estate, the assets, our three dogs, but they always supported me,” says the frail-looking but determined teenager, who speaks without restraint, with their blessing: “They tell me: ‘If you are anonymous, your word loses its value.’” Years after his grandfather, Sasha has thus joined the ranks of the new dissidents forced to leave their country. “In Russia, people do not want to see that they have been living in poverty for twenty years. They do not want to open their eyes to this war, because it terrifies them.” No, he continues, “the gulf is not generational, it separates those who know how to use a VPN [virtual private network] on the Internet and those who turn on the TV and receive ready-made formulas. But between the Soviet people, who lived under a totalitarian regime and saw a light of freedom in the 1990s, and those of my age, who see the process reversing, who should be more afraid? "The motivation for our departure was not economic - in Russia, you can make money - but political," assures Tatiana Chouvilchikova, a psychologist. The feeling that we were returning to the Soviet Union, the violations of human rights, the values that no longer exist in Russia such as security, the possibility of trusting the police, the justice system, respect for the rights of LGBT people, even if I am not, all of this is important to me, she lists. How can I explain it to you? I want to be able to express myself, on social networks or elsewhere. » Having left in mid-March, this 40-year-old woman with large tattoos on her arms, also contacted by video, now lives in Antalya, Turkey, with her husband, a computer programmer. She earns a little money by giving consultations online – “I increasingly refer my patients to psychiatrists” – he is still looking for work. They both hope to one day go to Portugal. A choice that has been mulled over for months. “Two years ago, I was already telling my husband that there would be war because of the militarization of society, the grand celebration of May 9 [the date of the victory in the Second World War], the revisited history, the aggressiveness of those in power, the talk about the enemies around us… That was the logical next step.” Deep family ruptures For this couple, as for many of their unfortunate companions, exile is a difficult ordeal. In addition to financial concerns – due to international sanctions, Russians cannot access their foreign accounts – there are the difficulties of language and finding a source of income quickly, all in the almost total impossibility of planning for the near future. Leaving everything behind, yes, but for how long? “Life in Russia is a permanent crisis, and I don’t think the country will become a European state in the next twenty years, in any case, I’m not prepared to wait,” says psychologist Tatiana. “Our exile is not temporary.” “It could end tomorrow or in twenty years. We behave as if it were for a long time, we look for work, the children go to school, we learn Hebrew,” confides Dmitri Tchernichev. I’m very afraid of becoming like those Russian generals in France after the Revolution, who didn’t unpack their suitcases because they thought they would stay for a few days.” The haunting of the past, again. "The suddenness with which this war was triggered can also fuel the idea of an equally sudden reversal," agrees Catherine Gousseff. "It was the same thing at the beginning of the 20th century, especially in 1924, at the peak of arrivals in Europe, before a form of resignation finally set in. Today, saying that they are going to stay where they are is a way of not projecting oneself into a hypothetical return, of confronting reality." But the connection between emigrants of yesterday and today ends there. Because the great paradox of the situation is that Vladimir Putin has not stopped, in recent years, trying to seduce the descendants of the White Russians. "As much as it was a taboo subject during the Soviet era, since the fall of the USSR, we have witnessed an immense recovery of the history of Russian emigration," the historian emphasizes. This has allowed us to offer a Europeanized version of a Russian elite, which still loved its country, which has conveyed its values and which has above all served to feed today's Russian nationalism." "Putin took everything," fumes the Russo-Swedish Sonia Peresvetov-Morah. And today he continues with the new emigrants, he has confiscated not only their life in the country, their property, but also part of their family, ideologically." For many of them, exile also translates, in fact, into deep family ruptures. "Until the last moment, my father did not believe in my departure," sighs Tatiana Chouvilchikova. He was born in 1945 in Ukraine, a country he never loved, he loves Putin. I call him every two weeks, but we don't discuss politics. If he realizes the situation, it will be very painful." Ekaterina Chelganova left everything behind: her apartment, her three cats and, above all, her 19-year-old son, who stayed behind to finish his studies with her ex-husband. "His father supports the war, between us, it's serious," she says, without adding anything other than a furious comment on another subject: the limitation of tourist visas for Russians, announced by several member states of the European Union: "Emotionally, it's understandable, but many people will become even more vulnerable with this decision that will help the Putin regime!" On September 26, Pavel (he does not wish to give his name) is leaving. Five days after the announcement of the "partial mobilization", this industrial engineering expert will join the ranks of the exiles. In transit in Yekaterinburg (Western Siberia), he is preparing to take a flight to Kulab, a city in southern Tajikistan, on the border with Afghanistan. The only ticket he could find, for 1,000 euros. Contacted by messenger, Pavel appears, a tight smile. “Yesterday, I spent eight hours queuing in front of the notary to sign powers of attorney [necessary in Russia for the transfer of property and all administrative procedures]. In front of me, there were only men. Same thing, for the plane, it is 90% full of men.” His wife and two little four-month-old twin girls stayed in Moscow, the time, for this 41-year-old father, to find somewhere to land. He has no plans. “I will probably try to reach Dushanbe [Tajik capital] then take a taxi with others to Tashkent [Uzbek capital], or even go to Kyrgyzstan – there, you can stay two hundred and ten days. Then, we will see, I will perhaps be able to continue my activity and work remotely?” "As soon as possible, he will bring his family over: "We are thinking about what comes next, about moving, maybe to Serbia... Everything is so vague..." Their dream would be to emigrate to Canada. "We never know how long it will last, like in 1917... Well, yes, for us, it has already lasted twenty-two years," Pavel continues, referring to Vladimir Putin's rise to power. The next morning, in a message, he specifies: "Slept. Feeling better. I am in Dushanbe." He is part of another wave, mainly male, even more sudden, more disparate than that of the early anti-war movement. But, like all the Russians who fled, he does not have a return ticket.

## ###ARTICLE\_START### ID:1882

DATA At $28 billion, Databricks is one of the most valuable private companies in the world. Having already won over half of the 500 largest American companies and 7,000 customers worldwide, its artificial intelligence platform has just exceeded $1 billion in recurring revenue this year. A dazzling success that has prompted giants AWS, Salesforce and Google to invest more than $1 billion in it last year, alongside Microsoft and the Andreessen Horowitz fund. Why such enthusiasm for Databricks technologies? "Regardless of their size and sector of activity, companies have an extremely strong appetite for building their strategies based on the analysis of massive data," explains Samuel Bonamigo, senior vice-president and new general manager of the EMEA zone. Responsible for developing the commercial activity in Europe, the Middle East and Africa, this former Salesforce and Google Cloud employee is one of the many talents that the company has recruited from former executives of Amazon or Alphabet. Databricks offers open source tools for storing and analyzing large quantities of data from many different sources, with an emphasis on creating artificial intelligence applications. "Companies want to use all the wealth of their data to try to better anticipate the future," continues Samuel Bonamigo. "Improving business processes or solving complex problems represents real value." Optimizing a supply chain, avoiding overstocks, better detecting fraud, anticipating payment defaults, developing new products... The use cases are multiple and varied in companies. To reduce unnecessary maintenance on its fleet of aircraft engines and limit unplanned ground downtime, Rolls-Royce collects data in real time and models its performance in the cloud, using Databricks technologies. “Databricks is central to data collaboration,” explains Herveig Lecuyer, data factory program lead at Schneider Electric, which used it to launch its digital services marketplace for its partners. Following in the footsteps of other publishers and major cloud providers, Databricks is beginning to adapt its products to the specific needs of certain sectors, such as finance, manufacturing and healthcare. IPO project After conquering a large part of the American market, the company wants to strengthen its position in Europe to meet strong demand. “In Europe, we are on a triple-digit growth rate,” says Samuel Bonamigo. The company has 800 employees in the region and has expanded its management team. The company must face the rise of the major cloud providers (AWS, Azure and Google) in this niche of big data and artificial intelligence. Faced with these competitors - who are now also its partners - Databricks highlights its "multicloud" expertise and its ease of use. Its other major competitor, the company Snowflake, was one of the most noted technology IPOs in recent years. Databricks also plans to go public in the long term, but will wait for better market conditions. The company is confident for the coming months, despite the worsening economic climate. "If you are subject to cost pressures, the last thing you want to cut are the things that make you more efficient," said Ali Ghodsi, CEO of Databricks, last week at a conference in the United States.

## ###ARTICLE\_START### ID:1883

Digital technology has transformed our lives. While many of us enthusiastically embrace the services and objects that come with it, just as many of us are concerned about the power that large web platforms are taking, the mass surveillance of citizens by sometimes even democratic states, among other pernicious effects. Both public and private authorities are seeking to appropriate this fantastic toy to put it at their service. Do we have no other solution than to accept total control of digital technology by the private or public sector? Yet there is one: the "digital commons". Humans have always learned to manage resources collectively, like fish in a communal pond. With total "laissez-faire", someone could fish all the fish in the lake and deprive the others. So, we make the lake a common, by establishing rules to preserve the resource. This is the starting point of this notion, studied by the American economist Elinor Ostrom (1933-2012, Nobel Prize in Economics in 2009). Let's give the Wikipedia definition: "Commons are shared resources, managed and maintained collectively by a community; the community establishes rules in order to preserve and perpetuate these resources while providing members of this community with the possibility and the right to use them, or even, if the community decides, by granting this right to all." Pastures, rivers or woods are rival resources: if I catch a fish, it is one less fish for the community. In digital, resources are non-rival: if I make a new copy of software, this does not reduce other people's access to this software; we can make millions of copies of it. This non-rivalry is the basis of the success of the idea of installing commons in the digital world. But not only that: digital technology also facilitates collaborative work, exchanges between people at levels that were still inconceivable in the world before. Community life and the collective management of resources are therefore facilitated by digital technology. If, for material commons, the community must ensure that overconsumption is avoided, for non-rival digital commons, the community must above all maintain the motivation to contribute. An existential risk is that of the multiplication of "cuckoos" who take advantage of the resource without contributing anything. This is the case, for example, when a private web service, such as Google's search engine, uses Wikipedia content without really contributing to the encyclopedia. Motivations and diversity The area where the concept of digital commons applies most obviously is that of open science. The desire to disseminate science has led to the sharing of scientific results in journal articles. Digital technology facilitates this sharing but allows us to go further, to share all the products of science – data, software, experimental protocols, clinical trials, etc. All of society is also opening up to digital commons with citizen initiatives such as OpenStreetMap, a collaborative project that constitutes a free geographic database of the world. In the field of creation, the commons are developing with Creative Commons licenses, which make books, videos, and photos open access for all. Here we find the question of the motivation to contribute. One of the challenges of digital commons is to bring out economic models that allow fair compensation for authors when the works are freely accessible. The commons hold an essential place for software. Why “share” software? We can do it out of altruism, to build a more open world, this is the heart of the free software movement. But companies have also massively adopted open source software, whose code is open to all. For companies, opening up the codes allows software to be produced, maintained and distributed more efficiently. The result is better software with standardized interfaces, used massively. Free or open source software, if the motivations are very different, the licenses on which they are based are ultimately quite similar. Through the richness of their diversity, digital commons offer an extraordinary laboratory for experimenting with approaches emphasizing both the solidarity of sharing and the optimization of the use of resources. In this way, they can participate in finding answers to the ecological threats that we must face.

## ###ARTICLE\_START### ID:1884

CYBERSECURITY When a citizen of the European Union buys a car or a toy, it is certain that the "CE" marking guarantees a level of security. Nothing like this currently exists for connected devices and digital products, the number of which is growing very rapidly. A blind spot that the "Cyber Resilience Act", a draft European regulation that will be presented on Thursday by the European Commission, aims to remedy. Having become essential in the daily lives of individuals and businesses, these connected objects are also a major vector of cyberattacks. "If everything is connected, everything can be hacked", summarized Ursula von de Leyen, the President of the European Commission, in her speech to the Union in 2021. According to a figure put forward by the Brussels services, two thirds of major successful cyberattacks were carried out via software or smart objects with known but uncorrected vulnerabilities. The regulation establishes that all products, hardware or software, capable of processing online data will now have to meet common minimum security requirements in order to receive approval and be sold in the European Union. This new cross-cutting legislation therefore covers televisions, fridges, cameras, connected electrical equipment or computers as well as stand-alone software and components used in intelligent systems, such as chips, routers, etc. "High risk" category The list drawn up by Brussels distinguishes two types of products for the compliance procedure, depending on their degree of criticality. "For 90% of them, it will be a self-assessment," explains a Brussels source. Manufacturers will have to carry out the necessary tests and checks themselves to show that their products meet the requirements imposed by the Union. On the other hand, for the most critical products - around 10% -, Brussels will require a security audit by third parties. This “high-risk” category includes, for example, smartphones, operating systems, digital certificate issuers, chips, smart meters, industrial firewalls, and anything used in critical digital infrastructure. Some products covered by other sectoral legislation such as connected medical devices or those specific to aeronautics will be outside the scope of the regulation, as will open-source software (unless they are the subject of a commercial product). New security requirements include, for example, the prohibition of default passwords, the obligation to record relevant security events, the encryption of confidential data, sobriety in the use of data, etc. More broadly, manufacturers of connected objects and software publishers must think about and integrate security from the design stage of their products in order to limit the possibilities of attacks. They will also have to monitor and correct vulnerabilities over time, the idea being to guarantee the cybersecurity of products throughout their life cycle. "We must be humble," the Commission is told. "The text aims to help raise the overall minimum level of cybersecurity and reduce the ability of attackers to exploit known vulnerabilities." According to preparatory studies, Brussels estimates that around 50% of manufacturers already meet the minimum requirements set out in the text. In the event of a serious breach, established by a national authority or in some cases by the European Commission, manufacturers will be subject to sanctions. This could range from a fine of up to €15 million (or 2.5% of annual turnover if the latter amount is higher) to the recall or withdrawal of products from the European market, as is done for consumer goods. "The text aims to help raise the overall minimum level of cybersecurity and reduce the ability of attackers to exploit known vulnerabilitiesEUROPEAN COMMISSION

## ###ARTICLE\_START### ID:1885

PARIS — Identifying Navalny’s poisoners, listing alleged war crimes in Ukraine… In eight years, the digital investigation site Bellingcat has become “the Kremlin’s worst nightmare,” says its executive director, journalist Christo Grozev, who is fighting against the shortcomings of international law. A representative of a new form of journalism based on the analysis of data accessible to everyone online — OSINT (“Open source intelligence” in English) — he spoke Monday in Paris to an audience of budding and experienced reporters invited by the Sciences Po School of Journalism. “We were incompetent, we became the bogeyman,” said the Bulgarian to sum up the evolution of Bellingcat since its creation in July 2014 by a British blogger, Eliot Higgins, surrounded by a group of nerds, passionate about the Internet. The independent collective, initially made up of apprentice investigators, quickly proved itself with its report on the crash of flight MH17, which killed 298 people in eastern Ukraine, which was already at war. In November 2014, the site supported the theory that the plane was shot down by a Russian missile from an area controlled by pro-Russian separatists, by tracing, based on photos, videos and public documents, the route of a Buk launcher from Kursk in Russia. Since then, the platform has multiplied revelations, notably on the alleged involvement of Russian intelligence in the poisonings of double agent Sergei Skripal and opponent Alexei Navalny. Russia, which recently described Bellingcat as a "threat" and considered it "undesirable", is "not our main subject of investigation", Christo Grozev, who is in charge of investigations into Moscow after a career spent in the private radio sector, assured AFP. "We investigated the war in Syria," in Yemen, "human rights violations by [the European border guard agency] Frontex, by Greece, Turkey, Hungary, the far right in the United States, in Ukraine," and generally "governments that commit crimes because no one else investigates them." "International justice has a handicap: it is based on the idea that governments care about the well-being of their citizens," says Christo Grozev. The International Criminal Court — which cannot judge states, only individuals — is for example often criticized for its ineffectiveness, while the courts of democratic countries can hardly collaborate with authoritarian regimes to obtain information. Hence the painstaking work carried out by Bellingcat, which has 18 full-time employees and around thirty collaborators around the world. HUMAN COST Regarding Ukraine, the platform relies on “two completely different and separate groups,” one with a journalistic aim, the other with a judicial aim, according to Christo Grozev. The first defuses false information in particular to determine, for example, “who bombed” a hospital or the authenticity of a video showing a prisoner of war being tortured. The other, which lists alleged war crimes, keeps its data to eventually transmit it to the International Criminal Court or to the “eleven countries” that have “launched their own investigations on the principle of universal jurisdiction.” Based in the Netherlands, Bellingcat is funded approximately 30% by the training it provides to various professionals, now excluding the police, who “sometimes use its methods to violate human rights.” The rest comes from private donors, in particular a Dutch charity lottery, sensitive to the work done on the crash of MH17, which left Amsterdam. The relentless quest for truth also has a "human cost," warns the journalist, who is the target of anonymous threats "twice a month." But "the adrenaline, the feeling of doing what justice or the secret services cannot do," like "the thanks received every day from Russian citizens in the street," make him want to continue.

## ###ARTICLE\_START### ID:1886

NEITHER FEDERER, NOR NADAL, NOR DJOKOVIC HAVE REACHED THE QUARTERROOMS OF A GRAND SLAM FOR THE FIRST TIME IN 18 YEARS In fact, the statistic is not entirely accurate. Two years ago, neither Nadal, nor Roger Federer, nor Novak Djokovic had participated in the quarterfinals of the US Open. But this season was special, marked by COVID-19. Thus, the Spaniard and the Swiss had skipped New York. The Serb, for his part, had been eliminated in the round of 16. However, he had not lost the match in a fair and square manner. The world number 1 at the time had been disqualified for having unintentionally hit a line judge with a ball hit in a gesture of frustration. AT ROLAND GARROS, A LONG TIME AGO Before that, the last time the three most dominant players of the last two decades had all missed the quarterfinals was 18 years ago, at Roland Garros. Federer was just 22 and beginning to rule men's tennis. He was ousted by Gustavo Kuerten. A surprising defeat, to be sure: the Swiss was already world number one and the Brazilian was ranked 30th. But Kuerten knew how to win in Paris. He had won the title at the Porte d'Auteuil in 1997, 2000 and 2001. Nadal and Djokovic were not at the French Open that year. The former, then aged 18, had an ankle injury. The latter was just 17 and ranked 331st in the world. Of course, this US Open is not quite normal either. Nadal was the only member of the Big Three, winner of 63 major titles since 2003, present in New York. And at 36, despite two Grand Slam trophies lifted this year, in Australia and France, "Rafa" is not at the top of his game at the moment. He himself acknowledged this on Monday, after his loss to the American Tiafoe, 24 years old and 26th in the world. "Often, tennis is a sport of positioning. If you are not well positioned, you have to be really fast and really young," said the Spaniard with a smile, at a press conference. I am no longer at that point in my career." WITHOUT DJOKOVIC AND FEDERER Djokovic, champion at Wimbledon in July, was forced to miss the last Grand Slam of the season. Not vaccinated against COVID-19, he is banned from entering the United States. Federer, for his part, has an injured right knee. At 41, the legend has not played for more than a year, but should make his return to competition this fall. NUMBER 1 NEXT MONDAY? But in a sign that the revolution is not quite underway, Nadal, with his 38-5 record this season and his four titles, could regain the world number one ranking on Monday. To do so, neither his young compatriot Carlos Alcaraz nor the Norwegian Casper Ruud will have to reach the final at Flushing Meadows on Sunday. If he regains the ATP number 1 spot, more than two years after his last appearance at the top of the rankings, Nadal would become the second oldest player in history to occupy this position, behind a certain... Federer, in 2018. \*\*\*\*\* ROGER FEDERER Switzerland | 41 years old In Grand Slams: Quarter-final losses: 12 (4 at Roland Garros, 5 at Wimbledon, 3 at the US Open) Semi-final losses: 15 (8 at the Australian Open, 3 at Roland Garros, 1 at Wimbledon, 3 at the US Open) Final losses: 11 (1 at the Australian Open, 4 at Roland Garros, 4 at Wimbledon, 2 at the US Open) Major titles: 20 (5 at the Australian Open, 1 at Roland Garros, 8 at Wimbledon, 6 at the US Open) RAFAEL NADAL Spain | 36 years old In Grand Slams: Quarter-final losses: 8 (7 at the Australian Open, 1 at the US Open) Semi-final losses: 7 (1 at the Australian Open, 1 at Roland Garros, 2 at Wimbledon, 3 at the US Open) Final losses: 8 (4 at the Australian Open, 3 at Wimbledon, 1 at the US Open) Major titles: 22 (2 at the Australian Open, 14 at Roland Garros, 2 at Wimbledon, 4 at the US Open) NOVAK DJOKOVIC Serbia | 35 years old In Grand Slams: Quarter-final losses: 10 (3 at the Australian Open, 5 at Roland Garros, 2 at Wimbledon) Semi-final losses: 11 (5 at Roland Garros, 3 at Wimbledon, 3 at the US Open) Final losses: 11 (4 at Roland Garros, 1 at Wimbledon, 6 at the US Open) Major titles: 21 (9 at the Australian Open, 2 at Roland Garros, 7 at Wimbledon, 3 at the US Open) Source: ATP \*\*\*\*\* Meanwhile, in 2004... Aside from this pandemic-hit year of 2020, it has been 18 years since Novak Djokovic, Rafael Nadal or Roger Federer reached the quarter-finals of a Grand Slam tournament. In almost two decades, the world has changed a lot: February 4 Mark Zuckerberg launches the first version of Facebook, which was at the time a social network for Harvard University students. February 19 Canadian Prime Minister Paul Martin announces the creation of the Gomery Commission, charged with investigating the sponsorship scandal. February 29 Haitian President Jean-Bertrand Aristide is overthrown in a coup d'état. March 11 Members of the terrorist group Al-Qaeda bomb the metro in Madrid, the Spanish capital, killing 192 people. March 20 Stephen Harper is named leader of the Conservative Party of Canada. March 25 Producer Guy Cloutier is arrested. He later pleads guilty to charges of sexual assault on two minors, including singer Nathalie Simard. August 29 German driver Michael Schumacher wins the last of his seven Formula 1 world championship titles in his Ferrari. December 26 An earthquake in the Indian Ocean causes a powerful tsunami that kills more than 200,000 people on the coasts of Thailand, India and Sri Lanka, among others.

## ###ARTICLE\_START### ID:1887

Phenomenal. Prodigious. Revolutionary. It’s easy to be tempted to use superla-tives when you first pick up the Steam Deck. But while this is the biggest game-changer in at least a decade, it’s not all rosy: Part handheld console, part personal computer, Valve’s new machine is both the best and worst of both worlds. Valve took a big gamble by launching a console that directly competes with the monster that is Nintendo’s Switch. A new platform that can run almost all of our PC games? All for $499, just $50 more than the new Switch OLED? But there was definitely a niche to fill in the handheld space: in recent weeks, the device has been sitting atop the platform’s best-seller list, outselling such hits as Stray, Marvel’s Spider-Man, and even Elden Ring. That’s all to say, with demand outstripping supply, it’s taken five months since the console’s launch to get our hands on one. Order one today and expect to receive yours in December… or later. A PS4 in your hands In short, the Steam Deck is an ultraportable PC powered by a custom AMD CPU that combines a legacy Zen 2 processor with a next-gen RDNA 2 GPU similar to those found in the PlayStation 5 and Xbox Series S and X, but at a much reduced power level. To preserve battery life, the Steam Deck’s CPU draws just 15 watts, compared to the 180 watts of the next-gen consoles. Add to that 16GB of ultrafast DDR5 RAM, and the result is a machine capable of performance comparable to the latest generation of PlayStation 4 and Xbox One consoles at the device’s native resolution (1280 by 800 pixels). Dark Souls 3, Guilty Gear: Strive, Dirt Rally 2.0, Valheim: in our tests, the Steam Deck was able to run our favorite games with a minimum frame rate of 30 frames per second, often going up to 60, provided that reasonable settings were used. All the games we tested ran better on our Steam Deck than on our AYANEO 2021, a device similar to the Steam Deck, but which costs almost twice the price. We are far from the Switch here and we are very, very far from the Game Boy Color of our childhood. Revolutionary, they said? Thanks to the popularity of the Steam Deck, PC developers now have a machine to target for the coming years. Finally, a minimum standard that will benefit all gamers who cannot afford high-end graphics cards! User-testers When it was released last February, the critics were unanimous: the device is frankly impressive, but incomplete. We have to make the same observation. The Steam Deck is a PC, and while it tries to offer a console experience, things can quickly get complicated once you lift its hood. The new SteamOS 3.0, this time based on Arch Linux rather than Ubuntu, comes with a completely new interface that is easy to navigate with a controller. Since the vast majority of PC games are designed for Windows, SteamOS translates them to Linux using Proton, an adaptation of the open source Wine software. You would expect that the transition of DirectX games to Vulkan would come with a performance loss, but, in fact, many benefit. Elden Ring, for example, does not suffer from any of the problems of the PC version on the Steam Deck. This translation step, however, interferes with the anti-cheat software that many online games rely on, making them unplayable. Take Rainbow Six: Siege, our favorite competitive first-person shooter, for example, which is incompatible with the Steam Deck. With tens of thousands of titles in its catalog, these hiccups are inevitable. Steam helps players with its Steam Deck Verified program, which “guarantees” perfect compatibility. At the time of writing, 1,951 games were on the program. Several games that aren’t “verified” can work with a little effort, using the experimental Proton build, for example. But even with this list, you sometimes hit a wall. On our machine, Red Dead Redemption 2 consistently stopped working after about forty minutes, despite being on this list of games marked as “playable.” And despite almost daily updates, there are still a few kinks to iron out on the software side: the virtual keyboard sometimes makes errors, browsing the game store is often haphazard, third-party app launchers are never user-friendly, and so on. An Open Platform But what causes the Steam Deck's problems is also what gives it an ace up its sleeve against Nintendo's Switch: it's a PC. Plug it into a USB-C dock connected to a monitor, keyboard, and mouse, and in a few clicks you have access to an open operating system comparable to macOS or Windows. Writing this article, browsing the web, taking online classes, listening to music on Spotify, communicating with friends on Discord, editing photos or videos for Instagram or TikTok, installing Windows, emulating other consoles like the PlayStation 2 or even the Switch... Everything is possible on SteamOS. Because, we repeat: it's a PC. And powerful as it is, it may be the only one you could ever need, as long as you're inclined to tinker a little. THE DUTY

## ###ARTICLE\_START### ID:1888

With the start of the school year just weeks away, Apple is going on the offensive by asking the Quebec government to change the criteria for its calls for tenders so that more Macs and iPads can be found in classrooms. The strategy is aimed at retaining future consumers, according to experts. The American giant has begun steps with Quebec to have the government modify the calls for tenders for laptops and tablets found in the province's schools. The world's leading tablet seller wants more consideration to be given to the "user experience" offered by a device rather than its price or features such as its weight and size. To plead its case to the Ministries of Education and Cybersecurity and Digital, Apple recently hired a lobbyist, Jonathan Kalles, from the firm McMillan Vantage. The multinational also hopes to meet with representatives of the Treasury Board Secretariat and the Government Acquisitions Centre, the organization responsible for calls for tenders for government authorities. Apple's representative in this matter, Mr. Kalles, did not return calls from Le Devoir. As for the Ministry of Education, it would not confirm whether it was in discussions with Apple or whether changes to the calls for tenders were being considered. Keeping children loyal Apple's approach does not surprise Jacques Nantel, professor emeritus at HEC Montréal specializing in marketing and product positioning. Access to school networks is a major strategic focus for electronic device manufacturers: "Once a consumer, especially a child, has become accustomed to a complex environment, the effort to change it and the associated cost are such that this consumer will maintain the status quo." In economics, we call "exit barriers" these obstacles encountered by users who want to leave an ecosystem such as a digital platform or an operating system within which they evolve. A situation that works in favor of the company that positions itself first with potential consumers. Mr. Nantel explains: "It's the same thing that formula milk manufacturers do, who give it to mothers who don't want to or can't breastfeed. The milk is given at the hospital. Since everything usually goes well, parents won't take the risk of changing suppliers once they get home. School is the security guarantee, the comfort blanket that makes children and parents love the Apple brand." Bruno Guglielminetti, spokesperson for the Académie de la transformation numérique (ATN) at Université Laval, echoes the same sentiment: "Whatever the brand, manufacturers will lobby a lot to ensure they have access to the educational market, because once these young people have become accustomed to working with a system or type of device, there's a greater chance that they will become consumers. Despite the manufacturers' good intentions in terms of education, it is above all a market development strategy." Result: free software, such as Linux, is less present in school networks than major operating systems such as Microsoft's Windows and Apple's OS. Certified schools In recent years, Apple has created a certification program for schools whose educational programs meet certain criteria, such as operating in the Apple ecosystem. Present in 36 countries, this certification has been awarded to 19 establishments in Canada, including two in Quebec: the CFER (centre de formation en entreprise et récupération) in Bellechasse, and the Marcelle-Mallet private secondary school, located in Lévis. Positioning in the "school market" is all the more important since the presence of IT and technology has increased considerably in recent years. An ATN study published in June 2021 revealed that almost all schools now have an Internet connection in all classes. In 2020, there was an average of one digital device available for every two students in all schools in the province. In addition, nearly 95% of schools provided computer equipment to teachers in 2020, compared to 50% in 2014. “And since then, there has been the pandemic, which has accelerated the digital shift everywhere, including in schools,” says Mr. Guglielminetti. Apple’s efforts with the government, which began in the spring, are part of a broader initiative to position itself in the Quebec public sector. The Cupertino company also wants to “influence government policies on information technology […] [in order] to facilitate the adoption by public bodies of devices and services provided by Apple.” The stated goal: “to increase the possibility for public sector users to purchase Apple products and services,” such as iPads and MacBooks. THE DUTY Once these young people have become accustomed to working with a system or a type of device, there is a greater chance that they will become consumers of it BRUNO GUGLIELMINETTI »

## ###ARTICLE\_START### ID:1889

Couthures-sur-Garonne (Lot-et-Garonne) - special correspondent - Because it has come knocking at our doors again and has taken up residence in Europe, the Couthures-sur-Garonne International Journalism Festival (FIJ), sponsored by the Le Monde Group, could not ignore the war. In the streets of this village of 370 inhabitants in Lot-et-Garonne, the war and its coverage by the media have animated many informal discussions and part of the two hundred meetings mixing journalists from various media, experts and current affairs actors with festival-goers curious to understand the creation of information. How do we show war without voyeurism? How do we photograph death or suffering without offering a degraded image of the victims? How do we sort out the true from the false when information is indeed a weapon of war? At the FIJ, visitors came for three days, from July 15 to 17, with their questions and their incomprehension, betting that this subject is too serious to be left to newspaper editorial conferences alone. The event, which attracted more than 6,000 festival-goers this year, called on 160 volunteers and welcomed more than 150 speakers. The Chairman of the Executive Board of Le Monde Group, Louis Dreyfus, had made the trip to participate in these days where, in casual dress, without filters and without wooden language, journalists and the general public exchange on their wishes and expectations regarding the press, television channels, radios and new media. If, this year, the headliners, such as the former minister Cécile Duflot, the writer and composer Gaël Faye or the comedian Charline Vanhoenacker, patron of this edition, the journalists (Edwy Plenel, from Mediapart, Salomé Saqué, from the Blast site, Marie Portolano, from M6, Sophie de Ravinel, from Le Figaro…) or even the academics, such as the political scientist Bertrand Badie or the historian Alexis Lévrier, attracted the crowds, many less academic activities and approaches, such as the creation of a small newspaper by the youngest, or the tasting of local products and wines from the South-West also focused the attention of the festival-goers. Among the major themes addressed, the historian specializing in propaganda David Colon debated, on Sunday July 17, the manipulation of opinion with Elena Volochine, correspondent for France 24 in Russia for ten years. Because a war is also won by words and images. An adage that has been proven every day since February 24 and the start of the Russian offensive in Ukraine. While the communication of Ukrainian President Volodymyr Zelensky and Russian President Vladimir Putin is as strategic as the most modern weapons, it is difficult to find a better example to analyze... Capturing weak signals In Couthures-sur-Garonne, on these hot July days, the narration of the war did not stop at the work of field reporters. With Liselotte Mas, a journalist at France Télévisions, festival-goers were able to follow up close what it means to "investigate online in times of war." Unearthing unpublished testimonies, evidence of wrongdoing or lies... The journalist, a specialist in OSINT (Opensource Intelligence) explained that open source intelligence consists of everything that "can be found on the Internet, available to everyone: elements that, once verified, analyzed, cross-checked, can serve as information". A new journalistic skill increasingly used and developed in editorial offices, real investigative work carried out by specialized journalists. Digging behind to hear the unsaid, picking up weak signals, all this is part of the DNA of the profession, according to Elena Volochine. The journalist came to Couthures-sur-Garonne to explain that her departure from Moscow in February in no way prevents her from continuing to "analyze propaganda, to deconstruct it" and answer festival-goers' questions about information in Russia. Russian journalist Denis Kataev left his country at the same time because practicing his profession had become impossible there. A news anchor on the independent Russian channel Dojd, he took the last flight to Cyprus, then went to France, where he is now in residence at Radio France. Every week, on the Dojd YouTube channel, Denis Kataev recreates a show to “continue to inform Russians in Russia, and combat official propaganda,” he explains. Until the start of the conflict, he still managed to “circumvent the rules and laws” and could continue to inform freely, despite the formal ban, for example, on talking about certain organizations such as that of the Russian opponent Alexei Navalny. But the law against freedom of expression, adopted by Parliament in March, has definitively put an end to all freedom of speech, as he reminded festival-goers at length. Written press or images, the same net has tightened on everything that is not the official word. “Responsible subjectivity” Another bias: that of the photographer Guillaume Chauvin, who chose to circumvent the bans by placing himself on the side of Moscow. On the walls of the church in Couthures-sur-Garonne, his work, called "War thick", tells the story of the Donbass war seen from the side of the pro-Russian separatists. Since 2015, he has been documenting the war there and exhibiting it here. Original in the staging he proposes and the "responsible subjectivity" he highlights, his images from the field raise in their own way the question of the journalist's objectivity. What position should he adopt? Can he accept being embedded (embarked with the army) or should he always remain on the outside, depriving himself of witnessing the clashes, and therefore of reporting from up close? No question of deciding on the subject... These hours of discussions, over three days, also served to remind us of the importance of always specifying where the journalist is speaking from. In addition to these delicate subjects, the festival-goers, often coming with their families, also had the opportunity to get passionate about taste education, the ecological transition in the face of inequalities, the concentration of media, as well as an ethical and personal question that is rising among the younger generations: "Should we continue to have children in 2022?" These are all themes that Le Monde addresses in its articles throughout the year and that the twenty or so journalists from the editorial staff present on site enjoyed discussing with curious and invested readers.

## ###ARTICLE\_START### ID:1890

Laurent Benmergui, 42, is convinced of the advantages of cryptocurrency. He is not the type to bore you with it all evening, however. He only buys bitcoin, and what he likes most about it is that this “money 2.0” uses “the power of mathematics and cryptography as well as the speed of the internet and electricity.” In short, the internet changed the world, and then crypto changed money. “It’s magnificent, it can’t be controlled. Satoshi Nakamoto, the pseudonym of the inventor(s) of bitcoin, is going to win the Nobel Prize in economics soon,” thinks the application support specialist. He is therefore not at all troubled by the recent upheavals in the cryptocurrency market. Bitcoin was worth $69,000 US last November and is now worth nearly $24,000 US. The entire cryptoasset market has suffered and its value comes from trusting someone, everything is open source and you can check it yourself,” says the history buff. Yes, at the beginning, like everyone else, he looked at the value of his portfolio several times a day. Up, down, up, down. “Now, I never look, I don’t care at all, bitcoin is the future. It’s the people’s money,” says the convinced. UNSTOPPABLE For this history and technology enthusiast, nothing can stop Bitcoin. “It’s a means of communication. You can’t stop math from calculating,” explains the Châteaugois. If nothing is easy to understand in the field of cryptocurrencies, the example of Laurent Benmergui shows that with effort, you can get there. “I’ve been learning for almost 10 years and there are still lots of things I don’t understand. But I understand enough to know that bitcoin is here to stay,” says the amateur investor. He didn’t think he’d get to this point 10 years ago, when a friend tipped him off. Today, he’s one of those believers whose confidence isn’t shaken even by a steep drop in value. When you believe in it, you believe in it. “AT THE BEGINNING, YOU LOOK AT THE PRICE EVERY DAY. BUT THAT’S NOT WHAT’S INTERESTING. IT’S THE CONCEPT.” -Laurent Benmergui, bitcoin investor of falling below $1 trillion. Unlike Laurent Benmergui, many individuals who have placed their savings on platforms like Coinbase, CoinFLEX or worse, Celsius, are worried. “I don’t have thousands of dollars to put into it anyway. I put in $100 per paycheck, or per month, or every two months, about $500 per year,” he explains. He hopes to be able to offer a “comfortable little nest” to his children, who are currently 15 and 18, in the future. THE BEST TECHNOLOGY Because one thing is certain according to him: bitcoin is here to stay and its value will progress slowly but surely. It was around 2016 that Laurent Benmergui really launched into the crypto adventure, after a first try in 2014. “That’s when I studied how it works. When you learn about crypto, what you study, in fact, is the history of money,” he says in a convinced and convincing tone. For a medium of exchange like money, bitcoin is by far the best technology, he says. “No State can control it, you don’t need

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## ###ARTICLE\_START### ID:1892

Blonde braids pinned back on her head, loose dresses in neon pink, green or blue, Dutch designer Ineke Hans took over the swimming pool and squash court of the Villa Noailles, as guest of honour and president of the Design Parade jury in Hyères. Behind her feminine Peter Pan looks, this 56-year-old industrial designer hides an unwavering determination, which is demonstrated in her exhibition "Frugal et Fun" (frugal and cheerful), in the Var. "I started out living in squats and eating bread, I produced my objects myself because I couldn't find any manufacturers and now, I don't want to compromise anymore", she asserts, a broad smile on her lips. This graduate of the Arnhem School of the Arts in the Netherlands in 1991 and of the Royal College of Art in London in 1995, began her career with initial collaborations with Habitat and Cappellini, then self-published, presenting her creations at furniture fairs in London and Milan. As a pioneer, twenty-five years ago, to general indifference, she made a set consisting of a table and four stools in recycled plastic and metal (Tête à tête Set, 1997), currently exhibited in Hyères. Since then, Ineke Hans has taken new steps. In particular, there is this prototype of the Instant Desk (2017), cleverly cut from a single sheet of plywood so that there is as little waste as possible, and for which she shares the recipe in open source. “Thanks to this method of disseminating knowledge, the object is made locally, where you want and according to what you want; the designer and the manufacturer are paid and you do not produce for stock!” A redesigned production line With the Rex chair (2021) – a project whose every step she describes in the former squash court of the Count and Countess of Noailles – she believes she has created “her best product to date”. It is the first Dutch chair to be returned. Based on a seat made of recycled plastic that she had designed ten years earlier (without much success), she redesigned the entire production line. Old fishing nets, office chairs and industrial waste serve as raw materials. The new chairs – solid and repairable, but, to tell the truth, with a crude aesthetic – are produced in moulds. Sold for around 250 euros each, they can be taken back for 20 euros if you no longer want them. In this case, they are checked, cleaned, possibly repaired and put back on sale with a deposit. "We can no longer live without plastics. 66% of them were produced after 2000, when we all started to drink and eat on the street, buying bottles of water and individual dishes. As a designer, it is no longer enough to design a product in a recyclable material. We must create fewer objects and put more energy into inventing a virtuous production cycle." Ineke Hans, who became a professor at the Berlin University of the Arts, has created a new Design & Social Context degree there. Because, she asserts, "the designer is not a decorator, he is responsible for giving meaning to the world. I do not believe in the designer who wants to become an artist."

## ###ARTICLE\_START### ID:1893

Less than four years after taking the reins, Thomas Kurian has profoundly transformed Google's cloud division. Number three worldwide with around 10% market share, he explains his strategy to catch up with rivals Amazon and Microsoft. LE FIGARO.- Google is opening its first cloud region in France today. What does this investment represent? Thomas KURIAN.- France is a priority country for us. We are keeping a commitment made two years ago to invest massively to help French private and public organizations accelerate their digital transformation. But we are committed to offering the best of our cloud under the conditions set by Europe and France. We understand very well the needs expressed by our customers in terms of digital sovereignty, control over the location and access to their data. All of this is part of the solutions we offer in our cloud region in France. The French "trusted cloud" doctrine is the most demanding in Europe in terms of sovereignty. How are you adapting? We announced a partnership with the French company Thales to provide cloud infrastructure and services in compliance with the new technical and legal requirements of the French government for a “trusted cloud”. We see this as a natural evolution of all the technical work that has been in place for many years to provide our customers with the ability to control their data and encryption, so that no one else has access to it. This demand has existed for many years among our customers. We are accelerating our capacity and commitment to meet it, with our partners. Google has just acquired the cybersecurity company Mandiant for $5.4 billion. Why? Companies are investing a lot of money in cybersecurity, and yet they remain very vulnerable to more numerous and sophisticated attacks. Why? Because it is very difficult today to have an “industrialized” platform to cover the entire security lifecycle. Companies must juggle multiple tools, without always having the required human resources. We want to integrate three key elements into a single platform: better understanding emerging threats, integrating them into an analysis tool that allows a particular company to know if it has been compromised and finally automating remediation so that companies can react much faster. In terms of cybersecurity, we also bring to market all the operational security tools that we have built and proven to protect our own services. How do you differentiate yourself from your rivals AWS and Microsoft Azure? Most large organizations have a multicloud strategy. They don’t want to be “locked in” to solutions. Our cloud, which relies heavily on open source software components, gives them the flexibility and freedom to build applications and run them on any other cloud infrastructure. This is a real differentiator. On the other hand, to analyze their data hosted in different clouds, they want to be able to use a single analysis platform that does not force them to move all the data to a single provider. We offer them this possibility, to allow them to develop more quickly. What are the expectations of companies in terms of the cloud? Compared to three years ago, the demand is no longer just for more efficient and less expensive IT infrastructures. Companies are modernizing the core of their information systems and are now migrating critical data flows to transform their economic activity. They want to quickly develop new business solutions using digital technologies, such as artificial intelligence, machine learning, data analysis or no-code IT development tools. This is what we are doing in France with LVMH, Renault, Fnac Darty or Groupe Casino. Expectations in terms of security, collaborative work and reducing the carbon footprint of IT systems are also very high. In 2019, you said you wanted to become as big as AWS within two years. You are not there yet. How can we achieve this? We have been fortunate to have experienced great growth since 2019. If you look at our business today, we are generating more revenue in a single quarter ($5.8 billion in Q1 2022, Editor's note) than we did in a full year. We are very pleased with our growth, the work of our teams and the portfolio of clients who have chosen to work with us. We are very focused on continuing our growth. Opening this new region in France allows us to better serve our clients locally. This is a very important moment for us.

## ###ARTICLE\_START### ID:1894

After awareness, time for action. Since last year, more than twenty French research laboratories have begun a process of reducing their greenhouse gas emissions with the aim of reducing them by 50% by 2030 (compared to 2019). This is the same ambition as that of the 2015 Paris Agreement to keep the rise in global temperatures to 1.5°C compared to the start of the pre-industrial era. And from the beginning of 2023, new entities could join this pilot group. "This network will be quite unique on a global scale," recalls Tamara Ben Ari, a researcher at INRAE, at the Institute of Ecology and Environmental Sciences in Paris, co-founder of the research staff collective, Labos 1point5, at the origin of this movement. Born in March 2019, the initiative aims to "take the entire French research community on a transformation process focused on reducing its environmental footprint". "Originally, there was a desire to transpose individual awareness and private life to the laboratory and professional life", recalls Sophie Schbath, director of the Applied Mathematics and Computer Science laboratory from the genome to the environment (Maiage, around 70 people), who initiated her lab's involvement in the experiment. "If we, researchers, cannot reduce our footprint, it will be harder to convince society that we can do it", adds Thierry Pellarin, deputy director of the Institute of Environmental Geosciences (IGE), which has around 250 people and is also participating in the project. "Mobilizing to act" All these pioneers went through the same phases, supported by the Labos?1point5 collective. First, the diagnosis, by carrying out a greenhouse gas assessment, using the collective's software made available from October 2020. "Rather than outsourcing this phase, we developed a free and open-source tool, in order to be able to better compare laboratories. It is also essential for teaching, because it forces you to ask lots of questions, it gets people talking in the labs and it plays an important role in mobilizing," explains Audrey Sabbagh, at the University of Paris Cité, co-manager of the experiment. "It is not a measurement for the sake of measurement, but also a mobilization with a view to acting to reduce emissions," adds Olivier Ragueneau, from the Marine Environmental Sciences Laboratory in Brest, another co-manager of the experiment. Then, it was necessary to train and mobilize the troops using workshops, educational sheets, and "serious games." "One hundred and twenty proposals came out and eleven were selected," recalls Marc Delmotte, a CNRS research engineer at the Climate and Environmental Sciences Laboratory (LSCE, around 350 people), who is taking part in the project and has been calculating its carbon footprint for ten years. These actions included banning planes for journeys of less than five hours by train, shared bikes on campus, mandatory personal cups for machines, etc. "After these workshops, we put twenty-eight action proposals to the vote, from which we developed reduction scenarios, on which the members of the lab voted," says Sophie Schbath. With 75% participation, the penultimate of the most restrictive scenarios was chosen, with more teleworking, one (larger) screen instead of two, the train for all travel in France, etc. While each laboratory followed the same method, very different actions were chosen, from eco-friendly actions (teleworking, train travel, etc.) to more ambitious solutions such as a carbon tax, carbon quotas allocated to teams or individuals and which decrease from year to year, or compensation schemes. No one has launched into a green currency, created based on the CO2 savings made. At the Oceanography and Climate Laboratory in Paris, researchers have opted for individual quotas encouraging people to reduce travel, but with exceptions for doctoral students (one flight every two years), long missions or at sea. At the IGE, management preferred team quotas, which are less "stigmatizing" for frequent travelers, explains Thierry Pellarin. At Maiage, the carbon tax has come into force and its amount will allow offices to be equipped with individual thermometers and thermostats. During the second Labos 1point5 days on the Jussieu campus in Paris, on June 1, the first feedback brought its share of surprises. First, the great heterogeneity of the situations, with very different balance sheets and breakdowns by position. Thus, the LSCE displays 11 tons per researcher, when Maiage, in bioinformatics, is rather at 2 tons (and 10 tons on average for a French person). Labos 1point5 analysts estimate, very preliminary, that on average a researcher weighs 5.5 tons/year. The distribution is also surprising, because heating and travel (outside the lab or home-work) are often exceeded by the purchasing item, made up of small equipment, fluids, consumables but also expensive research instruments. "It represents more than 36% of the total, when travel accounts for 23% and heating 15%," notes Marc Delmotte. Preliminary results presented by Tamara Ben Ari also show that the expected benefits of eliminating short flights are slim, compared to medium and long flights. "The use of air transport on long journeys, which makes up the majority of the footprint, cannot be replaced by the train," notes the specialist. With Olivier Berné, in an article to be published, she also shows a correlation between the number of articles and the number of flights by plane, which leads her to say that, "in the competition for different forms of capital in the academic world, access to air transport seems decisive." Implied, to reduce the carbon footprint, it will probably be necessary to move away from the logic of competition and overvisibility... "Like society" The first feedback also shows that these pilot fish are moving forward with difficulty and caution. In the introduction to the conference, Valérie Masson-Delmotte, a climatologist at the LSCE, presented a very long list of bad arguments for doing nothing: aversion to change, lack of knowledge about climate, the weight of habits, value systems and beliefs, cognitive dissonance, denial of responsibility, etc. "Laboratories are a reflection of society," she recalled. "There is opposition. Some say that it is up to the supervisory authorities to make decisions, not them," notes Thierry Pellarin. "We believe in the collective and in individual responsibilities. I am seeing awareness among people who, even if they have the money thanks to their external contracts, are now hesitant to buy new machines or take a plane," appreciates Sophie Schbath. For many, the fear is having to conduct fewer experiments, to obtain less data. Since Labos?1point5 leaves nothing to chance, in addition to the calculation tools and support kits, a research group has been set up to study the transformations at work: why does it work? how to mobilize? what are the obstacles? In short, to explore a concrete transition that is taking place. For the moment, all the measures are incentive-based, seeking maximum support from staff, and no sanctions are planned. Covid-19 has also helped these labs, because in 2020 and 2021, the objective of minus 50% was often achieved thanks to lockdowns. "But 2022 is looking less good in terms of carbon footprint. We are going to get into the hard part," warns Thierry Pellarin. If we go back to the period before Covid, we will go off track. We will have to arbitrate, team by team. If quotas are exceeded, everyone knows that we will have to be more directive."

## ###ARTICLE\_START### ID:1895

DIGITAL The blow was so close... "All the surveillance indicators went crazy at once. I quickly realized that we were under attack," says David Ducourneau, CEO of Sports Aventure. In half an hour, the team managed to contain the attempted intrusion so that the physical stores could continue their activity. That was in August 2021. The family SME operates a website and two stores in downtown Bordeaux. David Ducourneau's grandfather created the first store in the 1970s. Sports Aventure employs 26 people and has a turnover of 5 million euros. David Ducourneau had anticipated the risk. He even joined the company in 2015 to accelerate its digital transformation. As soon as he arrived, he chose to use an e-commerce platform. Looking for a solution accessible to an SME like his, he opted for Magento in its free, open-source version. "Back office and front office were closely linked in this tool targeted by the attack," he explains. After its maintenance was stopped in 2020, Magento became vulnerable. In order to isolate this internal management tool from the website and eliminate the risks of exposure on the internet, David Ducourneau decided in 2020 to redesign the Sports Aventure website to secure it. That was without counting on the "yellow vests" and the health crisis, which put a stop to the work. To counter the cyberattack in August 2021, the SME had to close access to its online store for three days in order to isolate and clean it, before reopening it with reduced activity and limiting certain accesses for users. "The latter encountered blockages and navigation was no longer as fluid as before," comments David Ducourneau. He believes that Sports Aventure has done rather well thanks to the responsiveness and agility of its employees. "We had the technical resources in-house with teams who knew and mastered the tool. Otherwise, without being able to manage the activity, inventory and order management, we could have been in great difficulty," he emphasizes. He estimates that he lost a few hundred thousand euros in turnover, although this remains difficult to assess. "Fortunately, we were in a low period," he confides. "A blessing in disguise" In September and October, turnover on the Internet nevertheless fell by 40%. "Since we were delisted by Google," continues David Ducourneau, "we suffered a real loss in terms of our natural referencing for more than four months. Natural referencing (SEO) is a long-term job." A hard blow for the company, which does 40% of its business online. Sports Aventure has been affected by the explosion of cyberattacks targeting both states and businesses. In 2021, the National Agency for the Security of Information Systems (Anssi) recorded 1,082 proven intrusions, compared to 786 in 2020, an increase of 37%. Companies, more vulnerable to cyberattacks during the holidays, are more likely to be hacked during vacation periods, weekends and holidays, according to a study by Euler Hermes and the Association of Financial Directors and Management Control (DFCG). In the wake of the cyberattack, David Ducourneau decided to invest 50,000 euros and mobilize four full-time employees and his historic service providers to provide Sports Aventure with a new website optimized for browsing on mobile phones. Thanks to its new content and a site that meets the standards expected by search engines, the SME is finally managing to acquire traffic through natural referencing. Above all, the entrepreneur has decoupled the back office from the website. "It is impossible for attackers to connect to our management system," assures the CEO. "The attack was a blessing in disguise: it forced us to invest."

## ###ARTICLE\_START### ID:1896

Athens Correspondence - While trying to cross the Evros River, which marks the border between Turkey and Greece, with thirty-eight compatriots, on April 17, MA, a young Syrian, was spotted by Turkish border guards who forced the group to land on an islet located between the two countries. The next day, the Greek Council for Refugees (GCR), legally representing the refugees, referred the matter to the European Court of Human Rights (ECHR), which immediately imposed provisional protection measures on the Greek state for these exiles stranded for several days without water, food or medical aid. The Greek authorities, who were supposed to respond to the ECHR and allow the refugees to be sheltered and to file an asylum application as required by European law, did not follow up. "After three days on the islet, people in uniform from the Greek side came to get us. They transferred us to a detention center on the Greek shore, beat us up, took our shoes and said they were going to send us back to Turkey. Which they did," MA told us by phone. According to him, a woman in fragile health who needed hemodialysis was in the group. "She was screaming for a doctor (...). No one came to her aid, neither on the Greek nor the Turkish side. She lost consciousness and died on the islet. The Turkish border guards recovered her body. The children who witnessed the scene were in tears," he said. A preliminary investigation has been opened by the prosecutor of Orestiada, one of the main Greek cities in the border region. "Ping-pong game" The magistrate also opened an investigation after the drowning in the Evros in mid-March of a 4-year-old child, Ayman Al Saleh. The boy was part of a group of about thirty Syrians who were arrested and forcibly taken to an islet by the Greek police, where they remained for five days before Greek rescue services arrived. According to survivors, the child fell into the water during the transfer, without the police coming to his aid. "We then informed the Greek authorities of the presence of refugees on the islet. The next day, a commando of masked men rushed to push them back... However, the Greek police told us that the group had not been located," says Evgenia Kouniaki, a lawyer for the NGO HumanRights360. Faced with this new method of pushback used by the Athens authorities, some human rights defenders believe that the Greeks no longer want to approach their neighbour's shore and are dropping the refugees off on these islets so that the Turkish police are forced to pick them up. According to other refugee testimonies, the Turkish authorities are also pushing them onto these strips of land by threatening to send them back to Syria if they do not leave for Europe. According to Athens, Turkey is knowingly opening the floodgates for migrants while the two neighbors are once again at loggerheads. According to the Greek Ministry of Migration, in the first four months of the year, nearly 30% more refugees wanted to enter Greece compared to the same period a year ago. "In the first four months of 2022, around 40,000 migrants tried to enter the country illegally," estimates the Minister of Civil Protection, Takis Theodorikakos. "It's a game of ping-pong between the two countries, which do not want to welcome asylum seekers. These islands are not very well defined territorially. Do they fall under Greek or Turkish authority? Depending on the season, they are even covered by the river, but according to the ECHR, they do indeed belong to Greece," underlines Evgenia Kouniaki. In April, the NGO Human Rights Watch (HRW) had also revealed that migrants were used by the Greek police to push back new arrivals to Turkey, in exchange for promises of residence permits, according to HRW. Between January and the end of April, the CGR alerted the Greek authorities to the need to rescue at least 230 migrants from Syria, Turkey, Afghanistan and Iraq stranded in the middle of the Evros River. "Between the end of April and mid-May, we have already asked the ECHR five times to intervene to provide humanitarian aid to Syrian refugees, including 44 children. For the latest cases observed, the ECHR required the Greek state to take provisional protection measures, but the authorities did not intervene," notes Alkistis Agrafioti, a lawyer for the CGR. Despite multiple investigations by NGOs and the media, Athens continues to deny resorting to “pushbacks,” a practice that runs counter to the principle of non-refoulement enshrined in the Geneva Convention on Refugees. In late March, the Greek Transparency Authority, tasked by the government with investigating the pushbacks, said it had found “no evidence” that Greek officers were involved. Under increasing pressure from civil society and Brussels, the body published the investigation in early May. But open-source researcher Phevos Simeonidis revealed that the Authority relied 45% on interviews with Greek police and coastguards, who have been accused of being behind the pushbacks. Of the 75 people interviewed, only one was from an NGO, and only four were migrants. No official from the United Nations High Commissioner for Refugees was questioned. "The European Union must now take responsibility for these crimes committed at Europe's external borders," says Alkistis Agrafioti. "The resignation of the director of the European Border and Coast Guard Agency, Frontex, is not enough to solve the problem [Frenchman Fabrice Leggeri left the head of Frontex on April 29]. We must ensure that an effective investigation is opened into these allegations of "pushbacks" perpetrated by the Greek authorities and that measures are taken."

## ###ARTICLE\_START### ID:1897

The cornerstone of digital communication, writing punctuates our connected lives, sometimes to the point of invading them. Behind this profusion of words lies a re-establishment of exchanges, increasingly privatized and commodified. It is a diffuse feeling, an impression. That of spending one's days writing emails, filling out forms, feeding diverse and varied correspondence, tapping on the screen of one's smartphone, feeding floods of text messages, WhatsApp conversations and other messages on Facebook, Twitter or leboncoin. "It's a rather surprising situation," notes the philosopher Valérie Charolles, author of Philosophie des écran. Dans le monde de la caverne (Fayard, 2013) and Se libère de la domination des chiffres (Fayard, published on March 2). When computer screens appeared, we prophesied the disappearance of writing, replaced by video and oral communications. However, the opposite has happened, we have witnessed a proliferation of writing in a whole range of forms." 1.4 billion emails are sent every day in France (33 on average per person), 380 million text messages are exchanged daily (figures from the Electronic Communications, Postal and Press Distribution Regulatory Authority, Arcep), not to mention the hundreds of millions of posts published on social networks and other messaging applications. With the pandemic, WhatsApp has recorded a 40% increase in its use. Figures that defy understanding but reflect an indisputable explosion of digital writing. "We have phones for writing, more than for making phone calls," summarizes Michel Marcoccia, a lecturer in information and communication sciences at the University of Troyes. A TREND TOWARDS ORALIZATION But when we talk about "digital writing," what are we talking about? For many, this question is a vocation. The philosopher Pierre-Antoine Chardel, professor at the Institut Mines-Télécom Business School, would readily distinguish "screen writings", the very ones that now take up all the space in our professional lives, from "writing on the screen", which would embrace the act of creation, redefined by the use of computers and connected interfaces. For others, it would be necessary to emphasize the plurality of digital writings. We do not write to our boss or the tax office as we write on Facebook or Snapchat. Hence a source of confusion and a necessary work of adaptation that not everyone masters perfectly and which generates its share of misunderstandings. Michel Marcoccia, author of Analyser la communication numérique écrite (Armand Colin, 2016), differentiates between "conversational writing" and "commentary" writing, which are all reactions to press articles, information or publications on social networks, a "putting information into conversation", according to the expression of sociologist Dominique Cardon. But what ultimately underlies all of these digital communications, and is signaled as a groundswell, is indeed a trend towards oralization, "of writing to do something that resembles conversation", according to Michel Marcoccia. "We have shifted into a civilization of oralized writing, confirms Béatrice Fracchiolla, professor of language sciences at the University of Lorraine. This is very new on the scale of humanity." This raises the question of the game between the norm of writing, academic, taught and learned at school, and orality, which is more a matter of sociolinguistics, a cultural context and the type of relationships that one maintains with one's interlocutor. "The old skills of writing are outdated," says Eric Guichard, lecturer at the Ecole nationale supérieure des sciences de l'information et des bibliothèques (Enssib). We must all relearn how to write, we are in a situation of generalized semi-illiteracy. Stabilizing a culture of writing takes thirty years, and we are not there yet." "DIGITAL WRITING IS HYPER-UNSTABLE" This is why, can we learn digital writing and, above all, who sets the rules of the game? In the 90s, in other words the prehistory of the Internet, network pioneers had tried to establish some informal rules in a document, published in 1995, entitled "Netiquette Guidelines". A set of principles, essentially typographical, for conversing online. Thus, it was advised to formulate "real" sentences, without abbreviations, to avoid capital letters considered as shouted speech, to sign one's correspondence or even to remain polite. But the era of the pioneers was that of free software, of a model that did not rely on the exploitation of personal data and of writing, practiced essentially on forums, designed to be archived and read later. With the arrival of instant messaging, then that of social networks and smartphones, everything changed. Because the main difficulty in understanding the practice of digital writing lies in the perpetual evolution of sites and platforms which, each in their own way, try to invent new ways of writing. "Digital writing is hyper-unstable because it is privatized, industrialized, subject to the power of engineers and coders," emphasizes Eric Guichard. "Digital writing is not writing on a blank sheet of paper," adds Serge Bouchardon, director of the Knowledge, Organization and Technical Systems (Costech) laboratory at the University of Technology of Compiègne (UTC). We must use software, writing environments, platforms and social media that impose their codes." "A TYRANNY OF PRODUCTION" Production media, what we call "architext," are decisive. Friedrich Nietzsche, in his time, had experienced this. In his old age, then plagued by vision problems, he had a "writing ball" made by the Danish engineer Rasmus Malling-Hansen and noticed that his thoughts, the rhythm of his sentences had been modified by the use of the machine. On Twitter, we condense our message into 280 characters maximum, we accompany it with hashtags to make it more visible and in doing so we also engage in archival work. By email, we keep it short and effective to make ourselves understood. "Subject, verb, complement, concise and direct, very managerial and Anglo-Saxon standards in short", notes Michel Marcoccia. From now on, we write not only on machines but also to be read by machines, before being read by humans. In doing so, we comply with their injunctions and their pace, to the point of confusing human time and machine time. The long time we need to assimilate knowledge, create trust or confront points of view contrary to ours, is lacking. "We end up confusing what is important and what is not, points out Béatrice Fracchiolla. We no longer have any time to rest or take a break. And, as we have to respond ever faster, we let ourselves be guided by our emotions at the risk of creating misunderstandings or tipping into violence." An invitation quickly resembles an injunction and can quickly degenerate into conflict. Body language is absent and cannot provide nuance. The message itself is, by essence, decontextualized. We no longer know where we are being written from and what state of mind our interlocutor is in. The speech is turned towards oneself - "when I am available" - and less towards the other. In addition, social media algorithms promote the most sensational content, which will be the most commented on and acclaimed. "The platforms are not exempt from responsibility," observed Romain Badouard, lecturer in information science, in an article devoted to the "brutalization of public debate". Their design, like their economic models, encourage the spread of violent, even hateful content. An observation shared by Michel Marcoccia who explores the forums of the site jeuxvideo.com: "It has to be trashy to be taken up," he sums up, "sometimes it could be Finnish, I wouldn't understand it better!" Adaptation is becoming an essential asset and we can barely grasp what's happening on Facebook or Snapchat before they are already outdated by others, TikTok for example. Writing, more broadly, has become a commodity, "a mineral," for social networks and other Gafam. "A substrate," according to the philosopher Valérie Charolles who sees in digital writing above all the advent of a domination of numbers, of the quantifiable, "as evidence of the place taken by the economy in our lives. It is not so much a tyranny of writing as a tyranny of production, summarizes Béatrice Fracchiolla, there is too much written communication. We are drowning." Hence widespread exhaustion, an explosion of burnouts and the feeling of being permanently at work. "AN INTELLIGENCE OF CONTEXTS" Faced with these upheavals, often naturalized under the sign of progress and which many workers have had the harsh experience of with the advent of teleworking, Béatrice Fracchiolla promotes education and is considering the creation of a charter for writing on screen. Serge Bouchardon, for his part, advocates distancing ourselves from the tools that surround us and developing an ability to decode codes. "The fish that moves in the water sees through the water but does not see the water itself," he says. Similarly, our digital environment, which is our new writing and reading environment, is often invisible to us." Not just mastering the tools but also understanding how they work, developing "an intelligence of contexts", a bulwark against the "rise of insignificance", according to Pierre-Antoine Chardel, or "the habituation to the valorization of interactions to the detriment of exchanges by signs". As early as the end of the 90s, in a pioneering book entitled Internet and after? (Flammarion, 1999), the sociologist Dominique Wolton had already warned us: an inflation of information, transmitted ever more quickly, is not synonymous with better communication. "There always comes a time when we should turn off the machines and start talking", he wrote. This undoubtedly lies another path to follow. ? OF DOMINATION FIGURES rd, , €20.

## ###ARTICLE\_START### ID:1898

ISRAELI-PALESTINIAN CONFLICT In the streets of Ramallah, there are Palestinians of all generations. Children on their parents' shoulders carrying flags twice their size, old men, young men, T-shirts with the inscription "1948", keffiyeh on their heads, placards "for our right to return" in their hands. At half past twelve, the sirens of the Nakba - "catastrophe" in Arabic - sound: 74 seconds, to mark the 74 years that have passed. Here, as every May 15, we commemorate the anniversary of the forced expulsion of more than 750,000 Palestinians during the creation of the State of Israel in 1948. For many, this day reopens the wounds of the past. Ruqayya Nazzal, surrounded by two friends, in traditional dress, observes the crowd, which is not very large. At 82, she says she was 8 years old during the Nakba. "I was in Qalqilya, a city that was at the center of historic Palestine. My parents always told me how they used to travel to the four corners of the country from our house. Now, seventy-four years later, the city is backed by an 8-meter concrete wall and our refugees have not returned to their land." In addition to the usual slogans, there are signs reading "Your silence is complicit." "That's for the double standards of the international community," explains Jalal Abu Khader, 27, who comes from Jerusalem. Here, when Palestinians use slingshots or Molotov cocktails to resist the occupation, we don't talk about heroism or resistance like in Ukraine. All weapons are sanctioned and we talk about terrorism. Today, we are also here to criticize the lack of action by the international community. Because the Nakba is not just a memory, it happens every day: when Palestinians are killed, when they risk expulsion, when their homes are demolished." At the top of a building in the square, the portrait of Shireen Abu Akleh is displayed on a billboard where advertisements are usually found. This year, the Nakba ceremonies are taking place in a very particular context: just two days after the burial in Jerusalem of this star journalist from al-Jazeera who was shot in the head on Wednesday morning in the Jenin camp while she was doing her job and wearing a bulletproof vest with the words "press" written on it. "We are all still in mourning," continues the young Palestinian. But at the same time, our determination, our resilience, our anger and our rage push us to mobilize to bring her justice. » The funeral of the woman who was nicknamed "the Voice of Palestine" was violently disrupted by the Israeli police, who attacked the pallbearers - the latter having received dozens of baton blows. Shireen's coffin tilted 45 degrees, before being lifted just in time. After the outcry of these images, broadcast live on television, and the unanimous condemnations of the international community, the Israeli police announced on Saturday that they were opening an investigation - the results of which will be published "in the coming days", according to a press release. "Accidental shooting" As for the murder of the journalist, the perpetrator has not been formally identified to date. Witnesses on the scene - the journalist's colleagues, one of whom was also injured - immediately blamed the shots fired by Israeli soldiers. The Israeli army initially exonerated the soldiers on the ground, only mentioning one scenario, "the possibility of a Palestinian shot". By the end of the day, the Defense Minister was much less assertive. Israel now accepts the possibility that one of its soldiers was responsible, but only "via an accidental shot." But according to the investigative journalism site BellingCat - which analyzed the open-source data relating to the death of the famous journalist - the gunshots, "slow and deliberate, suggest targeting rather than a shot aimed at another object or person," and the geolocation of Israeli troops in relation to Shireen Abu Akleh's location corresponds more to the angle of fire than that of the Palestinian armed groups. In any case, the journalist's death prompted a unanimous statement from the UN Security Council, which "strongly condemned" it. Prompted by the United States, this very rare unanimous position of the Security Council on a subject concerning Israel also calls for "an immediate, thorough, transparent and impartial investigation." "Behind his death, there is in any case a message for all Palestinian journalists. A bit as if it were to dissuade us from doing our work and to silence us, so that the Israelis can continue their crimes with impunity, whatever they may be, but out of the camera's sight," says Dia al-Adam, a Palestinian journalist and presenter for the Palestine TV channel. This is not the first time that Israel has targeted al-Jazeera journalists. Exactly a year ago, the al-Jalaa tower in Gaza, which housed the offices of the Qatari channel and those of the American news agency AP, was the target of an Israeli strike. It collapsed, live on television.

## ###ARTICLE\_START### ID:1899

To take over the Twitter network, Elon Musk followed the cuckoo technique. When Twitter co-founder Jack Dorsey flew the nest five months ago, handing over his engineer Parag Agrawal, the Tesla boss must have felt a favorable wind tickling his feathers. On April 13, he offered to buy "100%" of the company. A few spats with the board of directors later, the billionaire pulled off his coup on Monday. And for some $44 billion, he can take control of Twitter. One question remains: how does he plan to reorganize the most agitated social network on the Internet? Laxity. Because if we are to believe the entrepreneur's grandiloquent declarations, he will stir up a lot of twigs. Starting with that of moderation. Steeped in libertarian ideology, Musk is a defender of extreme freedom of expression, which he would like to see Twitter as the arena for. Sometimes indiscreet information about his companies, schoolboy humor, a dig at Bill Gates' belly before becoming the official owner of Twitter, the troll with over 80 million subscribers had only the 280 characters of a tweet on his account as a limit. Apart from the implementation of a button allowing users to modify their publications as they wish, the boss of SpaceX remains vague on the implementation of his project. Asma Mhalla, an expert in cyberpolitics and a professor at Sciences-Po, anticipates in Libération the appearance of a "no man's land of moderation", with the end of user bans and an even smaller number of moderators. These are all measures that the billionaire would be free to adopt after taking the company off the New York Stock Exchange, as he wishes. Annoyed, the expert asks: "Can we really give control over a democratic space to a private personality with a political agenda?" Not to mention that with only 1,800 moderators to monitor 217 million daily users, the social network is already accused of laxity in terms of moderation. So, analysts are worried. Increased spread of hate speech, conspiracy theories, disinformation Among the fears displayed, one is shaking the network: that of the return of deleted accounts, like Donald Trump. Suspended in January 2021 after the attack on the Capitol, the former president has nevertheless indicated that he does not want it. The billionaire also plans to tackle another project, that of the algorithm. In order to "increase the confidence" of users, the richest man in the world would like to make it "open source", allowing everyone to analyze it and suggest modifications. And, thus, to ensure more transparency on the underlying logic in the choice of publications highlighted. The idea appeals, including to Jack Dorsey, but its implementation remains unclear. Legally, will Elon Musk have complete freedom to impose his rules? Asma Mhalla qualifies: "The concern in the United States is justified, in Europe it is to be mitigated because our legal framework is stronger," summarizes the expert. Across the Atlantic, the First Amendment, guaranteeing freedom of expression, and Section 230 of the Communications Decency Act, exempting social networks from responsibility for their content, leave more room for maneuver to the new owner. It is not certain, however, that in Europe the entrepreneur will be able to act as he pleases. The European Union has already stressed that the new boss will have to "adapt to European rules". And in particular to the Digital Services Act adopted on Saturday and requiring large platforms to fight against their illicit content. Cleaning. Above all, behind the great values put forward by the libertarian, runs the businessman in search of big profits. And it's not certain that the two go well together. With its 217 million daily active users compared to Facebook's 1.9 billion, Twitter is lagging behind. Its turnover of 5 billion in 2021 represents less than 5% of that of Meta. The fault lies in an economic model based on advertising but lacking advertisers. Elon Musk could therefore be tempted to make up for it by betting on paid subscriptions. Launched in June, the "Twitter Blue" formula already allows you to cancel the publication of a tweet or choose a colored background for $2.99 per month. In order to attract more people, the billionaire promises a major clean-up, committing to "defeating the spammer robots" of the platform by authenticating "all humans" behind each account. Would Internet users agree to pay for a platform that, without moderation, would spread even more hate and misinformation? Elon Musk will have to answer for a contradiction, that of freedom of expression subservient to the wallet. Enough to lose a few feathers.

## ###ARTICLE\_START### ID:1900

HEALTH In a sealed room, a prototype robotic arm is subjected to intense heat. "We torture it in every way, to see how it reacts!" explains David Gouaillier, 41, in the wooded premises of Orthopus, established since 2018 on the island of Nantes. In another room, the design of the arm is being refined, which will be customizable in half a dozen colors. Enough to offer a quality and aesthetic prosthesis to people who have lost their arm or have limited use of it. The start-up of nine employees wants to "bring technology to people with severe disabilities, who can no longer move or move very little. The need is urgent," explains its founder, co-inventor of the Nao robot at Aldebaran Robotics (acquired by SoftBank Robotics Europe, then by the German United Robotics Group). The first model in the Orthopus range, called Supporter, will be available in June. Once the person has placed their forearm in a splint, the intelligent articulated arm supports the human arm thanks to a "robotic actuator" produced by a remote control, under the other hand. The robotic arm is also capable of memorizing movements (such as pressing a button, opening a refrigerator door, etc.) and reproducing them automatically. Its motorized system integrates proprioception, i.e. the human body's ability to position itself in space. This technology is currently used in robots active in factories but is, for the time being, rare in prostheses intended for individuals. Two patients, aged 6 and 18, have been trying out the Supporter prototypes since last summer. For David Gouaillier, "disability is an accumulation of problems specific to each person, with progressive pathologies. The more complex the disability, the more complex the robot's compensation is too." While the first Orthopus model will be offered at 5,000 euros, three more powerful models should complete the range, up to a completely autonomous arm, which could be marketed at less than 25,000 euros from 2024. Expensive, but half the price of the world reference, the Jaco from Canadian Kinova. In Europe, three Dutch companies (Armon Products, Assistive Innovations and Focal Meditech) manufacture arms at prices ranging from 10,000 to 20,000 euros. Orthopus is banking on having the same engine for its four models to keep its prices, with products assembled in Nantes. The start-up is first targeting the French market to "be the pioneer and leader" and will go through professional resellers. Lobbying in all directions "We specialize in upper limbs, which are class 1 medical devices (like glasses or crutches, editor's note). In class 1, marketing authorisations granted by public authorities are simpler and quicker to obtain,” specifies David Gouaillier. In France, there is no default reimbursement for robotic prostheses, but on a case-by-case basis. Hence the all-out lobbying of the young Nantes-based company, particularly with the National Agency for the Safety of Medicines and Health Products (ANSM). The original ambition was even greater. Orthopus, which has raised 2 million euros in funding and is seeking 1.8 million more, wanted to sell low-cost open-source (patent-free) mechanical prostheses. The fact that the market is uncertain, because it is focused on developing countries, and a bad experience with a Saudi patron made it give up. “We have refocused on technology and local, without completely abandoning our solidarity component,” swears David Gouaillier.

## ###ARTICLE\_START### ID:1901

Warsaw Correspondence - With the invasion of Ukraine, Russian disinformation networks have found themselves in difficulty: faced with the horrors of the conflict revealed in broad daylight, the message of the Kremlin strategists has been difficult to adjust. But in Poland, pro-Russian agitators have been active on the Web with a new strategy: to discourage Poles from welcoming Ukrainian refugees, at a time when the country is facing, in an admirable surge of solidarity, an unprecedented wave of migration. In this context, a new type of digital activism has emerged in the country: the "cyber-elves". Their mission is to put the Kremlin trolls in their place: to spread reliable and verified information on the conflict, the migration situation and to help ban hateful, suspicious and mendacious profiles from Internet platforms. Their method: "open source intelligence", that is to say advanced quasi-espionage techniques, based solely on data freely accessible on the Web. The elves are not pirates. But their targets remain the “troll farms” run by Moscow, and those who, out of disbelief or conviction, relay their message. Magda Szpecht, 32, is one of the first cyber-elves in Poland. A theatre director and feminist activist, she felt her calling born during the migration crisis triggered by Belarusian dictator Alexander Lukashenko in the summer of 2021. “That was the moment when real atrocities came closer to our borders and I felt the need to act,” she confides. She had then heard that, on the front lines of the information war in Estonia, the homeland of the cyber-elf movement, an army of nearly 400 members, had been at work for several years. 10,000 fake accounts “I understood straight away that I was a cyber-elf. This movement is codified, with its instructions for use, but you don't need to identify yourself as an elf to do elf work," she explains. This work of scrupulous fact-checking is particularly absorbing. "I spend almost all day in front of my screens and I feel remorse when I switch off. I am connected to nearly 40 Ukrainian Telegram channels." Magda was thus able to bring unpublished images of the conflict to the media, and was the first in Poland to comment live, at 5 a.m., on the bombing of the Zaporizhia nuclear power plant. Elves specialize, for example, in geolocation, metadata or facial recognition. But the Polish front has now moved to the terrain of the place of war refugees in the country. "Have you heard about the Polish woman who took in a Ukrainian refugee and that she seduced her husband? Or that Ukrainians pay less than Poles for a litre of petrol? That they have priority in hospitals? These are all stories that are circulating profusely on the Web." According to her estimates, nearly 10,000 fake accounts have appeared on social networks, with the aim of demotivating Poles tempted to help refugees. The movement launched by Magda Szpecht currently has around thirty members in Poland, "a drop in the ocean of need", she says. But the initiative continues to grow and others, similar, such as the "keyboard warriors" (2,500 observers on Facebook), are booming. Anna Mierzynska, who describes herself as a digital activist journalist, observes that the messages are particularly subtle and calibrated. "There is currently a major trend on the TikTok network, which claims that Polish men find Ukrainian women more attractive than Polish women. This plays on women's complexes and allows them to attack women, who, along with children, make up the majority of refugees." "Elves are nice, but there are few of them in Poland. I'm a killer," says Marcin Rey ironically. Among the "mercenaries" fighting against Russian influence in Poland, he is a veteran, having founded the particularly popular Facebook profile "The Russian Fifth Column in Poland" in 2015. His methods sometimes arouse controversy, but they are extremely effective. On March 21, he unmasked the administrator of the group "The Ukrainian is NOT my brother" on Facebook, one of the most influential propagators of anti-Ukrainian hate speech on the Polish web (55,000 observers), active since the war in Donbass in 2014, and reactivated with force three weeks before the start of the Russian invasion of Ukraine.

## ###ARTICLE\_START### ID:1902

REGULATION Instant messaging users know this well: unless you convince your entire address book to do the same, it is very difficult to switch to another service. A Signal user cannot chat with a friend who is on WhatsApp or their parents who have remained loyal to Facebook Messenger. But all that should soon change. The European Digital Markets Act regulation establishes the interoperability of messaging services. More precisely, the "gatekeepers", these tech giants used by at least 45 million Europeans and whose valuation exceeds 75 billion euros, will have to "open" their messaging services to competitors who wish to do so. This concerns WhatsApp, Facebook Messenger and Instagram Direct (Meta), iMessage (Apple), Skype (Microsoft), Google Chat... which could tomorrow be compatible with Telegram, Signal, Snapchat, Viber and more confidential messaging services like Threema, Skred or Wire, if they wish. The aim of the European authorities is to reinject competition into this market by removing the main obstacle to consumer freedom of choice. In the minds of legislators, it is illogical for messaging services to operate in silos, while emails and SMS are interoperable. That's the principle. The technical application, however, is more difficult. Brussels is aware of this. Only exchanges between two Internet users will have to be interoperable; the authorities are allowing a two-year deadline for group discussions, and four years for audio and video calls. But even the first step poses its share of challenges. How can applications that do not use the same computer protocols communicate? The question is not problematic between non-secure services (Instagram Direct and Messenger are already interoperable). But it is a burning issue for encrypted messaging services like WhatsApp, which have made the security of exchanges the heart of their marketing promise. Can this promise still be kept? Outcry There has been an outcry in the United States, where DMA is accused of signaling the end of secure conversations. "It is impossible to make two encryption architectures work together," said computer security researcher Steven Bellovin. Unsurprisingly, the most virulent attacks came from Meta. "Will this put an end to the confidentiality of exchanges, or seriously diminish it?", the boss of WhatsApp told the Platformer newsletter. Will Cathcart also predicts a wave of spam and an explosion in the virality of disinformation. "Have European regulators consulted enough computer security experts?", he pretends to wonder. Is the interoperability of messaging services "destined to fail", as the American magazine Wired headlined? Not so sure, says the European foundation Matrix. This organization has created an open-source encryption protocol that it would like to see become a standard. If everyone uses the same secure protocol, interoperability becomes easy. "But it's going to be hard to see Apple and Meta switch overnight," acknowledges Amandine Le Pape, co-founder of Matrix. She proposes another solution: creating "bridges" between messaging services. "An encrypted message from WhatsApp will be decrypted on this bridge, then re-encrypted according to the protocols of the other messaging service," she continues. These technologies already exist "but there was no industrial incentive to really develop them yet. The DMA will change that." For computer security experts, bridges are not an option: messages that are decrypted there become vulnerable. Matrix acknowledges this. "But the key is to clearly inform the Internet user that the encryption will be broken if they communicate to a messaging service, and give them the choice," emphasizes Amandine Le Pape. The latter deplores "the hypocrisy of WhatsApp" which already removes encryption from conversations when an Internet user communicates with a company. The unknown is how many messengers will want to be interoperable with WhatsApp or Messenger? In the past, Signal has spoken out against the idea in the name of protecting encryption. “If we do that, we’re shooting ourselves in the foot,” adds Thomas Baignères, director of Olvid messenger, which claims to be the most secure on the market. “Unlike WhatsApp or Signal, we don’t have a centralized directory of our users. And we don’t want to compromise their data or take the risk that WhatsApp will retrieve information about them.”

## ###ARTICLE\_START### ID:1903

Elon Musk, CEO of Tesla and SpaceX, is now the largest shareholder of the social network Twitter. Documents published on April 4 by the American stock market regulator show that Mr. Musk has acquired 9.2% of the social network's shares, for a value of approximately $2.9 billion (2.62 billion euros). This purchase, carried out discreetly on March 14 by the multi-billionaire, created a surprise: the value of Twitter shares rose by 27% on Monday on the New York Stock Exchange. Mr. Musk, very active on Twitter, is one of the most influential personalities on the social network with 80 million subscribers, his account is among the ten most followed. His messages, often mocking, sometimes cryptic, can cause major fluctuations in the price of a share or cryptocurrency. The announcement had all the more effect because it seems to be part of a considered strategy to challenge the current policy of Twitter's management. On March 25, the controversial entrepreneur launched a poll: "Freedom of expression is essential to the functioning of democracy. Do you believe that Twitter strictly adheres to this principle?" In this consultation without scientific value, the no vote won by more than 70%. In the process, the founder of Tesla asked his fans what consequences should be drawn, or even if it was necessary to "create a new social network". Two days earlier, he had asked whether Twitter's algorithms should be made "open source", which would make their code accessible and modifiable. "Censorship" This software manages in particular the display of tweets deemed the most relevant and interesting, based in particular on the number of people who have interacted with them. The user does however have the choice with the traditional display of Twitter, in reverse chronological order. Jack Dorsey, the founder of Twitter, who no longer exercises any responsibility in the company, has also often criticized his platform and suggested modifications. Also unpredictable and atypical, the entrepreneur also responded to one of Elon Musk's surveys with the question: "The choice to use (or not) the algorithm of their choice should belong to the user." Mr. Dorsey advocates the idea of opening content ranking algorithms to third parties. These developers, companies or individuals, could offer their version and Twitter users could choose the algorithm of their choice, in a sort of marketplace. This partial takeover could also have important political consequences in the United States, or even in the world. Historically considered a libertarian close to the left, Elon Musk has gradually increased the more or less discreet signs of support for Donald Trump. In early 2021, after Donald Trump's Twitter and Facebook accounts were shut down following the attack on the Capitol, the former president's son called on Mr. Musk to "save freedom of expression" by "creating a social network that is not biased (in favor of Democrats)." Since then, Donald Trump has launched his own social network, "Truth Social," currently only available on iPhone in the United States, and mired in technical problems. Mr. Musk's criticism of Twitter seems in any case to echo those of Republicans and Mr. Trump towards Facebook, its subsidiary Instagram or Google's subsidiary YouTube: these digital giants have been accused of "censoring" conservatives, particularly after the deletion, in January 2021, of Mr. Trump's account, following messages contesting the election, before the storming of the Capitol. “Given Mr. Musk’s longstanding criticism of Twitter and social media, it was expected that he might seek to build a competing platform,” said Dan Ives, an analyst at investment bank Wedbush Securities. “Instead, he appears to be setting his sights on Twitter. We view this passive stake as the beginning of broader conversations with Twitter’s current leadership that could lead to a more active role and a more aggressive takeover of the company.”

## ###ARTICLE\_START### ID:1904

Elon Musk, the eccentric boss of electric vehicle maker Tesla and spaceflight company SpaceX, sent Twitter into orbit on Monday after making public a major stake in the social network, which he accuses of restricting free speech. At the close of trading on Wall Street, the platform's shares soared by more than 27%, to $49.97. According to a document filed with the SEC, the American securities regulator, Mr. Musk acquired nearly 73.5 million ordinary shares of Twitter, or 9.2% of the company's capital. This makes the richest man on the planet the largest shareholder in the group, ahead of the investment fund Vanguard (8.8%) and the bank Morgan Stanley (8.4%), according to Bloomberg data. Based on Twitter's closing price on Friday, the investment amounts to nearly $2.9 billion. The South African-born billionaire is a frequent speaker on the platform, where he has just over 80 million subscribers, and his announcements on the network often spark controversy. In the summer of 2018, he claimed on Twitter that he had the appropriate funding to delist Tesla from the New York Stock Exchange, without providing any proof. After another unfortunate post in early 2019, he agreed to have his messages directly related to the electric vehicle manufacturer's business pre-approved by the SEC. The executive also gave up his position as chairman of Tesla's board of directors. However, in early March, Mr. Musk asked a New York judge to cancel the agreement reached with the securities regulator regarding his messages on Twitter, stating through his lawyer that the SEC was seeking to "harass Tesla and silence Mr. Musk." "Freedom of expression"The billionaire is also critical of the measures put in place by Twitter to moderate certain content deemed inappropriate. At the end of March, Mr. Musk published two surveys on the social network, one to ask his subscribers if they thought that Twitter's algorithm should be open source, the other to find out if they thought that the company respected freedom of expression. Voters had overwhelmingly answered "yes" to the first question and "no" to the second. "Given that Twitter acts de facto as a public square, its inability to adhere to the principles of freedom of expression fundamentally undermines democracy," the Tesla boss wrote on Twitter following the results. "Is a new platform necessary?" Twitter is regularly accused of censorship by many conservative voices in the United States, particularly since the suspension of Donald Trump's account last year. Like Facebook and YouTube, the blue bird network had estimated that the former president had encouraged his supporters to violence before the assault on the Capitol on January 6, 2021. On Monday, Representative Marjorie Taylor Greene, very close to the former occupant of the White House, wondered if Mr. Musk's investment would mark the "return of freedom of expression" on Twitter. "This will take courage, because the [Democratic] regime is investing heavily in a certain industry, and threats will undoubtedly come," the elected official wrote on Twitter. A passive participation? Elon Musk bought back common shares, which do not give him special powers. In the document sent to the SEC, he also specifies that his stake is passive, that is to say that he does not intend to influence the company's major strategic decisions. But this capital investment could be the prelude to a more active role within the company, some experts believe. "We expect this passive engagement to mark the beginning of deeper discussions with Twitter management and the board that could lead to active engagement and potentially more aggressive ownership," Dan Ives and John Katsingris of Wedbush Securities said in a note. Twitter did not immediately respond to a request for comment. IN SAN FRANCISCO AND PARIS RESPECTIVELY Given that Twitter acts as a de facto public square, its failure to adhere to the principles of free speech fundamentally undermines democracy ELON MUSK »

## ###ARTICLE\_START### ID:1905

As is often the case in the history of armed conflicts, the war in Ukraine is also a war of images. For several weeks, disinformation has been providing food for thought for journalists specializing in data verification - like CheckNews at Libération. But the hunt for fake news is far from being reserved for professionals: it also animates ordinary Internet users, who double up as cyber-investigators who are increasingly comfortable with OSINT, for "Open Source Intelligence". The expression refers to an intelligence technique based on the collection of public information that can be consulted completely legally, in particular through specific search engines, using mapping tools or even through the metadata of a photo. Taj Mahal. This is not the first time that Internet users have seized IT resources to investigate. In the United States, for example, many people investigated Luka Rocco Magnotta following his videos of animal abuse, well before the police became interested in his case and the crimes of the "Montreal butcher" were discovered. It was a vacuum cleaner model and a gas station chain spotted in the images posted online that allowed budding investigators to discover that the man they were looking for lived in Canada. In France, the Dupont de Ligonnès case also brought together its share of cyber-investigators. But beyond the desire to uncover the truth, the Osint community also regularly trains to respond to more playful challenges. For example, a photo showing a woman, all smiles in front of the Taj Mahal in India, from which the goal is to determine the exact location of the person, to the nearest meter. "To achieve this, we analyze everything in front of us: the people walking in the background, the size of the shrubs, the position of the sun. Every detail allows us to get started on a track," explains Baptiste Robert, an ethical hacker (i.e. a cybersecurity expert who tests computer systems to detect flaws) who regularly shares Osint challenges on his Twitter account. Delving into a photo and guessing the time it was when the shutter was pressed, finding the final destination of the bus that we see passing in the foreground, identifying the origin of the burger that a man is eating Baptiste Robert: "We can spend hours on this kind of challenge, scrutinizing the smallest element. The moment when we finally find the answer is extremely satisfying." For Baptiste Robert, learning to question images has educational virtues: "No technical skills required. It encourages you to sharpen your sense of observation and use digital tools that are accessible to everyone, which allow you to do reverse image searches, consult site archives, and follow air traffic live. Being aware of the information that an image can tell also means being more sensitive to the confidentiality of your personal data. "You take a selfie from your balcony? By analyzing a billboard and a street intersection in the background of the photo, we can easily find your address. And if you also have the misfortune of posting vacation photos the following week, we can easily deduce that your home is vacant and come and burgle it," warns Jean-Jacques Latour, head of cybersecurity expertise for the Cybermalveillance.gouv.fr system. Ecosystem. While images can tell a lot, they can also lie. According to Jean-Jacques Latour, "we will increasingly have to distinguish truth from falsehood." "Teleworking, playing online, getting information on the Internet, communicating with loved ones via applications: our digital uses are only increasing," he recalls. But cybercriminal methods are becoming more sophisticated. Typically, while a phishing email could be easily recognized a few years ago by its number of spelling mistakes, today's cybercriminals can buy very well-made kits. We are now faced with a real cybercriminal ecosystem: there are brains that develop tools, others that sell them, others that buy and use them, and still others that exploit the product of these tools." Faced with an image, a password reset request, an email from the bank, "you must always remain suspicious." The praise of permanent doubt, in short. ?

## ###ARTICLE\_START### ID:1906

With La Privatisation numérique (Raisons d'agir, 172 p., 9 euros), co-authored with Simon Cottin-Marx, the researcher at the Laboratoire techniques, territoires et sociétés (LATTS) at the École nationale des ponts et chaussées delivers a critical analysis of the digitalization of public services, in which he sees an extension of the area of capitalism. What was the starting point for this book? Like many city dwellers, astonishment at the invasion of sidewalks by scooters, the appearance and disappearance of "shared" bike stations, the noria of meal delivery scooters, the use of Doctolib or Vite ma dose to go get vaccinated against Covid-19, etc. Or the public debate on Health Data Hub (the collection of our health data on a Microsoft server), on the weight of Airbnb in the rental property stock... The common point of these surprises is, of course, the use of digital tools, but also the fact that they all concern the boundaries of public service: roads, housing, health... But the digitalization of the administration, on the one hand, and the privatization of public services, on the other, are already the subject of much research... Yes, but the digitalization of the administration has been studied until now as an internal development. We also know the classic forms of interaction between public and private: the subcontracting of IT services to IBM or Capgemini, the delegation of public service to Bouygues or Suez, which in turn subcontract to networks of companies specializing in "smart city" services. There are also some privatizations, such as the SNCF's "Macron buses", sold to Blablacar. But we are seeing new forms emerging. First of all, the appropriation of public space by private operators of "shared mobility" or applications, such as Waze, which generate traffic and uses on public roads. There is also interference with public policies: housing when Airbnb changes the destination of a large part of the real estate stock; health when Google and Apple block access to StopCovid via their Bluetooth application by invoking "protection of privacy"; social rights when Uber organizes and finances a referendum in California to repeal a law that regulates its activity. If these digital operators offer a more efficient and more "user-friendly" service than public services, why should we complain? These are in fact the markers of a fundamental economic transformation of capitalism, using new modes of profit production. The valorization of data, already well known, allows very fine marketing approaches for the benefit of those who own them: this is surveillance capitalism. The speed of information circulation and the "connectivity" of networks reduces transaction costs to the benefit of those who control them: this is platform capitalism. The problem is not so much the "Orwellian" risk of controlling our lives because algorithms are in reality incapable of keeping their promise of perfect knowledge, but the inability of these companies to deal with everyone's problems equally. Shared mobility operators are effective in city centers or intercity, but not in urban outskirts or rural areas. The same is true for digital infrastructure operators. This is a repetition of the unfortunately classic phenomenon of the privatization of profits and the socialization of losses: Netflix benefits from the deployment of fiber by public services without spending a dollar; Parisians use Doctolib to find vaccination slots in Seine-Saint-Denis, where the population is under-vaccinated... Is this not a transition period, while the State regulates this new "wild" capitalism? Indeed, some cities are countering the harmful effects of Airbnb, European directives and national laws are protecting private data or fighting the monopolies of GAFA. But we need to move forward on other fronts. Public services must provide digital services of the same quality as the private sector, but by serving everyone equally. Instead of promoting, in the name of the "start-up nation", the economic model of platforms by promoting the status of self-employed or by making agents precarious, as La Poste is doing by buying Stuart, the State should instead support the initiatives of public service agents based on free software. For example, the gendarmerie or local authorities with the Adullact association have developed business software; teachers have developed Framasoft, which offers teachers the equivalent of the Google range. But they are overwhelmed by demand. The State must offer server infrastructures, connectivity as powerful as those of Microsoft or Google. It must also continue along the path opened by FranceConnect, which offers everyone an alternative digital identity to Facebook Connect, or that of the inter-ministerial state start-up incubator, which authorizes "general interest developers" to design digital solutions for administrations. We must return to the very essence of public services. Initially, everyone swept the street in front of their door before delegating this "common good" to a road service financed by our taxes. We must make the common goods provided by digital services accessible to everyone.

## ###ARTICLE\_START### ID:1907

Nathalie Arthaud No proposal. Nicolas Dupont-Aignan Develop the offensive capabilities of the "cyber weapon". Create or recover French sovereign digital actors and tools (hosting, social networks, streaming), uncensored and radiant in the French-speaking world. Launch a French-speaking "Google" and build a sovereign French cloud. Make it mandatory for data from French users to be hosted in France by independent or state actors, with a real right to be forgotten. Adopt a constitutional law prohibiting digital traceability without free consent. Anne Hidalgo Create a cross-functional digital ministry. Establish a carbon footprint reduction charter for data centers. Build a digital architecture to guarantee hosting of our sensitive data on the territory of the European Union (EU). Create an equipment voucher worth 500 euros for the purchase of digital devices necessary for economic activity. Yannick Jadot Reappropriate the entire manufacturing cycle of cloud technologies at the European level. Force American giants to store European citizens' data on EU territory. Adopt a "Buy European Act" giving priority to EU technology companies in public procurement. Regulate crypto-assets, to preserve the environment and financial stability. Require large platforms to devote human resources to moderation. Make it mandatory to display their "environmental cost" on technology products. Oppose biometric surveillance technologies. Relaunch the project of a "Google tax" intended to increase the contribution of large Internet groups to financing the creation of online content. Jean Lassalle Strengthen cyber defense, make it a "fourth army." Create a "digital capes." Guarantee free online access to publications by researchers paid with public funds. Marine Le Pen Grant community preference (Buy European Act) in digital public calls for tender and national preference for strategic or sensitive projects. Consider requiring subsidiaries of American or Chinese digital giants to open their capital to European companies or to break the hierarchical link with their parent company. Create a public, free and open social network. Set by default on smartphones, tablets, etc. the limitation of content prohibited to minors and promote authentication by bank card. Better connect overseas territories, underground areas, white and gray areas. Invest in quantum encryption. Develop cyberoffensive capabilities. Use biometric recognition technologies at borders. Emmanuel Macron Invest 30 billion euros in "sectors of the future": cloud, semiconductors, quantum, artificial intelligence, mini space launchers, biomedicine, etc. Create a "European metaverse. Activate parental control by default for content on smartphones, tablets and computers. Continue efforts at European level on content moderation and the fight against harassment. Facilitate the IPO of French start-ups. Simplify the tax system for investment in start-ups. Train 400,000 to 500,000 additional developers over five years. Jean-Luc Mélenchon Guarantee the hosting of data for public services and essential businesses on servers in France. Bring digital and telecommunications infrastructures under public control. Create a public agency for free software. Establish a community preference for public digital calls for tender (Buy European Tech Act). Refuse private censorship on social networks carried out by Gafam. Create the national mission for mastering artificial intelligence. Create a French foundry for microprocessors. Valérie Pécresse Create a “sovereign cloud” for strategic data (health, nuclear). Establish a French and European preference (Buy European Act) in public procurement of software and hosting. Create a High Council for Economic and Digital Sovereignty. Simplify the filing of complaints online, particularly against online harassment. Train one million “digital talents” by 2030: create a national digital school, retrain 50,000 civil servants, etc. Support the repair and reconditioning of IT equipment. Accelerate the deployment of very high speed broadband by introducing a financial bonus for communities that complete the deployment before the end of 2024. Adopt a law on “protecting children from digital threats.” Open discussions on the “end of anonymity” online. Support the development of the blockchain and cryptocurrency sector. Philippe Poutou Withdraw the decree on the extension of profiling and the “global security” law. Requisition large communications companies. Dismantle Arcom (merger between Hadopi and the CSA) and create a democratic body bringing together journalists, media employees and users. Fabien Roussel Create a more protective status for platform workers. Adopt a law against “mass digital surveillance.” Strengthen the role of La Poste in reducing the digital divide. Make the fight against bullying and cyberbullying a "major national cause. Éric Zemmour Impose the hosting in France of sensitive data of the French as well as strategic data of the State and the private sector. Accelerate investments in blockchain and Web3, and relax the administrative framework of the sector. Exempt from capital gains tax the sale of crypto-assets if at least 50% is reinvested in the capital of a company in the real economy. Encourage the emergence of "euro stablecoins" (digital currencies) by the private sector. Better protect young people by organizing a "General Assembly of Social and Digital Networks."

## ###ARTICLE\_START### ID:1908

Overshadowed by the Russian invasion of Ukraine, the civil war in Burma has not abated. Assassinations, sexual violence, torture, disappearances, extrajudicial executions, persecutions the Burmese army has engaged in massive and systematic violations, many of which amount to war crimes and crimes against humanity according to a UN report published Tuesday. This document is the first investigation into human rights since Min Aung Hlaing's coup on February 1, 2021. "The appalling scale and scope of the violations of international law suffered by the people of Burma require a firm, unified and resolute international response," said the UN High Commissioner for Human Rights, Michelle Bachelet. The security forces have shown a "flagrant disregard for human life," the UN recalls. Before the coup, in 2017-2018, the army and its proxy militias had already committed mass atrocities, ethnic cleansing against the Rohingya, amounting to “crimes against humanity,” recalled the spokesperson for the High Commission, Ravina Shamdasani. The investigators were not allowed to enter the country. But they relied on testimonies and interviews with 155 victims, lawyers, witnesses, human rights activists, supported and corroborated by satellite images, verified multimedia files and open source documentation. At least 1,500 people were killed between February 1, 2021 and January 31, 11,700 were arrested and more than 441,000 displaced by the fighting and the army’s “cleansing operations.” Figures that only partially reflect the extent of the chaos. Widespread across the entire territory, the clashes between the army and ethnic armed organizations, supported by the People's Self-Defense Forces (PDF), no longer allow for an overall view of the toll. Air strikes, fires, artillery fire Burmese security forces targeted civilians, using a tried and tested method of killing. More than 200 people were shot in the head, others in the back. Many people died in detention. The UN reports "electrocution, rape, forced injections of drugs, forced ingestion of pork among Muslims, deprivation of water, food, and suspension from ceilings." Some families are still searching for their loved ones. To implement its "four cuts" strategy (cutting off communications, cutting off supplies, cutting off information and cutting off recruitment), the army has engaged in mass killings during its "cleansing operations." Burma has "plunged into a civil war whose scale and violence Westerners have not measured," recalls Sophie Boisseau du Rocher, associate researcher at the Ifri Asia Center, in the journal Politique étrangère. "To say that the coup has failed is an understatement. The Tatmadaw is living in a state of siege. [ ] The country is in complete disarray. [ ] We are witnessing the great return of poverty." According to the UN, "14.4 million people are listed as having an urgent humanitarian need." Burma is resisting, but is sinking before our eyes.

## ###ARTICLE\_START### ID:1909

What can we read on this ancient stele of uncertain date and origin? Does the missing text in ancient Greek refer to an "alliance", an "assembly", a "treaty between states"? The bite of time has erased some of the characters. But an algorithm, Ithaca, puts forward these three propositions to complete the reading. It is up to human experts to finalize the choice. This form of human-machine collaboration is proposed in a study published on March 9 in the journal Nature. Already scrutinized for its potential to assist humans in countless sectors, including archaeology, artificial intelligence (AI) is therefore also setting out to attack ancient Greek. Ithaca is an algorithm developed by the company DeepMind, owned by Google, in collaboration with the humanities departments of the Ca'Foscari universities of Venice (Italy) and Oxford (England), as well as the computer science departments of the Economic University of Athens (Greece). Named after the island where the Greek hero Odysseus came from, Ithaca is an AI designed for epigraphists, historians who study texts inscribed on durable media—often marble. In the Nature article, the authors demonstrate that when epigraphists collaborate with Ithaca, they can in certain situations benefit from significant time savings and also from more precise results. “Inscribed stones are exceptional documents for historians because they are primary sources,” explains Michèle Brunet, professor of Greek literature and epigraphy at Lumière-Lyon-II University. “Conversely, if you read historical literary texts, you are actually reading a copy of a copy of a copy... of the original.” The problem is that engraved stones rarely survive the centuries without damage. Often broken, eroded, sometimes transported far from their original location, they most often offer fragmentary texts, whose dates and place of creation—essential information for historians—are uncertain. Neural network The work of epigraphists consists of "guessing" the missing text, dating the texts and locating their provenance: tasks respectively called "restitution", "chronological attribution" and "geographical attribution". To do this, they establish parallels between the objects they study and other comparable inscriptions of the same nature for example (decrees, epitaphs...) or found in the same place to infer the missing information. But this work is time-consuming, and requires a huge culture. "The quality of a restitution depends on the number of texts that the epigraphist has read during his career", says John Blodel, professor of classics at Brown University (United States), who peer-reviewed the Nature article. The tool developed by the authors of the article could help historians in these difficult tasks. Ithaca is a neural network, that is, an algorithm that has been “taught” the work of an epigraphist during a learning phase. Its creators presented it with a very large database, made up of incomplete ancient Greek texts found on engraved stones. They then asked Ithaca to guess the missing text, as well as the date and place of inscription on the stone. By comparing the predictions of the artificial intelligence with the consensus reached by epigraphy specialists on the texts in the database, the authors were able to indicate to the algorithm where its errors were, so that it could adjust its parameters so as not to reproduce them. They repeated this process until Ithaca was well optimized for these tasks of restitution and chronological and geographical attributions. Once this learning is done, Ithaca can be confronted with unknown texts. The algorithm then suggests several possible restitutions of the missing text, as well as a certain number of dates and places of origin that it considers credible. He assigns a probability level to each of the proposed choices. It is then up to a human epigraphist to decide. The final choice is up to humans Whether they are in favor or not of the emergence of such technologies in their field of research, historians agree on one thing: the final choice must be up to humans. Anne Jacquemin, professor emeritus of Greek history at the University of Strasbourg, who says she is "amused but skeptical" about the usefulness of Ithaca, maintains: "The producer of the inscriptions is a human, so human expertise will always be needed to decode them." Laure Soulier, lecturer in artificial intelligence at Sorbonne University, emphasizes that the collaborative human-machine aspect is essential for the acceptability of such tools and user confidence in the algorithms. In a press release, the authors say they are working on versions of Ithaca trained on other ancient languages. They also published their data and model in open source, an approach that Laure Soulier considers essential for “confidence in the models” and “the reproducibility of the research”.

## ###ARTICLE\_START### ID:1910

It is already the seventeenth day of the war. This Saturday morning, I was woken up by a Telegram alert: at dawn, a Russian drone, loaded with 3 kilos of explosives and metal balls, approached the center of Kyiv. Spotted, it was shot down by the Defense Forces and crashed on the roof of a bank, setting fire to the upper floor. Nothing too serious, just a quick hello from the attackers. On Khoriva Street, a TV crew is doing its live broadcasts amidst the debris and we walk silently through Podil. The city is quiet. St. Andrew's Descent is deserted. What would Mikhail Bulgakov have written about all this? His birthplace is locked and locked. One morning in March 2014, when I laid a few bags on the cracked linoleum of an apartment in a peeling 1900s building, across from the old walls of the Mohyla Academy, the morale of the residents was on a roller coaster. Kyiv had just won a revolution and lost a peninsula. On Independence Square, the euphoria of Maidan was burning up in calls for mobilization, while the electricity of the revolution was coursing down St. Volodymyr Hill to emit its positive vibes in Podil, in the cafes and citizens' councils where there was a mixture of excitement and anxiety. Over the course of two revolutions, in 2004 and 2014, the Podil district, below the city centre, has become the nerve centre of the capital's creative class - "this post-1991 Ukrainian generation, which knows why and how to protest, create a civil society, set up solidarity actions, but which has not learned to organise things vertically, that is to say to generate a political project", comments the historian Yaroslav Hrytsak, professor at the Catholic University of Lviv. Upstairs, in the posh districts of Pechersk and Lipki, the major political changes and compromises with the oligarchs are taking place. Down below, Podil, on the banks of the Dnieper, is where ideas circulate. Contrary to what many visitors think, Maidan is not the center of Kyiv: we avoid this busy, mineral esplanade, rebuilt in the 1950s in Stalinist style, except during revolutions. For many Kievans, the soul of the city is Podil: its preserved 19th century urban fabric, its old monasteries, the Mohyla Academy, founded in 1632 by religious leaders, a center of shops and services, cafes that open and close without logic, and above all its fascinating citizen community - the "Podolianotchka". Barricades A red-bearded hipster, Pavlo Kaliuk, one of the best-known activists in the neighborhood, is one of its informal leaders. Since the Maidan revolution, this underground network has dedicated itself to improving daily life, creating links by renovating the urban fabric. Protection of historic buildings, creation of pedestrian streets, development of small parks. A few months ago, Pavlo, a 34-year-old self-employed real estate agent, his nose in his emails, was moving heaven and earth to house Belarusian refugees fleeing the repression of Alexander Lukashenko. The shadow of war has not left Podil since 2014: its students enlisted in volunteer battalions, the National Guard barracks, the new residents who have taken refuge from Donetsk or Luhansk, the smoky plumes of the Bakteria night bar, where local artists and soldiers on leave returning from the front in the East got drunk side by side. But for more than two weeks, and the start of the Russian offensive, war, the real war, has burst into this haven of peace. Podil has bristled with ramparts. Its streets, rebuilt after the great fire of 1811, are now blocked by concrete and sand barricades, guarded by groups of the Teroborona (Territorial Defense) or the Samooborona (unarmed self-defense groups). "What do you need? Tea, cigarettes? OK, we'll send them to you in the afternoon," Pavlo whispers through the car window to the lookouts with yellow armbands at a checkpoint. "The other day, we were driving in my Volkswagen in Podil, we were stopped by police and they broke the window of the rear shelf," says the activist. The car was registered in the Donetsk region. The atmosphere in the neighborhood is nervous. On the second day of the war, a Russian sabotage group in an unmarked vehicle had advanced as far as Kyrylivska Street. These units, called DRG in Russian and Ukrainian, had been sent to the city centre to identify and mark targets for Russian artillery. The saboteurs had been liquidated by the Territorial Defence. Police everywhere are scrutinising vehicles that have been parked too long. A white bus was found parked, it was packed with Russian radio transmission equipment. Kyiv is infested with double agents who swim like fish in a perfectly Russian-speaking city. On Yaroslavska Street, an impromptu meeting with Maksym Nakonechnyi, a film director and producer. “You know what? The other day I was stopped by the cops on Khoriva Street. They took me to the police station, made me kneel and blindfolded me, convinced that I was an agent provocateur. They stole my bulletproof vest, the dollars I had on me and we had to call the SBU [the secret service, editor’s note] to get everything back.” Director of Tabor, a small production company, Max has just made Spas, his first feature-length fiction film, which evokes one of the Ukrainian traumas of recent years: the extrajudicial detentions of civilians in the Donbass. The film is already on the radar of festival programmers, in Locarno, San Sebastian and Cannes. In the meantime, Max has started filming a short documentary on the Kyiv zoo - "Did you know that llamas react like humans to the sound of bombing?" He also works as a fixer (a person who knows a region and accompanies foreign journalists) and a translator for American media. "Healing" The revolution and eight years of war and fractures have given birth to a golden generation of directors, like Max, who are swarming to festivals all over the world. Apart from those who have children and who have gone to seek shelter in the west of the country, many have decided not to leave their neighborhood, we must record for History this ??? lll ??? What is happening. Among them is Christina Tynkevych. “My husband is a cameraman, but he decided to join the Territorial Defense, so we stayed,” she says on the street, not far from the Zhovten, the oldest cinema in Kyiv. “Going to the West seemed like desertion. You hide and you can’t protect your home. But it’s very hard to work with the sound of sirens in the background.” In the meantime, Christina volunteers. With her Leica slung over her shoulder, she takes portraits of the residents who stayed for a community media outlet on Instagram. She queues at pharmacies and delivers medicine to the elderly at home. “Podil has emptied. But what’s fascinating is that new routines have taken hold, in the queues outside the grocery stores. People have become even more tolerant, more open to each other.” If we leave, the city's recovery after the war will be even more difficult. So as long as it's not like Kharkiv or Mariupol, I'm staying. Our presence is a denial of access for the Russians," explains the thirty-year-old. "Napalm effect" In recent years, Kyiv has become a major capital of the electro scene, reminiscent of the spirits of a lost Berlin, post-revolutionary uncertainties and permanent war having raised a hedonistic wave of which Podil, with its many clubs, is the epicentre. Today, the amps have been put away. Somewhere on the banks of the Dnieper, a squat has been transformed into a clandestine laboratory. "There are quite a few bars where Molotov cocktails are now made," smiles Sacha, a sound engineer. "We then pass them on to the Teroborona, they store them at checkpoints or take them to Irpin, where the fighting is taking place." More than 2,000 explosive bottles left the workshop in two weeks. "We put acetone, polystyrene and gasoline in it," he lists, storing the cocktails in Club-Mate soda crates. "Today, we're testing a recipe with aluminum and paraffin. When it burns, it has a napalm effect." For Sacha, 36, making these people's projectiles serves to channel anxiety and emotions: "From now on, in our lives, we have to deal with the fear of death. We don't have weapons here, on principle. I'm a pacifist, I didn't want to join the army, but I'm in a situation where I'm wondering what to do if Russian soldiers come to my street. Now I know: I'll defend myself." In the industrial zone, in the north of the neighborhood, about twenty "MacGyvers" have transformed an old garage into a "hackerspace," a den of computer hackers, the only one in the city. They manufacture 3D printers and slow-rotating hydroponic watering cans (above-ground irrigation system), the plans for which are distributed in open source. "But everything has changed in the last two weeks, we only do one thing: tire guards!" smiles Artem, 32, two pairs of glasses on his forehead. We call them "the loaves of bread" of Podil. If a BTR-type armored vehicle runs over them, sharp spikes remain in the tires and automatically disable the vehicle." Volodymyr, 34, an arborist by profession, assembles metal rods in a star shape. "These are "garlic cloves". If a Russian truck passes, hop, we throw them under the wheels," he laughs. "We invented that in three hours, the day the war started." Further on, in Potchainynska Street, a summer bar terrace has been transformed into a sklad, a bazaar or warehouse. “Sitting and being afraid is not a solution, so all the residents who remained want to do something useful,” says Yulia Bielinskas. The retail journalist abandoned her professional website and co-founded a logistics base in her favorite bar. “We collect money, buy and receive humanitarian aid from Poland,” she says. “We have reserves in case of a siege, and we equip volunteer drivers with bulletproof vests. The bar’s kitchen operates for 200 people, local police officers and fighters.” Activists In the evening, before the curfew, we meet Volodymyr Yermolenko, philosopher, teacher at the Mohyla Academy, essayist, journalist and figure of the liberal intelligentsia of Podil, where he began his studies in 1996. “Podil, for me, is freedom, 24 hours a day, informality, a place for freaks, an old city where gentrification is not complete. In recent years, the energy of Maidan was beginning to spill over into the rest of society. Ideas here do not secularize into ideologies,” he says with a smile, in his polished French. In the neighborhood, shopkeepers and the middle class were becoming activists and supporting civic initiatives, and this thirst for culture, for books, was beginning to spread in turn to the rest of the country. “We only needed five or ten years to become a completely different country.” What’s happening right now, for us, is an anti-imperial war, and for the Russians, an attempt to save what they’ve already lost. If [the Russians] come here, they’re going to destroy the spirit of Podil, which represents everything they hate.” Journalist Brent Renaud Killed in the Field “If you really want to do a [reporting] project, just go and do it yourself,” journalist and filmmaker Brent Renaud told Filmmaker Magazine in 2013. So he made his own way to war-torn Ukraine. On Sunday, he was killed in Irpin, a suburb of kyiv. The car he was in was fired upon. His two companions were hospitalized. The 50-year-old, a multiple award-winning documentary filmmaker, had come with a colleague to film refugees leaving the region. Renaud is the first foreign journalist to die since the conflict began. Read in full on Libé.fr.

## ###ARTICLE\_START### ID:1911

Wednesday, March 2: On Le Monde's Facebook page, as on Emmanuel Macron's, several hundred dubious comments suddenly appear under our articles devoted to the war in Ukraine. They all repeat the same pro-Russian arguments: no civilian buildings were hit during the invasion, the Ukrainians are led by a Nazi government, Russia was forced to intervene because of NATO... They all have another point in common: they were published by Internet users' profiles in West Africa. Coincidence, expression of a shared feeling in certain African countries, or organized propaganda operation? Asked by Le Monde, Facebook conducted an analysis of these waves of pro-Russian comments and did not detect any "coordinated inauthentic operation" - the way the social network refers to most state propaganda operations. The social network has however suspended a Malian page with a large audience, which had recently been publishing exclusively pro-Russian messages, because it "misled users about its real geographic location and sought to monetize the attention paid by the general public to the war in Ukraine", explains the social network. In recent years, Russia has invested heavily in its propaganda capabilities in Africa, and in particular, with some success, in Mali, where Moscow's messages are surfing on criticism of France. Botched influence operations Still very present online, Russian and pro-Russian trolls seem to have lost their effectiveness. Since 2016, and the uncovering of the destabilization operations carried out in the United States by the Russian Internet Research Agency (IRA), Facebook and other social networks have implemented numerous countermeasures. Russian propaganda operations have had to adapt and have relied more directly in recent years on Russian soft power and its state media, RT and Sputnik. The blocking of these two channels on social networks throughout Europe at the end of February caused a small earthquake. Deprived of this privileged channel, which had become the main tool for disseminating its arguments, Moscow had to change its practices, with what seems to be a certain feverishness, and in a particularly hostile climate, with almost unanimous public support for Ukraine. The Russian embassy in France, which widely rebroadcast RT articles on social networks, has had to content itself with sharing messages published by dubious accounts for a week. War on Fakes, a fact-checking site recently launched by Moscow to denounce Ukrainian fake news, betrays a certain haste: its French version is full of translation errors and spelling mistakes. The official Twitter account of the Russian Ministry of Defense has, for several days, been set to "private", and its messages are only accessible to its subscribers. Added to this are multiple material difficulties: the collapse of the ruble exchange rate makes it more expensive to use foreign service providers; the blocking of advertising tools by all major digital companies limits the promotion of Russian messages; and the mobilization of a large community of open-source researchers, starting with the Bellingcat site, which documents attacks on civilians in real time, contradict one of the key elements of Moscow's propaganda. Censorship and military operations Can we conclude that the old recipes for Russian online influence campaigns no longer work? "After dominating the dark arts of disinformation for the past eight years, the Kremlin's mastery of information spaces now appears to be a scam, a fiction, another lie," writes Carole Cadwalladr, the Guardian journalist who revealed the Cambridge Analytica scandal and Russia's involvement in political destabilization operations in the United Kingdom and the United States. However, Russian propaganda is far from having disappeared from the Internet. It continues to take advantage of what it has done best in recent years, by emphasizing real or supposed divisions in Western opinion and is spreading widely, in France, in anti-vaccination movements, a subject identified as a promising one by Russian propagandists well before the Covid-19 pandemic. Moscow is also relying on the QAnon conspiracy movement, which sees Vladimir Putin as a close ally of Donald Trump in a fight against "pedosatanist elites." The content of Russian propaganda remains very visible on Telegram, a very unmoderated social network, where one of the main pro-Russian English-language channels, "Intel Slava Z," has more than 230,000 subscribers. But Moscow's web censorship measures also limit the reach of its messages, including on the Chinese social network TikTok, described as "a crucial element of the Kremlin's disinformation apparatus" by the British think tank Institute for Strategic Dialogue, which documents the Russian state's online publications. In early March, several Russian influencers were broadcasting the same speech on TikTok justifying the "special military operation in Ukraine. Since then, the uploading of new videos from Russia has been blocked by TikTok, as has access to content published abroad. Russian trolls can also still count on the help of hacker groups close to the state. The Belarusian hacker group Ghostwriter, which specializes in disinformation, has been particularly active in recent weeks; several hacking attempts targeting Ukraine or neighboring countries have been attributed to it. In the past, this group had notably infiltrated news websites to publish false articles, or hijacked social media accounts, particularly in the Baltic countries, Poland and Germany. And in Ukraine, Moscow seems to have changed tactics. In the early days of the conflict, messages posted online had tried to persuade the population that the Ukrainian military was massively laying down their arms. Faced with highly organized Ukrainian counter-propaganda, the Russian army seems to have sought, in recent days, to directly destroy the country's communications infrastructure. A tactic that backfired: with 3G network outages rendering the Russian military's secure phones inoperable, the Ukrainian army managed to intercept sensitive communications made on conventional cellular devices.

## ###ARTICLE\_START### ID:1912

Digital technology is one of the many blind spots in this presidential campaign. However, it "is structuring our society," Yannick Jadot (Europe Ecologie-Les Verts) said on Wednesday, March 9. And the Covid-19 pandemic and then the war in Ukraine have shown our "fragilities" and our "dependencies" in this area, added Valérie Pécresse (Les Républicains). The two candidates, as well as six counterparts or representatives, were invited by the collective of professional associations Convergences numériques 2022 to present their vision of a crucial sector, dominated by Google, Amazon, Facebook, Apple and Microsoft (Gafam) or TikTok. In their speeches, their programs and their responses to Le Monde, certain divisions are emerging. Data and sovereignty France's objective of "digital sovereignty" is a consensus. But, in detail, almost all of the candidates criticize the "trusted cloud" doctrine defined in June 2021 by the government for administrations and public actors: it requires data to be hosted by European structures, but authorizes the use of American software. "We need to change our vision," said Eric Zemmour (Reconquête!) on Wednesday. Jean-Luc Mélenchon (La France insoumise) instead proposes creating a "French cloud, made with free software and mandatory for use in the public and strategic sectors." Ms. Pécresse proposed on Wednesday to "mobilize public procurement," and therefore to "reserve 50% of public sector cloud hosting calls for tenders for European actors." All three, as well as Mr. Jadot, Mr. Zemmour and Anne Hidalgo (Parti socialiste), are defending a "Buy European Act," i.e. a community preference. "The Americans and the Chinese are doing it," justified Mr. Jadot. Emmanuel Macron is also in favour of it, recalled his representative, the Secretary of State for Digital Affairs, Cédric O, but "those who say that it will be done in a year are liars, because the subject is not consensual in Europe. Several candidates also defend stricter control of the takeovers of French companies by non-European giants. Ms Pécresse wants to submit them to a "High Council for Economic and Digital Sovereignty". Marine Le Pen would be ready to force Gafam to open the capital of their subsidiaries to local companies. Mr Mélenchon wants, for his part, to "restore public ownership" of Alcatel Submarine Networks (Internet cables). Nicolas Dupont-Aignan (Debout la France) dreamed on Wednesday of a "French Google". Finally, in the midst of the war in Ukraine, Ms Le Pen or Mr Dupont-Aignan are taking responsibility for equipping France with "offensive" cyber military capabilities. Economic regulation and targeted advertising Most candidates welcome the Digital Markets Act (DMA) as a step forward: this European regulation that France hopes to have passed by June requires major platforms to respect competition and prohibits them from favoring their own services. But some advocate for more regulation of targeted online advertising: candidates Pécresse, Le Pen and Jadot want to ban it for minors. Ms. Pécresse wants to allow "targeted advertising systems to be deactivated at any time," Ms. Le Pen and Ms. Hidalgo, to "deactivate them by default." Mr. Jadot advocates a partial ban on this "source of pollution." Fabien Roussel (French Communist Party) promises "a law against mass digital surveillance. On Wednesday, Mr. Mélenchon's representative, MP Bastien Lachaud (Seine-Saint-Denis), warned against "big-brotherization," and Mr. Dupont-Aignan against "Chinese-style social profiling." Moderation of social networks Mr. Macron defended, notably in the future European Digital Services Act regulation, the idea of imposing transparency obligations on platforms regarding their moderation and recommendation algorithms. This principle is shared by Mr. Jadot, Ms. Hidalgo, Ms. Le Pen and Ms. Pécresse. The latter adds a "major plan" for "digital protection of children", and Mr. Roussel targets "school bullying and cyberbullying". But, on the right and the far right, candidates believe, on the contrary, that the moderation of social networks should not be extended further. For Ms. Pécresse, "account closures should not occur other than by court order", to avoid "privatizing our justice system". For Ms. Le Pen's team, the "obligation of means" imposed on social networks regarding moderation produces "perverse effects", and deletions should be limited to content that is contrary to the law. Mr. Dupont-Aignan spoke of "censorship". E-commerce and Amazon Like Marine Le Pen and Anne Hidalgo, Yannick Jadot supports the idea of a "moratorium" on the establishment of new warehouses linked to online sales, "to protect local businesses from unfair competition" from giants like Amazon. Mr. Mélenchon also wants to "prevent the proliferation of giant warehouses". But the idea is rejected by Ms. Pécresse and the government, because it would also affect "French players". Mr. Jadot, Ms. Le Pen and Ms. Hidalgo also want to "equalize" the taxation of online sales warehouses with that of commercial spaces, subject to the Tascom tax. The government and Ms. Pécresse are opposed to this. Like Ms. Le Pen, Ms. Hidalgo is considering setting a "minimum price" for e-commerce deliveries. Should they also be taxed according to their carbon emissions? Mr. Jadot does not rule this out. Candidates Le Pen, Pécresse and Zemmour would prefer a "carbon tax at the borders of Europe" on all imports. Bitcoin and digital currencies The subject of bitcoin crypto-assets, non-fungible tokens (NFTs)... draws clear differences: Mr. Zemmour wants to "encourage" them and proposes to reduce taxation on capital gains. Ms. Pécresse says she wants to make "the development of this sector a priority", with legislation resulting from "a European framework". More cautious, Ms. Le Pen's team emphasizes that the sector, which is very varied, is also "conducive to deception, errors and "stock market surges". It proposes to bring crypto-assets into the common regime of financial markets. Mr. Jadot's team proposes to "regulate" cryptocurrencies, because they can be "devastating for the environment".

## ###ARTICLE\_START### ID:1913

They are refining information gathered for years on the Russian army, deciphering countless data and images, preparing for the future: Western intelligence services see the war in Ukraine as a unique opportunity to advance their knowledge of the Russian arsenal. The invasion of Ukraine constitutes a colossal deployment of Russian forces, exposing equipment, methods, principles and weaknesses as no spy stationed in the East has ever dared to dream. The services are "capitalizing enormously. Military deployments as massive as this, especially by this army, are rare," notes Alexandre Papaemmanuel, professor at the Institute of Political Studies in Paris. "We realize that what was imagined does not correspond to the reality of this deployment, which is tedious, with logistics that are not on time, coordination that is not effective," he adds. The conflict in Ukraine is certainly modern, with a strong information component. The Ukrainian resistance floods social networks with images, informing the public of the exactions of Russian soldiers as well as their equipment. Satellite images from private companies are used day and night, in near real time. The war in Syria, faced with the rise of the Islamic State group (IS), had already shown this, Ukraine confirms it on a larger scale. Unclassified like those of the general staff, these images are an incredible boon for analysts and other experts in what the jargon calls "open sources" (open source intelligence), therefore accessible to all. "In the history books" For spies, even those who have remained sheltered in front of their computers, the pool is inexhaustible. "The type of targets targeted by Western and Ukrainian services is much more visible and accessible, whether through image intelligence, electromagnetic intelligence, or probably also intelligence of human origin," notes Damien Van Puyvelde, an intelligence specialist at the University of Glasgow. This publicity of the fighting was also accompanied by a real coup: a few weeks ago, the Americans chose to publish the information that justified their alarmism about Russian intentions. A decision that "took the risk of compromising sensitive intelligence sources and methods, but the political decision-makers calculated that it was worth exposing the Kremlin's lies," says former American ambassador Nathan Sales, now at the Soufan think tank, based in New York. Confirmation from a European diplomat: "It will go down in the history books. The American machine made a political and strategic decision" by releasing its intelligence on Russian deployments. The master of the Kremlin did not back down. But in the space of a few days, he was exposed. And it seems - this is in any case the Western thesis - that he underestimated the ability of his adversaries to work together. The services certainly did not put their cards on the table indiscriminately. The one-third rule — I give you information, but you don’t give it to someone else — remains the law. But the rapprochement between countries has weighed on the agencies. “We are surprised by a form of consolidation [of certain information], of efforts by the European Union, the United States, other countries, individually and collectively,” says Yoram Schweitzer, a former Israeli intelligence official. “There is a political decision that clearly influences the intelligence services to try to be aware of Russian intentions and to obstruct them in a much more collective way.” But this is not a revolution. Spies have worked alone since the dawn of time and will not all be dining at the same table tomorrow. Washington and its allies in Central and Eastern Europe, former members of the Soviet bloc with well-filled Russian address books, have shared information, assures Nathan Sales. "But we can and must do better," he says, "especially on Russian military activities, to help Ukraine, ideally in real time." All these countries will, however, benefit from first-hand information on Russia tomorrow. "Despite the generational change with the retirement of the cold warriors [Editor's note: Cold War spies], we can expect Western collection and evaluation capabilities to remain considerable," says Mr. Van Puyvelde. IN PARIS The type of targets targeted by Western and Ukrainian services is much more visible and accessible DAMIEN VAN PUYVELDE »

## ###ARTICLE\_START### ID:1914

From the virus to Russian tanks. On the sets of news channels, epidemiologists have given way to warlords. In a few days, retired colonel Michel Goya, with his carefully trimmed beard and navy anchor on his lapel, has become a familiar face to horrified viewers, with his precise analyses as a remedy for nuclear flip-flopping. The officer does not come out of nowhere: hyperconnected military fanatics have been poring over the Way of the Sword, the blog of their "Pépère", as Goya calls himself on Twitter, for a decade. The strategist publishes long autopsies of battles, "retex" in military jargon, from the butchery of 1914-1918 to the French quagmire in the Sahel. But also, it is his geek side, erudite considerations on the infantry of the White Walkers in Game of Thrones and the jihad of the Fremen in Dune. The almost-sixty-year-old receives guests in the living room of his apartment in Asnières-sur-Seine. In the library, a few volumes of Manchette, Ellroy and Pamuk in a sea of khaki covers. No more sugar for the coffee, a solicitation text message every twenty minutes. At 4 p.m., he will leave the Parisian suburbs to go just across from the Ministry of Defense, to the offices of BFM TV, where he holds the spittoon until after midnight every evening. The channel has just made him its official consultant, for the duration of the war. Like most experts, he has been wrong "at least twice" about the conflict (he, at least, has admitted it). First about Putin's intentions ("this operation seemed perfectly stupid"), then about the lightning victory of the Russians. He has thought of the scenario Red Storm, that novel of the Cold War which imagined West Germany falling under the shock of stupor. Now he sees signs of an endless war in Ukraine, with siege and guerrilla warfare. "It could turn into a new Afghanistan for the Russians: Kyiv is 800 km², almost three times the size of Grozny." It is this kind of condensed observation that hits the mark with Goya, who is able to identify the key indicator in the ocean of open-source data - a mobile blood bank, a sign of intensifying fighting, a tire unsuitable for winter mud - and extrapolate. "Where the layman sees spots, Galileo sees moons on Jupiter." The officer likes concepts. The Russian invasion? Perhaps a "black swan," which Portrait changes "the global strategic space, where all the unknowns were known" into an unpredictable "Extremistan." "Even if we felt this return of high-intensity confrontations coming." The nuclear bomb? "The queen on the chessboard: even without moving, she influences the whole game." "Poliorcétique", the art of siege, he experienced it first-hand in Sarajevo in 1993. "Less than 200 shells in the day, it was a "calm day" in the report." Section leader in the marine infantry, the famous "porpoises", it was his first major operation. As soon as he got off the plane, one of his men was pierced by a bullet in the throat. A mission as absurd as it was dangerous, the fault of a French army that too often, according to him, was reluctant to name the enemy and set objectives. "Most of the time, we were fighting against Bosnian mafiosi. A siege within the siege, you wondered if we were holding the Serbs' positions." Michel Goya does not come from one of those families with a particle that form the braided elite. He grew up on a small farm in Béarn, the son of a Spanish cyclist who died the month after his birth in a fall. His mother, a textile worker, then "canteen lady" at the village school, was twice widowed at 40. She raised him with her three sisters, two of whom were from a previous tragic union. Anonymous benefactors, tearful fans of his father, a local celebrity, sent him piles of comics. Superheroes filled his loneliness. Very early on, he decided that he would be a soldier. After a preparatory class in literature, he failed at the gates of Saint-Cyr. "I didn't have the cultural capital. It conditioned the rest of my career." He joined the infantry, passed the internal officer's exams. In addition to Sarajevo, he was deployed to Rwanda, the Central African Republic, Guyana, and New Caledonia. He escaped life in the barracks by sitting on the benches of the Sorbonne at the age of 40. "In the army, no one does that!" Then began his second career, that of a "Parisian intellectual." At the doctrine center, he wrote a series of notes on the Middle East, obtained a doctorate in history, from which he would draw a reference book on trench warfare (Flesh and Steel). Under Sarkozy, he was for two years the "ideas box" of Chief of Staff Georgelin. Assigned to strategic research, he saw his position eliminated: the Great Mute had to tighten its belt. Even if it meant depriving itself of its brains, especially the most iconoclastic, "individualists" told him. "He was brilliant but not a good student, with a difficult character, far from the Catholic officer who reads Valeurs actuelles," summarizes defense specialist Jean-Dominique Merchet. And the army wants good students. They refused him the rank of general when he left. A scandal, which shows the smallness of this environment. Today, of all the former officers on TV, he is the best." Michel Goya left the army in 2014, with a pension of 4,500 euros gross. Married to an executive in mass distribution, none of his three children, all in their thirties, followed him into the army. He devotes himself to writing, with the trip-hop of Massive Attack in his ears. His latest opus, Le Temps des Guépards, traces France's foreign interventions since 1961, a "world war" of an army that was "a frog that can no longer become an ox." He offers some disturbing suggestions: the need for our country to have mercenaries in its pay, like Wagner or Blackwater, "ghost soldiers" to "act without acting." And he criticizes the weight of the military-industrial complex, which is too greedy, while the war of the future has the air of Mad Max, between low-cost drones and "retrofitted" tanks. "It's his "colonial infantry" side [the former name for the marsouins], summarizes an expert. In Mali, he was this close to suggesting that we reinstate the Senegalese riflemen!" Michel Goya also served as an advisor on Omar Sy's next film, dedicated to these African soldiers of France. Politically "in the dark", he says he is appalled by the "uselessness of the staff". Republican and Gaullist above all, he has had little taste for the platform of the pseudo-putschist generals. In 2015, he did not hesitate to come and unfold his analyses at an insoumis conference. Buddhist ("to live is to suffer: that suits me"), the Iliad as a bedside book, he nevertheless retains the nostalgia of combat. "It is not easily admitted, but the moment when the amygdala transforms you into a superman, it is exhilarating. When I was shot at, I knew what to do, it was very pleasant." Faced with Putin, we would like to say the same. ? April 19, 1962 Born in Montaut (Pyrénées-Atlantiques). 1983-2014 Military career. 2022 The Time of the Cheetahs (Tallandier). The Portrait

## ###ARTICLE\_START### ID:1915

BARCELONA — The Mobile World Congress (MWC), the industry’s biggest trade show that ended Thursday in Barcelona, was an opportunity for manufacturers and telecom operators to unveil a series of gadgets and innovations, touching on batteries, the metaverse and 5G. Selection. 5G BARMAN He prepares cocktails, speaks a dozen languages and recognizes his most loyal customers by their faces: developed by the Spanish food tech group Macco Robotics, the robot Kime aims to be a “high added value” barman. Even Joan Laporta, the president of FC Barcelona, stopped by the stand of the Spanish operator Telefonica to meet one of the stars of the show. This humanoid robot powered by 5G can "work 24 hours a day," enthuses its manufacturer, who highlights other features perceived as advantages: it avoids "unnecessary contact" and reduces the risk of "contamination"... VIRTUAL DISCO A long queue to go dancing, no security guards at the entrance, just a virtual reality headset to wear. At the stand of the South Korean operator SK Telecom, visitors got a festive taste of the metaverse, the virtual universe heralded as the next age of the Internet and which is attracting the interest of all the major players in tech. Controllers in hand, the 3.0 clubber is immersed inside a giant disco ball to shake his hips among other avatars in this virtual disco. This is one of the many applications of "Ifland", the operator's metaverse launched in 2021 and designed to "maximize the user experience through various virtual spaces and avatars." REMOTE CAR RACING Driving a car from more than 1,000 km away thanks to 5G? This is one of the applications of the latest generation mobile network offered by the French operator Orange. Called Vrombr, this mobile game created by the young company Polyptik allows you to drive real miniature cars via a smartphone from Barcelona... on a circuit in Châtillon in the Paris region. A concrete taste of the network of the future, as Orange has announced that it will gradually shut down its 2G and 3G networks in all the countries in which it is present in the European Union (Spain, France, Poland, Romania, Belgium, etc.) between 2025 and 2030. EXPRESS CHARGING AND ECO-FRIENDLY BATTERY In Barcelona, several manufacturers unveiled express charging systems, presented as the "fastest in the world"—a crucial issue for the smartphone sector, which has been striving for several years to improve the autonomy of devices. The Chinese company Realme has thus developed a 150-watt charge for its future GT Neo 3, allowing its battery to be recharged to 50% in five minutes. Its competitor Oppo has promised a 100% recharge in nine minutes, thanks to its 240-watt "Supervooc" technology. More environmentally friendly and intended to be less dangerous: the Japanese start-up PJP Eye has unveiled a prototype of an "organic" battery incorporating carbon made from cotton instead of the metals usually used for this type of product (nickel, manganese and cobalt). "This technology makes it possible to extend the lifespan of batteries" and therefore reduce "their CO2 emissions", explains its director, Inketsu Okina, who highlights another advantage, with a demonstration to support it: these batteries do not explode in the event of an impact. CYBERDOG Low on legs, its body full of sensors and microphones, the cyberdog from the manufacturer Xiaomi, exhibited for the first time outside China, can - as you choose - trot close to its owner, bark, give a paw or stand guard. This robot, whose brain was developed in "open source", and which is still in the experimental phase, is controlled via a mobile phone. A thousand copies were put on sale, at more than $200 each, on the Chinese market.

## ###ARTICLE\_START### ID:1916

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## ###ARTICLE\_START### ID:1917

The Hague Correspondence - Our work of collecting evidence has begun," said the prosecutor of the International Criminal Court (ICC), Karim Khan, announcing on March 2 the opening of an investigation into crimes against humanity and war crimes committed in Ukraine since November 2013 and the first Maidan protests. A first logistics team left The Hague on Thursday, March 3, to go "to the region. The day before, the prosecutor had been contacted by thirty-nine of the one hundred and twenty-three member states of the Court, mainly Western. At the risk of politicizing the case, Mr. Khan had asked them to speed up the opening of the investigation. Without this referral, he would have had to request, with supporting evidence, the approval of the judges of the Court before being able to begin the investigations. The ICC will not be alone in the hunt for evidence. As soon as the first tanks entered Ukrainian territory, dozens of investigators, ballistic and military experts, independent or members of NGOs, began tracking down digital evidence of potential crimes and from Ukrainians sharing their photos and videos. "Until now, it often took months, even years, for an open source community to emerge and start analyzing the information," explains Eliot Higgins, the founder of Bellingcat, an organization that investigated crimes in Yemen and the Skripal and MH 17 cases. "With Ukraine, we started before the conflict even began," he notes. The research aims to uncover evidence to denounce and prevent crimes, and to feed future cases at the ICC or national courts. Many European states have adopted "universal jurisdiction" allowing them to try perpetrators of war crimes, even foreigners. The first time that evidence was massively collected in times of war was in Iraq. Some of the seized items had been used in the trial of Saddam Hussein, who was sentenced to death and hanged in 2006. The war in Syria has seen many belligerents turn into investigators. Trained in evidence gathering by former members of the International Criminal Tribunal for the former Yugoslavia and the ICC, including Canadian Bill Wiley, founder of the Commission for International Justice and Accountability, Syrians have collected thousands of documents in regime buildings taken over by the opposition. They have documented in detail the chains of command of the Syrian regime and its crimes. Geolocation Ukrainians want to track down the evidence in turn. In an appeal launched on the Internet, the leaders of a hundred Ukrainian civil society organizations are calling for equipment "to track down war crimes." They call on the international community to “provide technology and support to groups recording [Russian President Vladimir] Putin’s war crimes” and to “find the human rights groups and lawyers who will ensure that Putin and his cronies are one day brought to justice.” In an article published on March 2 on the Just Security platform, Rebecca Hamilton and Lindsay Freeman, two specialists in digital investigations, estimate that “many Ukrainians who are currently filming the Russian invasion on their phones are benefiting from awareness and education” thanks to the tools put in place in recent years. The International Bar Association has developed a specific application, EyeWitness. Ukrainian NGOs have also already translated digital investigation protocols, established by the University of Berkeley in the United States and by the United Nations. Since the beginning of the war, several NGOs have produced their first analyses. Bellingcat has released satellite imagery showing a rocket launch from Russia toward Kharkiv, a city in northeastern Ukraine, 50 kilometers from the border. “It seems pretty clear to see the connection between the launch in Russia and the situation in Kharkiv,” Higgins said. The city has been under Russian fire since the first day of the war, on February 24. “Before the conflict started, there were a lot of videos posted on TikTok showing Russian vehicles and troops moving. They will be identified and geolocated, and we will be able to trace them back to the specific military unit involved. You can’t just say, ‘This is Russia.’ You have to say which unit, which command structure is responsible,” he said. Amnesty International also has its own forensic lab. “We have identified two attacks [one in Kharkiv, the other in Okhtyrka, in a school, killing three people] where we can say with certainty that cluster munitions were used by the Russian military against Ukrainian civilians,” says Milena Marin, who co-directs the lab. “I am afraid that we will see many crimes in Ukraine in the future, but I think it is a bit early to draw conclusions,” Wiley says by phone. “What we are seeing is a terrible situation, but it does not yet show a clear systematic criminal policy,” he adds. Speaking at the UN Human Rights Council in Geneva, Switzerland, Dutch Foreign Minister Wopke Hoekstra announced on March 1 that he would allocate €1 million to civil society to create an evidence-gathering mechanism. British Deputy Prime Minister Dominic Raab has threatened Vladimir Putin and his loyalists with "barring in The Hague," announcing that the United Kingdom has begun collecting evidence. The United Nations may also establish a commission of inquiry. On Thursday, March 3, a photo circulated online showing a hijacked road sign, offering only one destination no matter which way you go: The Hague, The Hague, or The Hague.

## ###ARTICLE\_START### ID:1918

Geneva Correspondence - The Dilbar was going to slip away, instead of remaining at the dock for several more weeks as planned, while the renovation work on the interior furnishings and on-board electronics was completed, "the most advanced security technologies of any yacht in the world", according to its German builder, Lürssen. But on the night of Monday, February 28 to Tuesday, March 1, customs officers from the port of Hamburg (Germany) boarded the ship to immobilize it, the first catch in the hunt for the assets of Russian oligarchs launched by the West since Russia invaded Ukraine. At 156 metres long and 24 metres long, the Dilbar was acquired in 2016 for $600 million (€541 million) by the Russian tycoon of Uzbek origin Alisher Usmanov, 68, one of the most powerful men among the circle of billionaires close to Vladimir Putin, even if the main person concerned denies it. “I have never been what you would call an oligarch,” he confided to the Financial Times in a rare interview in January 2020. At 16,000 tonnes, it is the largest motor yacht on the planet in terms of gross tonnage. At full capacity, it requires a crew of 96 people to serve the 24 passengers who have twelve suites. It includes two helicopters, a sauna, the largest swimming pool ever installed on a boat of this type, a beauty salon and a gym. Mr. Ousmanov demanded that the boat be equipped with a thousand sofa cushions, as is the tradition in Uzbekistan. On Thursday, March 4, the Hamburg port authority denied having taken measures, but acknowledged that, "in fact, no yacht that is not authorized to do so [would] leave the port." Berlin should soon confirm the seizure, following the sanctions decided on Monday by the European Union. On Wednesday, a second yacht was immobilized, at the shipyards of La Ciotat (Bouches-du-Rhône). The Amore-Vero ("true love"), costing 120 million euros, belongs to Igor Sechin, the boss of the Russian oil giant Rosneft, also a major figure among the Kremlin's cronies. It had arrived on January 3 for maintenance work. Customs intervened as the Amore-Vero was preparing to cast off, without having carried out all of the scheduled maintenance, the Ministry of Economy specified. "Multilateral task force" For the past ten days, sensing an ill wind, several Russian great fortunes have sheltered their floating palaces from any unpleasant surprises in the turquoise waters of the Maldives. But this is not the case for the majority of these dozens of vessels, as evidenced by the intense agitation perceptible on the Osint (OpenSource Intelligence) networks. This activity consists of collecting data and information from open sources online. The Twitter account "Putin is a virus", by cross-referencing various sources on maritime traffic in real time, has thus managed to publish a map that lists and geolocates dozens of Russian yachts on all the oceans. The Italian newspaper La Stampa took an interest in those anchored in Italy and discovered that two ships had been blocked on the Riviera del Ponant, in Liguria, awaiting official notification. Between San Remo and Genoa is that of Gennady Timchenko, the sixth richest person in Russia, and a partner of Mr. Putin since the beginning of the "Ozero cooperative" not far from Saint Petersburg, the historical matrix of the Putin clan. In the same area, the Lady-M, owned by Alexei Mordashov, a major shareholder in Bank Rossiya (considered by the American Treasury as "Putin's bank"), was also reportedly advised not to weigh anchor. New seizures (also of real estate) are expected to multiply, even if the United Kingdom and Switzerland, two of the main destinations for Russian heritage, are reluctant to intervene, despite having adopted the package of sanctions against Moscow. Mentioned for years as one of the possible means of coercion to counter the Kremlin's threats, the hunt for oligarchs began the day after the annexation of Crimea in 2014. But it was conducted rather weakly by the West. This is no longer the case. "We will launch this week a multilateral transatlantic task force to identify, track and freeze the assets of Russian companies and oligarchs under sanctions. Their yachts, their villas, and any other ill-gotten assets that we find will be seized," announced the White House on Sunday evening. The first target hit, Alisher Usmanov, is active in the metallurgy (Metalloinvest group), but was also one of the first investors in Facebook with another Russian billionaire, Yuri Milner. Until 2018, he held 30% of the London football club Arsenal, a stake subsequently sold for $700 million. He has a plethora of residences abroad, in England (Beechwood House in London and Sutton Place in Surrey), but also in Sardinia, Munich, Monte Carlo and Lausanne, where he took up residence in 2016. He is indeed part of the "great Olympic family". He was president of the International Fencing Federation for more than a decade, before the seat became "vacant" on March 2. The International Olympic Committee has held him in very high esteem since he purchased at auction and then donated to the institution in 2020 the original manuscript of Pierre de Coubertin, founder of the modern Games, "elegantly written in French in sepia ink on 14 sheets of vellum paper". A very discreet resident, he has never appeared in the local press and no one has managed to locate the precise location of his residence. "I know he is very ill and is staying indoors for fear of Covid," said a source close to Russian business circles in Switzerland. In a statement, he considered the seizure of his yacht "unfair." "The reasons given to justify the sanctions are false and defamatory accusations, which tarnish my honor, dignity and professional reputation. I will use all legal means to protect my honor and reputation." Not a word, however, about the war in Ukraine. Switzerland has not yet added it to its own sanctions list, modeled on that of the European Union. Bern was due to make a decision on Friday, March 4.

## ###ARTICLE\_START### ID:1919

In the aisles of the Mobile World Congress (MWC), the global telecommunications trade show held in Barcelona from Monday, February 28 to Thursday, March 3, Open RAN (or O-RAN, for Open Radio Access Network), a concept at first glance reserved for technophiles, occupied the conversations, between two demonstrations of virtual reality or metaverse (the digital space of the future). Because if open source was able to revolutionize the world of software at the end of the 1990s by opening the code of said software to the public, this new technology promises to shake up the balances of the telecoms sector. Until now, a mobile telephone network operated thanks to integrated equipment, interweaving hardware and software, often sold by the same supplier Ericsson, Nokia or Huawei. Like Apple with its Macs or iPhones, the intimacy between hardware and software makes it possible to optimize the operation of the device. But this integration has a flaw: it limits the ability of customers, in this case telecom operators, to change suppliers or to incorporate external functionalities into the network. By allowing more interoperability, Open RAN "lifts the lock on equipment manufacturers", said Maite Aparicio, head of this technology at the Spanish operator Telefonica, at the MWC. Open RAN will not eliminate antennas or electronic boxes that, placed on high points (roofs, pylons, water towers, etc.), send communications or data to mobile phones. This technology makes it possible to cut out the different functions of the box and add control software, through which it is possible to add third-party applications. Dominant in 6G With an open network, an operator can turn to other equipment manufacturers and add layers of software, therefore more services and flexibility. With the hope of lowering the costs of network deployment and management, which is not too much at a time when operators' turnover is stagnating, at best. No wonder the O-RAN Alliance, the association responsible for promoting and defining standards for this technology, was created in 2018, at the initiative of five operators, including the French Orange, alongside AT & T, Deutsche Telekom, NTT Docomo and China Mobile. "The current equipment is excellent, and we do not want to get rid of our partners Ericsson and Nokia. But Open RAN must allow us to improve innovation and regain choice of suppliers," explains Michaël Trabbia, director of technology and innovation at Orange. This freedom of choice has become much more necessary since Europe and the United States sidelined the Chinese equipment manufacturer Huawei for national security reasons. Among equipment manufacturers, and even though Ericsson and Nokia have joined the O-RAN Alliance, enthusiasm is less perceptible. "It's a good technology," admits Hannes Ekström, head of network strategy at Ericsson, the world's number one in telecom equipment. "Our priority is to make the best products at the best costs. And this can be done with different architectures," he adds. More than Open RAN, the Swedish group is banking mainly on the virtualization of networks which, while it makes them easier to manage, does not imply their complete opening. For equipment manufacturers, the danger of Open RAN is the emergence of competitors, such as the young American companies Parallel Wireless or Mavenir, and, even more worrying, seeing the American digital giants set foot on their turf. Google joined the O-RAN Alliance in June 2021. Its members also include Facebook, IBM, Microsoft, Oracle, etc. The United States, which had disappeared from this market since the acquisition of Lucent by Alcatel in 2006, "is building the ecosystem with its cloud [cloud computing] and software giants," analyzes Michaël Trabbia, who calls on Europe to mobilize resources to "stay in the race," while Open RAN is set to become dominant in 6G, the next generation of mobile telephony. Standards not yet defined This competition is only just beginning. Some new operators, who started from scratch, have opted for a 100% Open RAN network. This is the case of the Japanese Rakuten. "This has allowed us to build a network 35% to 40% cheaper than if we had had to replicate that of existing operators. "This also gave us confidence that the Japanese model can be duplicated elsewhere in the world," says Rabih Dabboussi, sales director of Rakuten Symphony, the division created by the Japanese conglomerate to sell its Open RAN services to other operators. A French subsidiary is currently being created. The American company Dish has also adopted this technology. A symbolic move: the network director of this new operator is the Frenchman Marc Rouanne, who had spent his entire career with traditional telecom equipment manufacturers, Alcatel-Lucent and then Nokia. He preferred to do without them to create the Dish network. The switchover of the historic operators will be more gradual. "At this stage, Open RAN can be effective for the deployment of a completely new network or for installing antennas in uncovered areas. But for dense areas, particularly urban areas, the relationship between performance, reliability and price is not currently as attractive as traditional approaches," says Tariq Ashraf, a consultant at the consulting firm BearingPoint. Hannes Ekström of Ericsson points out that the technology standards have not yet been defined and that it will be necessary to ensure "that they offer the best guarantees of performance, robustness and durability" in conditions of large-scale deployment. The question of the cybersecurity of these networks of the future, which stack different software layers, and therefore multiple angles of attack, will also arise. Thales, already present in mobile security since the purchase of Gemalto in 2019, is counting on this technology to "provide solutions at all levels," says Philippe Vallée, executive vice-president of the identity and digital security division of the defense group. According to the consulting firm Dell'Oro, the movement is underway: Open RAN will represent 15% of the market by 2026, almost half of which will be in Asia.

## ###ARTICLE\_START### ID:1920

Websites, AMAP, markets Sales without intermediaries are developing rapidly in France. The pandemic has boosted it even more. S ince 2009, France has had an official definition of this alternative food distribution method called the short circuit: a single economic intermediary between the producer and the consumer. This can be a supermarket, if it sources directly from farmers. But most of these means of supplying fruit and vegetables, meat or dairy products are rather to be found on the side of the producers themselves. According to 2019 figures from the National Institute for Agricultural, Food and Environmental Research (INRAE), direct sales take place at farmers' markets (690), open-air markets (9,600), in producers' stores (400), via AMAPs, Associations for the Maintenance of Peasant Agriculture, which offer baskets to their members once or twice a week (2,500 in 2,000 municipalities), directly on the farm or in connected lockers. "Archaic". Circuits with a single intermediary are the work of artisans (butchers, greengrocers), who buy all or part of their range from a farmer, and online sales platforms, which connect consumers and producers. The best known is La Ruche qui dit oui with its 1,500 delivery points in France and Europe. INRAE has produced a report on around forty of these sites. For the institute, the most virtuous is cagette.net, developed in open source and which does not take a commission. "We have to look carefully at how the margin of these platforms is used," warns Yuna Chiffoleau, agricultural engineer and research director in economic sociology for the institution. Short circuits have long been marginalized by public authorities and farmers alike. "They were seen as archaic, a form of resistance to progress embodied by mass distribution and export," analyzes the specialist. It was not until 2009 and Michel Barnier, then Minister of Agriculture, that they acquired legitimacy by being integrated into the agricultural census. "It freed up energies," appreciates Yuna Chiffoleau. The mad cow crisis at the end of the 90s was a trigger for consumer interest in local supplies considered safer, even if short circuit does not necessarily mean local. "A product is local if 51% of its added value comes from the territory. Sometimes, it is simply the last transformation while the raw material is imported," warns the research director. Another preconceived idea: when we say short circuit, we often think of a lower carbon footprint. However, the multiplication of short journeys (from the producer to the consumer and vice versa) can generate more greenhouse gas emissions than a long but single transport. Deliveries made by light utility vehicle by a producer emit a hundred times more CO2 per tonne-kilometre transported than a 40 t semi-trailer (1). What can we buy in short circuits? The latest data dates from 2010, those from the last agricultural census of 2020 are just starting to come in. Twelve years ago, these circuits were located mainly in the south of France and offered wine, honey and fruits and vegetables. Far behind, we found meat and dairy products and almost no cereals. "But this cereal sector is exploding for bread and pasta. There are now more than 200 producers" in this field, explains Yuna Chiffoleau. All products combined, the short circuit is developing rapidly. In 2010, one in five farms sold all or part of their range in this way. In 2020, it is one in four according to the first results, or between 15 and 20% of the global food distribution market. It is difficult to be precise since short circuits are everywhere: some in supermarkets, some at artisans, others for markets, AMAPs and on the Web. These systems are favorable to a healthy and sustainable diet because they sell five times more organic products than long circuits. "The entry into short circuits of market gardeners encourages their agroecological transition", specifies the INRAE researcher. They thus meet a need of consumers who now want to get information directly from the farmer and check that the food is not grown with a lot of phytosanitary products or from intensive livestock farming. Facilitators. The health crisis has further boosted interest in these short circuits, which have attracted a new clientele, and not just urban and wealthy bobos. But this practice is very demanding for farmers who spend a lot of time talking to consumers, selling directly or managing orders by email. "Some are worn out and are turning to a circuit with an intermediary," says Yuna Chiffolleau, for whom the development of short circuits needs facilitators. Like the site mes Producteurs mes Cuisiniers, in Lyon, which links farmers who work in agro-ecology and restaurateurs, from starred chefs to roadside restaurants. To find all these alternatives to mass distribution, Inrae and the monthly magazine Que Choisir have just created a participatory map available on the consumer association's website. (1) “Transport and logistics of short local food supply chains: the diversity of innovation trajectories”, by Ludovic Vaillant, Amélie Gonçalves, Gwenaëlle Raton, Corinne Blanquart, Innovations (issue 54a).

## ###ARTICLE\_START### ID:1921

"It's just a story of encounters," summarizes Marie Salomé, co-founder of Epicerie du coing. We found the premises, opened three months later and it took off right away." That was in 2013 and, since then, this organic food store, which gives pride of place to short supply chains, has become a must-see in the pretty town center of Novalaise, a town of less than 4,500 inhabitants located near Lake Aiguebelette, in Savoie. Bulk food distributors sit alongside crates of fresh fruit and vegetables, sourdough breads, cheeses, spices and herbal teas, biscuits, jams and cosmetics, and a nice section of local wines and beers. The tea room area has disappeared in favor of new shelves: "With the restrictions, it's complicated to welcome people, Covid has gotten the better of the zinc!" explains Marie Salomé. Alongside her, Marie-Eliane Lelièvre, Chloé Vialle, Sophie Rolland and Eric Traversier redistributed themselves, worked to keep this small business running, which owes a lot to the will of the town hall (which bought the walls to protect the business) and its customers: "To finance the takeover of the commercial lease, the work, the purchase of equipment and the constitution of the stock, the banks did not follow us too much, so we organized public meetings which worked very well and we called on participatory securities", recalls Marie Salomé. Committed entrepreneurs, a benevolent municipality, convinced "consumer-actors": the pretty story could be limited to that. However, another meeting was decisive: that with the founders of the Regional Food Proximity Group (Grap), created at the beginning of 2013 in Lyon, of which the Epicerie du coing was one of the first members. "LAUNCH RACK" Constituted as a cooperative society of collective interest (Scic), the Grap brings together activities of transformation and distribution of organic and local food (excluding agricultural production and livestock), i.e. around sixty autonomous entities to date: a majority of grocery stores like that of Novalaise, bars, restaurants, caterers, chocolate shops, bakeries, breweries, roasters, a wine retailer or a workshop for making meals for daycare centers. To these entrepreneurs, individual or gathered in Scop or association, the Grap offers, in return for a financial contribution based on their turnover, support and pooling of logistics, accounting, IT (using open source software), human resources and training services so that they can concentrate on the core of their business. Because finding the right producers, mastering the baking of a loaf or the crystallization of chocolate is one thing, but being an ace at paperwork and financial statements is another. And it is often these administrative tasks that weigh down and isolate business creators, particularly in the food industry, where competition with the big ones who have jumped on the organic bandwagon has become fiercer. Furthermore, within the Grap, the discounts negotiated with wholesalers apply to all partners, regardless of the size of their company. The group's ambition: to combat the myth of "entrepreneurship as a solitary adventure where only the strongest will survive" and "democratize it by removing existing barriers in terms of skills and self-confidence," explains Kévin Guillermin, CEO of the Grap. The SCIC, which posted a turnover of 21 million euros in 2021, also has the status of an activity and employment cooperative: the associated entrepreneurs are among the 217 employees of the structure and therefore have access to the social rights of the general scheme (health and unemployment insurance, pension fund). "It's a big plus," says Sylvain Louche, founder of the bakery La Clé de sole, in Lantriac, in Haute-Loire. I can take my five weeks of paid vacation per year, if I go to a bank, I am considered to have a permanent contract, and if I ever go bankrupt, I will be entitled to unemployment benefit." Beyond this security, this member of the Grap for a year, who works in tandem with his partner, appreciates benefiting from "an outside perspective": "We remain free to choose our suppliers, to work with this farmer or that miller, while feeling really supported." Opened in 2018 in Villeurbanne (Lyon metropolitan area), Label(le) Brûlerie processed nearly 21 tons of green coffee last year and employs four roasters. For its co-founder Hélène Le Corre, the integration of her company into the Grap was "a super important launch pad". "And it allows us to contribute to a larger-scale political project, to the issues of sustainable food, food security, and participatory governance", emphasizes the woman who is also one of the three co-presidents of the Grap. Located within a maximum perimeter of 150 km around Lyon, the SCIC's partners are subject to a specific ethical charter: plant or animal GMOs are prohibited, organic products must represent the majority of the foodstuffs sold or prepared, short supply chains are favored, exchanges with large-scale retailers are limited, as is the use of frozen foods. "GIVE AND TAKE" Furthermore, the income gaps between partners in a structure must not exceed a ratio of one to three, and the maximum salary within the Grap is capped at five monthly minimum wages. Finally, depending on the size of the company, its length of existence and the seniority of its employees, each partner has the possibility of becoming a shareholder in the SCIC. "We are looking for project leaders who are not in a position of pure consumers of services, who want to contribute something to the cooperative, explains Flore Escande, co-founder of a café-restaurant in Isère and co-president of the Grap. The idea is that everyone gives a little time and energy to the collective, that it is give and take." To encourage exchanges outside the two annual general meetings, cross-functional working groups (by profession, by territory and by theme) meet regularly. This emulation has given birth to a new tool: a purchasing "de-central", called Coolivri. Dedicated software has been developed, trucks purchased and drivers recruited. The system connects and delivers partners wishing to supply and obtain supplies from other members of the group, without obligation to purchase. "It allows for new outlets without multiplying the number of intermediaries", underlines Flore Escande. And at the other end of the chain, prices are never negotiated with producers. The success of the Grap today defies national statistics: 45% of partners live in the countryside (compared to 21% of the French population), 64% of entrepreneurs in the group are women (30% in the country) and 43% of part-time employees are men (they are only 7% in France). Proof that rebalancing the plate can also fuel the well-being of those who fill it. ?

## ###ARTICLE\_START### ID:1922

If you are not familiar with the concept of the metaverse, try it out (in English - for now, no virtual world speaks the language of Molière). Log in from a computer to decentraland.org as a guest. Create your avatar (male or female) according to the available options (haircut, blue shirt, gray T-shirt, beige cargo pants, sneakers or flip-flops, glasses, etc. - nothing too extravagant). Once your character is dressed, you can explore with the mouse and keyboard arrows part of the 90,601 plots (or 23 km2) of this virtual world that looks like a vaguely futuristic video game from the 2000s, where the bartenders are octopuses and where you come across giant shibas - these fashionable dogs from Japan that gave their name to a cryptocurrency. You can certainly play golf or have a drink, but you will quickly realize that your possibilities are very limited if you do not connect your "wallet" (digital wallet) filled with ethers (another cryptocurrency) that must be converted into mana, the currency of Decentraland. You are now able to dress your avatar "worthily" by going, for example, to the Metajuku shopping center to buy "collectibles" in the boutiques of the Tribute brand or the DressX platform (which brings together virtual fashion designers). There, in your dress between extravagant couture and robotic aesthetic or your space biker jacket, why not acquire some NFT digital art canvases or plots (currently around 23,000 euros each), like the German designer Philipp Plein, happy owner of 65 plots since Tuesday? The height of hype is to treat yourself, like Alexandre Arnault, on the NFT sales site OpenSea, to a CryptoPunk (a pixelated man's head) that will become your avatar or your profile picture on social networks and will give you access to a very exclusive club since the cheapest little character costs around 250,000 euros... Know that you can do more or less the same thing on The Sandbox, Roblox and soon Meta (the new Facebook), which are all metaverses. Does the experience seem a little absurd to you (if you are resistant to the virtual) or basic (if you know GTA, The Sims or any other video game by heart)? It's not entirely false. "Today, what we define as a metaverse is a cross between a video game and a social network, explains Martin Buthaud, a philosopher specializing in issues related to the video game universe. The word fascinates, worries or seduces, but what it covers is not very new, it is the virtuality that has been developing in our lives for a good twenty years. "If we talk about it so much, it is because Mark Zuckerberg, the founder of Facebook, put the term (taken from the futuristic novel The Virtual Samurai, by Neal Stephenson published in 1992) in the spotlight with the presentation of his Meta project, last October: "The internet is constantly evolving. We have gone from PCs to smartphones, and from text to photos then to videos, and it is not finished. The next platform will be even more immersive - a sort of palpable internet, where you will be in the experience instead of watching it. We call this the metaverse, the next frontier. It is the ultimate promise, which will bring people closer together, to have a feeling of presence, to be able to teleport anywhere." And especially in a shopping center. In reality, virtual fashion did not wait for the metaverse to exist. It developed through the lines of code of gamers, fans of Second Life in the 2000s, then, more recently, of Animal Crossing (a game particularly popular during the first lockdowns). In another parallel world - social networks - virtual clothing has also made a place for itself. Like those of the Tribute brand, which "rents" the rights to use a piece for an Instagram photo and dress an avatar, or which sells its NFT version allowing you to enjoy it ad vitam aeternam. "An overwhelming part of our lives is played out online on the professional side (on LinkedIn and Zoom, editor's note), and personal (on Instagram, Twitter or Facebook). A few years ago, I discovered that in the world of sneakers, it was common for people to buy a pair, wear them for a photo posted on their Instagram account, and resell them right away, remembers Gala Marija Vrbanic, the young Croatian founder of Tribute. What is the point of owning a physical object if the only goal is to show it off on social media? "Beyond the flex culture (showing that you own rare and desirable goods, read above), Tribute did not just put logos on "collectibles" but really established an aesthetic and know-how. "To develop products like ours, you have to be an excellent designer, master certain software and unleash your creativity. Today, digital clothing remains close to its real equivalent, but it will eventually free itself from traditional archetypes: we don't necessarily need pockets or sleeves in the metaverse! "Because that's the question: will we dress the same way in open space and in open source? New York Times journalist Vanessa Friedman suggested last month that the metaverse would free us - in terms of clothing - from gender, stereotypes and, of course, the body. However, when Zuckerberg, still him, composed his virtual outfit for his high mass, he chose a navy blue crew neck, black pants and white tennis shoes... Clearly, conformism will also exist on Meta. "The world of video games is based on this idea that you can be someone completely different, unrecognizable, live your life without any social or economic determinism, analyzes Martin Buthaud. But according to the design of Meta/Facebook, you should also lead your professional life there, hold meetings... There would therefore be a very strong porosity between the real world and the virtual world. In this case, can we imagine arriving in front of a potential customer with our avatar in a floral shirt and flip-flops? While users will probably exploit the possibilities of looks at first, the label will quickly come into play. "This new technological horizon is obviously a dream for the fashion industry. We can no longer count the number of NFTs (certified virtual clothing, watches and other sneakers) designed by Balenciaga, Nike, Gucci, Dolce & Gabbana, etc. Recently, the artist Mason Rothschild virtualized the Hermès Birkin bag (in all colors, materials, etc.) and sold around a hundred models for $450,000. But the saddler rebelled and obtained the removal of the products from the platform in question. Regardless, analysts are predicting a potential revenue of $50 billion for luxury by 2030. “When we started, the notions of metaverse, which was not as popular, and virtual fashion were distinct,” continues Gala Marija Vrbanic, whose company now has around ten employees. The two came together last year, when NFTs developed, first in art. Currently, there are digital fashion brands like ours on one side and luxury brands that have just started doing it. We do two different jobs. Established houses reproduce their real products and do not necessarily have a good command of these spaces. They think that what works in physical can also work on the web.” In the long term, will we see the emergence of artistic directors specializing in digital fashion within brands? "There is only one artistic direction in a luxury house, except for some that separate men and women," replies Lucas Delattre, professor at the French Fashion Institute. "Physical and virtual proposals must be coherent. The role of the artistic director is to be above, to have a vision. But it is also to understand the possibilities offered by technology without being dependent on it, to draw on what can serve their creative vision. Moreover, some of them are very curious about new technologies, while others remain cautious or even hostile. On the other hand, there will be new professions, the equivalent of tailors in terms of lines of code." Few brands seem credible in this area today. Balenciaga was a pioneer in video games and more broadly in virtualization - its CEO, Cédric Charbit, announced a branch dedicated to the metaverse within the house. Nike has absorbed RTFKT, a brand of virtual sneakers in NFT... "Fashion is constantly looking for new territories of development, confirms Patrizio Miceli, whose agency Al Dente, specialized in social networks and digital campaigns, supports brands in the metaverse. Virtual universes are the new China in terms of revenue and possible expansion. But they are also a source of inspiration and an opportunity to participate in contemporary culture. As when brands relied on Chinese partners to set up there, they are now forming partnerships with companies specialized in virtualization or absorbing digital fashion brands, more legitimate in the eyes of consumers." It's the whole story of subcultures and their recovery by the establishment. "Dressing your character in a game used to be a question of technical skills. You had to advance in the story to unlock elements, notes Martin Buthaud. With the arrival of brands, then the development of NFTs, a financial dimension has emerged in the video game world. This is what we call "pay-to-win" in video games. Similarly, in the purchase of NFTs, there is this need to show that we have not missed the boat, that we understand the world of cryptocurrencies and, incidentally, to prove that we are rich enough to buy an ultra-speculative digital object intended for a parallel universe that is still in its infancy. The world of video games is based on this idea that we can be someone completely different, unrecognizable, living our lives without any social or economic determinismMARTIN BUTHAUD, PHILOSOPHER SPECIALIST IN THE VIDEO GAME WORLD

## ###ARTICLE\_START### ID:1923

Digital sovereignty. » The government has chosen to devote two days of conferences to this theme dear to Emmanuel Macron as part of the French presidency of the Council of the European Union, Monday 7 and Tuesday 8 February. However, on this ground, presidential candidates are contesting the executive's policy, particularly on the hosting of online data in the cloud, dominated by Microsoft, Amazon and Google. The critics target the Trusted Cloud label, created in June 2021 by the government. This certification, now mandatory for service providers used by public actors, promotes a hybrid model: hosting by a company under European law, in order to avoid extraterritorial laws allowing access to data by the United States authorities, but American software. On this model, Orange and Microsoft, then Thales and Google, have announced partnerships. "The government has naively given up on the great idea of a truly sovereign cloud," attacked Valérie Pécresse on France Inter. The Republican candidate has legal doubts about the hybrid model and believes "that we are abandoning our French companies", according to her advisor, Senator Catherine Morin-Desailly (Union centriste). "This hybrid model is doomed to failure", agrees Jean-Lin Lacapelle, advisor to Marine Le Pen. Like the National Rally candidate, Eric Zemmour believes, in Le Point, that "the Orange-Capgemini-Microsoft or Thales-Google alliances are the gateway to American hegemony". Against "the proprietary software of Gafam", Jean-Luc Mélenchon wants to "develop a French cloud, made with free software (whose source code is open) and mandatory for use in the public and strategic sectors", explains Jill-Maud Royer, head of digital for the "insoumis" candidate. "As with food or energy, we must move away from external dependencies," believes Yannick Jadot's (Europe Ecologie-Les Verts) advisor François Thiollet, while admitting that this "will take time. Buy European Act Faced with this "magical thinking", Cédric O defends the executive's "ridge line": "We must protect data, support French players, but also allow our companies and administrations to have access to the best services", explains the Secretary of State for Digital Affairs, for whom "French service providers have good services but not yet the same quality and range as their American competitors. Mr. O also considers it "ironic" that the Ile-de-France region, chaired by Valérie Pécresse, uses Microsoft for videoconferencing and office automation... In response, Ms. Pécresse specifies that she also uses French players, for example for hosting regional council data, and defends a "realistic" policy, via public procurement: 50% of public sector cloud calls for tender should go to European players. Similarly, candidates are defending a Buy European Act, i.e. a community preference, on the model of the Buy American Act. There is no "reciprocity" in the opening of public markets in the United States, Mr. Zemmour justified in Le Point. "Protectionism is not a dirty word," Mr. Thiollet assumes, despite the risk of a trade war. Like Mr. Mélenchon, Ms. Le Pen knows that these measures could clash with Brussels' "fundamentally liberal ideological agenda," notes Mr. Lacapelle. Like Ms. Pécresse, Anne Hidalgo (PS) considered it possible in Le Point to "add criteria to public markets," as for environmental and social areas. Ironically, Emmanuel Macron defended a Buy European Act in vain in 2017. "France is for it, but lucidity obliges me to say that those who say it will be done in two or three years are liars, says MO. It is not consensual in Europe." Beyond that, Mr. Jadot and Ms. Pécresse are calling for stronger controls on foreign investment in "tech. Ms. Le Pen is even considering "drawing inspiration from the firmness" of Donald Trump, who wanted to force the parent company of the Chinese TikTok to open up its capital. Faced with calls for more investment, the government is promoting its support for French and European "unicorns" or the financing of the cloud planned by twelve countries via an "important project of common European interest." This mechanism created in 2014 authorizes state aid for certain disruptive innovations and key infrastructures. Here again, the question of the cloud joins the debate, broader and reinforced after the pandemic, on the balance between sovereignty and globalization.

## ###ARTICLE\_START### ID:1924

Not a day goes by without a new NFT-related news story hitting our keyboards. Non-fungible tokens, or "non-fungible tokens" in French, affect all areas, starting with entertainment, games, art, music, fashion. Critics of this new field of digital possibilities, still not legally regulated in France, where anything goes for speculation, talk about a bubble that should not survive the decade mark. But it's difficult to get a clear idea of the situation when you don't fully understand what we're talking about. Libération asked two defenders of this new digital biotope, who believe in the future of NFTs, to define the main principles, word for word. John Karp, who co-hosts "NFT morning", a daily podcast, believes that NFTs will change our perception of the world because they give value to the smallest "object" in the form of a digital file. An "enormous" potential according to him "to the extent that we are becoming" - if we are not already - "digital individuals". Lucie-Eléonore Riveron, co-founder of the auction house FauveParis that she runs, got into "crypto art" in March, when she discovered that the work Everydays: the First 5,000 days by the artist Beeple had sold for 69.3 million dollars (61.44 million euros) at Christie's. She now swears by digital art and also hosts a podcast ("The Art of NFT") in which she does, as here, educational work because "everyone mixes everything up" and "the general public mainly remembers what is scary" while we are witnessing a "paradigm shift", she says. ? BLOCKCHAIN To understand what an NFT is, you first need to understand what a blockchain is. For Lucie-Eléonore Riveron, "it is a decentralized technology in the sense that no central authority manages it." "The blockchain is a kind of notary's ledger where all transactions are recorded. None can be modified. The system is based on computing power generated by many computers, also called "miners," who are paid in cryptocurrency and are all independent. There are different blockchains on which we "mint" or "tokenize," which means that we integrate NFTs. Ethereum is the first blockchain to have developed NFT technology. It does not belong to anyone, these are open-source technologies [whose code is accessible to everyone and that everyone can use, editor's note]." John Karp: "It's a decentralized database where information is stored on thousands of computers, which guarantees traceability (you can consult all the transactions made in the history of bitcoin): this allows you to see that such a wallet (account) transferred such money to such another account. It is unfalsifiable, as if set in stone. That's why we're talking about a trusted system without going through a trusted authority, a bank or a notary. This is the first time that a network allows two people who don't know each other to potentially transfer a lot of money without the need for intermediaries." NFT An NFT is the title of ownership of a digital object. John Karp: "It certifies the original by making it possible to give ownership attributes to something that didn't have any until now on the web. As in the "real" world, an image or video can be copied infinitely: we can reproduce an artist's photograph, but only the original print has value. The NFT brings traceability to a digital work. It's like "notarizing": it's more reliable and secure, and more universal than what exists today. A piece of paper seems obsolete in comparison. We will be able to produce digital duplicates (NFT) of our valuables." He specifies: "Who says NFT says "smart contract" or intelligent contract: when an artist digitizes a work for example, a computer code automatically executes the clauses of a contract, and certifies that the creator will receive a certain percentage on the resale of his work. The conditions of sale on the secondary market are integrated into the file at the time the artist creates the work in NFT. This will automatically earn him royalties", which was not always the case in the so-called real world. “The artist Xcopy, who counts Snoop Dogg among his collectors, creates very morbid gifs. Some of his works sold for $100 two years ago, and are worth several million right now. Xcopy receives royalties for each resale of one of his NFTs. He can choose to publish a single work, or 5, 10, 100 copies. Anything is possible.” Lucie-Eléonore Riveron takes the art world as an example: “An NFT is a title of ownership inserted on the blockchain. When you own the NFT, you own the original [of a digital file]. The NFT is not the work itself, it is the certificate that refers to the work. The work is a file, stored on a server. In my sector, it is revolutionary because it allows us to make digital works rarer, which were previously reproducible and infinitely distributable: with a right click, we could - and still can - download them. It was very complicated for digital artists to monetize their work. There was no notion of rarity and the piece was therefore not monetizable." And to add: "The NFT allows the ownership of a digital file, it is not replaceable by something equivalent. It has allowed the rise of crypto art, which only represents 9% to 10% of NFTs. Everything else can be tweets, video game extracts, trading cards, or PFP [profile photo, editor's note] collectibles." COLLECTIBLES Collectibles are collections of NFTs. The most widespread are PFPs, series of profile pictures (which are often drawings representing avatars) which therefore take the form of NFTs. Lucie-Eléonore Riveron notes that "they represent the vast majority of NFTs on the market today. The most famous are Crypto punks. These are series of tens of thousands of characters or animals generated by algorithms. The rarity of certain traits of these characters gives them more value. It is a market now saturated with objects of no interest that are only used for speculation. Dozens come out every day on all blockchains. It is the Stock Exchange: people buy and resell, but it has very little artistic value. Like any financial product, it generates a lot of profits. The general public only remembers that, it is sulphurous." PROOF OF WORK PROOF OF STAKE John Karp explains that "to guarantee the security of the blockchain system and validate a transaction, thousands of machines are necessary. The computing capacity of these machines is very energy-intensive. This validation system is what is called "proof of work". The first blockchains were, and still are, very energy-intensive." Bitcoin works on this protocol. "More recent blockchains rely on a new algorithm, called "proof of stake", continues the expert. A machine will be useful in validating a transaction (compared to thousands of computers previously needed to validate a single transaction). Tezos or Solana blockchains are considered almost carbon neutral." The proof of stake protocol has nevertheless not fully proven itself in terms of security. GAS FEES To be able to mint an NFT (or tokenize a digital asset, now that this vocabulary is no longer a secret to you) and integrate it into a blockchain, "we pay what we call gas fees [transaction fees, editor's note], very high, linked to energy consumption, recalls Lucie-Eléonore Riveron. Gas fees are like tolls, more or less expensive depending on the saturation of the network at a given time. To do anything, you pay. Buying a cheap work on Ethereum, for example, costs between 80 and 100 dollars in fees, while on a more recent blockchain like Tezos it is 0.1 dollar. WEB 3.0 OR WEB 3 Web 1 embodied the Internet of information. Web 2 is the era of social networks. The third generation Web, that of blockchains and cryptocurrencies, would allow surfing on a more decentralized web. The term appeared in 2014, formulated by Gavin Wood, the creator of Ethereum, a blockchain that has its own cryptocurrency, ether (the second virtual currency after bitcoin), but has been widely discussed in recent months. In theory, Web 3.0 aims to give power back to Internet users and counteract the stranglehold of global Internet leaders such as Meta (the Facebook group), Amazon or Alphabet, a conglomerate of which Google is the main subsidiary. But Web 3 is also, according to critics, a highly marketed way of justifying a system that, once again, only benefits the richest, because it is based on the tenfold increase in power of the most powerful (and therefore most expensive) computers. "The spirit of Web 3.0 is collaborative," believes Lucie-Eléonore Riveron. She points out that "the arrival of Facebook with Meta (1), which integrates a new territory that does not share the same values, was not well received by the 3.0 community, because Facebook itself embodies Web 2.0 and the ultra-centralization of Gafa." (1) The group founded by Mark Zuckerberg - Facebook and Instagram, WhatsApp, Messenger and Oculus virtual reality headsets - became Meta in 2021, and will focus on the technology of the metaverse, a virtual world that our avatars will explore.

## ###ARTICLE\_START### ID:1925

TECHNOLOGY"We are ending 2021 as a different company," summarizes James Kavanaugh, IBM's CFO. The fourth-quarter results, presented Monday evening, allowed the American company to give a glimpse of its new profile, after three years of intense transformation. This period symbolically ended on November 3 with the split of Kyndryl, a now independent company bringing together the IT services activities that IBM wanted to offload. "Our quarterly results and our expectations for 2022 are a first glimpse of the IBM of today," said Arvind Krishna, IBM's CEO. With a turnover of $16.7 billion between October and December, representing growth of 6.5%, the group recorded its best quarter in 10 years. For the full year 2021, its revenues increased by 3.6%, to $57 billion. A real contrast with the declines of 2020 and 2019. By purchasing the open source software publisher Red Hat in 2018, then by separating itself from the activities of Kyndryl, Arvind Krishna repositioned IBM's profile and strategy on high-growth markets: the so-called hybrid cloud (which makes it possible to manage different types of clouds) and artificial intelligence, which are at the heart of the digital transformation of companies. "We are 30% a consulting company and 70% a technology company," summarizes Arvind Krishna. The latter also offloaded during the quarter part of the activities of Watson Health, the division specializing in artificial intelligence for the health sector, which did not keep its promises. He sold it for an undisclosed amount to the investment fund Francisco Partners. In addition to cleaning up its business portfolio, IBM has also expanded its partner ecosystem to broaden its market, acquired fifteen companies to strengthen its technological building blocks needed for its offering and continued to invest in R&D. Automation The group therefore believes it has done most of the foundation work needed to approach 2022 with new confidence. "I fundamentally believe that we have the right portfolio and the right direction (...) to be able to develop where the market demands it," Arvind Krishna told financial analysts. According to him, companies will continue to devote significant budgets to their digital transformation. "Customer concerns have changed over the past three years. They are no longer about cost savings but about which technologies to use and how to deploy them to improve the various processes," the executive observed. Improving the resilience of a supply chain, ensuring end-to-end IT security, improving the work experience of its employees, etc. represents work and investments that will support demand in the medium term. Companies are also demanding ever more automation of processes, in order to overcome the shortage of technological skills, which the Covid-19 crisis has made even more acute. For 2022, IBM anticipates growth of around 5% of its revenues. A target well received by Wall Street financiers where the stock gained 7% at the opening. Analysts will, however, closely monitor the contributions of its commercial relationship with Kyndryl. IBM has promised to be completely transparent on this point when publishing its next results for at least three more quarters. IBM also estimates that it has around $20 billion of "flexibility" over the next three years to buy back certain technological targets at the best price.

## ###ARTICLE\_START### ID:1926

The figure is dizzying: $70 billion. Even for Microsoft, which is considered a player with unlimited wallets in the video game industry, the sum is astonishing. The tech giant is reportedly about to acquire Activision-Blizzard, a major developer and publisher of video games, for $68.7 billion (€60.4 billion), according to information from the Wall Street Journal quickly confirmed by Microsoft. Seventy billion is nearly ten times the amount paid a few months ago to acquire Bethesda's catalog ($8.1 billion, almost the price of Amazon's purchase of MGM), in what seemed at the time to be a major deal. Never has video gaming seen such an outsized "move." Never before has Microsoft committed such sums to a buyout, having bought LinkedIn in 2016 for $26 billion. And the entire geopolitics of the sector could be turned upside down. Born from the merger between Activision and Vivendi Games, about fifteen years ago, Activision-Blizzard was already a video game giant, for a long time the largest publisher in the sector thanks to several of the most lucrative franchises in the industry: the Call of Duty shooter, a nearly annual series whose cumulative sales exceed 300 million copies, the antediluvian World of Warcraft which despite the weight of the years (the game started in 2004) still reigns supreme on the market of massively multiplayer online games, or the little Candy Crush, a must-have in mobile gaming acquired via the purchase of King in 2015 for 5.9 billion. Behind these figureheads, dozens and dozens of other familiar franchises (Destiny, Crash Bandicoot, Guitar Hero, Skylanders, Tony Hawk's, Diablo, StarCraft, Warcraft, Hearthstone, Overwatch) that provide the group with regular and often increased revenues. Not bad for the gamble launched in 1979. At the time, the 2600, Atari's star machine, only hosted games created internally by the console manufacturer without their designers ever being credited. Four of them joined forces to create Activision, which became the first independent studio in the history of video games. HARASSMENT AND SEXUAL ASSAULT Activision-Blizzard, with around 10,000 employees, can today boast 400 million active users every month. Another golden year in 2021, with only one cloud on the horizon: since the summer, the American group has been the subject of several federal investigations following accusations of harassment and sexual assault. Far from dying down over time, the affair has continued to escalate over the weeks, to the point of implicating the all-powerful CEO of Activision-Blizzard, Bobby Kotick. In a lengthy investigation, the Wall Street Journal demonstrated in mid-November that the public face of the group knew in detail the extent of the problems in its studios and had covered them up on several occasions. The shareholders nevertheless preferred to renew their trust in the man who transformed Activision into a flagship of video games, refusing to listen to the protests of 1,900 employees (around 20% of the workforce) of the group who were demanding his resignation. On Tuesday morning, we learned that since the start of the scandals, 37 people had been fired, with Kotick opposing the figure being released publicly. The day after the Wall Street Journal revelations, the head of Microsoft's gaming division, Phil Spencer, said he was "deeply disturbed by the horrific events and actions" within the American publisher, promising that Microsoft would "reevaluate all aspects of Xbox's relationship with Activision-Blizzard". At the time, we could not have imagined the scope of these words. "Activision's CEO will continue in his role", however, stated the press release published by Microsoft at the time of the acquisition. Would good intentions be soluble in billions? Phil Spencer nevertheless leaves room for doubt by adding that "until this transaction is negotiated [the finalization of the deal with Zenimax and Bethesda took more than a semester, editor's note], Activision Blizzard and Microsoft Gaming will continue to operate independently. Once the acquisition is completed, I will be the point of reference for the Activision-Blizzard teams". According to Bloomberg, Microsoft's big boss told investors that "once the deal is closed, we'll have significant work to do to continue building a culture that allows everyone to do their best work." Kotick may not be part of this equation. While the deal is still far from being completed (or even if it passes the antitrust test), this thunderous announcement underlines the spectacular turnaround that Microsoft has made in just a few years. The relative failure of its Xbox One, launched in late 2013 against Sony's Playstation 4, called into question Microsoft's steady progress since entering the sector in the early 2000s. In a bad position, the Xbox subsidiary has reinvented itself little by little, without waiting for the launch of a new generation of consoles. Already a pioneer in online console gaming (as early as 2002), Microsoft launched a subscription catalog service in 2017, GamePass, which was quickly compared to a "Netflix for video games." The idea behind the service is to transform the relationship with the player, by focusing less on a few exclusives than on an increasingly rich catalog, and at a price aligned with that of streaming platforms. At the same time, Microsoft is pursuing an aggressive acquisition policy, started in 2014 with Mojang (Minecraft), by acquiring well-established studios in the sector in 2018: Ninja Theory, Obsidian, Double Fine, etc. Then came the deal with Zenimax, in September 2020. Microsoft is no longer acquiring a studio but a publisher, Bethesda, rich in emblematic licenses in the history of video games (Doom, Fallout, Elder's Scroll, Dishonored). So many future exclusives for its subscription service that the agreement announced Tuesday makes a little more essential. The only difference is that Bethesda embodies a more modern video game, capable of renewing itself and waking up sleeping beauties like Doom, while Activision-Blizzard lives a lot on its past glory or on drained licenses. LARGE CATALOGUE BY SUBSCRIPTION The fact remains that a triumphant GamePass (25 million subscribers in 2022) allows Microsoft to no longer depend entirely on the random successes of machines condemned to obsolescence anyway, and to become deeply and lastingly part of practices. Today and even more so tomorrow, ignoring this catalog means depriving yourself of an entire section of popular video games. After the acquisition of Zenimax, all observers were waiting for a reaction from Microsoft's major competitor, Sony-Nintendo, which is evolving in its own ecosystem. The Japanese company has not budged for the moment and seems to be clinging to the idea that video game entertainment is paid for per action. That each production deserves to be purchased individually and not sold in a large subscription catalog. A position that is increasingly difficult to maintain, even if Sony can still count on the power of its Playstation brand, particularly in France and Europe, where "the Play" remains a symbol. For how long? THE COMPUTER FIRM CHANGES COURSE For the biggest purchase in its history, Microsoft is not skimping on the means. It is spending 68.7 billion dollars (60.7 billion euros) to buy the video game designer Activision-Blizzard. This acquisition will be paid in cash, when these operations are often partly paid in shares of the company that buys, so as to reduce the need for debt with banks. And Microsoft is not hesitating to pay the price. The firm is offering an extension of more than 45% compared to Activision's last stock market price, or 95 dollars per share. This is probably the most visible sign of the revolution carried out by CEO Satya Nadella, appointed in 2014. He has successively abandoned the diversification carried out by his predecessor in mobile telephony and bet on the cloud (remote data storage). He has played on opening up to competing systems and customers. In short, after having protected its software, Microsoft has converted to open source, which allows users to access the active principle of a program, or even to modify it. This strategy has been welcomed by the financial markets. Over the last three years, its share price has increased by 191%.

## ###ARTICLE\_START### ID:1927

From self-driving cars to the metaverse, the tech world is buzzing with promises. In 2022, Waymo (Google) will continue to test its driverless vehicles in various American cities, and Facebook, now Meta, will add bricks to the construction of its metaverse, a parallel universe accessible via virtual reality and augmented reality. But these futuristic visions will not materialize on a daily basis for a long time. Here's an update on the trends to watch from next year. BIOTECH MEATS AND CHEESES "2022 will be the advent of food made from plant proteins," predicts David Bchiri, president of the consulting firm Fabernovel in the United States. From New York to San Francisco, meat alternatives have become staples in many households, thanks in particular to Beyond Meat and Impossible Food, whose plant-based foods are similar in texture, flavor and price to a ground beef steak, among others. Their offer meets the demand of environmentalists: industrial livestock farming is responsible for 14% of anthropogenic greenhouse gas emissions, according to the United Nations. By 2027, the global market for plant-based meats is expected to be worth $35 billion (compared to $13.5 billion in 2020), thanks in particular to expansion beyond the United States, according to a report by Research and Markets. "The products are ripe and good. We're going to see agri-food groups buying up brands that are starting out, and we're going to switch from innovation to industrialization," assures David Bchiri. Cheeses are not spared: the Babybel brand launched vegan products this year. DECENTRALIZED WEB The first phase of the Web was that of the creation of blogs and websites, such as Yahoo, eBay or Amazon. Then came Web 2.0, the current era, dominated by social networks and content sharing. Platforms like Facebook and YouTube “have control and collect the revenue” from advertising, summarizes Benedict Evans, an independent analyst specializing in Silicon Valley. On Web 3.0, “users, creators and developers own shares [of the site] and can vote,” like in a cooperative, he explained recently on his podcast. This new step is based on blockchain technology, which has enabled the rise of cryptocurrencies (bitcoin, ethereum, etc.) and NFTs (digital authenticity certificates for online content). “We talk a lot about decentralized finance, but I think that in 2022 we will see more localized use cases, which will enter everyday life,” intervenes David Bchiri. The city of Miami, Florida, has raised more than $20 million thanks to its cryptocurrency, created in collaboration with City-Coins, an open-source protocol designed specifically for municipalities looking for alternative ways to raise funds. New York also launched in early November. But these technologies have a significant environmental impact, due to the massive electricity needs of computer networks and data centers, links in the blockchain. MONOPOLIES QUESTIONED The immense power of GAFA (Google, Apple, Facebook, Amazon) has been raising eyebrows among the authorities for years. Europe is taking measures, Russia and China are regulating or censoring them, and in 2021, America has armed itself to fight it out. Its angle of attack: competition law. Several investigations and legal proceedings are underway against these companies, accused of abusing a dominant position. The American competition authority (FTC), for example, believes that Facebook bought Instagram and WhatsApp to crush any risk of future competition. Mark Zuckerberg's group finds itself in a particularly difficult position after the massive leak of internal documents orchestrated by a whistleblower, showing that the company's leaders are aware of the harm caused by its applications, particularly for young people and democracy. American elected officials, for their part, approved in committee bills that challenge the dominance of GAFA. The explosion of cryptocurrencies also worries regulators. In September, the Chinese Central Bank even ruled that all financial transactions involving cryptocurrencies were illegal. BEWARE OF RANSOMWARE Ransomware attacks and theft of confidential data are expected to continue on a large scale in 2022. Between the rise in the value of cryptocurrencies and the authorities' difficulties in apprehending hackers, digital blackmail has taken off. It consists of hacking an organization's computer network and demanding a ransom in cryptocurrency in exchange for the code to regain access to its machines. “With 495 million ransomware attacks recorded to date, 2021 is already the most costly and dangerous year on record,” cybersecurity firm SonicWall noted in October. “In 2022, the main story for me and my colleagues is going to be ransomware. It’s too lucrative” not to continue, wrote Sandra Joyce, director of intelligence for cybersecurity firm Mandiant. And according to the American NGO Identity Theft Resource Center, data breaches are also set to break records.

## ###ARTICLE\_START### ID:1928

A major computer security breach, which is causing headaches around the world, has forced the Quebec government to preemptively shut down nearly 4,000 Internet sites and services while it looks into the situation and resolves the problem. Called "Log4Shell," the breach concerns a Java library called Log4j and developed by Apache, a free software. The breach can allow a hacker to execute arbitrary code remotely on a server and take control of it. At a press conference on Sunday, the Minister responsible for Access to Information and the Protection of Personal Information, Éric Caire, assured that "to date, we have no indication that we have suffered a successful attack." He explained that it was necessary to shut down several sites while it verified whether the Java library Log4j was being used, a "monk's work." "We have to scan all of our systems," he said. We're looking for a needle in a haystack." The sites of the education and health network, as well as Revenu Québec, are particularly affected. On Sunday evening, for example, it was not possible to access clicSÉQUR. For its part, the Université de Sherbrooke wrote on its site that it had closed access to certain computer systems while verifications were carried out. The vaccine passport and the vaccination appointment booking system are not affected. The sites will become available again as fixes are made or it has been established that they are not using the problematic element. The minister was unable to specify when this major operation will end, saying that "it will be a matter of days." In Ottawa, the sites of various departments have also been preventively closed. This is particularly the case for the secure My Account portal on the Canada Revenue Agency (CRA) website, which has been temporarily unavailable since December 10 and was still unavailable Sunday evening. “There is no indication at this time that the Agency’s systems have been compromised or that there has been unauthorized access to confidential taxpayer information due to this vulnerability,” the CRA said in a statement sent to Le Devoir, without specifying when the services will be available again. For its part, the Canadian Centre for Cyber Security “strongly recommends that organizations internally review potentially affected applications,” warning that “due to the widespread use of the Log4j library in popular infrastructures, many third-party applications could be vulnerable.” Many people affected Many people affected “This is a disaster from a global perspective,” says Jean-Philippe Décarie-Mathieu, head of cybersecurity at Commissionnaires du Québec. "It's serious, because it's remote code execution and it affects anyone who has a Java application with this library. There are a lot of people who use it." Many governments have also issued alerts about this flaw, including the United States, Australia and New Zealand. Patrick Mathieu, a computer security expert and co-founder of Hackfest, adds that it is easy for a hacker to take advantage of the flaw and that it does not require a lot of computer knowledge. "It's extremely simple, it gives access to mega-companies in a few clicks," he says. It is not impossible, then, for a hacker to get their hands on personal data once they control a server. Several tried to exploit the flaw Thursday, when it was revealed. Hence the importance of quickly providing patches, says Patrick Mathieu, who thinks that governments made the right decision by closing their sites. LE DEVOIR We must scan all of our systems. We are looking for a needle in a haystack. ÉRIC CAIRE »

## ###ARTICLE\_START### ID:1929

"Companies should all have the same reflex: turn off their systems and check whether they are vulnerable or not," says Éric Parent, president of EVA Technologies. Because states are far from being the only targets of malicious hackers who could exploit the Log4Shell breach to break into servers. Both the sites of giants like Facebook and those of small Quebec businesses are concerned from the moment they rely on a widely used open-source Apache module. THE ONLY SOLUTION Disabling your website without notice "requires courage," Éric Parent openly admits. But he is convinced that, when in doubt, it is the solution that is required to avoid problems in the medium term. "Anyone on the internet should resolve this problem by the end of the week. That's how bad it is," adds Patrick Mathieu, co-founder of HackFest. At the same time, he points out the unfortunate habit of hackers striking on a Thursday or Friday, just to have a free hand over the weekend. It is therefore especially in the coming days that the two specialists expect hundreds of websites to be temporarily offline so that their breach can be corrected. AND THE BANKS? While the two levels of government have been proactive in their communications regarding this breach, the same is not true for large financial institutions, the experts point out. "There needs to be transparency on their part. Are you vulnerable, yes or no? Are you working on it, yes or no?" says Mr. Mathieu, concerned by their silence. In response to questions from the Journal, Desjardins assured that it had made the necessary checks and that it had not been the victim of a cyberattack. Laurentian Bank stated that it had not been affected by the breach. The five other large banks contacted did not respond to us.

## ###ARTICLE\_START### ID:1930

REGULATION Microsoft was at the heart of antitrust proceedings in the 1990s and at the start of the millennium. After two decades of respite, the Seattle giant could once again have to deal with the European Commission's Directorate-General for Competition. The latter announced in October that it had launched a preliminary investigation into the American group's anticompetitive practices, opened following a complaint filed in July 2020 by its compatriot Slack. It is now the turn of a coalition of European companies to announce that it has seized the Brussels authority to denounce Microsoft's commercial practices. The charge is led by the German company Nextcloud, a free cloud file hosting solution for individuals and professionals. It is supported by around thirty European companies or professional associations such as Aqua Ray, Linagora and Whaller. The coalition filed a complaint against Microsoft with the European Commission in early 2021 but did not make it public. It decided to communicate publicly for fear that Brussels would put this file aside. The group has filed another file with the German Competition Authority, and could also refer the matter to the French Authority. These European companies denounce the fact that Microsoft is pushing its One Drive or Teams services to users of the Windows operating system. The latter are regularly invited, via messages on their screen, to use Microsoft's cloud storage solutions, while Teams messaging is now installed de facto in Windows 11. "Microsoft is aggressively pushing consumers to accept and deliver their data. This limits consumer choice and creates barriers to entry for competing companies," the coalition describes in its press release. The latter claims that "in a few years, Microsoft's market share in the cloud in Europe has increased to 66%, while the market share of national players has fallen from 26% to 16%." "Users expect a modern operating system to provide secure and reliable communication and storage services, regardless of the device used," a Microsoft spokesperson replied to Le Figaro. "Users of our operating system can easily select and use other communication and storage solutions instead of or in addition to Teams and OneDrive, which many of them do." An echo of Slack's complaint Microsoft was heavily condemned by Brussels in 2004 and then in 2013 for abuse of a dominant position, because it had favored its Windows Media Player and then its Internet Explorer browser to Windows users. For the coalition, history is repeating itself. "You copy the product of an innovative player, you couple it with your dominant offer and you kill their business. This type of behavior is bad for consumers, for the market and of course for European companies," underlines Frank Karlitschek, CEO of Nextcloud. The coalition's complaint echoes that filed in July 2020 by Slack. The American company believes that its development has been hampered by Microsoft, which has strongly pushed its collaborative messaging service Teams to businesses by integrating it into its powerful Microsoft 365 office suite. The investigation of the complaint is continuing in Brussels with the opening of a preliminary inquiry.

## ###ARTICLE\_START### ID:1931

INNOVATION The pandemic has propelled Inria to the forefront. The national research institute in digital science and technology has taken the lead in the team that developed the TousAntiCovid application, as well as around forty additional tools dedicated to monitoring the epidemic or digitally managing the crisis, for hospitals. "Several lessons can be learned from this experience: Inria's ability to bring together public and private stakeholders around projects, its ability to contribute to public policies and also the importance of increasing the maturity of public debate on such a subject", analyses Bruno Sportisse, CEO of Inria and member of the board of the European Innovation Council (EIC). However, since his arrival at the head of the institute in 2018, Bruno Sportisse has continued to strengthen the links between the research institute and its ecosystem. The Covid crisis has reinforced Inria in its role as "the armed wing of the State for research and innovation". The recovery plans and France 2030 have made digital technology one of the priority areas of national economic policy. Four major themes have been selected: quantum, cybersecurity, the cloud and artificial intelligence. More than €350 million have been earmarked to finance research dedicated to these themes. They echo major areas of application: health, mobility, agriculture and the digital transformation of education, which benefit from a research budget of over €230 million. Inria - which has an annual budget of €260 million - is a stakeholder in each of these areas, alongside other institutes such as Inserm for health, Anssi and CNRS for cybersecurity, and Inrae for agriculture. This involvement of research in public policies appears essential to "find the right balance between regulation and innovation". Rather than suffer the consequences of the technological choices made by the major digital players and try to contain them through regulation, Europe is seeking to define new legal frameworks to prevent certain abuses. "Relying on research allows the regulator to anticipate developments rather than being forced to chase after the dominant players in the market. Algorithms are needed to regulate algorithms," illustrates Bruno Sportisse. European dynamics The Régalia project, operated by Inria with the Directorate General for Enterprise and the Digital Regulation Expertise Center (PEReN), aims to "build the digital regulator's toolbox to, for example, be able to ensure that the platforms' recommendation algorithms do not contravene competition law or consumer law." Inria also participated in the launch of Scikit-learn, an open-source software for deploying applications based on artificial intelligence. But in the face of the firepower of Gafa, the efforts made by France may seem derisory. "In digital, there is a constant redistribution of the cards. You have to have the talent to play the battles," retorts Bruno Sportisse, recalling that as part of the acceleration strategy for AI, 800 million euros are dedicated to the training component. The recruitment of young permanent scientists has grown exponentially over the last three years and the trend should continue with, in its sights, the strengthening of innovations resulting from this research. With its startup studio, Inria aims to massively increase the number of startups incubated each year. The institute has already gone from ten to forty over the last three years, it wants to reach one hundred by 2023/2024. Cutting-edge areas of deep tech are addressed by the hosted startups. AI Verse tackles the subject of artificial intelligence in the metaverse. Cryptonext, a spin-off from Inria and the Sorbonne, is working on the thorny issue of encryption capable of resisting a quantum computer. "Inria supports researchers in creating companies. We also help them to remain within industrial logic, so that they do not become service providers," adds Bruno Sportisse. Inria's range is completed by a growing number of partnerships with companies. It has a joint laboratory with Orange, works with Atos, Naval Group on artificial intelligence, La Poste for the trusted digital society and the software publisher Berger-Levrault. "With France 2030, we have a real agenda of actions to avoid being subjected to, to build leadership in and with digital technology: the dynamic is triggered with a coalition of public and private actors, who are part of a European logic," adds Bruno Sportisse, continuing to forge links between research and innovation.

## ###ARTICLE\_START### ID:1932

In recent weeks, discussions in the US Congress and then in the European Parliament have once again highlighted the harmful effects of social networks. Once again, parliaments across the Western world are seeking answers to the damage caused by these platforms, linked from the outset to their design flaws. Once again, policymakers and Silicon Valley executives are wondering about the implementation of increased surveillance and strict regulation. The other way would be to see these digital giants change their practices by themselves and voluntarily. But that will not happen. And once again, the debate is focused on how to repair a model that is undeniably and irreparably broken. It is high time to move beyond this technological infrastructure, because it generates its profits from damage. The Internet has undeniable advantages, but its current model distorts the economic system by appropriating our personal data and selling it to the highest bidder. Social media is damaging public discourse by privileging clicks over truth and making misinformation and outrage more profitable than facts. Technology is designed for platform profit; it ignores the individual. It transforms our lives without our knowledge and erodes the civic institutions that are supposed to hold our societies together. All of these ills have a disproportionate impact on the already vulnerable; they have a toxic inequality effect. The result is a loss of trust that threatens our democracies. It is time to fix this, once and for all. The user at the center of the Big Tech project has delivered on his promise: “Move fast and break it. This is irreversible, irreparable, and cannot be fixed by regulation alone. Instead of trying to fix a broken model, we must build a new architecture for the internet, imagined and built on a more equitable foundation, with a positive spirit.” The goal is to completely reset our technological model in order to develop a new approach by placing the user at the center of the project. It is about optimizing it to guarantee access and equity, with a constant concern for the common good. This may seem audacious. But it is now within our reach. It is already possible to build an open source web protocol. From its conception, it would transfer control of personal data to individuals. It would encourage developers to innovate by allowing all users to benefit directly from the economic value of their data. With a collaborative and interdisciplinary approach, we can bring together technologists, social scientists, ethicists, lawyers and economists to imagine a new governance framework capable of charting the course for this next digital generation based on “ethical technology” in order to make progress sustainable in the long term. With the support of qualified individuals and institutions, we can build a dynamic of change that prioritizes people over platforms, opening new paths and giving life to a fruitful social, economic and civic engagement. Deadly cycle This is the very goal of our Liberty project, which we have just launched, with an Internet protocol already shared within the global community of free software, and an institute created to conduct research around digital governance, with researchers gathered under the banners of Georgetown University, in Washington, and Sciences Po, in Paris. By following this direction, we will find the safest path. We must restore ownership and control of personal data to individuals, their true owners. We must integrate standards and principles into the operational processes used to develop new digital services, applications, even the next generation of social networks. This is the price we pay to reposition technology at the service of the common good. We will propose a new model for sharing the value created by the Internet, which is currently captured for their own benefit by a few powerful companies. Despite the problems caused and exacerbated by the current web infrastructure, we have the capacity to build a more open and equitable civic architecture—an Internet for all. By using better technology with a governance framework to guide it, we have a real opportunity to strengthen our democracy, repair our social fabric, create a more equitable economy, and ensure a better future for us all. Of course, achieving this vision will not be easy. If we are to act now, ending the deadly cycle of failure and outrage, we must urgently take action in the public interest. We must recognize that the current system is broken. Simply changing it will never solve the whole problem. Small tweaks cannot restore trust or create the inclusive framework needed to get us where we need to go. It is time to stop focusing on the hope of fixing it. The current situation requires us to act quickly in a collective effort to transform the way the Internet works.

## ###ARTICLE\_START### ID:1933

The Internet was initially intended to decentralize exchanges by sharing information. It was part of a disruptive project that promised to increase individual freedoms and promote autonomy. It was in this place of all possibilities that we found new inspiration after the bursting of the Internet bubble at the turn of the century and the exhaustion of the service society. The Internet promised to be the new engine of growth. And since users were not ready to pay to consume these services, companies offered them to them for free, in exchange for the use of their data for advertising purposes. This new economy is in the process of pushing us into a society of algorithmic services whose excesses include addiction, lack of respect for privacy, surveillance and behavioral influence. In this context where the Internet now determines the profitability of our economies, is it realistic to rebuild it to return to its original intention? There are many initiatives that are trying to achieve this. For example, to change the situation in terms of data confidentiality and make exchanges more transparent, the association La Quadrature du Net promotes the generalization of the use of free software (open source), as well as decentralized services, such as those of the blockchain. Others, like the Polish association Panoptykon, propose to no longer allow companies to guess who we are, but to provide them with this information directly on a voluntary basis. But we can just as easily use the dark Net. On these alternative networks, it is difficult to collect personal data and identify users. There are dozens of them, including Tor, the most famous of them, with 2 million users per day. France is the sixth user in the world behind Germany, the United States, the United Arab Emirates, Russia and Ukraine, according to Tor Metrics. The dark Net was invented in the 1970s by the American Navy, which was looking to anonymize its connections. The military thus created networks isolated from Arpanet (the ancestor of the Internet), capable of exchanging data in an untraceable manner. The non-profit organization Tor Project is supported today by many patrons, such as the Electronic Frontier Foundation, Human Rights Watch and the Freedom of the Press Foundation. The network is still 90% funded by Washington as part of the fight against terrorism, censorship and electronic surveillance in certain countries, such as China and Iran. However, the American administration does not hesitate to denounce it elsewhere. Scapegoat This is also the case in France, where the dark Net is regularly accused of constituting a lawless zone conducive to terrorist plots. It is recurrent to demonize it, because it allows politicians to find a scapegoat, and companies that live off the collection of private data to discredit it. However, the latest attacks in Europe have shown that terrorists prefer very common means of communication, such as disposable phones, social networks and encrypted messaging applications such as Telegram. We also know that illegal sites represent only 2% of the sites reachable via Tor ("Empirical Analysis of Tor Hidden Services", Gareth Owen and Nick Savage, The Institution of Engineering and Technology Information Security No. 10/3, 2016). The dark Net is used to carry out illegal operations, for example, the sites Silk Road, AlphaBay and Hansa, which were closed by the FBI, but also to communicate and search for information without being detected by governments or other organizations. It is therefore widely used by journalists, whistleblowers, dissidents and cyber activists. But there are also military personnel, police officers and citizens wishing to preserve their privacy. Moreover, the first promoters of the dark Net are journalists' associations. For example, Reporters Without Borders offers a digital survival kit, which is nothing more than a guide to accessing the dark net. The Centre for Investigative Journalism (TCIJ) in Great Britain offers the same type of tool. Without the dark net, there would be no Edward Snowden, Frances Haugen or the Pegasus affair. Because, even in our democratic countries, this type of denunciation is likely to be prosecuted. This was the case, for example, with the conviction of the two whistleblowers in the "Lux Leaks" affair. And in countries with little regard for individual freedoms, where certain subjects cannot be discussed freely, such as China, Russia, Ukraine, Uganda, North Africa or the Middle East, the dark net allows dissidents opposed to the regime in power to relay their ideas, homosexual communities to express themselves or the "Arab Spring" to see the light of day.

## ###ARTICLE\_START### ID:1934

APPLICATIONS Zoom, Teams, Google Meet, WhatsApp, Signal... These American communication applications have become the new darlings during the Covid-19 pandemic. But today, the French government is trying to convince its civil servants to opt instead for tools developed by the French administration. Tools that are supposed to be safer and more efficient. As part of the Tech.gouv program, launched in 2019, the Interministerial Digital Directorate (Dinum) was tasked with developing these tools. It now offers a "public agent's digital backpack" (SNAP), including six digital applications to "support the administration's new hybrid working methods". These solutions include the instant messaging service Tchap, launched in April 2019. This service is one of the first to have been deployed, to ensure end-to-end encrypted conversations. It's sort of like the "WhatsApp for government employees," jokes Nadi Bou Hanna, the interministerial director of digital technology. "We needed a solution that would eliminate the weaknesses of other applications," he adds. Tchap currently has more than 260,000 users, including all ministries, some academies, prefectures, and consular services and embassies abroad. "We've noticed a huge amount of use from gendarmes, police officers, and military personnel who coordinate on the application," says Nadi Bou Hanna. According to him, Tchap's potential is aimed at the 900,000 French territorial agents, and up to 2 million individuals if we include teachers. He hopes that by the end of the year, the application will exceed 300,000 users. In order to ensure their security, Dinum submitted Tchap to YesWeHack hackers, thus becoming one of the first government clients of the French company. The goal: to find the flaws and vulnerabilities of the application, while remaining ethical. For more than two years, 19 hackers have been rewarded for their research. "Tchap is a tool designed in open source", meaning that its code is accessible to the public. "Anyone can find flaws, and thus make this community work", mentions Guillaume Vassault-Houlière, CEO of YesWeHack. According to him, it is "important not to depend on the same people", in other words Gafam. "Facilitate teamwork" To fill the rest of the backpack, other tools are made available to public agents, such as Audioconf or Webconf, online meeting services. They have respectively 40,000 and 85,000 participants on average per month. While these are traditional services, other tools are almost like social networks, like Osmose. This platform "allows all government agents to be connected according to their interests". Its members can thus help each other and exchange through more than 6,000 communities. In order to complement Osmose, another solution, Resana, was launched in spring 2020. It aims to "facilitate teamwork" and currently has more than 16,000 collaborative spaces. The latest service to join the SNAP is Webinaire, launched at the end of last June. It allows seminars to be organized where participants communicate remotely. Up to 350 people can meet. This tool was initially created for teachers by the Ministry of National Education, Youth and Sports. Unlike competing applications, all the instruments deployed by the State are hosted in France at OVHCloud, Outscale, Scaleway, Orange Business Services or within the Ministries of the Interior or Ecological Transition. According to ÈFlorent Tournois, head of the digital services performance department at Dinum, "these products are primarily intended for agent services, but they also ensure France's influence" in terms of digital technology. He adds that "these tools could be highlighted during the French presidency of the European Union" between January 1 and June 30, 2022, allowing other States to adopt similar solutions. For the time being, various security approval processes for this software are underway with the National Agency for Information Systems Security (ANSSI), and should be accepted within a few weeks. We needed a solution that would eliminate the weaknesses of other applications. NADI BOU HANNA, INTERMINISTERIAL DIGITAL DIRECTOR

## ###ARTICLE\_START### ID:1935

DIGITAL After fifteen years under the umbrella of EMC and then Dell, VMware regained its independence in early November. "The split offers many opportunities. It is favorable to our business, our customers and our shareholders," explains Raghu Raghuram, CEO of VMware, during an exclusive interview with Le Figaro. VMware, which many employees discovered during the lockdowns, offers solutions "allowing employees to work wherever they are." The American company brings together on a single platform all the solutions available in the cloud, whether those provided by the major players in the sector or specific business applications. Its solutions are used by more than 500,000 companies worldwide. Beyond the definition of its activity, Raghu Raghuram readily presents his group as "the Switzerland of the cloud", a way of emphasizing its independence, but also the neutrality of its solutions. At a time when the subject of digital sovereignty is on everyone's lips, the neutral flag has advantages. "Since we do not store data, we are not subject to the American "cloud act"", recalls Raghu Raghuram. Its neutrality also comes from its ability to bring together on a single platform technological solutions from various horizons: major server suppliers Dell, HP, Lenovo, notably used by companies for their private cloud, applications hosted in public clouds... "Since our solutions are open source, our customers are not captive", adds Raghu Raghuram, thus responding to another concern of Western markets. In a multipolarized world, where the differences between practices are widening, VMware is banking on its ability to integrate into local ecosystems. A partner of the French OVHcloud, it is even one of the components of its SecNumCloud certified offers (the French label guaranteeing the security of cloud offers). Virtual universes The CEO also says he is convinced that "the boundary between the real world and the digital world is increasingly blurred". He cites several examples, starting with that of large retailers without cashiers: purchases are made in store, but the entire purchasing and payment process is managed remotely, in the cloud. "A pacemaker is very concrete. But the data it generates is processed in the cloud. We provide the infrastructure that links the two," he adds. Another manifestation of the extension of digital "blurring" the boundary with reality: the metaverse. Convinced that the concept will be rolled out in the business world, Raghu Raghuram believes that VMware will be the platform on which these virtual universes will be built. The group may well adorn itself with all the attributes of neutrality, but it nonetheless displays significant ambitions in terms of growth and expansion. "We can more easily think about major external growth operations, even if for the moment, we are not considering anything large," adds Raghu Raghuram. His group is experienced in "small acquisitions." In twenty years, he has completed around fifty, only four of which were for more than $1 billion. VMware's ambitions are commensurate with its financial means. It generates more than $4 billion in free cash flow per year. During the split, it distributed $12 billion in exceptional dividends to its shareholders - 80% of which went to Dell, in proportion to the shares they held. The dividend tap will be cut off, in favor of a share buyback policy and the financing of internal and external growth. Enough to meet the expectations of its new shareholders. "We are also investing massively in cybersecurity. When the entire activity is digital, it is obviously a fundamental subject," adds Raghu Raghuram. It was in particular to meet this need that VMware bought Carbon Black in 2019 for $2.1 billion, completing one of the largest external growth operations in its history.

## ###ARTICLE\_START### ID:1936

Last September, Texas's new restrictive abortion law sparked its share of resistance, some of which was of a new kind. Outraged by the law, a white American feminist activist created a video on TikTok suggesting that the reporting platform set up by this southern US state be flooded with spam to temporarily disable it. To support this call to action, a young black American activist developed a bot, a small computer script, to automate and amplify the feminist struggle for reproductive justice. Although digital resistance practices have multiplied in recent years, the term itself is not new. The concept emerged at the dawn of the 21st century in the wake of the Zapatista solidarity movements and the alter-globalization movement. We owe this notion to the researchers and artists of the Critical Arts Ensemble collective, who attempted to explain the mobilization of emerging digital technologies to disrupt existing government, military, or corporate institutions. The term digital resistance has since been mobilized to designate practices aimed at uniting freelance journalists, supporting the Palestinian struggle, #BlackLivesMatter, indigenous struggles such as #LandBack or the one for democracy in Zimbabwe. These protest activities have often been associated with hacker culture and in opposition to dominant, commercial and surveillance technologies such as Google, Amazon, Facebook, Apple and Microsoft (GAFAM). But a quick look back at history shows us that they are not only a contemporary phenomenon. They are part of the struggles engaged in pre-industrial and industrial societies. Let us take these maroon women and men who, in Haiti, Jamaica or elsewhere, destroyed machines on plantations, in addition to creating autonomous communities far from the slave system. Let us also think of the Luddites, who, during the British industrial revolution, opposed the replacement of workers by machines by breaking or sabotaging them. Characteristics of practices In this new issue of the journal Possibles, we wanted to define digital resistance around five main characteristics: The collective aspect. Digital resistance is basically a collective action. Resistance is structured around solidarity movements focused on specific causes rather than a posture that is individual. Tool or object of resistance. To understand digital resistance, a distinction must be made, that of resisting through digital technology or for digital technology. There are therefore both struggles through technology and resistance for different technologies. Strategy or tactics. Another distinction to be made, although with nuance, is that between the strategic and tactical dimensions of digital resistance. Strategy refers to an action that can be done from a specific place, located outside the adversary's power environment. Tactics, on the other hand, refer rather to gestures that can only be done within the adversary's power environment. Discursive and practical. Some forms of digital resistance are more discursive, such as writing manifestos that think about feminist and decolonial infrastructures, data, and artificial intelligence, for example. Other forms of resistance are much more practical, such as developing free software. And of course, some initiatives are somewhere in between, because although they are rooted in practice, they contribute greatly to striking the imagination and opening up possibilities. The aspect of autonomy or "sovereignty". Autonomy often emerges as an important dimension of digital resistance. It can be expressed through the development of so-called non-commercial infrastructures or frugal local development rather than through a transfer of technology from the North to the South. The term "technological sovereignty" has been used in recent years by States, but also by social movements and indigenous groups, to mark digital resistance against large digital companies. In order to combine awareness and encouragement of digital resistance, we created the Laboratory on Online Rights and Alternative Technologies (labdelta.ca). The initiative, which is a partnership between the Université de Montréal and the NGO Alternatives, aims to lay the foundations for a space for research and experimentation related to digital rights and resistance. Comments or suggestions for Des Idées en revues? Write to rdutrisac@ledevoir.com. Des Idées en revues Every Tuesday, Le Devoir offers a space to the artisans of a periodical. This week, we offer you a text arising from the theme of the latest issue of the journal Possibles, spring 2021, volume 45, no. 1.

## ###ARTICLE\_START### ID:1937

This is a case that went somewhat unnoticed while political and media attention was focused on Facebook and the new revelations from Frances Haugen's documents. However, if the facts are true, it paints a very unflattering portrait of Google. The American giant is said to have maneuvered to maintain its dominant position in the online advertising sector, entered into an agreement with Facebook to protect its interests, and, using its essential status, is said to have collected commissions from website publishers that were significantly higher than those charged by the market. While some of these accusations were made public in December 2020 with the filing of a complaint by 17 American states against Google, a new version of the prosecution case was posted online on October 22. The original document had been redacted, in its public version, of many elements at Google's request. The judge decided to lift this censorship, revealing new details. We thus learn that Google's dominant platform, AdX (Ad Exchange), which organizes automated auctions between website publishers and advertisers to fill advertising spaces, charges commissions of 19 to 22%, while this rate climbs to 30 or even 40% on Google Display Network, a platform reserved for small players. These rates are two to four times higher than those charged by other programmatic platforms, the complaint states. "Only a player in a monopoly situation can impose commissions twice as high as the competition while continuing to expand its market share," asserts Texas Attorney General Ken Paxton. "Such a platform should not be an immensely profitable business, but rather a public good that facilitates exchanges between buyers and sellers" of advertising space, argued a Google employee in an email obtained by investigators. The company responded to these revelations by stating that "this complaint is riddled with inaccuracies. Our commissions are in fact among the lowest in the market." A pact with Facebook Another claim from the attorneys general: Google tried - unsuccessfully - to knock down an advertising technology that would have threatened its revenues, "header bidding." This open-source system, created in the mid-2010s by the adtech industry, aims to automatically put Google's AdX in competition with rival platforms when an advertising space is for sale on a website. The goal is for the most advantageous offer for the publisher of the website to win. Header bidding has been described as an "existential threat" according to an internal Google memo revealed by the complaint. The giant responded by creating a competing solution, Open Bidding. This led it to negotiate a pact with Facebook, named "Jedi Blue" and signed in 2018. Facebook is said to have agreed that its powerful advertising solution Audience Network, which initially supported the header bidding project, also use Open Bidding. In return, Google allegedly provided Facebook with several benefits to ensure that it won a certain number of advertising auctions on AdX - something Google denies. Google also created the AMP mobile format in 2016, which was supposed to display publishers' web pages more quickly. To support its claims, the group knowingly slowed down the display of ads on sites that did not use AMP... Another claim in the complaint: Google designed AMP to work poorly with header bidding, thus pushing publishers to de facto use the company's advertising solutions. These elements will fuel a trial that is not expected to open before 2023, and which could last for many years. CW

## ###ARTICLE\_START### ID:1938

INTERNET While waiting for its first users, Donald Trump's future Truth Social network is stirring up investor passions. Since the announcement of its merger project with the former American president's new company, Trump Media and Technology Group (TMTG), the shares of the Spac called Digital World Acquisition Corp (DWAC) have soared by 740%, after two particularly crazy trading sessions at the end of last week. Never has a Spac (a company that raises money on the stock market with the sole purpose of making an acquisition) experienced such transaction volumes. Listed since September on the Nasdaq, the company, now better known by the nickname "Trump Spac", is valued at more than 8 billion dollars! The phenomenon corresponds to the identikit portrait of what is called a "meme stock", popularized last spring by the Gameloft and AMC affairs. It can be defined as the sudden interest in a stock whose price is the result of its virality on forums and social networks rather than on economic fundamentals. In a matter of hours, the acronym DWAC became one of the most popular mentions on the popular Reddit forum WallStreetBets. Amateur stock traders looking for a quick profit joined Donald Trump supporters and early hedge funds in the market to fuel phenomenal demand. “Thanks Donald Trump, $17,000 profit yesterday,” wrote one of them on Reddit. “Enthusiasm is no substitute for fundamentals, and Trump Media & Technology Group is lacking them,” wrote Louis Navellier, president of the investment firm Navellier & Associates, which claims to be a Trump supporter. TMTG has said little or nothing about its business model, its sources of revenue - mention is made of advertising and a subscription for a future video-on-demand platform - or its quantified ambitions. It has not even shown a product yet. The beta version of the Truth Social application, promised for November to the first "guests" on the waiting list, was cracked less than two hours after the project was announced. Hackers managed to create "realDonalTrump" accounts, or in the names of QAnon guru Ron Watkins, or former Vice President Mike Pence. The beta version was removed from the internet, casting some doubt on its technological vulnerabilities. Since Monday, Truth Social has also had to face a potential legal conflict with the Software Freedom Conservancy (SFC). This non-profit organization supporting free software accuses TMTG of having used the source code of another social network, Mastodon, for its platform, without respecting its license. This license requires those who use the open source code to publish their modifications to the code used, which has not been done. "The Trump group has 30 days to remedy this infringement, or its rights to the software will be permanently removed," threatens the SFC. Depending on the outcome, the case could go to court or force the application to review its code. This could delay the release of the platform, announced to the general public for the first quarter of 2022. Patrick Orlando, CEO of DWAC, promised more financial details this week on the future company resulting from the merger between his Spac and Donald Trump's company. The merger between the two entities must still obtain the green light from the stock market authority, the Security and Exchange Commission. Another question raised by some supporters of the project: will the $293 million raised by the Spac be enough to finance the investments necessary to develop a rival alternative to the giants Facebook and Twitter? The absence of any mention of an application developed for Android also raises questions. The only certainty: the fanfare debut of the DWAC share is good financial business for Donald Trump, president and majority shareholder of a company whose valuation has quintupled in five days. Thanks Donald Trump, $17,000 profit yesterdayAN AMATEUR STOCK MARKET TRADER ON THE WALLSTREETBETS FORUM

## ###ARTICLE\_START### ID:1939

Under the pale light of corporate neon lights, two men in their thirties are busy, isolated in their office. Piles of books and electrical cables, between them sits only one computer. Masahiro Hara and Takayuki Nagaya tried to negotiate to have two, but at the head of Denso Wave, the car parts production company they work for, the management was intransigent: no budget for their project. The fault lies in the bursting of the Japanese speculative bubble which, in 1992, no longer encourages the country's bosses to invest in innovation. Rather ironic for an invention that, years later, can be found on every street corner. Because what the two engineers are cooking up is the QR code, or quick response code. Today, popularized by the health crisis, this square made of black and white stores the information of those vaccinated against COVID-19, provides a link to the menu in restaurants or indicates the origin of certain products in the supermarket. Unimaginable for this creation that was perceived as superficial in France just a few years ago. With a few more white hairs, Masahiro Hara now willingly tells the story of this invention, on which he himself did not necessarily bet: "I was mainly thinking of a professional use when I created it", explains, with a smile, the Japanese, to Libération. Far from imagining that what they are developing will one day be used by some as a tattoo, Masahiro Hara and Takayuki Nagaya are then mainly trying to lighten (and speed up) the work of workers in automobile factories. As the engineer explains, at the time, "the entire car production chain is managed by barcodes". By alternating lines, these latter store the information of a product, such as its price. A simple scan is then enough to reveal and digitize them. Their invention in 1949 aimed to reduce the wrist problems of cashiers, then forced to write everything down. A sort of super barcode In the 1990s, more and more information had to be associated with car parts, and barcodes had an insurmountable limit: their size. Only about twenty alphanumeric characters (numbers and letters) could be stored there. To overcome this problem, the packaging of parts was therefore covered with about ten barcodes to provide the maximum amount of data. Which made the same number for workers to scan. So, Masahiro Hara and his colleague thought. How to create a sort of super barcode, in which everything would fit? At that time, the engineer's passion for go, a board game of Chinese origin involving black and white pieces on a grid, inspired him. "I quickly realized that a two-dimensional structure, rather than one like the barcode, would allow for more information to be included," he explains, in Japanese, since he has never learned English. More is an understatement since QR codes contain up to 4,296 alphanumeric characters, 200 times more than barcodes. Once he had found this idea, Masahiro Hara continued to work at his desk for months. The idea for the square quickly came to him, but another problem gave him a hard time coding: that of recognition by the camera to scan it. Faced with the mere alternation of black and white, the latter was lost. A distinctive sign had to be integrated into the invention. To discover it, the engineer then embarked on a very laborious task. Every day, for each language, each writing, he analyzes the proportion of white and black. One by one, he dissects them in order to find a unique combination in the world, which he takes a year to find: that of the three small squares decorating the corners of all QR codes. "Connecting offline and online" The small squares integrated into the large square, in 1994, that's it: the QR code is ready. And in Japanese society, from the 2000s, it's a hit. At Toyota, it speeds up the work of workers, but also makes it more precise. Indeed, while a scratched barcode is unreadable, a QR code damaged by 30% remains functional. And the invention also seduces, outside of factories. On advertising posters, pencils, even boxes of vision lenses... When Masahiro Hara walks around his neighborhood, he finds it everywhere. And, in some ways, the use of his work ends up overtaking him. "Bar hostesses had QR codes tattooed on their arms to give their phone number and personal information," he notes, still astonished. Miles away from the arms of Japanese hostesses, in Korea, China, Thailand and Taiwan, Masahiro Hara's creation spread from 2005, imported by Japanese factories located in these territories. Other continents, however, did not flash on the QR code until about ten years later. Especially because, while Japanese cell phones have been equipped with cameras that can read them since 2002, iPhones only offered them from the 2010s. A little before, some advertisers and flagships of American technology were already predicting a great future for the little square. Among them, Google. In 2007, Sean Owen was a developer there. He remembers very well the interest generated by the QR code for Google Print Ads, the service allowing you to buy ads in traditional newspapers. By referring to a site URL, Masahiro Hara's creation would make it possible to create a link between paper and the Web. Or, as this former employee of the multinational put it more nicely to Libération, it would "connect the offline and the online." An exciting project that, he readily admits, comes "much too early." Flop in the Western public space In any case, to do this, the engineer is working on building a QR code reader, a project that he finally puts in open source to allow anyone to contribute. Until 2010, more than 140 technology enthusiasts contributed their line of code to the edifice before the application came to fruition, under the name Barcode Scanner. With more than 16 million users, it now serves as a reference, even if Sean Owen admits that it loses about 10% of its followers per year, with more efficient systems having emerged since then. Ironically, while Japan is scanning it with all its thumbs and Google is infatuated with it, the QR code is a monumental flop when it enters the Western public space. For those who are not interested in technology, the verdict is clear: the invention is futile. In the media, only a few exceptional uses lead to it being talked about. As in 2011, for this hoax in Morbihan, which imagines a farmer tagging his cows for a game or, in 2013, during the creation of the company Épitaphe in Poitiers. Its principle? Engrave QR codes on the tombs of cemeteries in order to learn more about the deceased. When Snapchat also seized on it in 2015 (the aim being to add a friend more quickly by scanning them), the specialized media Techcrunch ironically headlined: "How Snapchat made QR codes cool again". Darling of the pandemic If it didn't make them cool, what allowed QR codes to gain momentum was the COVID-19 pandemic. Sean Owen explains: "The first time I saw someone other than a computer scientist scan a QR code was last year, for restaurant menu links." Between its speed of use, its storage capacity and its international use, the little square was very quickly preferred to its competitors, such as the French 2D-Doc. In fourth place in the ranking of the best applications drawn up by Google Play Store, a QR code reader, downloaded more than 100 million times, is listed. The health passport that must be checked by bars, restaurants or border police is not unrelated to this success. Having become the darling of the pandemic, the QR code, however, sees its success bring it trouble. Between those redirecting to phishing sites that steal Internet users' information and those stolen to be resold, the limits of invention in terms of security are becoming increasingly visible. At over 60 years old, Masahiro Hara is competing with ideas to perfect his precious tool and make it more secure. Recently, he developed the SQRC, a QR code that can hide part of the information it contains. The next step? Create a new one, capable of containing images. In addition to the fun aspect, he hopes to see his future creation break through in the hospital environment: "If the QR code can have people's X-rays, cardiogram information... in an emergency, it could save lives." Saving lives without enriching his own: in 1999, Masahiro Hara placed his invention under a free license. Not a penny has fallen into his pocket since the start of the COVID-19 crisis. A square inventor, like his work. LIBERATION If the QR code can have the x-rays, the cardiogram information of people… in case of emergency, it could save lives MASAHIRO HARA »

## ###ARTICLE\_START### ID:1940

This is a perilous subject on which the armed forces have wanted to position themselves for a long time. After having postponed the date several times, the Ministry of the Armed Forces finally presented, on Wednesday, October 20, its new doctrine of computer warfare of influence (L2I), supposed to define the contours of possible military maneuvers in the media space, in particular on "social media" during external operations. The French army has always carried out actions in the information field, but it now assumes it loud and clear, like other military powers. This was essentially the meaning of the presentation organized on Wednesday at the headquarters of the armed forces staff in Paris. And this, a little less than a year after the armed forces found themselves pinned by Facebook in the context of a report revealing for the first time that fake profiles were engaged in "information warfare" in Africa. At the time, this report was released in the context of a latent confrontation between Paris and Facebook linked to the birth of the Digital Service Act, a package of European measures aimed in particular at obtaining greater transparency in social network algorithms. The methods of the French military had been put on the same level as Russian information manipulation. Something that the armies had taken badly, considering that they had rather shown inhibition until then, notably prohibiting themselves from electoral subjects, unlike Russia. Since then, water has flowed under the bridge and the "public elements" of doctrine presented, although summary, are intended to be a way out of the rut. "The information field (...) is a place of strategic competition, justified the Minister of the Armed Forces, Florence Parly. False, manipulated or subverted information is a weapon." These remarks were immediately accompanied by an important precaution in the eyes of the armies: these actions are carried out "in strict compliance" with the United Nations Charter and international humanitarian law (IHL). A narrow margin, while IHL is not very talkative when it comes to information warfare. The new doctrine thus assumes that armies, beyond simple digital monitoring, will now be able to use content dissemination to "mislead" the adversary. They may be required to "denounce, contain, weaken or discredit, including by trickery, an information attack". And they will be able to "promote the action of the forces", to "denounce the inconsistencies or lies of the adversary", or even to "convince the actors in a crisis to act in the desired direction". A verbal balancing act, in order to avoid possible accusations of "perfidious" maneuvers, prohibited, on paper, by international humanitarian law. "Red lines" On the organizational level, it is the cyber defense command (Comcyber), attached to the army general staff, which will retain control over computer influence warfare operations. For content production, it will rely in particular on the Joint Center for Environmental Actions (CIAE), based in Lyon. A very discreet center where, since 2012, the armies have partly designed their "civil-military operations" and influence operations. The CIAE's staff, like those of Comcyber, are set to grow significantly thanks to the credits provided for in the 2022 finance bill. Concerning the tools to detect possible enemy maneuvers to manipulate information, or to distribute the content produced, few details have been communicated. At the Ministry of the Armed Forces, on Wednesday, it was simply specified that a certain number are based on simple free software, therefore requiring little financial means. The ministry also acknowledged that it could be required to rely on the private sector to acquire technical solutions, "but not to order influence operations from it." By launching itself more uninhibitedly into the information war, the challenge for the army is, however, ultimately, to gain influence, and for its actions in this area to reach a useful audience. A battle for audience that requires it to rub shoulders with another war, well known to traditional media: that of mastering Internet referencing algorithms and the particularly complex management tools of digital giants, such as Google Analytics. To do this, the ministry has admitted to seeking to recruit digital marketing specialists from business schools. In this very sensitive field that is the computer war for influence, Paris assures that it has certain "red lines". Such as not using undercover agents with press cards, a common procedure in many countries for intelligence purposes. "There is and always will be a form of asymmetry between what we do and what our adversaries do. Russia uses its media. We will not do that," it was assured on Wednesday. The L2I doctrine presented is prudently limited to operations conducted under the orders of Comcyber and the army general staff. It does not address methods that may be used by French intelligence services in other contexts. It also aims to be different from the fight against foreign digital interference in the media on national territory, led by the Viginum agency. The latter was launched on October 15 under the supervision of the General Secretariat for Defense and National Security, attached to the Prime Minister.

## ###ARTICLE\_START### ID:1941

SECURITY Apps to do everything: communicate, draw up tickets, geolocate, consult criminal records files, share directories, photos, videos and why not, tomorrow, do facial recognition, if the legal framework opens up more... The police are silently experiencing a small technical revolution. "Finally, we are investing in equipment and we are concerned about moving to police 3.0!" rejoices Stanislas Gaudon, national secretary of Alliance (majority among officers and guards). This unionist wants to believe that the modernization of equipment carried out by the Beauvau of security will not be a simple announcement effect intended to magnify Emmanuel Macron's security record on the eve of the presidential election. The National Police General Directorate (DGPN) is striving, for its part, to give a more concrete translation to the dream of field agents who are fed up with having to make up for the past shortcomings of the administration with bits of string and sometimes with their own money. Prefect Frédéric Veaux, head of the DGPN, mentions the supply of 111,500 smartphones for the police out of the 200,000 concerned by the signing of a tailor-made police-gendarmerie contract recently signed with two French companies: the operator Orange and the Aix-based manufacturer of shockproof telephones Crosscall. This same company will also deliver 20,000 digital tablets to the police by the end of next year. Crosscall? It's the small French brand that is on the rise in the field of telephony. A start-up whose products are renowned among sportsmen and outdoor enthusiasts. It already equips SNCF agents and, above all, the armed forces. Advantages of its Core X4-Neo model dedicated to law enforcement: it is resistant to sand, water, falls, without an external shell. The return rate for breakage of Crosscalls does not exceed 3%, when it reaches 20% for competitors and their average lifespan is 39 months, double that of other devices on the market. This is, in any case, what the manufacturer claims. Not to mention the battery life, which is also significantly higher than average. The DGPN wanted flawless security. Orange therefore opted for an "open source" Android operating system. In short: a system that allows Beauvau to install its own digital security layers to make its mobile applications more secure and encrypt the communications of police officers and gendarmes. The machine works in 4G. It will have multiple uses. It will allow patrols to be "geolocated". It will transmit voice, texts, photos and videos. To send the portrait of a suspect caught on the spot for verification, for example. Officers will have access to more than sixty "business applications". In short, the software essential to modern policing, with access to shared directories and databases that can be consulted in real time. A budget of 38 million euros Applications are the lifeblood of the matter. One of them, with an English name but of French origin, Team on Mission, will allow the telephone to be used as a police radio, at high speed and no longer at low speed like the good old Acropol system, which was born, it is true, in 1994. An experiment is underway in Paris. "Can you imagine, soon we will no longer have to wait our turn on a congested radio network to ask a command room to check a particular permit or residence permit," rejoices a police officer from Public Security. What a time saver! "We will even be able to issue our tickets with this smartphone," he continues. The police officer sees only advantages in being able, with this tool, to consult and fill out the computerized log of police stations and access many files, such as those of wanted persons or stolen cars. The modernization movement is well and truly underway. In terms of equipment, it is part of a draft budget for 2022 of 38 million euros. It includes the planned doubling of the NEO tablet fleet to eventually bring it to 100,000 machines. The philosophy of this deployment is unequivocal: "It is about moving from a logic of collective equipment to the provision of individual equipment, so that each police officer, wherever they are, benefits from the best tools," explains someone close to the DGPN. In this maelstrom of technical reforms, the national police has set aside 12 million euros for the renewal of the TPH 900 mobile radio terminal kits and 3.4 million euros for the old portable communication posts of the foot patrols. A bountiful harvest for the services that the Darmanin years! On condition, say the unions, that the effort goes "beyond" the electoral horizon.

## ###ARTICLE\_START### ID:1942

In one sense, computing has already been admirably democratized, that is, made accessible to the greatest number (especially since the advent of multifunction phones). But in the deepest sense of the term, which implies giving power back to the population, computing is nowadays mainly undemocratic, even antidemocratic (while the industry seems too often to be based on deprivations of rights: violation of privacy, devices artificially impossible to repair, decisions made by algorithms that do not have the capacity to explain their reasoning). In the walled fiefdom that is Facebook, citizens do not have a great deal of control over the kind of content served to them by an artificial intelligence which, as recent events demonstrate, is anything but an enlightened despot. While regulating Facebook and other cyberspace dictatorships has become a necessity, we should not delude ourselves: their fundamental nature will not change, and these regulations will at most succeed in reducing their harm. Indeed, as the American lawyer Lawrence Lessig noted twenty years ago: in cyberspace, code is law. It is computer code that dictates the behavior of the algorithms and applications that have become embedded in our lives. However, programming languages are specialized formalisms that allow us to precisely describe complex systems that evolve rapidly over time, something that a legal text will never be able to accomplish. If we want to make cyberspace more democratic (or simply less toxic), we must absolutely take an interest in the code: is this code public? Who can modify it? Who is able to understand it? Moreover, in the free software world, where the code is always public and where comments and modifications are encouraged, the ethical issues are much less glaring. In this spirit, let's bet that if Facebook's computer code had been scrutinized from the beginning by experts authorized to publish their impressions, the most detestable aspects of the platform would probably never have taken root. Against the immense power of the computer giants, we need more than regulations. We need a new countervailing power: computer freedom. While freedom of the press is based on access to information and literacy, computer freedom would be based on access to computer code and "coderacy" (the ability to understand this code). If there are laws to be written to strengthen our democracy in the era of algorithms, they should rather focus on the accessibility of computer code and the place of programming in compulsory public education. Democracy as we know it cannot exist without a sufficiently high literacy rate. For the democracy of tomorrow to emerge, we must give the gift of "coderaticism" to our children. Holder of a doctorate in computer science, teaches programming at Montmorency College If there are laws to be written to strengthen our democracy in the age of algorithms, they must rather focus on the accessibility of computer code and the place of programming in compulsory public education

## ###ARTICLE\_START### ID:1943

Google, the American giant of online search and services, and Thales, the French flagship of security and defense... Their origins are very distant, but the two companies nevertheless announced a "strategic partnership" this Wednesday, October 6. The goal: "To co-develop, within a new company, a sovereign cloud offering that meets the criteria of the French "Trusted Cloud" label. This alliance is a direct response to the new doctrine set out in May by the State for the hosting and online services of administrations and public structures. Its principle: data must be controlled by French or European companies, in order to escape American extraterritorial laws such as the Foreign Intelligence Surveillance Act. However, it authorizes these companies to use software bricks from American groups. This policy therefore encourages hybrid offers, such as the one created by this agreement between Google and Thales. The entity, whose name is not yet known, should start its activity in 2022. It will open three data storage sites in Ile-de-France. To benefit from the "best of both worlds", each of the partners will contribute their expertise: Google will offer its extensive range of online software, from artificial intelligence to database management; Thales its guarantee on data sovereignty and its expertise in cybersecurity, for example for the management of data encryption keys, which it already sometimes provides to Google or its competitors such as Amazon or Microsoft. Thales will hold the majority of the company's capital and will exercise "clear control of governance", indicates Marc Darmon, Deputy CEO of Thales in charge of the secure information and communication systems business. This assumes that Google will hold less than 33% of the shares. The amount of the agreement is confidential. The logic of this merger is reminiscent of that of two other partnerships already announced: in November 2020, Google joined forces with OVH, the French leader in cloud computing. The Roubaix company has thus integrated, in one of its offers, Anthos, a platform created by Google to manage activities on different clouds, public or private. In May, Orange and Capgemini joined forces with Microsoft and created Bleu, which wants to offer a "sovereign" version of Office 365, the American company's office suite. However, hybrid solutions are not a consensus. Some, including the French Scaleway, a cloud subsidiary of the telecoms operator Iliad (founded by Xavier Niel, a personal shareholder of Le Monde) or the National Council of Free Software regret the abandonment of the software layer to the leaders of the American cloud. They would have liked, like the start-up association France digitale, for public structures to place orders with French and European companies. On the political side, we find among the critics the former socialist minister and presidential candidate Arnaud Montebourg or the senator Catherine Morin-Desailly (Union centriste), who doubts the real legal security of hybrid offers. On these sensitive points, Google and Thales cite in their press release the National Agency for the Security of Information Systems, tasked by the government with certifying the "Trusted Cloud" label. Its president "enthusiastically welcomes this ambitious project. Updates to Google software will be "received continuously but received, evaluated and validated within a security airlock managed by Thales", it adds. Exclusive agreement To those who are worried about the risk of a French partner becoming dependent on the solutions of an American supplier, Thomas Kurian, CEO of Google Cloud, assures: "We are careful not to lock customers in. Our solutions are compatible with other clouds." In the longer term, the question is the place that these hybrid offers can take on the market. Other agreements of this type could be announced, even if Google and Thales specify that their agreement is exclusive for "Trusted Cloud" offers. Google says it is targeting public structures with Thales, but also national companies providing critical infrastructure in France, in finance, communications or energy, and more broadly, all companies. "We believe that in the long term, Google's activity in the cloud in France will mainly involve this type of alliance with local players like Thales," says Mr. Kurian. The question of the sovereign cloud could in any case be a subject of debate in the presidential election.

## ###ARTICLE\_START### ID:1944

We are data naive! Although more or less aware that data is the 21st century equivalent of arable land in the agricultural era or machines in the 19th century, we are still not sufficiently exploiting the potential opportunities in this area. Today, in the midst of the Covid-19 crisis, the cross-referencing and sharing of vaccination and test files is still problematic, even though the public health issues are glaring. We are therefore calling for a real aggiornamento of policies in this area. In public debates, the issues are unfortunately often confused: issues of confidentiality, use (the purpose of data analysis), secondary uses (as opposed to the primary intentionality of the data), control of uses (what data, to do what), control of users (by whom), sensitivity (what are the potential consequences of data interpretation). This confusion harms transparency, collection, organization, and valorization of data. Ultimately, it harms the trust required for economic development to be fueled by the creation and dissemination of knowledge. A patrimonial, centralized, and siloed approach still dominates. As the 2013 Trojette report [report by Mohammed Adnène Trojette, magistrate at the Court of Auditors, advocating free data from public institutions] already deplored, the fluidity of public data in France is not self-evident. Even between government departments: for example, the computer systems of the tax administration and social administrations have very few gateways between them. We must be able to free up the creation of value without compromising the confidentiality of data owed to citizens, a confidentiality whose principle has been reaffirmed by several European directives. The National Commission for Information Technology and Civil Liberties (CNIL) was born in a climate of fear of Big Brother, particularly following the Safari project [Automated system for administrative files and the directory of individuals], which aimed, in 1974, to interconnect a number of government files through unique identifiers. Today, in the era of big data and thanks to new technologies, we must be able to ward off these fears. The stakes are high, it is a question of dealing with the predatory behavior of a growing number of commercial companies, even terrorist organizations. Blockchain technology can now ensure control between stakeholders. In contrast to big data centralized on servers, secure distribution is also possible both for the source data and for the learning of algorithms. Finally, to ensure that personal data is limited as much as possible to personal use, we must use synthetic data (aggregated or individual), which has undergone a transformation ensuring strict confidentiality. Today, to access the Holy Grail of data, a real obstacle course is imposed even on the best-intentioned researchers. Among the examples of data that is insufficiently exploited because it is insufficiently exploitable, Health Insurance suffers from a lack of resources that results in very long accreditation times and problems with computing power. Paradoxically, the whole world envies us this source of data, but in practice it is not very available to collective intelligence. It will therefore be necessary to imagine more flexible protocols for accessing public data, manage confidentiality at the root, but also modernize the rules for matching data to make them more usable. A cultural asset In line with the Open Government Partnership [Partnership for an open government, bringing together 79 countries for the transparency of public action], this could be a great objective for the European Digital Service Act, Etalab [the establishment responsible for the French government's open access data platform], and the interministerial digital department [created in 2019]. Data is a cultural asset whose use value results from transformations by multiple contributors. It is a question of co-creation and a new data economy. It is at this price that data can constitute a source of value in the 21st century. This is the lesson of the pandemic, where too many decisions had to be made in uncertainty, sometimes with good predictive models but without real-time data feedback. Especially in times of crisis, increasing transparency and access to information can catalyze innovation to improve existing services or create new ones. Data and algorithms, crossed with all kinds of open access resources (in the media, universities, companies, etc.), will allow the emergence of Osint [OpenSource Intelligence], which moves any human challenge into the promising field of collective intelligence. Let us urgently embrace these developments for the benefit of all!

## ###ARTICLE\_START### ID:1945

To follow up on François Delorme's point of view presented on Saturday, September 25, "The last real hope." Establishing a global carbon tax is a good idea, but it must be applied to everything that is produced, made, manufactured, built; it must be applied to everyday objects, those in the home, office, and leisure, as well as to food that travels thousands of kilometers and ends up on our shelves. The IPCC says it clearly: we must reduce our consumption of raw materials and our production. It is in fact the consumerist economy from extraction to store shelves or warehouses that must be slowed down. On the other hand, the price per ton of carbon must be realistic. Carbon capture would cost $800 per ton, François Delorme tells us, which seems extremely expensive to him; Yet, this is a realistic starting price that would spur companies towards the true prices of goods and services by integrating the carbon footprint and other negative externalities. If a metal that is becoming scarce like copper is trading at around $2,500 per ton, perhaps we should consider making carbon rarer… Carbon in the form of taxes cannot be the only tool to significantly reduce the manufacturing of anything and everything in our supply-side economy. We still need to reduce the number of products offered at the same time as the expectations of expansion (growth) of markets driven at full speed under the banner of globalization. At the Applied Sustainability Workshop, we are working on ways to curb this oversized economy, in particular by designing and manufacturing only the essential everyday objects in a new economic framework: the sustainable redeployment of the local economy, everywhere. There are barely more than twenty objects or types of objects that are essential out of sixty, so it is possible to significantly reduce our consumption of raw materials overall by doing less and better. The essential, sustainability and local are the vectors of a change in volume and scale that will reduce our carbon emissions while creating work supporting a sober but friendly life on a planet that will take centuries to recover from our existence. Obviously, our initiative, which we hope to see reproduced elsewhere (our R&D is public and open source), cannot claim to be the only solution. Our governments must imperatively initiate the major decarbonization works that are required: the massive deployment of public transport; the energy upgrade of buildings; the production of renewable energies while promoting a reduction in energy consumption and less chemical agriculture capable of capturing a maximum of carbon. But there is no plan to reduce or slow down the economy despite the IPCC's injunctions in this regard. Citizens who are both consumers and actors in the current economy are the only ones capable of locally triggering this other, reduced and slower economy. And it is the carbon footprint that allows us to take this economic and social turn if we use it as a lever for change and an economic indicator in the same way as the price on the label. Industrial designer at the Atelier de la soutenabilité appliquée Carbon in the form of taxes cannot be the only tool to significantly reduce the manufacturing of anything and everything in our supply economy. We still need to reduce the number of products offered at the same time as the expectations of market expansion.

## ###ARTICLE\_START### ID:1946

The Astro Pi project offers primary and secondary school students the opportunity to develop a small computer program that could potentially be executed on board the International Space Station (ISS). This year, students will have the opportunity to develop programs on brand new Raspberry Pi models, much more powerful than those present on board the ISS since 2015. The Raspberry Pi, a small, affordable computer, is enjoying immense commercial success, not only with students, but also with industry, which uses it for everything. ASTRO PI PROJECT The primary mission of the Raspberry Pi is to provide young people with access to simple and affordable programming equipment. In 2015, the European Space Agency sent two of them to the International Space Station, in order to carry out various scientific experiments using the various sensors added to the small computer. Subsequently, access to the small computers is open to budding student programmers, so that they can create scientific experiments using computer programs that they have designed. For the 202021 school year, 15,756 students from 25 countries, including Canada, participated in the project. This year, participants are benefiting from new Astro Pi models, much more powerful than those used since 2015. And they will be sent aboard the ISS in December. TWO MISSIONS, THE SAME OBJECTIVE The registration period for both missions is underway, and teachers can register a group of students for either mission, depending on their age and level of computer skills. Although the two missions are very different in terms of complexity, their main objective is nonetheless to allow young people to learn the basics of programming in a concrete and motivating context. When I was young, I would have given anything to have one of my programs run on the space shuttle, the technological Holy Grail of the 80s! MISSION ZERO: FOR BEGINNERS Mission Zero is intended for students under 19, but it is particularly aimed at those in elementary school. It consists of writing a simple program to take a humidity reading on board the Space Station, in order to communicate it to the astronauts, with a personalized message that will be displayed for 30 seconds. If the program does not contain any errors, it will be run in space. Teachers or mentors have until March 18, 2022 to submit a program, but they must first register on the website https://astro-pi.org/fr/mission-zero/. MISSION SPACE LAB More complex than Mission Zero, Mission Space Lab asks students to create a real scientific experiment, using the different sensors and the camera of the new generation Raspberry Pi. A Coral USB module, designed by Google, will make it possible to program artificial intelligence applications, such as image classification or object detection. Teams have until October 29, 2021 to register and projects must be submitted by February 24, 2022. Subsequently, the selected experiments will be deployed on board the ISS in April and May, in order to provide teachers with a report on the experiments before the end of the school year. To register: https://astro-pi.org/mission-space-lab/. RASPBERRY PI: A SUCCESS STORY The original idea behind the Raspberry Pi is to offer young people the opportunity to learn the basics of programming on an affordable and modular computer. But be careful! The Raspberry Pi does not compete with conventional desktop computers, because its ARM architecture does not allow the execution of all Windows programs, although it is possible to install a watered-down version of this operating system. On the other hand, Windows 11 seems very promising. According to initial tests, the Raspberry Pi does quite well with Microsoft's new operating system. However, it is in Linux that it is possible to exploit the full potential of the small computer, and it is thanks to free software that the Raspberry Pi has made a place for itself in the industrial world, which also constitutes 44% of sales. The Raspberry Pi is present in several industrial machines, PLCs and network equipment around the world, due to its price, of course, but also because of its high reliability and low energy consumption. The success of the Raspberry Pi is based as much on the price as on the reliability and simplicity of the product. In terms of power, the Raspberry Pi 4, the new generation of the product, offers up to 8 GB of RAM, a 1.5 GHz quad-core processor, two HDMI ports that can support resolutions up to 4K. All this for just a hundred dollars! On the other hand, you will have to add a few dollars more to purchase a case, a power supply and a micro SD card, unless you take advantage of the turnkey kits sold for less than $200. If you have smaller projects, a basic version, the Raspberry Pi Zero, is available for only $7. It is the ideal companion for your home automation projects! redaction@lequotidien.com When I was young, I would have given anything to have one of my programs run on board the space shuttle!

## ###ARTICLE\_START### ID:1947

CYBERSECURITY Passwords, identifiers, interface access keys, certificates... Every day, thousands of pieces of extremely sensitive information for companies, written in the computer code of applications, end up in the "cyber" nature... During the SolarWinds attack, which hit tens of thousands of large administrations and companies in the United States, it was in particular by recovering an access key mistakenly present in a development code that hackers were able to move around in the software publisher's information system. Once this entry point was crossed, they were able to multiply the intrusions in cascade at many of the subcontractor's customers and discover many other "secrets" allowing them to legitimately authenticate themselves to other systems. Traumatized by this affair, American President Joe Biden published an executive order last May to improve national cybersecurity. It includes in particular the obligation to better secure the software supply chain. Among the injunctions made to companies, that of securing the development codes of the most critical applications. To measure this growing risk, it is important to know that behind the digital transformation of companies, armies of independent developers work every day in open source on the GitHub development platform and deliver kilometers of codes in different languages to create applications. Added to this is often the pressure of speed, leaving room for errors that create flaws or deliver to malicious eyes information that is supposed to remain secret. Protection solution In France, the company GitGuardian tackled this type of very specific vulnerability in 2017. For its two co-founders, Éric Fourrier and Jérémy Thomas, it all started with a "game": sifting through the contribution repositories on this GitHub platform that has become essential for all IT developers, whether they are independent or employees of large technology companies. The number of "secrets" unearthed convinced them of the need for a protection solution. In 2020, the technology they developed detected two million, a figure up 20%... "This puts the security of companies at risk, because the vast majority of organizations are unaware of the problem or are poorly equipped to deal with it," explains GitGuardian. Their tool has already attracted a few large companies in the United States such as Datadog, Talend, Maven Wave.... 90% of its customers are overseas Without revealing any figures, "GitGuardian is experiencing a phase of real acceleration abroad," underlines Guillaume Charpiat, account executive of the start-up, awarded at the International Cybersecurity Forum (FIC) in Lille. "Our small frustration is having few large French companies among our customers," he regrets.

## ###ARTICLE\_START### ID:1948

The 2021-2022 school year begins, like the previous one, in uncertainty. With its now usual procession of concerns: new variants, health measures, risk of confinement... It is therefore also time for the first assessments. Attention is focused on online teaching, so highly praised since the 1990s, and finally put into practice on a large scale. "From the start of the pandemic, educational institutions around the world had to switch quickly online, sometimes in a matter of days. Many, but not all, adapted as best they could," explains Sidney Taurel, president of the British Pearson group, the world's number one in educational publishing, which is in the midst of a shift towards online learning. Digital tools and platforms, at least when they were available, saved the furniture of education. Without them, two school years would have been entirely sacrificed to the detriment of an entire young generation. In 2020 alone, "the Covid-19 pandemic led to a series of school closures worldwide for an average of fifteen weeks", according to UNESCO, which fears, along with UNICEF, "a generational catastrophe". This is considerable. Vocational training has also accumulated "closed doors" days. "The crisis has greatly accelerated distance learning practices to ensure educational continuity, against a backdrop of massive recourse to teleworking. However, this development has been painful, often at a forced pace for training organizations, which were not prepared", noted Aurélia Bollé, general delegate of the Forum of Digital Training Actors (FFFOD). Called to the rescue, "e-learning", in its Anglo-Saxon name, has abruptly gone from being an option to a requirement. Students who were equipped have managed to pull through, but those who were not have dropped out. Review of strengths and weaknesses. Good equipment required First observation, the success stories were closely dependent on the digital experience and commitment of the teachers. "I was not caught off guard," says Marion, a CP teacher in Châteauroux (Indre). Because the media I use on a daily basis are mostly digitized and can be used from home. Good distance learning also requires a good Internet connection, a recent computer, a scanner, an unlimited mobile plan to call families... Which is not the case for all teachers." Online educational resources did not wait for the lockdowns to be used by many teachers, freeing themselves from traditional school textbooks in the process. The Canotech digital toolbox, from the public Canopé network, is proving, for example, to be a gold mine for educators, as is the Eduscol portal, from the Ministry of National Education. There is also the Coué method. “Every year, I communicate with parents at the beginning of the year to be transparent about my work. Setting up remote work for March 2020 was quite simple for me: I already had all the emails, a blog that worked well and a smartphone application, Classroom [by Google]. Nothing was impossible to do; the students were even quite happy to work during the lockdown,” says Julien Gourdon, a teacher at the Paul-Langevin school in Sartrouville (Yvelines), although his dual-level CE2-CM1 class of 24 students caused him an overload of work. “I didn’t use any specific tools for remote work, apart from the Calcul@tice site for mental arithmetic. I sent the work in PDF format; the students had their textbooks with them,” he adds. For her part, Guislaine David, co-general secretary of SNUipp-FSU, the leading French union of primary school teachers, notes that "school teams that had blogs before the pandemic used them during the lockdown to connect with students and families by posting exercises." TV, Gafam and academic support Second observation, the offer is abundant, but very heterogeneous, between public and private. The Ministry of Education recommends digital applications such as "Ma cl@sse virtuelle via" (on the Arena academic portals), "Ma classe à la maison" (free CNED platform), "Espaces numériques de travail" (ENT), or the school life management software Pronote, published by the Marseille company Index Education (Docaposte group, subsidiary of La Poste). But, despite digital sovereignty, Gafam have largely invited themselves into French schools, from kindergarten to high school: like Google and its Classroom application, with its tools Docs (documents), Sheets (spreadsheets), Slides (presentations) and more than ever Meet (video conferences) and Drive (backups). For a pre-teen student who already juggles with the video-sharing application TikTok, Classroom seems like child's play. And tutorials (in video on YouTube or Instagram) or MOOCs (online training for all) are possible options for Generation Z, the generation of smartphones and social networks. Watching TV instead of going to school has also worked: the public channel France 4 has allowed thousands of middle school students to take classes with the program "La Maison Lumni" (a counterpart to the edutainment site Lumni.fr, also published by France Télévisions). Praised for its role during the lockdowns, France 4 will not be closed this summer, as Emmanuel Macron has given up on removing it from TNT. Furthermore, for privileged families, paid or freemium (basic free) tutoring has attracted 15-24 year-olds: Superprof was a hit, with 1.6 million unique visitors in April alone in France, followed, according to Médiamétrie, by Nosdevoirs and Maxicours, tied, with 1.3 million students, Kartable, with 1.2 million, or Digischool, with 0.7 million. Support can also come from afar: "My father hired a maths teacher based in Senegal to help me; I was taking four additional hours of classes remotely every week,” says Ibrahima Diallo, 14, who, despite “a fairly complicated year, and especially the pressure” of the 3rd year, obtained his brevet at the Blaise-Pascal college in Plaisir (Yvelines), while the success rate fell by 2.4 points this year (to 88%) at the national level. For its part, adult education also had to go online to continue classes. Training and apprenticeship organizations, skills assessment centers or support centers for the valorization of acquired experience (VAE): “Most providers of skills development actions have been able to innovate,” assures Michel Baujard, founding president of CFS+, a consulting firm and training organization based in Paris. It was first through synchronous mode [real-time training], thanks to videoconferencing, which made it possible to replace “face-to-face” with “remote-face-to-face.” Asynchronous [delayed] mode has also developed with the lockdowns, but to a lesser extent." Based in Montpellier, Saliha Ouldyerou, a project leader in digital learning and mobile learning, chose to train remotely, with the University of Nanterre (Paris-X), to become "online learning and training project manager. But she didn't think she would end up 100% remote: "The training was done on Moodle [an Australian platform available as free software and used by Paris-X]. I use emails or WhatsApp for informal exchanges with the group. For "videos", it's Zoom, and for sharing documents between peers, Google Drive, as well as YouTube for videos. I had to buy a larger screen and a Bluetooth keyboard," she says. Others of her classmates have abandoned Facebook's messaging application, Messenger, in favor of Signal or Discord. Third lesson, this full-scale test of online teaching has shown the limits of the instruments proposed by the national education system. "There has been confirmation of shortcomings: support for teachers has come from associative networks, from the skills of relatives, much more it seems than from institutions [Ministry of National Education, academies] which set the rules, give orders, but do not have the means to pay attention to uses and facilitate them", believes Sophie Pène, researcher and professor at the University of Paris-Descartes, specialist in education. "We have seen Discord [an American instant messaging service originally designed for video games] preferred to other digital environments, just because "it works". More and more teachers have their own toolkit", she notes. Avoiding "Zoomification" During the very first lockdown, from March to May 2020, a survey by the statistical department of the Ministry of National Education (DEPP) showed that only 17% of primary school teachers used the CNED's "Ma classe à la maison" platform (26% in secondary schools). A year later, last spring, the platform of the French public distance learning organization was the target of a cyberattack from abroad. "The tools set up by the national education system, the CNED virtual classroom, for example, were rather faulty, because too many people were connected at the same time. But I managed to see my students regularly in "video" thanks to Zoom, even though I don't think I was allowed to," says Julien Gourdon, in Sartrouville. The latter suggests improving the "video" tools under the banner of the national education system so as not to saturate immediately in the event of a fourth lockdown. According to him, it would also be necessary to "provide tablets to help those who, at home, have a computer or tablet for four or five people, including parents who are teleworking". To provide confined lessons, Marion, the CP teacher in Châteauroux, had to buy her equipment with her own money: "The meager bonus of 150 euros per year will not allow that." The SNUipp-FSU union, for its part, points out the fact that "in primary school, there is no training for teachers on remote teaching. In addition, "what also posed a problem for students is the equipment of families; few students in primary school have a personal computer. Some families do not have one at all". And when there was one, the connections could not keep up: "There were difficulties connecting to Zoom; the teachers finally had to send us the lessons via Pronote", specifies Ibrahima, in Plaisir. As a result, lockdowns have increased inequalities. "If there is to be a fourth wave, schools must absolutely remain open," warns teacher Marion. In vocational training, there have also been pitfalls: "The risk is to give in to the easy option by transposing face-to-face training remotely with long hours in videoconference mode. It is this phenomenon of the "zoomification" of training that must be avoided," warns Aurélia Bollé (FFFOD). In education as a whole, there will be a before and after Covid. Researcher Sophie Pène concludes: "What public digital transformation policies had not achieved, the virus has achieved: distance learning that was unimaginable a few months ago, based around videoconferencing." Gradually, learning at your fingertips is becoming a reality.

## ###ARTICLE\_START### ID:1949

UNITED KINGDOM This is not going to ease relations between London and Moscow. Together with Cardiff University, the Foreign Office published a report on Monday on a vast Russian propaganda operation consisting of spreading disinformation using Western media to serve the Kremlin's interests. According to researchers from the Crime and Security Research Institute, 32 leading media outlets in 16 countries were targeted via their reader comments sections. The websites concerned included the Daily Mail, the Daily Express and the Times in the UK, Fox News and the Washington Post in the US, Die Welten's Spiegelet in Germany, La Stampa in Italy and Le Figaro in France. The study focused on 242 articles dealing with politically controversial events. The mechanism is always the same: "pro-Russian" or anti-Western comments are published in response to relevant articles on Russia. They are then forwarded to Russian-language media outlets which use them as the basis for articles. These comments are thus mixed in with the news and, by their sheer volume, presented as representative. They are also found on “fringe” media and websites that have been linked by Western security services to Russian intelligence agencies. These methods are not new, especially since the confrontation between Russia and Ukraine, but the Cardiff researchers believe that their use has intensified since 2018. “This influence campaign is particularly significant because of its international scale and its sophisticated targeting of a wide range of media, social media websites, in a coordinated manner,” explains Professor Martin Innes, who directs the institute’s OpenSource Communications Analytics Research (Oscar) programme. “By using the comments sections of major Western media brands, propaganda is presented as revealing the dominant opinion.” The “troll” puzzle For Western media, detecting or countering this type of activity is a puzzle, with technology allowing “trolls” to constantly switch between different identities. Forensic tools have highlighted “unusual behaviors” associated with some accounts posting pro-Kremlin content. “These multiple signals of inauthenticity and coordination, while individually relatively ‘weak,’ when aggregated suggest that comment activity may be orchestrated,” the report says. It cites an account that has changed its location 69 times and its name 549 times since its creation in June last year. The report also cites evidence of coordination between Russian state media and outlets linked to the Patriot Media Group, which rely on these reader comments. Their stories use headlines such as “Daily Mail readers say…” or “Der Spiegel readers think…” to suggest that there is broad support for Vladimir Putin’s government in the West. These Russian-language stories are also propagated in Central and Eastern Europe. “As mainstream media outlets have become more alert to the risks of foreign state influence operations, disinformation actors are seeking new vulnerabilities and adopting a ‘full spectrum’ media strategy, which mixes information from social media and mainstream media,” said Martin Innes. “This report highlights the threat to our democracy from Russian state-sponsored disinformation on the internet,” said British Foreign Secretary Dominic Raab, assuring that the UK was working “closely with our international allies to resist the lies of the Kremlin trolls.” He will still have a hard time attributing to the Russians the attacks he and the Foreign Office have been subjected to for their lacklustre handling of the Afghan crisis.

## ###ARTICLE\_START### ID:1950

vareilles (Yonne) special envoy - In Vareilles (Yonne), during the week, there are few events. If the calm were not disturbed by a cyclist who came to buy a baguette from the vending machine, this village of 245 inhabitants, integrated since 2016 into the commune of Vallées-de-la-Vanne, would seem deserted. "The majority of the inhabitants work in Sens, about fifteen kilometers away," explains Bernard Romieux, former mayor of Vareilles and current first deputy of the new commune. Here, as in most rural areas, elected officials have one obsession: not to see "their" population decrease. "To remain attractive, for example, we have opened a public service center, set up a solidarity carpooling service and supported the creation of an association designed to combat the isolation of the elderly," notes this former Parisian who has lived in Vareilles since 2008. But, to access the association's program of activities or book a carpool trip, you still need to be able to connect to the town's website. Not easy, according to Bernard Romieux: "Here, in some hamlets, the speed barely reaches 500 KB. For the big operators, we are not a priority." In these conditions, it is impossible to watch a program in replay or participate in a videoconference. "For us, this is a priority project if we want to attract families. When people visit a house for sale, they often have the reflex to take out their phone. The poor quality of the network has a deterrent effect," notes the councillor who has seen a fair number of teleworkers arrive over the course of the year. Thanks to radio waves The elected representatives of the Vallées-de-la-Vanne found the solution in Joigny, 30 kilometres to the south, with the Société coopérative d'aménagement numérique icaunaise (Scani). Located in the former printing works of the 28th geographical group of Joigny which supplied the French army with staff maps, this cooperative society of collective interest was officially created in 2016. A meeting on the Paris-Joigny TER is, in part, at the origin of the birth of this alternative Internet service provider (ISP). "Since my data hosting company was in Paris, I commuted daily. One day, I was approached by an IT specialist who was intrigued by the stickers of the Fédération des ISPs associaatifs stuck on my computer. He convinced me to join PC Light, a local association for learning about computers. That's where the idea of offering proper Internet access to residents of the local white zones was born," says Bruno Spiquel, Scani's main facilitator, or even its mastermind. Created almost from scratch, the cooperative's network works using radio waves, which are transmitted from antenna to antenna. "We take Internet where it works and bring it to places where it doesn't exist," sums up the forty-year-old. Pylons, grain silos, water towers or church steeples... any tall building is good for the small group. "Sometimes the installation is very quick, sometimes it takes several hours," explains Alfred Urban, Scani's designated antenna technician. For several months, in addition to the installations, this very committed volunteer has been the president of the cooperative. Long hair, ponytails and Marilyn Manson sweatshirts... The look of this small team of enthusiasts is striking. "Especially when we have an appointment with elected officials," jokes Allan Taquet. A strong activist culture The only full-time employee at Scani, this former fiber installer is responsible for setting up connections, at a rate of four or five per week. He also helps maintain the network. When, in their offices, the thermometer goes crazy because of the heat coming from the servers, the small team of permanent staff finds refuge two floors down, in the premises of the "fab lab" [collaborative workshop] in Joigny, where computers being reconfigured, routers and switches sit alongside beer bottles and pizza boxes. "Here, during the lockdown, we refurbished old laptops for middle school students," says Bruno Spiquel. The artisanal side of this ISP can be disconcerting, but that doesn't stop it from having 825 members, including 557 individuals, communities, businesses and liberal professions. "We have forgotten that, before being swallowed up by for-profit operators, the Internet was first and foremost militant and associative," recalls Bruno Spiquel. He cut his teeth at French Data Network (FDN), an associative ISP created in 1992, making it the oldest in France. Collection of personal data limited to what is strictly necessary, priority given to the use of free software, prohibition of using marketing and advertising communication or participation of members in the smooth running of the network... the militant and collaborative culture has largely inspired the founding principles of Scani. Here, users are not customers but members who have invested at least 10 euros in the cooperative. "They are co-owners of the network and encouraged to be active participants, according to their possibilities," insists Bruno Spiquel. Volunteering makes it possible to offer a reasonable subscription rate of 30 euros per month without skimping on network maintenance. "There is a core of about ten very active members and about thirty members who are really involved," specifies Alfred Urban. Stéphane Gendrin is one of them. Responsible for the strategy of an automotive equipment manufacturer, teleworking four days out of five, he owns an estate in the Auvergne hamlet of Poilly-sur-Tholon, where until 2014, with a speed of 500 KB, surfing the Web was torture. "We first installed an antenna on the bell tower of the village church. But to connect the inhabitants of my hamlet, we needed another relay. At the top of the hill, opposite my house, there is an agricultural silo. It was perfect. But the owner refused, until he himself needed a decent flow rate to process his data during the harvests," he recalls. Another relay antenna is installed in a tree on his property, in line with the silo, which requires him to regularly remove the leaves, as the radio waves have the weakness of being disrupted by organic matter. "There is also a relay on the stable from which the network goes to the hamlet," adds this former administrator of Scani, who regrets that the cooperative does not do more advertising to make its assets known. However, it has development projects: it intends to deploy its own fiber network in Joigny, with the support of the municipality, which has already entrusted it with the connection of its seven schools and public buildings as well as the storage of its data. A very high-speed network that will complement its radio network in the remaining white zones in the department.

## ###ARTICLE\_START### ID:1951

TF1 9:05 p.m. Game of Talents. Entertainment. Episode 1. Presented by Jarry. 11:40 p.m. Friday, anything goes with Arthur. Entertainment. Pyjama special. FRANCE 9:05 p.m. Candice Renoir. Series. A little negligence gives birth to a great evil. There's no point in running. 11:00 p.m. Candice Renoir. Series. 2 episodes. FRANCE 3 9:05 p.m. 90s TV. Entertainment. Part 2: 1994-1999. 11:25 p.m. Daho by Daho. Documentary. CANAL+ 9:05 p.m. Fast & Furious: Hobbs & Shaw. Action. With Dwayne Johnson, Jason Statham. 11:15 p.m. OpenSource. Film. ARTE 8:55 p.m. The Delivery Man. Drama. With Bjarne Mädel, Nick Julius Schuck. 10:25 p.m. The Rolling Stones - Crossfire Hurricane. Documentary. M6 9:05 p.m. NCIS. Series. The first day. Ladies of honor. 10:45 p.m. NCIS. Series. It's just goodbye. Old school. And then.... Trio de choc. FRANCE 4 9:05 p.m. The night of the live. Show. 10:30 p.m. The night of the live. Show. Continued. FRANCE 5 8:50 p.m. The roads of the impossible. Documentary. Ukraine, in the mist of the Carpathians. Cuba, viva la vida. 10:40 p.m. C dans l'air. Magazine. PARIS PREMIÈRE 8:55 p.m. The killer. Policeman. With Jean Gabin, Fabio Testi. 10:30 p.m. The Humanity Bureau: threat to humanity. TV movie. TMC 9:15 p.m. Life is a long quiet river. Comedy. With Hélène Vincent, André Wilms. 10:55 p.m. The schoolmaster. Film. W9 9:05 p.m. Action investigation. Magazine. Delinquency in Normandy: the gendarmes of Le Havre in action. 11:00 p.m. Action investigation. Magazine. NRJ12 9:05 p.m. Profiling. Series. New start - Parts 1 & 2. With Raphaël Ferret, Juliette Roudet. 11:15 p.m. At the heart of.... C8 9:05 p.m. Alex Lutz. Show. 11:00 p.m. Thursday report. Magazine. TFX 9:05 p.m. Large families, life in the sun. Reality TV. Episode 6. 10:00 p.m. Large families, life in the sun. CSTAR 9:10 p.m. The den, the zoorefuge of hope. Documentary. Episode 2. 10:25 p.m. The Den, the Zoo-Refuge of Hope. Documentary. TF1 SERIES FILMS 9:00 p.m. The Adventures of Tintin: The Secret of the Unicorn. Animated film. 11:00 p.m. The Last Legion. 6TER 9:05 p.m. The Simpsons. Cartoons. The Girl on the Bus. The Great Simpsina. Fat Tony's Real Wife. Homer Scissorhands. 10:40 p.m. The Simpsons. Cartoons. CHÉRIE 25 9:05 p.m. The Big Blue. Adventures. With Jean-Marc Barr, Jean Reno. 11:30 p.m. Uncle Charles. Film. RMC STORY 9:05 p.m. The Women of Charles Manson. Documentary. 10:40 p.m. Face to the Judge. LCP 8:30 p.m. Behind Our Masks. Documentary. 10:00 p.m. To Each His Own Story. Documentary.

## ###ARTICLE\_START### ID:1952

In computing, every beginner starts by writing a program that displays "Hello, World!" But the American company OpenAI, a specialist in artificial intelligence, put the tradition in jeopardy on August 10. That day, in a video, its technical and scientific directors announced the release of a software, called Codex, which allows you to do without learning a computer language, since it responds to instructions given in natural language. All you have to do is say "Write "Hello, World"" for the program to obey and propose the few lines of code that will give the traditional result. Even better, it works to control the display of an image, a clickable button, the creation of a mini-web page server... A version linked to the famous Microsoft Word software also allows you to give voice commands to remove spaces, bold lines... And all in a dozen languages, including the most widespread, Python, Ruby, Javascript, Php... In thirty minutes of demonstration, has OpenAI just put millions of programmers out of work? Not yet. Two days later, the company launched a challenge to volunteers: convert five problems into lines of code as quickly as possible. Many humans beat the new software, even if the latter did faster than the average of the participants. "These were really very simple problems, which do not allow you to measure the interest of Codex", notes Vincent Terrasi, product director at Oncrawl, which optimizes the referencing of its clients in search engines. Nevertheless, in a few seconds, Codex allowed him to write a program that retrieves all the links on a web page and stores them in a file. "A developer often reinvents the wheel by writing fairly repetitive and classic pieces of code that could be automated, freeing up time for value-added tasks. It's a kind of augmented intelligence," says the specialist, who also appreciates the automatic writing function of a program's comments to explain how it works. From machine to human "It's not really intelligence. The machine spits out code logically through inductive algorithmic processing. This automates certain tasks for the programmer, but IT is a craft, and in any case, you'll have to get your hands dirty. I doubt the point of such a tool," says François Pellegrini, professor of computer science at the University of Bordeaux. "When I see that even the worst students are recruited, I am worried to see tools appear that make writing codes even easier," sighs Roberto Di Cosmo, professor of computer science at the University of Paris. Codex is the first to go this far in helping with programming. There are already software programs that automatically complete function names specific to a language, but not yet several entire lines. Programming as we speak is the final stage of a historical evolution of computer languages aimed at moving away from the machine towards the human: there were punch cards, then so-called machine languages, then more advanced languages... To achieve this, OpenAI, a company founded in 2015, co-financed in particular by Elon Musk and Microsoft, relied on another of its innovations, "language models", GPT-2 and especially GPT-3 in 2020. These building blocks allow machines to write English, French or German correctly, to the point of answering questions, completing texts, generating long sentences consistent with the first ones, feeding conversation robots, analyzing the tone of customer comments... These enormous programs, which are based on the technique of artificial neurons, with more than 175 billion parameters for GPT-3, are built by ingesting billions of web pages. In the mass of data swallowed were also tons of computer codes, which allow the system to generate syntactically correct computer lines. But asking GPT-3 to directly propose lines of code did not work. A special training plan, intended for this task, gave birth to Codex, for which an evaluation scale was also created: 164 hand-written programs that the machine must complete. While GPT-3 has 0% success, Codex achieves 29%, or even 38% in an even more finely trained version. In June, OpenAI proposed a first application of Codex, Copilot, in partnership with Microsoft, owner of the Github platform for hosting and sharing computer codes, which was used to develop the program. The latter automatically completes the beginnings of codes. Then, in August, it improved Codex and made it available free of charge, but upon registration, for testing. Environmental cost As soon as they were revealed, Copilot and Codex sparked controversy. The community of free software, programs whose code is available, modifiable and shareable, has questioned the legality of the process. Wasn't Copilot going to copy and paste bits of protected code? Doesn't a commercial product like Copilot violate certain licenses of programs deposited on Github, which prohibit commercial exploitation? The FreeSoftwareFoundation has given the community until August 23 to write reasoned analyses on these questions. OpenAI believes that its invention makes legitimate use of the lines of code recovered and that it has not found any generated lines strictly identical to those present in Github. Codex also raises questions that its ancestor GPT-3 had already raised, in particular on the environmental cost linked to electricity consumption during the development of the program, and, more fundamentally, on its "intelligence", closer to the parrot copying things already seen than to that of a professional capable of creating novelty, efficiency... Another question, defused in advance by OpenAI in an article put in preprint, that of the risks of generating buggy programs, or even malicious code (viruses, phishing, ransomware...). It considers that human supervision is always necessary to verify that the code does what was requested. It also believes that its tool "does not lower the barriers to entry to the development of malware. As a precaution, the company takes a look at all the lines produced by its program and recommends running these codes in "sandboxes" isolated from a network or from the heart of computers.

## ###ARTICLE\_START### ID:1953

TF1 9:05 p.m. Good Singers. Entertainment. Episode 2. Presented by Jarry. 11:25 p.m. Good Singers. Entertainment. Episode 1. Presented by Jarry. FRANCE 9:05 p.m. Fort Boyard. Game. Presented by Olivier Minne. 11:25 p.m. Tokyo 2020 Olympic Games. Sport. Live. FRANCE 3 9:05 p.m. Mongeville. TV movie. Perfume of love. With Francis Perrin, Gaëlle Bona. 10:35 p.m. Mongeville. TV movie. Return to the palace. CANAL+ 9:00 p.m. Opensource. TV movie. With Jesse Metcalfe, Bruce Willis. 10:35 p.m. Nomis. Thriller. With Henry Cavill, Ben Kingsley. ARTE 8:50 p.m. The interstellar odyssey. Documentary. 1 - Planet hunters. 2 - On the way to the stars. 10:40 p.m. Don Giovanni. Opera. Salzburg Festival 2021. M6 9:05 p.m. Seal Team. Series. The Doza Cartel. Behind the Wall. 10:45 p.m. Seal Team. Series. In the Wolf's Mouth. One Last Prayer. The Prisoner's Dilemma. Other Lives. FRANCE 4 9:05 p.m. Les Francofolies 2019. Concert. Gaëtan Roussel. 10:00 p.m. Les Francofolies 2019. Concert. Radio Elvis. 10:45 p.m. Meryl. Concert. FRANCE 5 8:50 p.m. Beautiful Escapes. Magazine. Weekend in the Camargue. 10:20 p.m. Beautiful Escapes. Magazine. The Great Open Spaces of Mongolia. PARIS PREMIÈRE 8:55 p.m. The Bodin's Life-Size. Show. With Vincent Dubois, Jean-Christian Fraiscinet. 11:20 p.m. Aretha Franklin: the secret history of her hits. TMC 9:00 p.m. Columbo. TV movie. The gifted. With Peter Falk. 10:25 p.m. Bad Buzz. Movie. W9 9:05 p.m. The little story of France. Series. With Alban Ivanov, Ophélia Kolb. 11:00 p.m. The little story of France. Series. NRJ12 9:05 p.m. The Big Bang Theory. Series. The intimate zones. The situation comic-con. A roof for Rajesh. 10:30 p.m. The Big Bang Theory. Series. C8 9:05 p.m. M for House. Documentary. Destination Rodez. 11:00 p.m. M for House. Documentary. TFX 9:05 p.m. Crime Chronicles. Magazine. The Sambre Rapist Case: The Suspect with Two Faces / Fatal Love Triangle. 10:50 p.m. Crime Chronicles. Magazine. CSTAR 9:00 p.m. Paranormal Investigations. Magazine. 10:50 p.m. Paranormal Investigations. Magazine. TF1 SERIES FILMS 9:00 p.m. Joséphine, Guardian Angel. Series. 1998-2018 Back to the Future (Part 1). Back to the Future (Part 2). 10:50 p.m. Joséphine, Guardian Angel. Series. 6TER 9:05 p.m. The French's Favorite Vacation. Magazine. Dream Family Cruise. 11:00 p.m. The French's Favorite Vacation. Magazine. CHÉRIE 25 9:05 p.m. Call the Midwife: The Heroines of the Shadows. Series. Land of Exile, Land of Welcome. Farewell Saint-Nonnatus. 11:15 p.m. Heritage. Magazine. RMC STORY 9:05 p.m. The Worst Accidents: Roads. Documentary. 2 episodes. 10:45 p.m. The worst accidents: roads. LCP 9:00 p.m. In the name of heritage. Documentary. 10:00 p.m. The snows of Kilimanjaro.

## ###ARTICLE\_START### ID:1954

Adrien Parrot is a medical engineer and president of the InterHop association, which brings together computer engineers, doctors and lawyers. It campaigns for the protection of health data, as well as for the development of "digital commons", i.e. alternative, free and secure tools in e-health. Doctolib subcontracts the storage of its data to AWS, Amazon's cloud division. How is this problematic? It is problematic in two ways. First, because this data is centralized in a single location. At InterHop, we would like to see the development of decentralized hosting. Of course, this would not eliminate the risk [of a cyberattack], because zero risk does not exist, but at least it would dilute it. The simplest thing would be to host data at the level of the department, the region, the hospitals. Or even the practice. The second problem, which for us is a line that must not be crossed, is that linked to the extraterritoriality of law, American in this case. Amazon is, as you know, a company under American jurisdiction, and through the Cloud Act in particular, intelligence services can access the personal data of their companies for surveillance purposes. However, this data is hosted on AWS's German servers, therefore governed by the general data protection regulation, which governs their transfer outside the EU? Unfortunately, in our opinion, the law that takes precedence is that of the United States, because other texts apply. We talk a lot about the Cloud Act but we must also mention Fisa and Executive Order 12333, which impose secrecy on companies. They must not reveal access requests and concern a very broad category of data. If the FBI comes to Amazon or Microsoft and asks for access to the data of a particular person, the company is obliged to do so while guaranteeing the secrecy of its "boss", which is none other than the American State. On this subject, you asked the interim relief judge of the Council of State to suspend the partnership concluded between the Ministry of Health and Doctolib for the organization of vaccination. The company was cleared in March. What did you think of this judgment? With Covid threatening, and therefore coming into play a lot, it was a question of public health before being one of computer security. But we refute the fact that the appointment data was not considered as health data by the interim relief judge. And this while the CNIL and the National Council of the Order of Physicians defended this idea. Furthermore, we had several times requested a technical analysis independent of ours and that of Doctolib which assured that everything was fine. Just to put the ball in the center. But we didn't get it. KelDoc stores its data at OVH, a French hosting provider. Maiia on the cloud of its parent company, Cegedim (and makes it a sales pitch). Are these options more secure? I hate to answer, I'm not a salesperson at Maiia. But it's true that by being pragmatic and thinking in terms of risk, we eliminate extraterritorial risk. Basically, would better competition guarantee more secure protection of health data? In fact, the more players there are, the more decentralized it is, the better it is for the protection of health data. This helps to dilute the risks, but that's not what seems to me to be the main thing. In my opinion, these essential health services should be part of the common good, open source, and thus be much more resilient. Interview

## ###ARTICLE\_START### ID:1955

Before us, two rows of wire-mesh cabinets ("bays") filled with computer servers, separated by a central corridor topped with a ceiling and closed by glass doors. It is cool inside, warm outside; a classic of modern data centers. But the "cube" into which, duly accompanied, we set foot on this morning in late June is of a very particular kind. Bathed in blue light when it is not lit up as a visitor approaches, doors decorated with images of an owl with wings spread and talons darting towards a globe filled with binary numbers, it is nestled in the basement of the Hôtel des Invalides in Paris, within one of the most discreet entities of the Republic. The data stored here is highly sensitive, stamped with the seal of national defense secrecy. And for good reason: we are in the holy of holies of administrative wiretapping - in the jargon, the "IS", for "security interceptions" - carried out on behalf of the French intelligence services. A fortnight ago, Libération was able to cross the threshold of the historic installations of the Interministerial Control Group, the GIC: the organization attached to Matignon that centralizes non-judicial wiretapping implemented on the territory, but also connection data or "metadata" (who communicates with whom, when, where) requisitioned from operators, real-time geolocations. All for the vast field of "defense and [of] the promotion of the fundamental interests of the Nation", from anti-terrorism to economic intelligence, including the fight against organized crime, counter-interference or the "prevention of attacks on the republican form of institutions" (see page 6). THE WORK OF A COPYIST MONK Foreigners' access to these places, which are obviously under heavy guard, is as rare as it is extremely regulated. The first time television cameras entered them was in 1991, when the Rocard government tabled the very first text governing telephone tapping in Parliament; that day, reporters filmed deserted spaces. The last media outlet to have been authorized to visit: l'Obs, in April 2015, a few days before the adoption by the deputies, at first reading, of the law on intelligence. On the surface, not much seems to have changed in six years. Along the corridors, anonymous closed doors line up, topped with a simple number, which hide from visitors' eyes the offices of the GIC personnel, subject to defense secrecy, and especially the "exploitation sections". This is the name given to the teams sent by the secret services to come and make their honey from the interceptions transmitted by telecom operators and Internet service providers. That is, for each person targeted by an "IS" - we speak of an "objective" -, telephone conversations, text messages, but also network connections: even if the majority of Internet traffic is now encrypted (or "encrypted"), these digital flows are nonetheless rich in revealing metadata. "It is not the intelligence that goes to the service, it is the service that comes to the GIC", recalls its director, the general engineer of armaments Pascal Chauve, 46 years old. Every day, there are an average of 300 "operators", many of them from the ranks of the General Directorate of Internal Security (DGSI), who frequent one of the sites of the "big ears" of Matignon: in addition to two Parisian sites, including the headquarters of the Invalides, there are around forty antennas scattered across the territory. They come to listen to the intercepted conversations, translate them if necessary, transcribe them - reconstructing lives is in this respect the work of a copyist monk. Before sending the transcription to the intelligence service concerned, a control office checks that it complies with the law, and in particular that the person being listened to is indeed the person referred to in the authorization. It is true that in the 80s, the anti-terrorist cell of the Elysée had disguised the espionage of Edwy Plenel, then a journalist at Le Monde, by using the name of his partner to request the wiretaps "ORANGINA" AND "GET 27" In a large open space where the management of protected networks is taken care of, we are given a demonstration, via a version operating on fictitious data, of the application that extracts the substantial marrow of the metadata collected during the wiretaps. On the home screen are displayed the pseudonyms of the "targets" of the same "operator": "Orangina", "Get27", etc. A click on a pseudonym, and a dashboard of the target's digital activity appears: senders and recipients of the last calls, SMS and MMS received and sent, but also most frequently contacted correspondents, most consulted websites, most used communication protocols. By clicking on a domain name, for example, you can find its other "targets" who have connected to it. Another view allows you to visualize the geographical movements of a person being listened to. A future version, currently under development, will also display social graphs - the "operator" will see at a glance that one or another of the targets within their scope has been contacted by the same number. "We have resolutely decided to enhance metadata," emphasizes the director of the GIC. Who specifies: "We are the Continued on page 4 Continued from page 3 project managers of our applications." And for good reason: technological sovereignty in matters of espionage is a highly sensitive issue. In 2015, the signing of a contract between the DGSI and the American company Palantir, a supplier of "big data" analysis solutions for American intelligence, had caused some gnashing of teeth, particularly in Parliament. The tools purchased from "service providers" are therefore "internalized", and the teams "rely heavily on open source software bricks". 330 TO 350 REQUESTS EVERY DAY But since the 2015 law, it is not only the tools made available to the intelligence services that have evolved. Because in reality, the GIC has mutated, and its scope has exploded. With the (very) substantial extension of the techniques legally assigned to French spies, the requests passing through it, submitted for advice to the "wiretapping policeman", the National Commission for the Control of Intelligence Techniques (CNCTR), and for authorization to Matignon, have climbed. Those concerning connection data still constitute the majority of the 330 to 350 requests that reach the GIC each day (see page 6), now in dematerialized form via secure software. In addition to the storage of wiretaps and metadata transmitted by operators, there has been the harvest of so-called "proximity" spy tools: beacons, microphones, cameras - centralization is complete for sound, in progress for image. With two major exceptions: the two main intelligence services, the DGSI and the DGSE, each centralize their "proximity" harvest for their own account, as well as the data that they capture via "legal hacking" IT tools (spyware), and are exempt from sending them to the GIC. The cherry on the cake is that it is in the network of the organization located on Boulevard de la Tour-Maubourg that the algorithms responsible for detecting "connections likely to reveal a terrorist threat" are running at full speed, the famous "black boxes" that caused so much ink to flow six years ago. It is therefore to him that the four French telecom network operators (Orange, SFR, Bouygues and Free) have been transmitting since 2017 the metadata flows of telephone communications made on French territory, and tomorrow Internet connection data, so that they can be sifted through within 24 hours (read opposite). It is he who signals the alerts generated by the algorithms to the requesting services (currently DGSI and DGSE) and then, after a new authorization circuit, communicates the metadata concerned to them. In other words, the GIC is no longer just the sanctuary of administrative wiretapping, but more generally the first safe of raw data concerning French residents and collected via the tools included in the 2015 law (certain practices, such as tailing, do not fall under the intelligence law, and the surveillance of "international electronic communications", carried out in particular by the DGSE, benefits from a much more flexible regime). It is both the heart of the reactor and the buffer zone of massive national algorithmic surveillance of metadata, a hunt for "weak signals" always strongly denounced by freedom defense organizations. It is also the heart of the control exercised downstream, "on documents", by the CNCTR. This was the original promise, hammered home by the promoters of the 2015 text: to expand the secret services' toolbox - in particular by authorizing in the law practices that had until then been prudishly described as "illegal" by the authorities - in exchange for much stricter supervision of their activities. Six years later, while there are still persistent gray areas, such as the "sovereignty files" created by the services or the exchange of intelligence with their foreign counterparts (see page 5), progress in this area is undeniable. Thus, the wiretapping policeman can now access remotely, from his premises in the 7th arrondissement, the IT tools developed and implemented by the GIC. And therefore "everything that the services collect and produce for a fairly large number of techniques", summarized the president of the CNCTR, Francis Delon, in May before the Defense Committee of the National Assembly. The 2015 law, a "big bang" The latest report from the Parliamentary Intelligence Delegation does not mince its words, mentioning an "exponential increase in the volume of data" that the GIC is required to store. With the existing building reaching its limits, a new building was purchased at the end of 2018 in the suburbs of Paris - in Montrouge (Hauts-de-Seine) according to the French Intelligence Research Center, which Pascal Chauve, as is customary, neither confirms nor denies. It is due to be delivered in 2022 to house a new data center and relieve the Invalides site, which according to the director of the GIC displays a "worrying density" - all the more problematic during the health crisis, when it was necessary to limit the occupancy of the premises. Over the last six years, the service has almost doubled its workforce, going from 132 to around 250 agents. The share of contract workers has climbed from 35 to 53%, a consequence of the evolution of profiles, with the organization recruiting more and more engineers. Boulevard de la Tour-Maubourg, the 2015 law will therefore have been a "big bang", underlines Pascal Chauve, who arrived in his post in January 2016: "We had to transform the GIC in all areas." Including in its administrative existence. The director sums up the affair in a colorful formula: the GIC has gone "from the stage of a small semi-clandestine box to the status of an authentic service of the Prime Minister, a trusted third party" within the ultra-regal intelligence ecosystem. To understand, we must go back six decades. At the time, the Hôtel de Matignon was occupied by the Gaullist Michel Debré. In 1960, on the advice of his eminence grise in espionage, Constantin Melnik, Debré created - by a secret decision - an organization "responsible for ensuring all telephone and telegraph wire tapping and recordings". The structure was placed under the aegis of the Sdece, the External Documentation and Counter-Espionage Service (which became the DGSE in 1982), at the time attached to the Prime Minister. But in 1966, after the kidnapping and assassination of Mehdi Ben Barka, one of the main opponents of the King of Morocco Hassan II, the Sdece came under the Ministry of the Armed Forces. Result: the GIC certainly remained under the authority of Matignon, but administratively came under the external intelligence service, from which most of its personnel came. And for more than half a century, it will be fully funded by the famous "special funds" devoted to the secret activities of the State. Bakelite telephones If we find traces, in hollow, of its existence in the 1991 law on wiretapping - "The Prime Minister organizes the centralization of the execution of authorized interceptions" - it was not until 2002 that it was made official by decree. And 2016 for the cord that still connects the GIC to the DGSE to be cut. Since then, its agents have been, more logically, under the General Secretariat for Defense and National Security (SGDSN), located a few meters away, and its budget has joined the "normal" credits: 29 million euros in the 2021 finance law. With the exception, however, of a remainder of special funds (the extent of which, unsurprisingly, we will not know) intended to pay the telecom operators who process requisitions, and to discreetly purchase certain sensitive equipment. From ancient times, there are still a few relics, displayed in glass cases along the corridors. Here are Bakelite telephones, there an ancient listening device called a "zonzons box", further on a tape recorder cabinet topped with a flashing light - a siren was triggered when a cassette had to be turned over. Light years away from the current daily life of the GIC, which has become, explains its director, a sort of "engineering company". The current challenge: attracting highly qualified profiles that others are also hunting, in the public and private sectors. Like other sectors of the State, and the "intelligence community" (see box on page 3), the wiretapping sanctuary also hopes to inspire vocations. By highlighting the high technological content of its missions, and its central role in the supervision and control of French-style espionage. Its "rise in power", according to the formula of the parliamentary delegation for intelligence, is in any case far from being complete. If all the arbitrations have not yet been made, its budget and staff should increase again next year. ?

## ###ARTICLE\_START### ID:1956

For those who met or knew him, he had a sparkling gaze, a palpable generosity, and an unwavering curiosity. For those who have immersed themselves in the analysis of the social and cultural changes caused by the advent of the Internet over the last fifteen or twenty years, he embodied a fertile reflection, which could be summed up in the titles of two of his works: Cause commune and Sharing. A tireless activist for the sharing of culture, a thinker of digital "common goods," and co-founder of La Quadrature du Net, Philippe Aigrain, 71, died on Sunday. This doctor in computer science, who notably studied at Berkeley, "imported to France the idea of the 'commons'," resources that are neither the responsibility of the State nor exclusive individual property, emphasizes researcher Valérie Peugeot, who met Philippe Aigrain for the first time in 2003. In the years that followed, he would become one of the main players in the lively debates on intellectual property in the digital age. It was Philippe Aigrain who, in 2008, developed the idea of a "creative contribution", or mutual funding, by Internet users, of cultural creation, which would make it possible to legalize the sharing of works online. It would never see the light of day, but this reflection would have a lasting impact on a generation of Internet freedom activists. Who were also nourished by his work on digital commons, from free software to Wikipedia, including Creative Commons licenses. The man was also a poet, an editor - since 2016, he has directed the Publie.net publishing house. In 2006, he fought against the Dadvsi law, three years later against the Hadopi law, more recently against the intelligence law (2015), the creation the following year of the "megafile" TES "His curiosity, his ability to combine knowledge" allowed him "to navigate between activist, intellectual, artistic communities [and] between countries", explains researcher Félix Tréguer, who praises his ability to never "depart from the care of oneself and others". He will have nourished the reflections and practices of lovers of a free and cooperative Internet, drawing, despite the disillusionments, other possibilities. Read in full on Libé.fr. Disappearance

## ###ARTICLE\_START### ID:1957

At the end of May, impak announced that it was changing its mission. From an app that lets you buy products that support a more sustainable economy using cryptocurrency, serial entrepreneur Paul Allard’s company became an impact rating agency. The idea is to guide investors and lenders by assigning an “impact score” to the companies they want to invest in. The environmental equivalent of a credit rating, in a way. CHANGE OF MISSION In the wake of this transformation, the 2,266 small investors who had put $100, $200 or $1,000 into the company in 2017 have seen their money disappear, at least for now. This is the case for Martin Saint-Denis, a consultant for social economy businesses who put $700 into the project. “They raised funds for a good cause, but they didn’t use it for that,” believes the 32-year-old Montrealer. impak Finance promised, among other things, to assess the social and environmental impact of the companies present on its application. Like him, 2,265 other people, mostly Quebecers, were charmed and invested a total of $1.4 million. Major players like Anges Québec also chipped in $2.9 million, for a total of $4.3 million. Martin Saint-Denis does not blame the company so much for having blown the $4.3 million without creating either the application or the impak Coin (MPK), but rather for having been kept in the dark. "It was a risky investment, they did not hide it. But now they are telling us that our investment no longer has any value, when thanks to our money, they have developed a methodology that they use in another way," he adds. "If we have nothing to hide, we communicate. They were doing the submarine for months, even years,” adds another investor, Stéphane Bomy, who had invested $1,000 in MPK. At impak, they recognize that the situation is far from ideal. “I understand. The result is ‘super boring’ and frustrating for them, I’m the first to be angry that it didn’t work,” explains the CEO of the company, Paul Allard. As for the accusations that there was a diversion from the initial mission of the project, he categorically refutes them. “The methodology that we use for the impact rating agency is not ours. It is an open source methodology [Editor’s note: free]. It was not created with the $4.3 million,” assures Paul Allard. However, when it comes time to explain how the money was spent, he offers only evasive answers. AMF DOES NOT INTEND TO TAKE ACTION In this case, the 2,266 small investors cannot count on the assistance of the Autorité des marchés financiers (AMF). “The risks surrounding the impak Finance project were identified and known to investors,” recalls Sylvain Théberge, spokesperson for the organization. In short, the Quebec financial markets regulator does not intend to open an investigation into impak.

## ###ARTICLE\_START### ID:1958

Not everyone applauds the government's new doctrine on hosting data in the cloud. Announced on May 17 and called "Cloud of Trust", it promotes in particular "hybrid" solutions, which consist of having French or European companies host software from American players such as Microsoft, Google or Amazon. Announced ten days later and welcomed by the government, the creation of Bleu, a cloud company founded by the French Orange and Capgemini, with Microsoft as a partner, has also raised some eyebrows. "We don't see how this doctrine has any industrial project other than giving the entire market to the already dominant players", criticizes Yann Lechelle, CEO of Scaleway, the cloud subsidiary of the telecoms operator Iliad (founded by Xavier Niel, an individual shareholder of Le Monde). "French players risk being confined to the role of infrastructure provider and reseller of non-European software", the manager anticipates. However, the software part "captures most of the value", underlines Mr. Lechelle, nevertheless welcoming as a "very positive" point the injunction made to public structures to opt by default for online hosting in the cloud rather than on local physical servers. The government's policy wants "the best of both worlds": using French or European players (in order to avoid access to data under American extraterritorial laws such as the Foreign Intelligence Surveillance Act) while using American technologies (in order to have the "most efficient" software, in particular Microsoft's Office 365). But this choice raises reservations. "It is an admission of capitulation to rely on Gafam", judge, on June 27 in an op-ed in Le Monde, "young developers" (including a Scaleway employee). For Quentin Adam, CEO of the French publisher Clever Cloud, the battle for software layers for using cloud infrastructures is not lost: "Giving up now when everything remains to be done would be a major strategic error," he declared on May 28 to the Next Inpact website. "We regret that the government is choosing to rush when it could place orders with European players," added Stéphane Fermigier, co-president of the National Council for Free Software, on May 31 in Les Echos. In the political sphere, entrepreneur and former socialist minister Arnaud Montebourg, during a visit to Scaleway, invited ministers Bruno Le Maire (economy) and Cédric O (digital transition) on Twitter to "forget Microsoft and think about France." "We are handing over our administrations to Gafam and torpedoing our businesses," protested senator Catherine Morin-Desailly (Union centriste, Seine-Maritime). She fears that Bleu will take over the Health Data Hub, the French health data platform, whose hosting by Microsoft has caused controversy and which the government has promised to migrate to a "French or European" provider. She also doubts the legal security of hybrid offers. "Sharing value" These critical voices are also in favor of a "Buy European Tech Act", which would reserve a share of public digital markets for local companies but would require changing the law. Faced with these attacks, other players support the doctrine. Orange specifies that Bleu will have to obtain, before its launch in the second half of 2022, like any "trusted cloud" provider, Secnumcloud certification from the National Agency for the Security of Information Systems, responsible for verifying IT and, now, legal security. Some French companies, including Oodrive or 3DS Outscale, a subsidiary of Dassault Systèmes, already have certain certified offers. "The new State doctrine is a step in the right direction, even if we didn't wait for the label to be trusted," notes David Chassan, Outscale's strategy director, who says he gave up selling Microsoft Office 365 under license three years ago because of the "85% commission. For the French leader OVH, which has formed a partnership with Google to use its software, hybrid offers "must allow for real value sharing and they do not prevent us from also defending French or European solutions. Cédric O's office defends the doctrine: "One of its pillars is to support European players in parallel so that they move up the value chain and can compete with the Americans," they explain. The State Secretariat for Digital Affairs promises more details in July on the 100 million to 150 million euros in funding. "This is medium to long term. "We are realistic but it is not a resignation," they explain. The "hybrid" solution with license already represents "a paradigm shift" for American giants, accustomed to controlling the entire chain, assures the firm. As for the Health Data Hub, Bleu "could host it", but there will be a competitive tender and bricks could be awarded to different providers. Public entities have twelve months to migrate their existing projects. This could invite the cloud into the presidential campaign.

## ###ARTICLE\_START### ID:1959

Before meeting him, we already suspected that Zuukou Mayzie was a strange bird. We had partially discovered the fascinating new album by the rapper member of the 667 collective, Segunda Temporada, through a number of singles released in recent months. But listened to in its entirety, one track after another, the work suddenly secreted a new substance, as if it only took on meaning once the contents of all the bottles had been mixed. In a thick mist of delicate mauve, flutes and guitars stuffed with choruses, epic choirs and extremely manipulated brass, sharp synthetic melodies and slow, muffled bass, and then a voice, Zuukou, of an insane sweetness, mingle; inhale deeply and you are catapulted into a trance not far from dawn, each sensation is of a delirious and cottony acuity at the same time, impossible to leave this couch, impossible to interrupt the infinite flow of videos that scroll in automatic playback on YouTube and propel into your dilated pupils an exquisite corpse that starts from the animal documentary, deviates towards the compilation of the 100 worst semi-trailer accidents and ends up somewhere between the tutorial for 3D printing of open source firearms and the whole truth about Jeffrey Epstein's "suicide". Like this kind of night, we emerge from Segunda Temporada slightly haggard, confused between the real and the virtual, and there is Zuukou in front of us, perched on an imposing black electric scooter, black jogging pants, black down jacket, black hood, black doo-rag, black socks - contrasting with a pair of scarlet plastic flip-flops flanked by a big "EKIP", the rallying cry that the members and devotees of 667 mumble at every turn like Tourette. Asses lined with noodles. Alongside Zuukou, we slowly wander through the small, wealthy streets of Enghien-les-Bains (Val-d'Oise), where he lives. He could see himself in one of these villas, we take stock as we walk towards the lake: this one, boring, that one, too sad, that one, yes, not bad, that one, oh no, not enough character, it needs character - this one could do the trick, a beautiful Second Empire residence, with honeysuckle where it's needed. The rapper shows us with amusement his "city of big bourgeois", tells us where the diplomats live, the hotel where the French football team stays, and then, on our left, Fouquet's. As a teenager, he did part of his schooling at the Lycée Français Jean-Mermoz in Dakar, Senegal, a private school with an excellent reputation where tuition fees range from 3,900 to 6,300 euros a year. "The richest people I've ever seen in my life were there. I lived with the sons of ministers. 14-year-old kids who arrived in cars with their name on the license plate. They weren't normal people!" It was in this environment of ass-lined noodles that he met Freeze Corleone and his other friends who would become the League of Shadows. Rather privileged kids, therefore, which allowed their rap to flourish in other fields than the eternal ones of hardship. "In the 667, no one would say: it was hess (misery, editor's note). If there was one who said that, I would tell him, man, you're lying, it was never, ever hess!" Far from hess, therefore, on a bench facing the lake, we digress pleasantly with this nice, witty and sensitive boy who always seems a little out of it. What would appear in automatic suggestion if we watched a YouTube video on our phone? "A six-hour vlog of a guy walking around Shinjuku (a district of Tokyo, editor's note), a guy testing a katana, an anime, a guy blowing something up with a rocket launcher, how to make good whipped cream, how to make a good mafé." He fervently talks about Nujabes, Tom Hardy, Miyazaki, Pharrell Williams, esotericism, Danny Boyle, would like to die in a canyon like in 127 Hours ("It's beautiful, it's orange"), details in detail his recipe for yassa, an exquisite Senegalese dish: "If you're really into performance, you can add ginger, but not too much: it stings." What would be the equivalent of ginger in a production? "The violin, in addition, it stings or, no, the tam-tam! It can give you blisters. Just like ginger can give you ulcers." Castor oil. One thing led to another, having had the misfortune of pronouncing the word "helicobacter", we discover a great hypochondriac who has found peace in particular in faith, prays five times a day, "but chill, very very moderate". He has always had a tendency towards transcendence, and, as a child, addressed "something blue". His next project: "I'm going to get into cosmetics, I found the trick against baldness!" He shows without transition a photo of his former baldness on his phone and takes off his doo-rag to proudly show off the result: "Look, it's homogeneous, it's not a joke!" Indeed, Zuukou's hair implant is remarkable. He can only say one thing: castor oil - but promises to reveal a new ingredient when we interview him again. For the love of bald people, we hope the next album will be released soon. SECOND TIME by Zuukou Mayzie (Forever Young / 667).

## ###ARTICLE\_START### ID:1960

INTERNET In France, Frank McCourt is known for being the owner of Olympique de Marseille. But the American billionaire, who made his fortune in real estate, is also a philanthropist. He gave a total of $200 million to his former university, Georgetown, to finance a school dedicated to public policy. Frank McCourt now has another concern: the excesses of the internet. "We now have enough evidence of the destructive power of social networks," he explains to Le Figaro, referring to the polarization of opinions, the spread of disinformation, "and these algorithms that amplify hatred, trigger emotional reactions and destructive behaviors." "Our democracy is going through an existential crisis. People no longer know who to believe and trust has eroded," says the billionaire. I'm not saying that technology is bad in itself (...) If social networks are a mirror of the worst in society, we must change them so that they reflect the best. » That’s why Frank McCourt has decided to dedicate $100 million to fixing the internet, an initiative called Project Liberty. Of that sum, $25 million will go to developing and promoting the Decentralized Social Networking Protocol (DSNP), a decentralized and open-source protocol that aims to give citizens back control over how their data is used. Ownership of personal data Google, Facebook, Amazon... These conglomerates owe their fortune to the extraction, analysis and exploitation of the personal and behavioral data of their billions of users for advertising purposes. These giants also analyze the network of connections and relationships between Internet users and companies on the internet, what Facebook called the “social graph” in 2007. “We need to make this social graph no longer privatized, but a common good. In this way, you allow other entrepreneurs to create new products and services” that can compete with existing social networks, explains Braxton Woodham, technical director of Project Liberty. This public social graph will be based on blockchain, "in order to keep an unfalsifiable record of the activities and relationships of Internet users." In return, citizens will obtain full ownership of their data - which will be certified by the blockchain. "This is the central point of our thinking: data belongs to individuals. This is not the case today: it is captured and monetized by third parties. We live in a world of surveillance capitalism which is, in my point of view, extremely unhealthy," says Frank McCourt. "By giving back power to citizens over their data, they can decide to refuse to share it for commercial purposes. If they accept it, they must receive financial compensation. This value belongs to them." This theory is similar to that of the French philosopher Gaspard Koening, who advocates for Internet users to have ownership rights over their data. Mass surveillance The remaining $75 million will be dedicated to the McCourt Institute, which will finance university research on the theme of technology serving the common good. Sciences Po Paris and Georgetown University will each receive a $25 million donation, paid over ten years, while maintaining their academic independence. "It would be illusory to believe that one person is capable of solving tech problems on their own. Tech is capable of innovating at high speed, but it would be a bad idea to put the weight of ethical, legal, political or philosophical questions on the shoulders of these engineers...", explains Frank McCourt. "That's why we need external perspectives, including that of academics and more particularly researchers in social sciences, to build a new model for the internet." The billionaire believes less in regulation by states, "whose processes are too slow to keep up with the developments in tech." While Frank McCourt talks a lot about social networks, he is also worried about the development of artificial intelligence, which also has bad sides. "Tech can do extraordinary things, but it is not by nature at the service of humanity. We must ask ourselves what purpose we want to give it. If it's just about creating a more efficient way to monitor the population, through facial recognition, then that's not a world I want my children to grow up in."

## ###ARTICLE\_START### ID:1961

Annecy (Haute-Savoie) special correspondent - It is one of its hidden virtues, Lake Annecy allows animated films to be born. During the 60th edition of the Annecy International Animation Film Festival and the International Animation Film Market (MIFA), which are being held until Saturday, June 19 both in Haute-Savoie and by Zoom, due to Covid-19, the big sport is to go fishing for funding. Directors engage in "pitch" sessions to raise funds. In search of 500,000 euros to balance his budget, but also of co-producers, broadcasters, distributors and investors, Nigerian filmmaker Stanlee Ohikhuare presented online, on Monday June 14, his feature film project Artifacts. A story of a 3D statue transferred from a Parisian gallery to a museum in Nigeria, where it is discriminated against by real African sculptures who consider it a vulgar fake foreigner... His colleague Brian Olaolu Wilson, also based in Nigeria, tried his luck to find money for his series Animah's Journey. A young girl discovers her village in the fire and blood, in the north of Nigeria, after an attack by Boko Haram terrorists. Animah hides in a forest, finds friends there and wants to free child prisoners. More than twenty projects, mainly short films, from African filmmakers were presented. Because, in 2021, the African continent is in the spotlight at the Annecy Festival. A recent Nigerian feature film, Lady Buckit and the Motley Mopsters, by Adebisi Adetayo, was screened there, in order to show what Nollywood offers to the world of animation. Betting on the future In six decades, only 46 African films have reached the Holy Grail of an official selection. This can also be explained by the extreme rarity of the production of animated feature films. "For the past fifteen years, there has only been one feature film per year. It's a disgrace for a continent of 1.3 billion inhabitants!", says Laza Razanajatovo, director of the Madagascar Short Film Meetings, annoyed. Series intended for television as well as short films constitute an emerging market, even if it is still too small to supply the entire continent. For its own festival, Laza Razanajatovo receives, each year, "35 animated short films, generally self-produced by young directors. Véronique Encrenaz, head of MIFA, agrees. "We can't really talk about an animation market in Africa yet, except in certain countries, like Nigeria or South Africa, where studios like Triggerfish [South Africa] meet international standards," she says. It is also in these English-speaking countries that international agreements are concluded with American giants. Disney+ has thus teamed up with the Kugali studio in Nigeria to create an animated series adapted from the comic strip Iwaju ("future" in Yoruba), signed by the three founders of Kugali, Tolu Olowofoyeku, Hamid Ibrahim and Fikayo Adeola. This program will expand the offering of the American platform (Disney+) in 2022. For Disney, which has also been working with Triggerfish for years, this is a bet on the future since the demand for animated programs is growing exponentially worldwide. And this craze should also affect the African continent, characterized by its young population. Netflix has also taken up this challenge, since the platform has been producing its first African animated series, Mama K's Team 4, with Triggerfish, in Cape Town for two years. Trembling Written by Zambian screenwriter Malenga Mulendema, the plot, set in Lusaka (Zambia), features four teenage girls recruited by a former secret agent more determined than ever to save the world. The screenwriter wanted to create "strong, funny, resourceful and slightly crazy young African girls. And show that everyone can become a superhero, regardless of their origins," assures Malenga Mulendema. Black superheroes have become the norm in animation since the exceptional global success of Black Panthers, by Ryan Coogler, from Marvel Studios, in 2018. Are the major American platforms coming to the rescue of African animated cinema? “We are impatiently waiting for Netflix to help produce local programs. The major problem in Africa remains underfunding. There is no CNC [National Center for Cinema] in Africa,” explains Mounia Aram, founder of a production and distribution company of the same name, based in France, which works with the entire African continent. “This is the number one problem,” confirms Rodrigue N'da, from the Afrika Toon studio, in Ivory Coast. “The technological equipment is extremely expensive,” he explains. Very often, the software, too expensive for most studios, is pirated. Mohamed Zoghlami, an expert in the animation and video game sector, notes a tremor. He lists more than 250 studios throughout Africa, compared to 50 two years ago, and notes "an increased role of the diaspora in trying to remedy the crucial problem of financing. In his eyes, the governments of African countries do not yet really take into account the challenge of creative and cultural industries, "by refusing to see that they could create thousands of jobs. Even if a few initiatives have been taken in an isolated manner, in Nigeria or Egypt, he concedes. The battle of images will also involve the defense of African soft power. As in many industrial and infrastructure sectors, the Middle Kingdom is, here again, lying in wait. The Chinese platform StarTimes is already inspired by known and recognized African content to produce it itself in China. It then pours out its thousands of hours of cheap programs adapted to the black continent, which are seen on digital terrestrial television in Africa. Animated films and series are broadcast on television in Kenya, for example, the pay channel Akili is dedicated to animation, on smartphones, on the Internet and, above all, YouTube. "The new generation, totally digitalized, watches programs almost exclusively on mobile phones," assures Mohamed Zoghlami. The audience for video-on-demand platforms remains tiny. A pan-African animation and pop culture channel, African Animation Network, based in South Africa, should be launched soon. "We would like it to be free," assures Mounia Aram, who has joined its creators. As for the number of movie theaters across the African continent, it hardly allows films to be made profitable. Resolutely optimistic The market will not take off without the emergence of new talent. However, animation suffers from a lack of training and recognized schools, "even if we see incredible excitement. "Everything that these enthusiasts can do, when they don't have the means, is incredible," says Mounia Aram, who is also president of the African Creative Talents association, which aims to professionalize animation training in French-speaking Africa, with a resolute optimism. She plans to open a school in Morocco. According to Mohamed Zoghlami, "many young people train with tutorials on YouTube, using free software, due to a lack of schools and training." He is proud to have trained 15,000 young people in Tunisia in video game, design, 3D, virtual reality and animation, and plans to create a training network for these professions in around ten African countries. The animation market in Africa is also undergoing a cultural update. "We no longer want Europeans or Americans to tell African stories. We want to tell them ourselves," says Laza Razanajatovo. A way to put an end to traditional tales and African mythology to focus, as elsewhere, on more societal, political or environmental themes. "The African continent is full of little-known and magnificent stories. It is high time to get away from clichés and stop making people believe that Africans live among giraffes and antelopes! Children have two or three cell phones," pleads Mounia Aram. She laments that, for a vast majority of viewers, everything still comes down to Kirikou and the Witch, by Michel Ocelot, released in... 1998. "It is time to move away from a colonial past" to reinvent ourselves, seize freedom of speech to write "our African culture," says Kenyan director and screenwriter Ng'endo Mukii. In creation, new avenues will undoubtedly come from the very strong porosity, in Africa, between comics, video games, advertising and animation. Nigerian comic book author known for Strike Guard, CentralAttack and Voyager, Ayodele Elegba opened his own animation studio, Spoof, in Lagos in 2015. This allows him to adapt his own works into series, short films and, soon, feature films. He also comes to Annecy to look for co-producers. And he also does everything he can to get Netflix to spot him... FULL FRAME

## ###ARTICLE\_START### ID:1962

Attempts to think differently about the platform model are emerging all over France. In February, for example, the British platform Just Eat announced to everyone's surprise that it wanted to employ 4,500 delivery people in France. This decision contrasts with its competitors Uber Eats and Deliveroo, which have until now been attached to the sacrosanct status of self-employed. It will take a little time to know whether the initiative will radically change the conditions of workers, but this decision has already been unanimously welcomed by the unions and collectives of delivery people. To deal with the stranglehold of international platforms on the market, some now want to favor cooperatives. More and more of them are emerging, in Nantes, Strasbourg or Bordeaux for example, and offer a fairer alternative for all stakeholders. They act as an intermediary between the delivery person and the customer, allowing them to escape the old divide of "independents versus employees" while offering guarantees that the work can be carried out in decent conditions. Grouped together in a federation, these cooperatives seem even more credible: created in 2017, CoopCycle brings together around forty of them and relies, for example, on open source software to offer better working conditions and a horizontal organization. This alternative already promises to expand, but it will face a major challenge: ensuring that the customer agrees to pay the right price to have products delivered.

## ###ARTICLE\_START### ID:1963

On a trip to the Old Continent, the President of the United States, Joe Biden, lectures Europe. Forget Moscow, the common enemy is now in Beijing. We hope that the president has not surfed the French Internet too much. He reportedly learned there, following an article on the Politico website, that the French search engine Qwant, nicknamed the "European Google" and supported by France, Germany and the European Commission, had just secured €8 million in funding from Huawei, Washington's bête noire. The Chinese telecoms equipment champion, which spends a fortune on lobbying to restore its image in Europe, is rushing to the aid of yet another disappointed hope. Of course, the very active septuagenarian Joe Biden will be able to put on a condescending air. These €8 million do not even represent two hours of Google's net profit. And then Qwant, founded in 2013 on the promises of respect for privacy and a certain independence from the Californian behemoths, is in fact in the hands of another titan, Microsoft. The latter in fact provides nearly 60% of Qwant's search results with its own engine, Bing. In addition, Microsoft is also responsible for the advertising management as well as a good part of the French company's IT infrastructure. In terms of sovereignty, we could do better. The initial idea was nevertheless laudable: to free ourselves from the supervision of an American tool that has built its hegemony and the efficiency of its service on the exploitation of its users' personal data. And after all, the Korean Naver or the Russian Yandex have demonstrated that it is possible to succeed in making a local search engine prosper. In addition, initiatives based on free software, such as DuckDuckGo, have also found their way. But Qwant lacked the means to match its ambitions. Three years after its creation, in Seoul in 1999, Naver merged with a very popular gaming portal and went public, then launched into instant messaging. Qwant did not lack public support. The European Investment Bank, the Caisse des Dépôts, and the German Axel Springer provided financial support. The French administration installed it by default on its computers. But, in 2013-2015, it was already too late in this highly capitalistic specialty of Internet search with a faltering technology and no solid business model. In 2020, the company reduced its losses to 13 million euros, almost twice its turnover. To take on the titans, you need a strategy, resources, and a good sense of timing. Not easy.

## ###ARTICLE\_START### ID:1964

Are you tired of debates on insecurity? On the veil? On Snow White? On Napoleon? On CNews? Are you despairing that the left is divided on secularism? On inclusive writing? On non-mixed meetings? Do you think that this distracts us from the real economic and climate issues? Then, Paresse pour tous is for you. This novel by Hadrien Klent, a pseudonym, is a most enjoyable political fiction in these times of long pandemic, collective depression, smell of putsch and national rallying that knocks on the doors of power. It is the story of Emilien Long. The man is an economist. He studies working time through the centuries. After brilliant studies and research at Normale Sup, then in the United States, he won the Nobel Prize in economics. He decided to return to France, he was given a position at the CNRS in Marseille, where he spent time looking after his children, whom he shared custody of, and thinking in his cabin in the Sormiou cove. Encouraged by his editor, he began writing a new book, Le Droit à la paresse au XXIe siècle, an assumed homage to the famous book Le Droit à la paresse (1880) by Paul Lafargue. His idea was simple: considering that the massive gains in productivity, for over a century, had not been offset by a sufficiently drastic reduction in working hours, he developed a whole theory on the need, in order to be a more harmonious society, to work much less. "It's three hours a day, or fifteen hours a week, I will demonstrate that it is entirely possible to choose them as the legal working hours," explains Emilien Long. Through a whole series of tax transfers, wage limitations and a complete overhaul of the entire social protection financing system, I will prove that it is possible to radically change working time practices in our country without harming its competitiveness or its social protection, while preserving, or even strengthening, the triptych of our motto which seems, today, more than relevant: Liberty, Equality, Fraternity." Fifteen hours, when we are still debating the transition to a 35-hour week, seems crazy. And yet: Emilien Long develops his argument, through a number of arguments and graphs, but also by evoking Rimbaud, Breton, Debord and Julien Coupat. Paresse pour tous is presented as a novel, and the pages are very pleasant to turn, but it is above all a programmatic essay that uses the springs of fiction to develop a political argument. The book thus alternates between the hero's adventures and chapters from his textbook, which is a success, selling more than 200,000 copies. Faced with this public recognition, Emilien Long, who was thought to be a bit lazy but who has a tiger in his engine, decides to run for president. At first, his candidacy is seen as a joke, à la Coluche, but the forty-year-old, who is reminiscent of Piketty or Villani, all those scientists who end up having ambition, hangs on. And, little by little, he ends up convincing, haloed by his Nobel stature and carried by a desire for solidarity poetry. The whole challenge for Emilien Long and, through him, Hadrien Klent, is, through nearly 360 pages written during the first two lockdowns, to make his readers understand that laziness, a provocative term, does not mean "laziness". The goal is not to work less to wallow in front of Netflix, but to devote one's free time to others, to associations, to one's vegetable garden, to reflection, etc. "In 2008, we had to overcome the subprime crisis. Today, the coronavirus crisis, argues Emilien Long, facing the Minister of the Economy of Macronie. Tomorrow, what will it be? Global warming? [ ]. Each time, triumphant liberalism suggests that we suffer even more! That we sacrifice ourselves to save a system that is nevertheless absurd. [ ]. I suggest the opposite. That we reverse the place of work and free time. You know, whether you are a collapsologist or not, and I am not necessarily one, we cannot deny that things, at the moment, are declining in the world in general and in our country in particular: life expectancy is no longer increasing, the quality of housing is decreasing, measured happiness is collapsing." For the candidate, it is thus necessary to oppose the productivists, the opposing camp, to the "living", that is to say them, the "realists". Show that the arguments defended are not utopian but that it is neoliberalism on the contrary that is. And we end up (almost) believing that such a candidate, in real life, could win. Emilien Long, who is building a lively and diverse team around him, is not only interested in working time and its new organization, but in all that this implies as a logic of our relationship to the world: on the environment, agriculture, culture, free software, social networks, the taxation of Gafa and heritage, the reduction of the highest salaries, etc. He creates a coherent system, with which, moreover, on certain points we do not always agree, but which has the merit of existing. This is, paradoxically, what is quite sad about reading Paresse pour tous: to think that, despite the election year and the programs that are coming, we will not read anything in the coming months that is more original while being serious, more "disruptive" as the Macronists say, to rethink the left. And it was necessary to go through a fiction written by an unknown. Too bad the author is not a politician but, who knows, maybe he will inspire some. At the top of the pile

## ###ARTICLE\_START### ID:1965

Shanghai Correspondence - Huawei is going all out: the Chinese telecommunications leader unveiled its new operating system, HarmonyOS, on Wednesday, June 2. This alternative solution to Google's Android and Apple's iOS is tailor-made for the era of connected objects, the group assures. It allows easy communication between a smartphone, a smartwatch or a television from the brand and, tomorrow, a smart car. But the challenges are numerous for the Chinese giant, forced to take this path after the American sanctions of the summer of 2020, the United States having cut off its access to Google services and American software producers. Launched in 2019, when Huawei was first placed on the blacklist of the American Department of Commerce, HarmonyOS is built on the basis of the Android OpenSource Project, the source code of Android, usable without a license. However, this operating system wants to go further. "With Harmony, we were not simply going to produce another Android or iOS. That would bring no value to the consumer. "Our special features are what Android and iOS lack," Wang Chenglu, the project's lead developer, said on Wednesday. The first device equipped with Harmony is a Huawei TV, released in 2019. "There are two goals: to strengthen interconnectivity between devices, and to reduce dependence on Android, because of US sanctions," said Jason Low, a technology expert at research firm Canalys in Shanghai. "Creating an operating system takes time, but it was necessary and, in the long term, it is an advantage for Huawei. Interconnectivity is a strong trend. The goal is to create new uses, and therefore to sell more devices. » "Heroic efforts" In addition to a tablet presented on Wednesday, marketed with Harmony, Huawei will offer updates for most of the brand's devices and smartphones, during 2021. The group from Shenzhen, the Chinese tech capital, hopes that Harmony will be used by 200 million devices of its brand by the end of the year, and by 100 million other terminals of different brands. Some manufacturers of connected objects, such as Midea, one of the leaders in household appliances in the country, are already compatible with Harmony. However, convincing other competitors to adopt this OS is a challenge: "For newcomers, perhaps, but I can't imagine Xiaomi, Oppo and Vivo, who already use Android on all their smartphones and connected objects, switching to Harmony," emphasizes Mr. Low. Before Huawei, Samsung, Microsoft and a few Chinese players tried to launch their own operating system, without success, so much so that Android powers eight out of ten smartphones in the world. Huawei also seems to have played it safe: "In use, the system is not very different from Android," says Li Hui, a specialized Chinese influencer, who was able to test Harmony. The architecture is the same, but they offer more localized functions for Chinese users," says this blogger who is widely followed on Weibo, the national Twitter. However, Huawei's worries do not stop at software. The United States, which suspects the company of spying on its users on behalf of Beijing, has especially deprived the group of access to the latest generation of semiconductors. The group had to sell Honor, its entry-level brand, to reserve its last chips purchased before the sanctions for its premium smartphones. The former world number one in smartphones (in the second quarter of 2020) has since seen its phone sales collapse by 41% in the fourth quarter. Overall, Huawei’s revenue fell by 16.5% in the first quarter of 2021, or 152 billion yuan (19.5 billion euros) less. Under these conditions, the transition to in-house software will not be enough. “Smartphone sales accounted for 55% of its revenue, and telecommunications equipment 35%,” notes Dan Wang, a technology analyst at Gavekal Dragonomics. Huawei is in an extremely difficult situation, with its two main branches at risk of collapse due to lack of access to semiconductors. The company is making heroic efforts to pivot to new sectors such as automobiles. But without chips, a technology company doesn’t really have much room to maneuver.”

## ###ARTICLE\_START### ID:1966

After the "brutal shock" of the transition to distance learning, Mathieu Moury, a history and geography teacher at the Ernest-Bichat high school in Lunéville (Meurthe-et-Moselle) and digital correspondent, welcomed "with interest" the launch, in June 2020, of the Digital Education Summit (EGN). The aim was to learn the lessons of the first lockdown and to co-construct a consolidated and shared digital strategy. The consultation, first territorial and then national, resulted in 40 proposals: combining broad principles and concrete solutions, they aim to reduce the digital divide, more effective teaching or the development of sovereign digital technology. Quite a program. Six months later, skepticism prevails in classrooms. The "mega-bug" of distance learning on April 6, when school returned home, showed the limits of the educational continuity strategy of the last few months. The Ministry of National Education has passed some of the responsibility onto the communities, responsible for equipment and networks; which have criticized it for its lack of "regulation of uses. If these passing the buck shows that we are far from participatory governance, "with the management of the health crisis and the EGN, a dynamic has been set in motion. There is a desire to work together more, and better, believes Marie-Caroline Missir, who heads Canopé, a network for educational creation and support. Even if it is difficult to bring horizontality into a very vertical system. Progression of dialogue What has been accomplished around the management of digital workspaces (ENT) has notably begun to advance the dialogue between the State, decentralized services and communities. Educational continuity also involves the establishment of a minimum digital base. A call for projects funded to the tune of 105 million euros thanks to the recovery plan will help voluntary municipalities to equip elementary schools, which are less well-equipped with computers, video projectors or ENT. The Digital States General also reiterated the need to support teachers. A rare proposal to have materialized to date, the annual bonus of 150 euros, paid for the first time in January, should allow them to equip themselves little by little. Another priority: strengthening initial and continuing training. "It would be better to talk about a start," says ironically Joël Lamoise, national secretary of SNPDEN-UNSA, the union of school heads, for whom "the effort remains very insufficient. Since the first lockdown, Canopé has developed webinars to help teachers combine face-to-face and distance learning, manage stress issues or students in difficulty. These sessions have brought together more than 170,000 participants. "It's an interesting offer," acknowledges Stéphanie de Vanssay, national education advisor at the SE-UNSA union, "but, overall, teachers lack the time to train, especially since it's optional in secondary education..." Academies are raising awareness among schools about protecting personal data, while teachers' use of solutions that do not comply with the European General Data Protection Regulation (GDPR) has rekindled the debate. But there is a lack of relays on the ground. The development of free and open source software, considered more protective, remains a "priority," according to Rue de Grenelle. A pious wish, according to specialists: "It's very complicated, open source software has to be sustainable, and the communities behind it have to keep it alive," explains an academic delegate for data protection. Few teachers have committed to a self-certification of skills system, via PIX. This online public service "is nevertheless a virtuous way to advance digital culture," believes Mathieu Moury. PIX, which was to be generalized for the first time this year in 3rd, final year, CAP, BTS and preparatory classes for the grandes écoles, will be optional for students. They too are insufficiently acculturated to digital technology. Mathieu Moury and his colleagues spent two hours helping high school students get to grips with the laptop, provided by the region, which they use with one hand, "like a smartphone. Support for families All these dimensions should be taken into account in the Digital Educational Territories (TNE) project. Aisne and Val-d'Oise have been testing this program since September, combining equipment, educational resources and training for teachers and parents. An investment of 27.3 million euros over three years. The experiment, whose originality lies mainly in the support for families, will be extended to ten new departments at the start of the school year. TNE must support companies in the digital education sector (EdTech) through the acquisition of educational resources by Canopé. A promise that should come to fruition "in the coming weeks", reassures Marie-Caroline Missir, while industrialists in the sector are worried about not seeing the millions of euros announced arrive. After the acquisition, in December 2020, alongside the digital sector of the La Poste Docaposte group, of the publisher of the school life software Pronote, the Banque des territoires plans to invest as a minority shareholder by 2022 in five to ten start-ups specializing in inclusion and the reduction of educational inequalities. An issue inseparable from a successful policy. This file was produced as part of a partnership with In-FINE, an international forum on digital technology for education.

## ###ARTICLE\_START### ID:1967

When Voltaire said that you have to "cultivate your garden" to find happiness, he certainly didn't imagine doing it behind the wheel of a state-of-the-art combine harvester. The phrase has aged a bit; it must be said that working the land has changed a lot, and that today it no longer consists of hoeing, weeding or digging your field. Peasants have become farmers, who have transformed themselves into agricultural operators. Larger areas to cover, more meticulously calculated yields, and laboratory-hybridized varieties sprayed with pesticides are all unavoidable issues in the agricultural world today. It is a more original, less explored but equally essential subject that is addressed in Reprendre la terre aux machines. Manifeste pour une autonomie paysanne et alimentaire (Seuil, 2021), collectively written by members of the association l'Atelier paysan: la dépendance des agriculteurs aux machines agricoles. By seeing zucchini cultivation as the result of a process that relies primarily on a lot of gasoline, metal, and nuts, the book allows us to take a different look at the current situation of farmers. While around 70% of farmers' income is made up of national and European aid, 14% do not generate any income even after subsidies, farmers accumulate an average debt of 160,000 euros, the quantities of pesticides spread increased by 22% between the Grenelle Environment Forum of 2009 and 2018, and dozens of farms disappear every week, it is clear that the agro-industry is "a system that does not work at all," write the authors. Ever more efficient machines would even be responsible for a "sacrifice of farmers" - to use the expression of sociologists Pierre Bitoun and Yves Dupont - who are paradoxically the first victims and perceived as the first culprits of our ecological problems. The book identifies several "locks" that prevent the agricultural world from reforming itself. That of machines to begin with: so-called "4.0" agriculture, which aims to automate everything that has not already been automated, to monitor its harvests using sensors or drones, and ultimately transforms the farmer into an office worker with an eye fixed on a series of numerical indicators. This situation is not due to chance: the orientation laws of French agriculture, since the 1960s, have provided incentives for super-depreciation ??? lll ??? of machines purchased by farmers. These subsidies have the effect of "pushing [farmers] to resell them faster and invest in new ones, well before the first ones are worn out," write the authors, organizing "the obsolescence of machines" and stimulating "the technological headlong rush." With a market estimated in 2016 at 131 billion dollars, 60% of which is held by only five players, agricultural equipment represents a major financial challenge. Reducing the use of machines would lead to considerable losses for these equipment manufacturers, whose influence is measured by advertising of course, but also by YouTube channels promoting the machines and even, according to the authors, by video games (the famous video game mystery that is Farming Simulator, "developed in partnership with 75 machine manufacturers," which stimulates a completely mechanized vision of agriculture). It is partly the fact that equipment is becoming more and more expensive that sets the imperative to generate more profits, leading to the creation of larger farms and the decline of the peasant population. Another of the obstacles analyzed in the book is the "identity logic", partly stirred up by the National Federation of Farmers' Unions (FNSEA, the leading union in the agricultural profession), according to the authors. By overplaying a divide between misunderstood farmers and ungrateful consumers, the union would create a gap between farmers "held responsible for the nuisances of the agriculture into which they have been forced" and neo-peasants full of good intentions who would come to replace them "to the media's cheers", observes the Atelier paysan. Above all, denying the reality of these nuisances would be for the historical community the vestige of a social history, that of a sometimes forced mechanization and of "the devastation to which their world has been subjected and of which they have in fact become accomplices". The authors therefore have the finesse to repeat it on several occasions: those who would choose an alternative path should be careful not to adopt a moralizing stance towards conventional farmers. Given the solidity of these barriers, the alternative supported by the Atelier paysan - "low-tech" machines, co-built with the members of the association according to their needs, and whose plans are shared in open source, an originality that regularly attracts the curiosity of the media - is no longer sufficient. And the solutions cannot be marginal, the authors argue. As ecological thinker Bernard Charbonneau explained more than fifty years ago, organic farming has become "the complement to the range of industrial agriculture" rather than its counter-model. The observation may seem paradoxical: "Abundance has become a problem," the authors state. This is because shelves that are always stocked during the day mean having unsold goods in the evening. However, since donations of unsold goods from large food stores and industrial and agricultural donations were tax-exempt in 2016 and 2018, private sector losses have been offset by public money. A "class divide" is then playing out around the food issue, with organic being reserved for a portion of the population and food aid packages - distributed to 7 million people in 2020 - having become a structural mechanism rather than a temporary support measure. To escape this shaky system, the essay becomes manifest and proposes a "democratic transformation of agriculture and food, in all their aspects". Peasant technologies are not enough in themselves to change the current balance of power. The authors hope that a social movement "at least as vast as that of the GMO mowers" can be born thanks to efforts of popular education. The social project that they outline seems distant: questioning the Treaty on the Functioning of the European Union and the CAP, setting a minimum price for food products entering France, socialization of food on the model of social security or even the installation of a million farmers in France within ten years. Just as the book is written collectively, its proposals are called to be debated. No doubt some of them will be abandoned along the way. But the authors are careful to point out that "autonomy", which etymologically designates the capacity to set one's own laws, "surely does not consist in freeing oneself from all one's dependencies, but in taking inventory of the dependencies that enslave us and those that make us freer." At the top of the pile L'Atelier paysan Reprendre la terre aux machines Seuil, 288 pp., €20.

## ###ARTICLE\_START### ID:1968

The Gafa have never been so much under fire as since the health crisis, but no one has yet found a way to replace them. However, a number of initiatives have been trying for several years to offer an alternative to digital platforms. They are called Mobicoop, CoopCycle, Reasonate, Fairbnb, Commown or Les oiseaux de passage and offer services comparable to BlaBlaCar, Deliveroo or Uber Eats, Spotify, Airbnb, Apple and Booking respectively. The difference is that these outsiders are cooperatives. So, are cooperatives old-fashioned? Not so much anymore! CoopCycle provides an application to around thirty cooperatives of delivery people grouped together to free themselves from Deliveroo and Uber Eats, like Olvo and its 34 employees on Parisian tricycles. Resonate, an alternative to Spotify, uses blockchain to offer artists fair remuneration. The sustainable tourism platform Fairbnb, born in Italy and launching in France, aims to respond to the perverse effects of Airbnb by investing 50% of its profits in local social projects. As for Commown, it offers a sustainable smartphone (Fairphone) using open source software for rent at 20 euros per month. These initiatives propose a social model far from Uberization and its corollary, the "gig economy", underlines Odile Chagny, economist at Ires, founder of Sharers & Workers, and co-author of the book Désubériser, prendre le contrôle\* in particular with Mathias Dufour, president of the think-tank #Leplusimportant. Data protection These unicorns, as opposed to those of Silicon Valley with a single "o" - whose model is based on the environment, solidarity and shared governance - claimed their place in the recovery plan at the Forum of cooperative platforms, organized by the Coop des Communs a few months ago. Especially since some of them are establishing themselves in France, such as CoopCircuits (short-circuit food distribution, whose number of customers increased tenfold during the first lockdown), Enercoop or La Nef. The cooperative movement is also showing insolent health: over the past year, 203 entities have been born and their overall turnover (6.3 billion euros) has grown by 8%, according to the General Confederation of Scops. However, local authorities are also setting up service platforms for their users. Hence natural partnerships. Also, the Mobicoop carpooling and solidarity mobility cooperative - without commission -, which has 450,000 users, brings together several local platforms, including the Breton Ouestgo. But these initiatives are far from competing with Gafa. "Even in the United States, the consortium of cooperative platforms has few powerful players," says Richard Stallman, initiator of the free software movement. "That's not our ambition," replies Bertrand Sibille, president of Mobicoop. "Cooperatives have too few users, especially since they are sometimes regional." According to him, their development depends on data interoperability, a mutual exchange between interconnected cooperatives to create a larger network. Above all, based on open-source free software, they protect data, their major asset. With his Solid project, Tim Berners-Lee, one of the inventors of the web, intends to decentralize personal data so that it is linked to its owner and not to a platform. So many avenues for all those who wish to regain control of their data and the algorithms that exploit it. \* "Désubériser, prendre le contrôle" [Desuberize, regain control], edited by Florent Forestier, Éditions du Faubourg.

## ###ARTICLE\_START### ID:1969

Against the azure blue of the Sea of Continuity or the Pandemic Ocean, continents, islands and archipelagos stand out, in a gradient from green to brown highlighting the reliefs: Pantouflie, Googland, the Carrouf Strait, Zoomfjord, Mount Surgèle, the Clubbing Desert, the forbidden lands of Sapland... In 12 plates and 20 local maps, Julien Dupont's Transconfinemental Atlas maps the world in coronavirus version. Not exactly the planisphere that this history-geography teacher pins to the walls of his priority education college in Vaulx-en-Velin (Rhône). "With the lockdown, the impossibility of traveling", the forty-year-old who once lived in Egypt felt the call of "cartographic fiction. Last year, he even suggested to his students kept at a distance to activate this escape valve by tracing the contours of their suddenly shrunken universe. "The sensitive map of their isolation." Imaginary or tragically serious, maps form the backdrop to our daily lives under Covid-19. Global spread of contamination, incidence rates by department, occupancy of intensive care beds, vaccinations, deaths... Department colored green? Get out. Red zone? Don't move! A presidential address? Quick, trace the local perimeter of authorized freedom on the Internet. Identify the accessible countries on a world map... The virus has caused a phenomenon that pre-existed it to flare up, and which Xemartin Laborde, at the Infographics department of Le Monde, sums up as follows: "The map is the language of the moment. We have abundant material and creative techniques. The field of possibilities has opened up." Warning! The cartographic domain is currently being expanded. For those who are neither geographers nor those who fell into their grandfather's atlas as a child, in rainy and bored weather, the map evoked, yesterday, that boring thing to fold or swallow before the baccalaureate. Now, the "information visualization tool" (according to Christine Zanin, lecturer in geography at the University of Paris), proves its perfect adaptation to the society of the image. On social networks, Twitter in the lead, a dusted-off cartography is exhibited, told and seduced. Announces its participatory events ("Mapathon", "State of the map...) as so many peaks of hype. Play with winks and challenges: a map per day on a theme imposed in November (#30daysmapchallenge), a collaborative map of cartographic quotes in literature (#MapQuote), photos of clouds or decrepit facades evoking the contours of Brittany or Morocco (#Thingsmaps)... Internet users are going wild. The atlases are selling like hotcakes without gluten, 40,000 copies for the one published by La Vie and Le Monde, twice a year. The audience for the illustrated geopolitics show "Le Dessous des cartes", on Arte, climbs to 600,000 viewers on some Saturday evenings. The same craze for cartography masters, at the university, taken by storm although always more numerous. In 2010, two Angevin middle school teachers, Marie Masson and Olivier Godard, launched a mini-map competition to get their 4th grade classes out of their torpor. A decade later, 4,500 students and teachers from middle schools, high schools and preparatory classes compete each year. From his middle school in Gennes, on the banks of the Loire, Mr. Godard savors this "appetite of students and their parents" for the map, "thanks to which we understand extremely complicated things at first glance. He will not dampen the youthful enthusiasm by inscribing it in a long French tradition: the National Geographic Society, the first in the world, which is celebrating its bicentenary; Jacques Bertin, in the 1970s, who established the graphic codes of the map and made it a global reference... "There is indeed a French specificity of taste for cartography," knows Christine Zanin. In Saint-Dié, in the Vosges, the Geography Festival attracted 40,000 people before the epidemic. But in the eyes of teenagers, the "map" takes on the new guise of a series opening sequence (Game of Thrones), a video game feature (Minecraft), or the shrinking of a pixelated territory leading to confrontation (Fortnite). Their parents are not unaware that "what is happening on the other side of the world ends up affecting us all," explains Emilie Aubry, from "Dessous des cartes": "Covid-19 has exacerbated this phenomenon. For months, we watched what was happening in Wuhan, because we knew that it was deciding our lives in Europe." Pandemic, climate change, migration, terrorism... Maps illustrate the globalization of issues, the uniqueness of the world. They also reassure those who are losing their bearings, by ordering, hierarchizing, and drawing limits. "Col de la Carto", as the IGN map at 1/25,000 would indicate, with many contour lines and red triangles. This peak of interest in spatial representation owes everything to the digital tools and data available. Let's go back in time, just to get our bearings: in 2000, American President Bill Clinton stopped encrypting the military satellite geolocation signal in real time GPS, allowing its civilian use. Five years later, Google Maps was launched, soon followed by Google Earth and then Street View. Thanks to aerial images, terrestrial shots, we can now zoom in to the garden of the pavilion starting from the globe. Fascinating! With smartphones, their myriad of applications based on geolocalized information, these maps that no longer need to be unfolded are essential in everyday life. "Google Maps has slipped one into the pocket of every French person. "It has shaped the representation of the territory," admits Sébastien Soriano, the new director of the National Institute of Geographic and Forest Information (IGN), who is trying to catch up with the movement by developing "natively digital" base maps, which are easier to read than the current digitized paper maps of Géoportailmaison. Easy to use and often free, new visualization software allows anyone who is not put off by computers to improvise as a cartographer. Because the data is there, accessible, abundant. Since the 2016 law for a digital Republic, public services and local authorities (with more than 3,500 inhabitants) are required to make them public via the Datagouv.fr platform. Or that of the IGN which, since January 1, has opened its enormous information bases. Cartographers, transformed into geomaticians (computer aces), into geodata scientists, churn out data by the shovelful. But the general public is also keen to produce maps, even if it means mistreating the semiology of the late Jacques Bertin. And to "ruffle the feathers" of Christine Zanin: "There is an effervescence, a creativity in non-textual presentation. But those who do not have the necessary background convey false images. The early Covid maps, on TV, how horrible! We couldn't see anything, there were numbers everywhere. The vagaries of democratization..." Co-author with her of Mad Maps (Armand Colin, 2019), Nicolas Lambert, a research engineer in geographic information sciences at the CNRS, observes the same "citizen emergence in the production and use of maps, still unthinkable ten years ago. Forgotten is the state monopoly, the legacy of a prerogative of the king crucial for controlling the territory, troop movements, and tax collection. "Online access," he says, "to free geographic information systems, open to contributions, animates a whole community." That of the "free software enthusiasts", fans of free software and mutual aid, who can be recognized by their immoderate use of the acronym OSM. For OpenStreetMap, the Wikipedia of the map. In 2004, this collaborative mapping web platform was launched in England. An account opened, a quick online initiation and presto!, you click to enrich the map of the world. Well, of the neighborhood. Streets, paths, shops, red lights, pedestrian crossings, defibrillators, electric charging stations, elevators in stations... Precious details on a user scale. In France, 5,000 people contribute regularly. Around 400 per day, double the number five years ago. The OSM France association, an offshoot of the British foundation, prides itself on being one of the most active, behind Germany, the United States, and Russia. Geography teachers filling their retirement? Not only that. Enthusiasts of all ages, forest lovers, fans of cycle paths, obsessed with accessibility for the disabled. Outside of lockdown, local "cartoparties" bring them together, all over France, between two annual gatherings (State of the map France). An entire ecosystem has flourished around these rich and constantly updated map backgrounds: the Geovelo app, tourist routes of local authorities... "It's a common, OSM," boasts Christian Quest, spokesperson for OSM France. What connects us is the culture of sharing." A trendy event of the moment, on the Net: the Monday evening "mapathon", on the website of the CartONG association, created in 2006 by cartographers from Chambéry. Thanks to OSM, volunteers patiently map, for humanitarian purposes, the regions of the globe that are still "blank" or described too long ago, using satellite images. "It's not a problem if you've never mapped before, the learning process is not long," encourages the site, which nevertheless checks a posteriori the land use elements that novices trace digitally. After the earthquake in Haiti in 2010, or during the Ebola epidemic in Africa, four years later, the creation of maps mobilized thousands of good geographical volunteers throughout the world. Mayors quickly grasped the potential of the collaborative map. Dear residents, imagine your city in a better way, like in the game SimCity, place a bench here, a bus stop there. Trigger the approval of the virtual thumbs up. Then take part in real debate workshops! The urban planning agency Repérage urbain, which uses participatory democracy through maps (with its "Debatomap"), is struggling to meet demand: "Around fifty municipalities or communities of municipalities, of all sizes, have already called on us," says Eric Hamelin, manager. "We brought together around 560 participants in Valence, 3,000 in Lille, whereas between meetings and registers, usually a hundred people speak at most." Cycle paths linking rural municipalities, opening the prefecture park to all... New requests are daring to emerge. The virtues of participatory mapping, to which even the IGN succumbs, to list property boundaries (thanks to owners, expert surveyors) or refine its road information (with the firefighters). "We are talking with OSM to go further," confides Mr. Soriano. "We are no longer a citadel. Our information is accessible, produced and reusable by all. » New producers, new uses, new forms. The "map" is reinventing itself. Thanks to digital technology, static maps are becoming interactive, coming to life when the mouse moves over them, integrating sound and video. They are also gaining in relief, and feature mountains, buildings that are more impressive than life, or data landscapes (called "extruded") with evocative peaks. As for their subjects, playful, even fictional, they go off the beaten track. In the "Cartographic digressions" section of his website, Boris Mericskay, who teaches geography at the University of Rennes-II, presents the map of the Rennes population in Lego or that of crêperies, on a national scale. "Thanks to open data that is both voluminous and very detailed, and to Web tools, cartography is freeing itself from traditional modes of representation," the academic rejoices. His colleague from Paris-I, Adrien Van Hamme, illustrated (based on 18,600 votes on the Internet) the fundamental spatial distribution between the France of the chocolatine and the France of the pain au chocolat, with a crushing geographical victory for the latter. At the head of the Infographics department of the daily newspaper Les Echos, Jules Grandin mapped President Macron's practice of power during the summer of 2019. Very much in the center, the capital, "Macron-Ville", to the West, the "Community of communes of the Bois des Conseillers. Then the "Territory of technostructures", the "Canal of indifference", the "Prefecture under indifference", the "Pointe de la société civile... Between cartography and illustration, the boundaries are blurred. Between cartography and activism too, but there, nothing new under the Tropic of Capricorn. "The "map" is a combat sport, recalls Christine Zanin. A formidable weapon. The art of manipulation by visual sign. » In March, Lucas Destrem, responsible for promoting the industrial heritage of Ariège, published on Twitter a map of the Paris metro, each of the 500 stations bearing the name of a cultural venue. Like a single frustrated spectator, Internet users shared this visual symbol of solidarity with confined artists. The epidemic has been conducive to "graphic forms of protest", observes Nicolas Lambert, "card-carrying cartographer" (with the Communist Party) on Twitter: "The "map" is a subjective representation of facts. It is always a selection, a narration. A scientific tool for accessing knowledge, but also a tool for communicating through images." His animated map of a year of overheating in intensive care and intensive care did not lack political impact. Suspecting the government of minimizing the number, the "red pens", a teachers' movement, launched a participatory map of schools affected by the epidemic. Result: 2.8 million views. Counter-power through the map. Cartocracy, say the Anglo-Saxons.

## ###ARTICLE\_START### ID:1970

Windows and Mac OS environments are well known, Microsoft Office and Google Chrome, just as well. On the other hand, when we talk about Ubuntu, LinuxMint, Fedora, Apache, LibreOffice... there is a good chance that eyes will widen. The first are proprietary software protected by Copyright and whose programming codes are jealously protected: competition requires. The second are free software, protected by Copyleft or Creative Commons and whose programming codes are accessible to all. Two diametrically opposed philosophies: the secrecy of competition, the sharing of information. Copyright protects the rights of the author and restricts the rights of the user. Copyleft recognizes the rights of the author, but guarantees the following four rights to users: use the software without restriction, study the programming codes, modify them to adapt them to their needs and redistribute them. Consequently, if a user wants to distribute his modification of a software under Copyleft, he is required to do so under this same license. In the words of Philippe Rivière, this is what makes free software strong: "the publication of results and sources is permanent, the discussion is open and free of constraints of secrecy, recognition by peers is done on the basis of merit and competence, within a global "community" of individuals cooperating freely according to their affinities." Free software thus allows free access to knowledge, in the four corners of the world. Wikipedia is an excellent illustration of this: free access to knowledge, and this, in more than 270 languages, and more than a million articles in French. The participatory site is thus the fifth most visited site in the world, and attracted 1.7 billion unique visitors per month in November 2020. At the last Francophonie Summit in Kinshasa, among the recommendations issued at this meeting was a very clear encouragement to freely share knowledge and, of course, an incentive to use free software. In 2012, the French Prime Minister, Jean-Marc Ayrault, also encouraged French public administrations to adopt free software. But is this software as reliable as proprietary software? In 2019, Apache, free software, was the most popular web server. The United States Department of Defense uses GNU/Linux "The US Army is "the" largest Red Hat Linux unit fleet" and the US Navy's nuclear submarine fleet runs on GNU/Linux. Viruses on Linux? Their almost non-existence is often explained by the small number of users, making the design of viruses less attractive. In fact, since the codes are open, "it is generally of little use to install an antivirus under a GNU/Linux operating system, in the context of a "personal computer" type of use. Zero risk does not exist, however, but antiviruses will not help you any more." But then, how can we explain that we continue to use proprietary software if their free counterparts are free? Asking this question is to underestimate the power of marketing. And it is the users who pay for this marketing when they buy their software. At a time when debates are raging around intellectual property, and in particular that of patents on vaccines, let us recall that in 1955, Jonas Salk, the creator of the first vaccine against polio, refused to have it patented: "the patent must belong to the people" he replied to a journalist. Would it be wise for the financial health of a company to take priority over the health of millions of human beings? To learn more about this: visit cs3r.org or follow us on Facebook. Solidarity Committee/Trois-Rivières

## ###ARTICLE\_START### ID:1971

You won't believe your ears. The quality of the audio is a fond reminder of those who were lucky enough to experience the "high-fidelity" analog sound of the 1960s to 1990s. All the conditions are in place for high-definition sound to gradually establish itself in the digital world, whether on online music platforms or those that offer spoken content (streaming, web radios, podcasts, audio books, etc.). The Swedish Spotify, the world's number one in music streaming, and the American Apple Music, one of the latest arrivals on this continuous audio streaming market, are sharpening their weapons with a view to offering "hi-fi" quality for everyone this year. The general public, and not necessarily just music lovers, is increasingly demanding better quality for their ears. "In France, as in the main European countries, sound quality is the primary criterion for purchasing headphones for six out of ten buyers. This is almost obvious, the criterion having been fairly constant for two years and more than 10 points above the following criteria: comfort, wireless, or ease of connection to other equipment," notes Julien Peleton-Granier, research director at the GfK Market Research Institute. For its part, Fnac, one of the leading audio sellers in France, intends to reinvest in auditoriums to attract music lovers. The renewed interest in vinyl records also illustrates this quest for hi-fi sound, emitted in analog mode from a turntable (the record player) by mechanically reading the microgroove engraved on a thin PVC disc! Globally, according to the International Federation of the Phonographic Industry (IFPI), vinyl sales jumped 23.5% in 2020, while CDs - the famous optically readable compact disc - fell 11.9%. In decline but known for their better sound quality compared to streaming, these two media make up the physical market, which generated $4.2 billion (€3.4 billion) in sales worldwide last year, still accounting for nearly 20% of all recorded music. "The MP3 of the 2000s diverted users from hi-fi quality to the quantity of infinite catalogs put online, while wireless has grafted itself onto this trend towards dematerialization by sweeping the market with small Bluetooth or Wi-Fi speakers, or even multi-room," says Stéphane Gissy, head of hi-fi products at Fnac Darty. Online music revolution The culprit is therefore designated: MP3, a digital compression format that reduces the size of the digital file. It became the standard after being defined thirty years ago by the Moving Picture Experts Group (Mpeg). A compromise deemed acceptable at the time between quality and size of the compressed file (weight in bytes), MP3 has helped to democratize music on the Internet. It was popular in the 2000s not only on Walkmans and portable music players (including the first iPod, launched in 2001), but also on Internet file sharing networks, most of which were illegal. This revolution in online music, with the collateral damage caused by piracy, was at the expense of quality. "MP3 went in the wrong direction," laments André Kudelski, the son of the founder of Nagra, the Swiss manufacturer of the ultimate in professional portable tape recorders, created in the early 1950s. Even today, although increasingly pushed towards the exit, MP3 still sets the tone. When encoded at 128 kilobits per second (Kbits/s), its compression allows, by cropping its sound spectrum, to obtain a digital file that is ten times smaller than its original on audio CD. MP3s at 256 Kbits/s or even 320 Kbits/s improve the compromise. "The level of compression used is more or less important depending on the choice of the service editor, a choice often dictated by the cost of bandwidth," notes Xavier Filliol, operational director of Radioline, a web radio and podcast platform where MP3 remains dominant. "However, there are about a hundred web radios in MP3 at 320 Kbits/s out of the 90,000 streams indexed by Radioline; they are called "Radio HQ" [for High Quality, Editor's note]. Podcasts, on the other hand, are almost exclusively produced in MP3," continues the man who founded the website MP3.fr in the 1990s. And he adds: "I remain attached to this universal format with its recognizable "grain" (no bass, treble that whistles). This sound marked an era of musical liberation, like vinyl, cassette or FM in their time. » As for music streaming platforms, they prefer to use the AAC format, which, at equivalent quality in MP3, consumes less bandwidth on high-speed networks. For example, an AAC file at 128 Kbits/s is equivalent in audio quality to an MP3 at 256 Kbits/s. Better still: an AAC file at 320 Kbits/s offered by Spotify or Deezer in "premium" restores a listening quality that is close to that of the CD. The American Tidal and the French Qobuz, for their part, stand out by offering up to 1,400 Kbits/s. But what is the exception could become the rule: the brand with the apple, criticized in 2017 by the American-Canadian singer Neil Young for the low quality of its streaming at only 256 Kbits/s, is preparing to launch Apple Music Hi-Fi in June (during its developers conference) and at no extra cost. If this rumor is confirmed, the promised CD quality would boost the streaming market. In order not to be caught off guard, Spotify was quick to announce last February the launch "later in the year" of a "Spotify Hi-Fi" option for its premium subscribers. Capturing the original sound The secret to a good recording lies upstream in the chain. In capturing the original (analog) sound, the higher the sampling frequency (in hertz) and the higher the digital encoding (in bits), the more faithful the audio quality is to the source. "While the CD is content with 16-bit encoding at a sampling frequency of 44.1 kHz, Hi-Res files benefit from at least 24-bit encoding at a frequency equal to or greater than 96 kHz, and up to 192 kHz on many of the titles we offer," explains Georges Fornay, CEO of Qobuz, a pioneering platform for high-resolution streaming certified by the Japan Audio Association. It now claims "more than 70 million titles in Flac format. This open codec (in other words, free encoding software) was first made available twenty years ago. Flac offers the advantage of compressing an audio file by half or two-thirds without any loss of data. The Windows 10, Android since version 3.1 and Apple MacOS/iOS 11 operating systems have adopted it. But in streaming, apart from Qobuz, it is little used, except for archiving. The French Hi-Res pioneer remains one step ahead in its niche market compared to the dominant platforms attracted in turn by hi-fi sound. Georges Fornay reveals that "in parallel with Flac Hi-Res, Qobuz will soon offer the DSD format for download, failing to be able to exploit it in streaming. Created in 1999 by Philips and Sony, DSD is sampled at... 2,822.4 kHz, sixty-four times more than the CD, of which the Dutch and Japanese are also at the origin. It is the nirvana of very high musicality for music lovers and purists, as long as their hi-fi equipment is compatible with DAC (Digital-to-Analog Converter) to convert digital to analog. This is made possible, for example, by a "stream" (audio server) from the Toulouse manufacturer Liedson. And why not download an immersive, multichannel AC3 audio file for your home cinema in the future, which is used in cinema? "It is very little used by the music industry, which continues to produce... in stereo. However, the opportunities are enormous. The immersive binaural sound format adapted to headphones could thus develop," says Xavier Filliol. Tidal and Deezer offer immersive 3D sound for headphones in Sony's 360 Reality Audio format. Renewal of the hi-fi market While waiting to find the auditory Grail in streaming, the return to grace of hi-fi could have consequences on the cyclical market for audio equipment and give it a second wind. While last year, only sales of audio headphones and sound bars for televisions recorded strong growth, of 20% and 14% respectively according to GfK, the other segments of the French hi-fi/audio market are in decline. As a result, in 2020, the "sound" turnover in France only increased by 6.2%, to just over 1.1 billion euros. As if the smartphone was enough to listen to music and audio content. Hi-fi equipment manufacturers sold 510 million euros worth of systems, speakers, amplifiers and tuners last year. This is 3% less than in 2019, even if we include vinyl record players (Dual, Audio-Technica, Pioneer, Yamaha, etc.), which follow the growth curve of vinyl records but remain marginal. With the "democratization" of hi-fi sound on the Internet, manufacturers of high-end audio brands such as the Danish Bang & Olufsen (B & O), the Americans Bose, JBL and Sonos, the French Cabasse and Devialet, the Japanese Denon, Pioneer, Sony and Yamaha, the British KEF, Marshall and Bowers & Wilkins (B & W), or the German Sennheiser have gradually adapted to streaming and connected audio. Their sales could benefit from a renewal of the audiophile market, expanded to Internet users won over by the new online audio quality. "Historic hi-fi brands have reinvested in recent years to integrate new digital technologies. This ranges from controlling hi-fi devices from a smartphone or tablet to networking streaming amplifiers or connected active speakers (integrated amplifier and network), via wired (Ethernet) or wireless connectivity. With this new connected hi-fi equipment, quality is starting to (re)interest consumers,” confirms Stéphane Gissy. Especially since very high speed, with optical fiber deployed in recent years and the gradual arrival of 5G, will allow sound to take its revenge on the Internet. With bandwidth (speed in megabits per second) and latency (in milliseconds) being increased and reduced respectively, a concert by several musicians located, for example, in the four corners of the world could ultimately, unlike the aggregated recordings that we saw during the lockdowns, take place live and in hi-fi streaming without audio lag. The Swedish company Elk Audio has developed a latency reducer (to 20 ms), particularly on 5G, which interests Vodafone and Orange. The Internet of ears (streaming, web radios, podcasts, etc.) is on the move, provided that we increase (the sound) quality and definitively turn the MP3 era around.

## ###ARTICLE\_START### ID:1972

Basel (Switzerland) special correspondent - First noticed in Switzerland at the start of the pandemic, Emma Hodcroft's predictions are starting to appear everywhere, even the New York Times, which asked her a few days ago why the variants have such curious names (for example, 20H/501Y.V2 for the so-called South African variant). Answer: "It is true that they are not obvious. They must be simple, easy to remember, and not include a geographical indication so as not to offend anyone." A researcher at the University of Bern, where she has not set foot for a good year due to teleworking, the epidemiologist meets in the middle of a windy park, surrounded by luxury buildings, without a mask, but at a respectable distance. The virologist lives in Basel. The Rhine is nearby, the German and French borders are less than a kilometer apart, and on the horizon, the chimneys of the Basel pharmaceutical industry belch their white plumes. This panorama will be her outing for the day. Since the start of the pandemic, the researcher has spent most of her time in her apartment, taken up with tracking the virus and its incessant iterations. "The days start at 7 a.m. and end at 10 p.m. I try to save Sunday afternoons," she says. "It's intense, but exciting. I never would have imagined that my career would take such a turn." In practice, this 33-year-old biologist is able, based on a sample taken on the other side of the world from which she has just downloaded the DNA sequence, to trace the family tree of a variant (English, Indian, Breton, or whatever) over five generations and, above all, to understand how it pierced the defenses erected in its path. The collaborative project Nextstrain, which she co-hosts, is mapping the ravages of SARS-CoV-2 live, not to count the victims, but to profile the killer. When, why and where does it change appearance? What techniques does it use to continue the offensive when, on the other side, the response is organized with quarantines, lockdowns and mass vaccination? In early October 2020, when a second epidemic wave was ravaging Switzerland, Emma Hodcroft stood out in a daily newspaper by stating that, "alas, we had seen it coming since the summer. The sequencing of the virus tells us very clearly that the origins of what is currently affecting us are on the beaches of Spain a few weeks ago. Decoded, the samples taken from Covid-19 patients all said the same thing: the mutation, however tiny, had an Iberian origin. "Variant hunter? The title makes me smile, but it is indeed the objective pursued by the convergence of several disciplines: biology, genetic engineering, bioinformatics. " Emma Hodcroft's days follow one another and are similar. When she wakes up, she downloads the latest raw genomic data uploaded to the open source platform Gisaid. She then browses the contributions of the Nextstrain team in New Zealand. The colleagues in Seattle will be online later in the afternoon. The work consists of identifying mutations, spotting molecular anomalies, correspondences, and validating hypotheses of viral progression in the territories. The playing field is vast, the entire earth, quite simply. Nextstrain collects genetic information from 10,000 new samples of the virus per day. "But be careful, we do not claim to obtain an exhaustive and perfect map," warns the researcher. The sources of these samples are very variable. We get almost nothing from Africa, for example. The four countries that sequence the most are the United Kingdom, the United States, Switzerland and Denmark. So, for them, our analyses are very complete." After interpreting the daily data, she annotates her graphs, publishes them on the Web and posts her comments on Twitter, where she has 64,000 followers compared to 800 at the end of January 2020: "a recognition, not an end in itself." Sentinel work Born in Norway to parents working in the oil industry, Emma Hodcroft grew up in Scotland before following her mother to Arlington, near Dallas, at the age of 5. She studied biology at Texas Christian University. "I wanted to study medicine, but I didn't have the grades," she recalls. "I realized that research was a job, that you could earn a salary to study the evolution of species. » She then left for Edinburgh, where she conducted research on HIV genetic mutations, master's, doctorate, postdoctorate. In 2017, she joined the University of Basel to work with Richard Neher, co-founder of Nextstrain. This project then established the family links between pathogens such as influenza A, Ebola, and Zika. Today, it is the real-time decoding of the coronavirus family tree that takes up all of her time. This sentinel work to warn of the potential dangers of yet another mutation is central to the fight against the pandemic, but often frustrating. "We are all so obsessed with these variants, the general public and researchers alike, that we forget the essential thing: it is not them who perpetuate the health crisis, but us. The virus does not spread on its own, it needs human vectors, and I will never repeat enough how much the crux of the matter in combating it is mobility, or rather its restriction. » And to quote B.117, aka the English variant. Detected in the county of Kent in England in October, "we had to wait until Christmas Eve for politicians to deign to react, too late to be able to slow down." She hopes that history will not repeat itself with the South African, Indian or Brazilian variants, or one of their successors. But whatever happens, she will be one of the first to know.

## ###ARTICLE\_START### ID:1973

A major figure in the contemporary landscape and a pioneer of computer music in France, Philippe Manoury is worried. Some works in his catalogue, and not the least, are currently problematic in terms of performance. This is the case with Pluton, which should be a highlight of the composer's 70th birthday celebration in 2022 at the Cité de la Musique in Paris. Created in 1987, with the 4× from the Institut de recherche et coordination acoustique/musique (Ircam), a super-powerful machine that made it possible to program sound transformations in real time, the score was conceived at a time when the future of the music-science association seemed bright... "When the first analogue synthesizers replaced the magnetic tapes used in mixed music, we already thought we had made a big step forward," says Philippe Manoury, "but these new instruments sometimes went out of tune because certain electronic components were sensitive to temperature variations. » The arrival of digital technology reassured creators. The game of numbers is independent of the ambient heat or cold. "We said to ourselves that we could keep everything, and we were convinced that we had eternity ahead of us...", recalls Philippe Manoury, recalling a conversation he had in the 1980s with his elder Pierre Boulez, the founding director of Ircam. Since then, technology enthusiasts have realized that this was an illusion. "I was first confronted with the problem of the survival of works with electronics when I was asked to design a shorter version of On-Iron, a piece that I had written at Ircam for the Accentus ensemble," confides Philippe Manoury. "And then, it became clear that we had abandoned the program that was used to do voice synthesis and that in the meantime we had skipped several generations of computers. So we had lost track of it..." When talking about his situation with some of his peers, the composer then realized that he was not an isolated case. "Our memory and our repertoire are no longer protected," he believes, "because we are at the mercy of the industry: if the company that owns the program decides to stop marketing it, we won't be able to do anything." It is therefore urgent, according to the composer, to find a solution. This could come from free software, from open source. Demonstration: "My Sonus ex machina cycle, of which Pluton is a part, works either on a Macintosh and to run it, you have to buy the Max/MSP software, or on Pure Data, created by the mathematician Miller Puckette, the inventor of Max, which can be downloaded for free. » American Miller Puckette, who teaches at the University of Southern California (San Diego), looks back on the reasons that led him to change his tune after leaving IRCAM in 1994: "I realized that when you make software that belongs to an institution like IRCAM, which is more open-minded than a commercial company, the creators still lose control over what they have invented, and for me open source was the way to keep control." And who controls the distribution of the work? "In the case of Philippe Manoury, who set everything up himself from the start, based on the patch [software version created specifically for a work] that I provided him," he replies, "it's the composer. Programming is the only entity that allows us to grasp his thoughts." Furthermore, when Manoury develops a piece with a real-time device, "he also partly plays the role of the performer. "Proceed with an update" Not all composers do this and many have to "compose" - that's the way to put it with a specialist, formerly called a "musical assistant" and now a "producer in computer music" (RIM). Serge Lemouton has been one of them, at IRCAM, for thirty years. "The problem of the sustainability of works with electronics, in real time or not, results from the multiplicity of formats that exist for software and sound files," he explains. "This is exactly what happens when you change your mobile phone and half of the applications no longer work on the new device. You have to do an update." What now affects ordinary people has been hampering the diffusion of music for forty years. One of the tasks entrusted to Serge Lemouton is therefore to remedy this. "At IRCAM, we regularly update the works in our repertoire, it's more or less painful, but we have real know-how in this area. We also develop systems and protocols to solve the difficult problem of conservation or archiving, so that these works remain alive and can be played in the future." Here, we move from life to survival, according to a phenomenon that Michaël Levinas (born in 1949) is keen to place in a historical perspective. "I belong to this pioneering generation that worked on the writing of sound, which means confronting the amnesia of signs and notation," summarizes the composer whose work "in fact involves the relationship to transmission and the obsolescence of media, in this case technological environments. While Michaël Levinas says he is concerned about "the future of some of [his] works produced at Ircam [Gogol, Les Nègres, La Métamorphose]", he considers that "the question is deeper and that it goes beyond individual destinies. He considers it "necessary, even urgent, to draft a memorandum on the conservation of media", which he did, before arranging, in February, at Sacem, a meeting between all the parties concerned. From the creation phase (composers, representatives of studios such as Ircam) to that of the protection of the work, in the immediate future (copyright society, publishers) and beyond... since the National Library of France (BNF) was associated with this reflection. After recalling that the BNF has extensive experience in sound archiving, Mathias Auclair acknowledges that the issue of digital "manuscripts" has been raised for several years within the music department (which he directs), and that it came to fruition in 2012 with the deposit of Michael Galasso, the composer of, among other things, the music for the film In the Mood for Love by Wong Kar-wai. "He composed from time to time on paper and sometimes on software like Sibelius, we recovered all this material," explains Mathias Auclair. Putting the pieces of the puzzle together Other creators, like Pierre Henry, have committed to bequeathing everything, but in most cases, the mixed music works preserved at the BNF under the legal deposit are accessible in an incomplete manner. The score without the electronic part and vice versa. "We always have one or the other...", deplores Mathias Auclair. Publishers are also often forced to put the pieces of the puzzle together, so much so that Pierre Lemoine, director of Editions Henry Lemoine, threw a spanner in the works: "Five years ago, I said that I would no longer publish pieces with electronics." These do not reach 10% of the number of performances that concern his publishing house in a year, but they often keep him busy for months. "When, on the other side of the world, someone wants to play a so-called "mixed" piece from our catalog, it is often a "struggle" to find the electronics, and sometimes for nothing because the producer of the concert ends up abandoning the project." The situation changed in 2019, when the publisher signed a contract with the studio that originated the sound file (Ircam in Paris, Grame in Lyon, GMEM in Marseille). This specialized institution is now responsible for the maintenance, monitoring and "porting" (transition from one operating system to another) of the electronic part of the work. Frank Madlener, director of IRCAM, welcomes this progress, which is already well established in the United Kingdom. "It's as if we were the publisher of the computer part (sound bank, software, patch, etc.)", he says, specifying that it is "impossible to constantly update the thousand works in IRCAM's repertoire. This monitoring of the work is not limited to the redevelopment of the computer program from version to version, which is much safer and more efficient, according to Frank Madlener, than open source: "We have to completely rethink the sound production, in relation to the place, in relation to the musicians, which leads to a true interpretation of the patch or electronic data." This will be the case for the legendary Répons, by Pierre Boulez, on June 30 at the Philharmonie de Paris. From then on, who says interpretation says indications. The director of IRCAM does not forget that the history of music has long been based on the transmission of a text, but he finds the latest developments very dangerous for the sustainability of works. First, because of a writing that tends to lodge itself everywhere: "In addition to writing the score, writing the patch, writing the space, sometimes writing virtual instruments, writing the interaction." Then, by "the proliferation of writing modes specific to each creator. Behind the question of the survival of works with electronics also lies the problem of their interpretation with tools and instructions that have disappeared in a few decades. On this level, one element must be taken into consideration, according to Frank Madlener. That of the transmission of the original codes technically speaking of a patch, "from RIM to RIM, from one generation to another. When oral tradition comes to the rescue of cutting-edge computer music technology.

## ###ARTICLE\_START### ID:1974

The field of artificial intelligence is moving to "Big Science". On April 28, the largest project in the field was launched, bringing together more than 250 researchers from a hundred laboratories or companies (CNRS, Inria, universities, Renault, Airbus, Ubisoft, Orange, Facebook, Systran, etc.) and a dozen countries. The goal of "Big Science", its nickname, is to create a giant network of artificial neurons capable of "speaking" eight languages perfectly, including French, English and Bantu languages. In the jargon, it is a "language model", a program that knows grammar, masters syntax, has an enormous vocabulary... "Language models are central in many fields", recalls François Yvon, a computer scientist at the CNRS, participating in the project, and who lists applications such as automatic question/answer systems, dialogue robots, the creation of summaries, translation. The IT giants already have their "oracles". The best known, GPT-3, from the company OpenAI, outputs more than 4.5 billion words per day, for around 300 clients, as the company announced on March 25. It is used to facilitate customer relations, answer questions, create dialogues for games... With 570 gigabytes (GB) of texts ingested for its training and 175 billion parameters (equivalent to neurons and their synapses), it remained the largest for a long time, before being beaten in January by Switch-C from Google, which fed on 745 GB of texts and has ten times more parameters. 5 million hours of computing "The disconnect between academic research and digital companies worries me. "It is no longer possible to compete: the best results are obtained by the largest systems," regrets the Frenchman Thomas Wolf, initiator of the project and co-founder with two compatriots of Hugging Face, an American company for "sharing machine learning models. At the beginning of the year, he decided to bring together the research community to build his own tool. The first step was taken in mid-April with the agreement of the Grand Equipement national de calcul intensif (Genci) and the Institute for Development and Resources in Scientific Computing of the CNRS (Idris), to make available 5 million hours of calculation, which represents almost a quarter of the capacities of the Jean-Zay machine, installed in Orsay. "It will be an XXL calculation, the largest we have done in AI. In general, these projects need 10,000 to 50,000 hours," recalls Stéphane Requena, technical and innovation director of Genci. But the interest of the project is not only to have computing time, it is above all to correct the many defects of private "competitors": monolingual, opaque, poorly controlled and above all carrying many risks, such as the generation of stereotyped, biased, outrageous texts. The Big Science model will therefore be multilingual and its computer code as well as its parameters will be accessible. Its learning corpus will be better controlled than the large collections of the Web used by current systems, with in particular the correction of different language and gender biases. Several groups will also study questions of ethics or fairness of use. These challenges are essential. In December 2020 and February 2021, Google fired two of its researchers in artificial intelligence ethics, Timnit Gebru and Margaret Mitchell, who were working on the risks of language models. With two other colleagues, they published a text in March that summarizes the main defects of these "lucky parrots", as they call them. They list the first slip-ups of the GPT-3 family. In the texts produced, disabled people are described negatively. Responses quickly slide towards conspiracy themes. "The initiative is also a reaction to the fact that the large models developed by digital companies ask themselves these questions after the fact. We will first list the questions, then the model to answer them," insists Thomas Wolf. Without a budget of our own To this long list, we must also add the desire to understand how these models work, with sometimes astonishing results. For example, while the machine learns on a fairly simple task, which is to complete a sentence, it is then able to carry out various tasks, without new learning, such as translating, counting, writing in computer language. "We could dream of a model capable of self-inspecting and which would say what it understood, or even say "I don't know", hopes François Yvon. "But the most beautiful research questions are those that we don't yet know", recalls Benoît Sagot, research director at Inria. Before taking on all these challenges, this consortium, without its own budget, bringing together a complex mix of public laboratories, start-ups and large groups, will have to show that it can work. On Wednesday, April 28, at the launch, the participants, embarked for a year together, have already made an appointment in July for a first stage of restitution of the progress.

## ###ARTICLE\_START### ID:1975

When he heard about 3D ceramic printing in the 2000s, Michael Eden, a potter based in the northwest of England, began to dream of all that this new technology could allow him to achieve, of the creative boundaries that he could thus cross. The machine, based on a 3D model produced on the computer, creates objects in volume by adding material (plastic, ceramic, glass) in successive layers - a process called "additive manufacturing". "When you work on the wheel, you are subject to centrifugal force, to gravity. But this digital process allows you to free yourself from the constraints of clay. I saw a lot of potential in it." While the shop he runs with his wife enjoys a solid reputation - they produce for Habitat among others - the 46-year-old artist returned in 2006 to warm up the benches of the school, at the Royal College of London, where he confronts these cutting-edge techniques. "I wanted to see how all the know-how I had mastered could be transferred to a computer," he explains. He imagines ceramic works that would be impossible to create using manual techniques, "impossible objects." Vases with an organic structure resembling lace and with incredibly complex details. At first, his fellow potters did not understand his approach, were uninterested in it or openly criticized it. "Perhaps they felt threatened by all these magnificent things I could do?" While the use of this machine is perfectly accepted when it comes to manufacturing industrial parts for the medical or aerospace sectors, it is a different story when it steps on the toes of crafts. "When I met my partner at the Haute École des arts du Rhin, I was very reluctant," says Thomas Royer, designer and co-founder of the multidisciplinary studio La Double Clique, which uses 3D printing to make its objects. "I was more attracted to traditional craftsmanship, to handwork. By collaborating with Trystan, I understood that it brought a lot of poetry and sensitivity, that the field of possibilities was very beautiful." Mentalities are starting to change, but questions, even fears, remain. "A company managed to scan the gestures of a painter decorating a plate, and then had them reproduced very precisely, quickly, by a robot," says Michel Paysant, visual artist and founder of the research laboratory La Céramique comme expérience at the Ensa in Limoges. "It's perfectly feasible. But should it be done?" The milestone has not yet been reached, but it is a very current question, particularly among major brands. And the same goes for 3D printing." For its part, the publisher Roche Bobois has recently marketed a glass table with an imposing 3D-printed concrete base. Is this the end of excellent craftsmanship as we know it? Will the machine finally get the better of the human hand, in its most noble form? "We must see this technology for what it really is, namely a tool that opens up new creative avenues, an amplifier of the imagination," the French artist temporizes. A complement to further appropriate the material. "We are living in an era of technological revolution," continues Michel Paysant. In my opinion, we have passed the milestone of resistance to digital technology. The idea is not to lose the ancestral gesture, but to put it into perspective with these tools. » Water-soluble molds Thanks to 3D printing, the boundaries between designer and maker are disappearing. "We wanted to be totally independent and make our objects ourselves, without going through a factory," explains Milosz Dabrowski, half of the duo behind the UAU Project label, distributed in France by the digital gallery Folks. The arrival on the market in the 2010s of more accessible home 3D printers convinced them to invest. "Our first attempts weren't great!" admits the Pole. "So we reviewed our drawing methods and greatly improved the machine so that it best met our needs. We even built our own, alone, after many hours spent watching tutorials on the internet." Enjoying greater creative freedom, the duo became more responsive, adjusting its range and modifying its products based on the success encountered. "Above all, we only produce what we are ordered, in a very eco-responsible way. »They design colorful vases, lights and candlesticks, with geometric shapes, textured and meticulous reliefs, made of PLA, a bioplastic of plant origin. If, at the beginning, the Mulhouse residents of La Double Clique also printed their finished objects directly, they preferred to change the process, eager to rediscover the beauty of the gesture: "I missed manual work. From now on, we print water-soluble molds, like molts of our objects, in which we pour a non-toxic acrylic resin mixed with terracotta powder, wood or even charcoal." All of these elements allow, for example, color schemes similar to marble. "Then, we clean them, sand them, cut them..." Mastering your tool 3D printing has thus democratized the use of molds, usually very expensive and therefore reserved for mass production. According to Michel Paysant, it will also revolutionize the way in which know-how is transmitted, helping artisans to go further in their creation: "I developed for Meisenthal, the International Glass Art Center, an open-source digital mold library, i.e. a thousand shapes from which everyone has the right to create objects. Everyone can consult them, download them and work peacefully from home, no matter where they are in the world. The artisan virtually leaves the solitude of the workshop, thus belonging to a large community." Because the most difficult thing to master is the software that allows these shapes to be modeled digitally. "The CEO of the manufacturer Make Your Bot believed a lot in this democratization of 3D printing among individuals," explains Lucas Lachaud, sales manager at Formlabs. But it didn't take off: on the one hand because domestic machines do not yet allow objects to be made that are sufficiently solid, and on the other hand because you need to have real knowledge of 3D drawing. "Not everyone can become a designer. Just like traditional crafts, the 3D artisan, a new kind of artisan designer, must master his tool, whether it is the software, which allows him to translate his idea into computer language, or the machine itself. Far from opposing tradition, 3D printing broadens the field of possibilities and pushes back creative limits. So many qualities that attract more and more designers. "I envy the young generation who have this real construction site of the future at their disposal," acknowledges Michel Paysant.

## ###ARTICLE\_START### ID:1976

Control your home lighting and heating with your smartphone, open or close your shutters remotely; or even monitor your water consumption in real time using a connected shower head. This is what our daily lives could look like in the near future. According to the latest forecasts from the Digital Market Outlook, the global turnover of the "smart home" sector should reach 88 billion euros in 2021 (compared to 69 billion in 2020) and the milestone of 150 billion euros is expected by 2025. A clear sign, Ikea, a global supplier of affordable furniture, is active in this segment of interior equipment 2.0. This is demonstrated by its partnership with the Lidar application which allows you to furnish your home virtually using augmented reality. And according to the American technology news site The Verge, Ikea and Sonos - known for its wireless speakers - will once again work together for connected decorative elements. In particular, a frame or board/speaker with a quality audio system integrated into everyday furniture. The speaker, indicates The Verge, would have the shape of a "frame" or a "panel", like a work of art to be fixed to the wall. A bit like Samsung's Frame TV which can blend into a frame. Similar audio furniture already exists, but it costs the equivalent of a net minimum wage (more than 1200 euros) at Soundwall, which offers very high-end sound and aesthetic products. Sustainability. The Swedish brand is not the only one to invest in the sector, but is committing itself to it a little more each year. In 2019, the furniture and decoration giant already collaborated with Sonos for a range of shelves (100 euros) and lamps (175 euros). Sonos is the guarantee for the Swede to get out of the low-end image. "In the case of Ikea, rather than talking about collaboration, the question is rather how to manage the delay when you don't know how to do it," points out Jean-Louis Frechin, a specialist in digital design, architect and founder of the No Design agency, who believes that "with these ranges, Ikea, which is known as a copycat, has somewhat electrified the world of furniture. By taking a step ahead of Habitat, for example. Others, like Leroy Merlin, are trying it." But this partnership, articulated around the still very secret project called "Titan", raises the question: don't furniture and technology have divergent interests? Is sustainability compatible with technological progress, which is often a factor in obsolescence? "A good piece of furniture can last twenty years, while a technological object may not exceed five years," asks Jean-Louis Frechin. The two worlds do not have the same logic of duration over time." Added to this is the climate awareness of generations that are part of the responsible consumption movement. "The Sonos-Ikea partnership will only be interesting if the long-term perspective prevails. The future is open-source firmware that can be updated without depending on manufacturers. This would allow consumers not to be held hostage in the event of an abrupt end to the collaboration between the American and Swedish companies." "A hit." For her part, Cécile Bar, a collaborative innovation advisor, believes that Ikea's direction is not necessarily to focus only on sustainability. "Low-end furniture is a hit, some people love to renew their interior, which was not the case in the past. Other people in precarious situations simply have no choice." She sees two audiences evolving in parallel: "There are those who live in small spaces or temporarily, fans of Le Bon Coin and cheap furniture. And those who have the means to achieve their ecological ambition." Our two interlocutors agree, however, that this type of Ikea-Sonos partnership is still intended for high-end furniture. For Frechin, the Swedish giant has the advantage of being able to offer attractive prices. "For bulbs and switches, Ikea has practiced very aggressive prices, if we compare with the Pionnier-Philips system. It was almost double." Planned for this summer, the Ikea-Sonos speakers should not exceed 200 euros, in order to remain accessible. If the materials and components are of quality, the work of art hiding a high-performance audio device could once again attract the crowds. And other brands could follow suit.

## ###ARTICLE\_START### ID:1977

It is 11 p.m. in Garabulli, east of Tripoli, on June 24. Musa(1), a Sudanese man in his twenties, is getting ready to set sail. That evening, about 70 of them climb into a white inflatable boat that has washed up on this beach. They all hope to reach the Italian island of Lampedusa, nearly 300 kilometers to the northeast. This migratory route is one of the most dangerous in the world. More than 20,000 migrants have died there since 2014. Just last week, 130 people drowned there. For twelve hours, the small boat hurtles along. By midday on June 25, it has covered almost half the distance that separates it from its objective. "The boat was moving well, we were all seated and we still had enough gasoline." But then Musa sees the cuckoo again that he had already seen in the early morning. “It was white and grey.” That morning, a plane used by Frontex, the European border and coast guard agency, flew over the area. It was followed by a ship that finally caught the boat’s tow. On its side, Musa deciphered an inscription, “648 Ras Al Jadar.” Then a coat of arms: the boat was decorated with the colours of the Libyan coast guard. More powerful, the boat finally blocked the path of the migrants’ boat before ramming it. Four men fell into the water. Two got back on board. Two disappeared, Musa explained. When it stopped, a Libyan “knifed our boat,” he recalled, before throwing them a rope. He remembered the cynical words of the uniform: “It’s over, we are here to save you.” That day, Musa and his comrades were the victims of a padlock that Europe had created to protect itself from migrant landings. While nearly 600,000 of them are still languishing in Libya, their crossing is made perilous by the system that is supposed to help them. "HYPOCRISY" Boats leaving the Libyan coast are always considered to be in distress due to their overcrowding. In this context, "rescue" operations, such as the one Musa experienced, are governed by international treaties. NGOs consider them more like "interceptions". Because behind the helm of these boats that crisscross this part of the Mediterranean, we often find the Libyan coastguards who tirelessly bring the migrants back to their point of departure. This is the case for 11,891 of them in 2020, according to a restricted document from the European External Action Service (EEAS) that Libération was able to consult. In this report, the Brussels authorities express concern about their fate: "Migrants and refugees continue to be subjected to arbitrary detention and torture, both in official and unofficial prisons. [ ] According to the UN, among the perpetrators of these human rights violations are members of the government." Since 2018, Tripoli has had its own SAR zone (for "search and rescue"). On this 200 km strip, the country is responsible for sea rescues: it is up to it to contact the boat best able to intervene. Its coastguards, on a drip of European money, are well supported by Frontex planes, which report shipwrecks to them. The agency stopped its maritime patrols in 2019 and only maintains aerial surveillance operations. However, in 2012, the European Court of Human Rights (ECHR) ruled that refugees could not be returned to Libya. Is Frontex's initial mandate being diverted from its purpose? "The biggest hypocrisy is that by having coastguards in Libya, we prevent people from crossing the Mediterranean," explains a Frontex employee. "We have never cooperated directly with the Libyan coastguards," opposed Fabrice Leggeri, the agency's executive director, before the European Parliament in March, already in turmoil since the opening of an investigation by the European Anti-Fraud Office (OLAF), the EU's anti-corruption watchdog. Three Libyan coastguards and a high-ranking officer argue the opposite: they claim to have received directly from Frontex the coordinates of ships to be rescued, sometimes even on WhatsApp messaging. A "clear violation of European law," according to Nora Markard, professor at the University of Münster. If this is the case, it is always under the seal of urgency, the agency opposes: "When human lives are at stake, we try to transmit information about a rescue to all actors." After several months of investigation, Libération, its partners from the Dutch media Lighthouse Reports, the German television program Monitor and the newspaper Der Spiegel are able to demonstrate the extent of this unnatural relationship between the EU and the Libyan coast guard. Thanks to open source data, the analysis of the coordinates of intercepted boats collected by the NGOs Sea Watch and Alarm Phone, the testimonies of survivors, Frontex employees, coast guards, as well as the consultation of exclusive documents, photos and videos, we were able to reconstruct with precision the course of 94 attempted crossings, which took place between January 2020 and March 2021 in the central Mediterranean. In 56 cases, the Libyan coastguards finally intercepted the migrant boats before taking them back to Tripoli. In 20 cases, a Frontex plane was seen near the scene of the shipwreck, even before the coastguards intervened. However, the latter are not always in the best position, as on 17 June, when several merchant ships were less than three hours away from a rubber dinghy in distress. That day, the coastguards took more than seven hours to reach the scene. Repeated delays that may have caused the disappearance of 91 migrants. BLURRED BORDER The authors of the EEAS report are also concerned about the state of the Libyan boats. In February, only four of them (out of twenty) were in working order. Today, there are only two left, according to a Libyan captain who wishes to remain anonymous, and equipped with rather rudimentary navigation instruments. Finally, according to our information, in at least nine cases, the Libyans intervened in the Maltese rescue zone, several hundred kilometres from their coast. Before bringing the migrants back, again and again, to the other side of the Mediterranean. To respond to accusations of complicity with the Libyan coastguard, Frontex has only one answer on its lips. If the agency flies its planes in the Mediterranean, it does not participate in or coordinate the rescue. After detecting a ship in distress, it limits itself to notifying the neighbouring maritime authorities. It is up to them to take the appropriate measures. "There is a misunderstanding that it is important to clear up. Frontex does not coordinate rescue operations," insists someone from Warsaw, the organisation's headquarters. "In general, we informed all the rescue centres nearby: Malta, Italy, Egypt, Tunisia, Libya, and sometimes even Algeria," recalls a former employee. The protocol is as follows: the agency sends a photo with the coordinates of the boat. The alert is repeated every thirty minutes. If no one responds, Frontex is entitled to contact all boats in the area and report the sinking. It is in this context, considered extremely rare by a specialist on the subject, that the agency is entitled to be in direct contact with the Libyan coastguard. Officially, the only contacts that Warsaw has with Libya are via officials from the Tripoli rescue center, the Joint Rescue Coordination Center (JRCC), created with financial and logistical support from Europe (46 million euros) and placed under the responsibility of the Libyan Ministry of Defense. The boundary between the two entities, the Libyan coastguard and the Tripoli rescue center, is nevertheless blurred. Several sources, both in Libya and in Europe, maintain that the two bodies are in fact the same, such as Massoud Abdalsamad, a colonel in the coast guard and head of the JRCC. CONTRADICTIONS Part of the neurosis of the European super agency of coast guards and border guards is played out on the twelfth floor of a building in the heart of Warsaw. This is where the Frontex Situation Center (FSC) is located, the surveillance center of the flagship of the European fight against irregular immigration. On the walls of this open space, giant screens broadcast live the movements of the planes, drones and other helicopters that the agency deploys every day to the external borders of the European Union. In Warsaw, each FSC employee follows the progress of "his" operation. He is in contact with both the pilot of the plane and the "sensor operator", responsible for directing the camera to the lenses. The latter two witness, day after day, mass drownings or shipwrecks. In spite of themselves, they are witnesses to the drama unfolding in the central Mediterranean. And to the contradictory injunctions of Frontex's mandate. Of course, the agency saves lives. But it also sends exiles back to Libya, a country they do everything to leave. "When I talk to my colleagues who are responsible for rescue, they maintain that when you are in such a situation, you do not think about human rights," says a former senior officer of the agency. Before continuing: "What is certain is that this situation was not foreseen by the texts governing sea rescue." Within the division, the situation is causing damage. At Frontex, many testify to the psychological difficulties of these agents who are not like the others, placed at the heart of the contradictions of the system. A former employee recalls his emotion when reading the detailed reports that are drawn up after a shipwreck. Not to mention the Libyan situation, which interferes with daily life: "One day, an asylum seeker who was on a boat in the Mediterranean called me while I was shopping. His boat was sinking." On June 25, on the Ras Al Jadar, Musa found other migrants who had previously been intercepted. The ship continued on its way, for at least an hour, the young man believes. He intercepted another small white boat, at nightfall, from which about fifty passengers disembarked. Then it was disembarkation. His group was separated from the rest of the troop. Musa was handcuffed. He was then taken to Al Khoms prison, 120 kilometers east of Tripoli. That day, 270 exiles were intercepted, including 92 Sudanese, according to statistics from the International Organization for Migration, a United Nations agency. On dry land, Musa claims to have been beaten. Knocked to the ground. Others tried to escape but were caught by Libyan police. It is not the jailers that the young man is most bitter toward. It is Europe to which he feels he owes this time behind bars: "I saw it with my own eyes: European planes gave away our position so that the Libyans could catch us." ? (1) The first name has been changed. This investigation was conducted in collaboration with Sara Creta, Bashar Deeb and Emmanuel Freudenthal. "An asylum seeker called me while I was shopping. His boat was sinking." A former Frontex employee

## ###ARTICLE\_START### ID:1978

A project to combat COVID-19 at Mila, the research center specializing in artificial intelligence (AI), has caught the attention of Intel, which will announce a partnership with the Montreal center for artificial intelligence on Wednesday to extend the scope of this project beyond the coronavirus. Mila has a new major partner. Intel is announcing an investment of an undisclosed value to become an industrial partner of the center founded by researcher Yoshua Bengio of the University of Montreal. As part of this new alliance, researchers from the Californian multinational and Mila will attempt to develop artificial intelligence (AI) tools to more quickly determine how certain molecules behave when confronted with a virus or bacteria. Concretely, the two partners believe they can accelerate the creation of new vaccines and drugs that can more effectively treat diseases of all kinds. Thanks to AI technology, researchers can run dozens of simulations at the same time and thus more quickly determine the various effects of certain molecules on an organism and on the evolution of a disease or virus. Intel will provide the expertise behind this parallel simulation method, while Mila will handle research related to medical data and algorithms. Through this partnership, Intel also hopes to facilitate its recruitment of computer science and AI experts by participating in the various networking activities of the Montreal research center. In accordance with practices in this field, the fruits of the research resulting from this partnership will be shared with other AI and health sciences researchers. "This means that the entire technology and medical research sector, in Montreal and elsewhere, will be able to benefit from our work, and not just a handful of large companies," said Denis Gaudreault, general manager of Intel in Canada, in an interview with Le Devoir. An AI springboard for Intel The health research project announced today is just the first in a series that Intel wants to launch in Montreal. The American company, which has some 800 employees in Canada, is looking to diversify beyond the manufacture of computer chips to take advantage of a major wave of anticipated growth in global demand for computing devices. The digital shift taken by several industries in recent months is already leading to shortages of computer components worldwide. “The value of our market will increase from $50 billion to $300 billion in a few years. We see applications in health, manufacturing, transportation and security. AI has a very important role to play in this shift,” explains Mr. Gaudreault. Due to its high concentration of university researchers specializing in different forms of AI, Montreal is a world-class hub that can help Intel position itself advantageously in these different sectors, according to him. “Montreal is a hub. We were really looking forward to having a presence here in AI research." For Mila, this partnership with a company with an international presence offers a new opportunity to shine beyond the borders of the city. "It's an opportunity to democratize AI and accelerate the creation of open-source solutions like those developed at Mila," explains Stéphane Létourneau, vice-president of the Montreal research center. LE DEVOIR The two partners believe they can accelerate the creation of new vaccines and drugs that can more effectively treat diseases of all kinds

## ###ARTICLE\_START### ID:1979

NEW YORK — With the vaccination campaign accelerating, the question of a digital “vaccine passport” is becoming increasingly real in the United States, despite growing political controversy and a fragmented health care system that makes it difficult to centralize data. Asher Weintraub, 17, was excited to show off New York State’s new digital “pass” he downloaded to his smartphone on Friday, which, via a QR code, certifies that he is immune to COVID. “I think it’s cool, we don’t have to show all kinds of documents every time,” he said, flashing his code at the entrance to one of the first indoor shows in Manhattan since March 2020. Pushed by Democratic Gov. Andrew Cuomo, New York is so far the only state to have launched such a voluntary “passport,” in partnership with tech giant IBM. Other governors, on the contrary, repudiate the idea. Florida's Republican governor, Ron DeSantis, was the first to sign an executive order on Friday prohibiting state administrative services from issuing "any standardized document" intended to certify that a person has been vaccinated against COVID, and businesses from requiring their customers to provide proof of immunization, arguing that this would "reduce individual freedoms and harm patient confidentiality." On Tuesday, his Republican counterpart in Texas, Greg Abbott, banned a series of organizations from requiring proof of vaccination, while in Pennsylvania, some Republican elected officials are also pushing for this. South Dakota's Republican governor, Kristi Noem, had also deemed the idea "un-American" last week. NO FEDERAL MANDATE Faced with this controversy, the Biden administration intends to stay above this fray. Earlier this week, White House spokeswoman Jen Psaki assured that there would be "no federal requirement for everyone to obtain a single vaccination certificate." And that Washington would simply issue recommendations to ensure that the systems developed are "fair" and guarantee data confidentiality and security. However, even without federal impetus, few Americans doubt that these digital certification methods will develop, in a world where smartphones have become an essential tool of daily life. Many are particularly following with interest the "Green Pass" adopted in Israel, where the vaccination campaign has been a model of speed. A few non-governmental projects are therefore moving forward. Alongside the New York "pass", the Common Pass project, with global ambitions, seems the most advanced. Launched by the non-profit organization Commons Project, which specializes in the interconnection of digital health data, this "pass" is already used daily by a dozen international airlines, according to its director Paul Meyer. Unlike the system designed for New York State, this platform is based on free, non-commercial software. “Neutral” and “safe” in terms of data protection, it is, according to him, “emerging as the standard” for a sector that promises to be booming, with the progression of vaccinations and the pressure to restart economic activity. Discussions are underway with the European Union — which is working on a “green pass” that would allow free travel within the Schengen area — and separately, with several European governments, he said, without specifying which ones. Setting up such a digital passport is “simpler” than in the United States, he said: the generally public health systems of European countries already centralize health data, while in the United States, where the health system is essentially private and each state has its own health services, everything is “fragmented.” “FREEDOM REGAINED”While America’s political polarization could slow the Common Pass’s development, he acknowledges, he hopes the “newfound freedom” argument—freedom to travel, go to a baseball game, or go to the theater—that the passes are designed to foster will prevail. Marcus Plescia, chief medical officer of the ASTHO group of state health officials, agrees that “most people realize that a vaccine passport is going to be useful in at least some situations,” and that “the restrictions are going to be different depending on whether you’re vaccinated or not.” For now, the discussion is still “a little premature,” with only about 20 million Americans fully vaccinated, he says. But he wouldn’t be surprised if COVID-19 vaccination certificates were soon required in schools—once COVID-19 vaccines are approved for younger people—and by some private employers. “I think some of the hesitancy will dissipate when people realize all the things they can do once they get vaccinated,” he said.

## ###ARTICLE\_START### ID:1980

The first French lockdown, in spring 2020, was the scene of an unexpected union victory. While its expansion in France seemed unwavering, its promises to increase permanent contracts in disaster-stricken areas always outweighing criticism of its social policy, Amazon had to kneel down in front of SUD Commerces and the CGT. Sued by these two unions, then convicted in court for a lack of health risk assessment in its warehouses, the online seller closed them for several weeks, the time to adopt measures commensurate with the situation. This did not prevent the firm from raking in record profits, but the symbolism was strong. It was all the more so since this type of victory remains somewhat isolated: apart from a few strike movements in Apple stores in recent years, the Gafam (Google, Amazon, Facebook, Apple, Microsoft), nickname given to the masters of digital capitalism, seem to be sheltered from any large-scale social movement. However, in recent months, an unprecedented movement seems to have started. Companies like Google or Kickstarter have set up unions. And, in the United States as in France, the politicization of digital workers is slowly making its way, sometimes to the very top of the ladder. The first obstacle to unionization within digital companies is their organization. It must be said that the composition of the workforce of the web giants is like society as a whole: polarized. At the bottom of the ladder, we find proletarians who, when they are not directly employed, are in the hands of more or less vigilant subcontractors. Their activities vary depending on the company that pays for these services: handling, delivery, artificial intelligence training, after-sales service, moderation of online content EMPLOYEE SPYING A French company symbolizes this great divide: Téléperformance, the self-proclaimed world leader in customer relations, which provides its services to Apple, Google and Amazon. Established in nearly 80 countries, where it employs almost 400,000 people, the company headed by the discreet Daniel Julien does not do social lace. For years, unions have denounced its Taylorist culture and its surveillance of employees. Working conditions that these employees endure throughout the year to allow the CEO to pursue his dreams of a "success story": the company entered the CAC 40 last year and Daniel Julien received, in the process, 17 million euros in compensation - 900 times the minimum wage, the starting salary in his company. On the side of executives and in engineering, generally better treated, the situation is different. In the United States, we are witnessing an awakening of white-collar workers in tech. Once kings and queens of an industry that pampered them, they are sometimes becoming aware of their privileges, and also of the failings of their own companies. An awakening partly linked to the various public crises that the digital giants have experienced in recent years (the Cambridge Analytica affair, Donald Trump's mandate and his use of social networks, etc.), but also to several scandals in human resources (the dismissal of the two researchers in charge of the artificial intelligence ethics laboratory at Google). As a result, people at the top of the Gafam food chain now want to have more influence on the choices of their employers, both internally and externally. In January, a group of employees at Alphabet, Google's parent company, announced the launch of a union, which aims to be the role model for all the group's professions. An exceptional event in Silicon Valley, where initiatives of this kind can be counted on the fingers of one hand. "Everyone at Alphabet contributes to developing our technologies, from the people who drive our buses to the coders, from the sales department to the cleaning department," insists the press release announcing the initiative. "We are responsible for the products we bring into the world. Their implications go far beyond Alphabet." VERY RARE MOVEMENTS In France, we have not yet seen a similar phenomenon, despite a stronger presence of unions. In smaller companies, tongues are starting to loosen on poor working conditions, notably thanks to the Instagram account Balance-TaStartup. But in the offices of the digital giants, which have invested in certain popular locations in Paris or its suburbs, actions by engineers or executives are extremely rare. "Unionization movements in the United States are first and foremost a collective approach of solidarity, against strategic positions of their company," analyzes Matthieu Trubert, UGICTCGT union representative at Microsoft, which employs around 2,000 people in France. "In our country, unions pre-exist this type of situation, whereas in the United States it's the opposite: unions are created following a conflict. We have a hard time moving on to this stage of collective solidarity." It's hard to talk about unionization to people who generally benefit from many advantages, starting with high salaries in an industry that is still growing, and which therefore needs to recruit. It's also hard to overcome digital workers' aversion to politics. These tensions are particularly felt around diversity issues. In 2017, for example, a Google engineer published a manifesto violently questioning his company's policy of positive discrimination, believing that it was "politically correct". However, beyond unionization, political engagement is not a new subject for the digital sector. "For a long time, we have observed a strong mobilization around issues such as data security or free software, much more than for the inclusion of women in the industry, notes Isabelle Collet, professor at the University of Geneva and specialist in gender issues in tech. We must also take into account the libertarian ideology of the digital environment, which pushes towards a certain contempt for the human, political dimension. All that matters is science." "MOMENT OF CRISIS" For those who decide to get involved, ultimately, it is not only about fighting for their rights, but also for another model of society. The Solidaires Informatique union, a member of the Union syndicale Solidaires, specializes in digital, consulting and video game companies. It is established in companies such as Atos and Ubisoft. In addition to labor law issues, the question of the societal impact of digital technology is increasingly being raised within their base. "As digital workers, we must question the consequences of our actions," says Nadine Stéphant, from the national office of Solidaires Informatique. Among the topics addressed by the union: ecology, sexual harassment in the workplace and surveillance capitalism, a theme that gained importance during the first lockdown. "Politically, we are in a time of economic, social and environmental crisis. Digital technology is linked to all of these things," adds Jean-François Thuillier, a developer. He himself chose to join a cooperative and participatory society (Scop), the Lille agency les-tilleuls.coop, in order to have a work environment more in line with his personal values. He is also a member of onestla.tech, a movement of digital workers in France, which was formed around the demonstrations against pension reform. The collective now hopes to transform the trial by creating an association, by uniting as many digital workers as possible around major political and social issues. But without necessarily going through the union box. "We also want to reach people for whom unionism is a deterrent," summarizes Jean-François Thuillier. More and more people feel involved. We can no longer compartmentalize what we do at work and our personal convictions." "As digital workers, we must question the consequences of our actions." Nadine Stéphant from the national office of Solidaires Informatique

## ###ARTICLE\_START### ID:1981

April 2020. While other novelists were rolling out their yoga mats on the tiles of their country homes, Thomas Clerc was conscientiously crisscrossing the empty streets of Paris. Adorned with various banners and diverted shop windows, the capital had suddenly become, like many cities around the world, the unexpected provider of top-quality literary material. A small gold mine even, if you are like him a manic-Perecian obsessed with all kinds of sorting, inventorying, categorizing and typologies. Unsurprisingly then, the man who presciently wrote in 2013 the prototype of the lockdown novel, Intérieur - a sort of attempt to exhaust a Parisian apartment in the form of a semiology summary - promptly offered Libé his list of hanging sheets. So we read on May 2 (Thomas Clerc is a regular columnist for us): "At 3, square Clignancourt, "Let's stay at home" is less threatening than "Stay at home" at 6, but more depressing. [ ] At 4, rue Boinod, "Money for the public hospital"; the same at 47, rue Ordener. At 68, rue Lepic, "More money for the public hospital" accentuates the rhyme. There are still left-wing people in Montmartre, I wouldn't have believed it." But while the novelist was handing over his "cloth of gold" at 74, boulevard Barbès, he was probably unaware that a mobile patrol, numerous and organized, was carrying out more or less, and on a larger scale, the same operation. SONGS, TWEETS AND DREAMS At the same time, in fact, the collaborative collection "Vitrines en confinement" was taking off throughout France but also in Italy, in conjunction with the University of Rome. The challenge was nevertheless born as a hobby, to occupy the children of Marta Severo - a researcher in information and communication sciences at the University of Paris-X Nanterre - and Sarah Gensburger - a researcher at the CNRS who previously worked on the commemorative documents hung on Boulevard Richard-Lenoir during the 2015 attacks - during the daily hour of outing allowed during the first lockdown. Goal of the game: to photograph with smartmaladroites each time with the same protocol (frontal framing, tight, without people) this bookstore peppering the books in its window with humorous messages (On the Road, by Jack Kerouac, "but not more than three kilometers"), this brasserie diverting its daily menu ("stay at home, have children!") or, later, these immense red neon lights on the facade of the Olympia ("not essential"). Today, there are more than 1,500 people contributing to this open source challenge, via Instagram and Facebook, gradually mapping on a web platform the traces of an astonishing metamorphosis: while downloads of the WhatsApp or TikTok applications exploded, public space also found its primitive function of "social network". Too bad the project did not receive more budget. It's a shame that he couldn't, for example, mobilize all those photographers who are the heirs of Bernd and Hilla Becher, those ambassadors of the Düsseldorf "objectivist" school of photography who know how to poeticize the practice of census-taking, to stage emptiness and silence, and to ennoble the typologies of water towers or abandoned nightclubs. Here the photos are, and the platform, too arid. It's the aesthetic "poverty" of a corpus that is essentially academic, for the time being. It is nonetheless sufficiently rich to note, for example, like Thomas Clerc, certain sociological data - "the Parisian contributors mainly live on the right bank, in the eastern and northern districts where the messages are most numerous," comments Marta Severo - or political data - "in Italy, the contributions didn't arrive before May, probably because people felt too guilty about going out, or when they did make a phone call, it was to go to the supermarket by car. The photos we then started receiving from them were images of gardens or balconies." On Twitter, #VitrinesEnConfinement has become one of the hashtags collected by the Bibliothèque nationale de France, which has been involved since March 2020 in a gargantuan project to archive the Web during the pandemic (200 million tweets archived in connection with the Covid19 crisis). Marta Severo and Sarah Gensburger, they specify, are also in continuous contact with other collectors, whose list would take three pages as there are so many of them, on an international scale - museums or heritage actors - who have launched calls for contributions since March 2020 to collect objects, tweets, photos, documents, but also dreams (we talked about them in Libé on October 1). But, for example, "Vitrines en Confinement" notably crossed paths, during the major Pandemix.mob conference organized in December, with the two researchers behind "Corona Sound Machine, singing the virus in Latin America" - a work on WhatsApp videos that hijack pop songs. Above all, they are in close contact with the Mucem (the Museum of Civilizations of Marseille), this institution whose mission is precisely to document social facts and promote artisanal know-how, ordinary objects and non-institutional productions. Unable to carry out its usual ethnographic surveys, the Mucem team also went through a large participatory collection that has now brought together more than 600 proposals focused on the first lockdown. NEO-BARTHES AND APPRENTIS TATI Over there, in the Marseille reserves, around a hundred objects are currently sleeping, waiting to be classified, integrated into databases and documented. The micro-mythologies they carry will surely excite neo-Barthes and apprentice Tati. And this is also one of the perspectives for the Mucem, says Aude Fanlo, head of the fund, who is already thinking about the future exhibition: inviting artists to work on this collection (Thomas Clerc is surely already on the TGV), which currently includes a large proportion of banners in support of caregivers, soap displays, yoga mats and kitchen accessories, but also a stunning thread for defogging glasses when wearing a mask, an ingenious hair clipper augmented with a vacuum cleaner handle, a clever zip line for connecting two buildings to pass salt, or a simple wheelbarrow transformed into a children's merry-go-round or a weight machine. So much for the Lépine competition. For the rest, the Mucem team noted the significant number of objects made to mark time and materialize duration: calendars, diaries with crossed out days and activities carried out. More worrying, the subcategory of "imaginary friends" (figurines and disguised cuddly toys). More widely shared, the category of "shoes", liminal objects between inside and outside, danger and safety, of which the sendings were curiously numerous. So what could the little robot from Pixar, Wall-E, the one who sorts human artifacts according to his own criteria of value, have done with them? Responding to the collection, insists Aude Fanlo, was also to talk about solitude and lack, to bear witness to an unsinkable need for fiction, of the playful quest for consolation expressed here at a very low frequency, in the most ordinary corners of our confined lives. The collection is in no way a photograph of society at a given time, she warns: for that, all social classes would have had to be represented, which was not the case and will soon be rectified, since Simon Leroulley, a sociologist at the Lest laboratory/Somum institute, will work precisely to expand this collection by going into the field to help groups. As a museum of society, the Mucem's collections are not constituted in the mode of acquisition on the art market. The protocol will be as follows: soon, these "objects without quality" will be presented to the internal committee and then to the acquisition commission to be admitted or not in the collections. They will then be registered in the inventory and will enter the coffers of the assets of national museums, which means that they will ultimately acquire the same status as the works of the great museums of Fine Arts. And to think that you resold your Twix-throwing parrot on eBay? On Twitter, #Vitrines-EnConfinement has become one of the hashtags collected by the BNF, engaged in a gargantuan project of archiving the Web during the pandemic.

## ###ARTICLE\_START### ID:1982

TELEPHONY This time, it's for real! With Orange, Crosscall won the call for tenders launched by the national police and the gendarmerie. The French smartphone manufacturer will deliver 200,000 mobile phones and 20,000 tablets to the national law enforcement agencies. A great revenge for the group that had the market stolen from it four years ago by Sony. With this public order, which will be delivered between the last quarter of 2021 and the first of 2022, Crosscall is reaching an important milestone. The French Tom Thumb of mobile telephony should go from 500,000 devices sold per year to 700,000. Enough to return to growth, after a "stable" 2020 at 81 million euros. The group hopes to pass the 140 million revenue mark for the current financial year. It also hopes to gain visibility with the general public, businesses and politicians. Crosscall is not neglecting any avenue to improve its reputation, in a sector dominated by players capable of investing tens of millions of euros in marketing. The French company may have 100,000 fans on social networks, but it is difficult to compete with the marketing resources of the market leaders. An average lifespan of 40 months For the time being, the brand is mainly known to outdoor sports enthusiasts and construction professionals. It is appreciated for the solidity of its devices and their durability. Its smartphones have an average lifespan of 40 months. In addition, Crosscall has achieved an 8.8/10 in the repairability index, one of the best scores on the market. However, several criteria assessed in the call for tenders from the police force concerned the resistance of products, their ability to withstand shocks, to resist falls, to immersion in water, etc. Battery life was also one of the determining points, as was the ability to deliver products with an open source version of Android, without a manufacturer overlay. Software security is, in fact, crucial for the police force. It is therefore necessary to prevent users of the terminals from being traced by malicious people. The integration part falls to Orange. The telecoms operator brought Crosscall on board following an initial qualification process. It is thus continuing its strategy of supporting French start-ups by integrating them into its commercial developments. Crosscall is, in fact, playing the tricolor card, claiming to "offer a French alternative to non-European players". Even if for the time being, its devices are still manufactured in China, like most of its competing products. The French company is nevertheless starting to "repatriate activities that were outsourced to Asia", with the implementation of an evolving research and development laboratory in Aix-en-Provence, next to its headquarters. The group wants to relocate product design and prototyping. This first step has already been initiated. In a second phase, a reconditioning line will be opened, which is also a way to gain skills in the field of manufacturing. In a few years, it hopes to be able to assemble smartphones in France. "These different stages are a way of maturing the sector", explains David Eberlé, vice-president of Crosscall. Some of the components will continue to be imported, other parts could be manufactured on national territory, for example, those in injected plastic. "It is possible to restart the French ecosystem", believes David Eberlé. One point worries him, however: the difficulty in finding qualified labor and in particular developers in France! It is possible to restart the French ecosystem DAVID EBERLÉ, VICE-PRESIDENT OF CROSSCALL

## ###ARTICLE\_START### ID:1983

CYBERSECURITY The rarity of this type of publication attests to the seriousness of the alert. In a report made public Monday evening, the National Agency for the Security of Information Systems (Anssi), responsible for cybersecurity in France, technically details how hackers were able to break into the computer networks of French companies and public organizations between 2017 and 2020. These entities had in common the use of an "open source" version of the software platform of the French company Centreon, to supervise their IT infrastructures. "This campaign mainly affected IT service providers, particularly web hosting," Anssi specifies in its report, urging users to take emergency measures and be very vigilant about their systems. According to Centreon, customers of the commercial version of its software platform such as Airbus, AccorHotels, Air France or Air Liquide, as well as the Ministry of Justice are not affected. "The attack described by Anssi exclusively concerns obsolete versions of Centreon's open source software," insists the growing company, worried about the impact of this affair on its image. Very discreet, the attackers managed to install "back doors" in the versions concerned, giving them access. The risk is that the attackers then moved inside certain systems, to extract critical data or carry out new attacks on the most strategic targets. "It is possible that customers of these service providers were affected by rebound," explains Loïc Guezo, secretary general of Clusif, a French association of cybersecurity specialists. "This campaign has many similarities with previous campaigns of the Sandworm modus operandi," adds Anssi in its report, without directly attributing - this is not its role - this campaign of attacks to Russian military intelligence. Many other questions remain at this time: how were the hackers able to install backdoors in the Centreon software in the first place? Who are the compromised users and to what extent? It will take time to know the extent of the damage. Alarm signal Beyond the technical aspects, these attacks first remind French companies of a harsh reality: espionage at work in cyberspace is an economic tragedy, and it is not just a question of protecting themselves against rampant ransomware crime. But whatever the attackers' purpose, the increasing complexity of IT systems on the one hand, and the high degree of sophistication of attacks on the other, make it absolutely necessary to change one's defensive approach. Companies are now dependent on an ecosystem of partners and service providers for the management of their IT and security. The latter have therefore become preferred targets. "The monitoring tools that we put in our information system are often targets for cybercriminals, because they allow access to a lot of data," says Gérôme Billois, partner at Wavestone. Preventing intrusion is almost impossible, as shown by the major Solarwinds cyberattack, revealed at the end of last year in the United States, where a software publisher was used to target ministries and large American companies. "Solarwinds was a wake-up call. The traditional approach to security, based on knowledge of threats, is not up to the task," says Marcus Fowler, director of strategic threat at Darktrace, which recommends detection methods based on artificial intelligence. Detecting that someone has entered through a door can be difficult, especially if they have a key. On the other hand, you need to be able to immediately identify that they are moving in the environment," he summarizes.

## ###ARTICLE\_START### ID:1984

IT Red Hat's technologies have become IBM's trump card since the publisher was acquired for $34 billion in 2019. Its software, based on open source (whose code is free to be adapted by developers), is used to build companies' cloud projects. Red Hat's revenues grew by 18% in 2020 ($3.4 billion in 2019), while IBM's other activities are struggling more. The American IT giant has begun a drastic reorganization for 2021, planning to split the group into two separate listed companies by the end of the year in order to focus on cloud activities. What will be the future of Red Hat, now an autonomous entity, in this new group? "We are a neutral entity within IBM and we will remain so," Paul Cormier, who took over the reins of the company last year when former CEO Jim Whitehurst became IBM president, explained to Le Figaro. "This neutrality is essential because we work with a rich ecosystem of partners who, in some cases, are IBM competitors, such as AWS, Google Cloud and Microsoft. We must be able to continue working with them in the same way that we work with IBM, in order to have the largest available market." "Hybrid" cloud IBM is relying on the Red Hat platform to develop its "hybrid" cloud business, which allows companies to administer data stored in different locations (public cloud, private cloud, internal servers, local objects, etc.) from a single point. “Instead of having to manage the complexity of different clouds that are as many silos, this allows companies to have a single environment, easier to automate and manage for developers, for security managers, and for operational staff,” explains Paul Cormier. According to analyses by the Forrester firm, nearly 9 out of 10 companies are implementing or will implement hybrid cloud projects. A pioneer in this field, the company enjoys a clear lead. Since its creation in 1993, the company has developed and distributed open source solutions for companies. “Red Hat brought the Linux operating system (a free competitor to proprietary solutions like Microsoft Windows, editor’s note) into the commercial world,” continues the CEO. “When we came to market with our first Linux product, people liked it because it was almost as good as commercial products, and much cheaper. Today, it is because open source development is where innovation happens, allowing multiple people to collaborate and co-develop to solve complex problems." Another motivation for companies: their flexibility and the ability to adapt this software to their needs. The use of open source development has exploded over the last twelve months in companies, on both sides of the Atlantic. The software publisher is seeing this acceleration in its activities. But the biggest wave is yet to come. "We are only at the beginning of the digital transformation. Today, there are only 20 to 25% of applications in all clouds," explains Paul Cormier. For the company, the roadmap is clear: "We are building everything around this hybrid platform, strengthening security, storage possibilities, developing services also for developers in order to be able to integrate applications together," explains the manager. As competition between the major technology players in the field heats up, Red Hat wants to stay ahead and is counting on the leverage of its owner. "IBM gives us the opportunity to grow much faster, above all," he adds. "It allows us to reach many more customers, in markets where we were not present." IBM sees Red Hat as the engine of its growth for the years to come.

## ###ARTICLE\_START### ID:1985

Red Hat cloud, the free software publisher that has become IBM's trump card PAGE 23

## ###ARTICLE\_START### ID:1986

Arte Bellingcat, the freedom fighters 23.25 Fascinating documentary from 2019 on the geeks of open source investigation (or collaborative investigation) at the origin of resounding scoops and major investigations published in recent years. France 2 A Perfect Planet 21.05 Third and fourth parts of the animal documentary series produced by the BBC. These two episodes focus on volcanoes and the sun, as well as the influence of man on ecosystems. Breathtaking images. Canal+ Séries Chimerica 16.00 The opportunity to (re)discover this excellent British miniseries by Lucy Kirkwood released in 2019, of which the encrypted channel broadcasts the four episodes in a row. Alessandro Nivola plays a journalist investigating the famous unknown man of Tiananmen Square. Ciné+ Emotion Deux moi 20.50 In this 2019 film starring Ana Girardot and François Civil, the director of L'Auberge espagnole, Cédric Klapisch, sets out to depict the current generation of young urbanites, isolated and mildly depressed.

## ###ARTICLE\_START### ID:1987

Investigation, pages 16-17 “It’s super exciting to indirectly participate in women’s history.” A seasoned Wikipedia contributor, Morgane has taken Elizabeth (1), 39, who is just starting out, under her wing. They are both participating via videoconference (due to the pandemic) in the Wikipedia workshop organized by the Nantes association Affs (Women and Feminism Workshops). After being introduced to the precise and delicate rules of this community, Elizabeth has published her first article. The lucky one? Zsuzsanna Lorántffy. A princess consort of Transylvania, whose name was taken from the list of 999 women cited in the feminist work The Dinner Party by Judy Chicago. An article based on the English and Spanish versions. "I had to hunt down gender bias in the Spanish-language version, where she was only presented as a wife, even in the illustration where we see her with her husband," explains Elisabeth. That evening, there were eight of them, of all ages, to discuss work in progress and possible difficulties. It was also the moment for the founder, Anne, 59, to present the association's documentation purchases that could serve as sources for future articles. "My goal was, from 2015, to make it easier for women to contribute," she explains. The online encyclopedia only has 10% of female contributors for its French-language version, including 5% in major contributing accounts. The march towards equality is therefore still long for "the largest encyclopedia in the world", visited each month by nearly 500 million people in more than 300 languages. Anne formed a task force of about twenty people and trained fifty others: "Our second challenge is, by writing about feminism or biographies of women, to appropriate invisible knowledge, recovered by men." One example jumped out at her: "On Wikipedia, no field escapes men, not even the menstrual cup. It was mostly men, with a few women, who contributed to the article. But things are improving." Since 2016, 860 articles have been published by the Affs. Thanks to several associative initiatives carried out in recent years, women are gaining ground. The French-speaking Wikipedia currently has 18.62% biographies of women. "In 2015, it was only 15%," emphasizes Natacha Rault, founder and president of the association Les Sans pagEs. The project, launched in 2016 by this 50-year-old French woman living in Switzerland, is now one of the most active on the French-speaking portal. The genesis? "The Equality department of the University of Geneva, where I work, commissioned me to organize a conference on this subject. Beyond talking about it and fueling a certain pessimism, I wanted to try to do something concrete." An idea inspired by English-speaking initiatives, such as Women in Red. "REDUCING GENDER BIAS" While they represent half of humanity, "women on Wikipedia are still a minority," laments Natacha Rault. Biographies of women, articles on the history of women and feminisms, the Sans pagEs list more than 8,000 publications. "But the goal of the project is to reduce gender bias. If we limit ourselves to quantitative approaches, we will not produce quality articles," notes the president. Since 2020, the Sans pagEs have been evaluating articles to "try to improve skills and quality." The meeting is held online every Thursday. Reducing the gender gap on Wikipedia is a challenge. Natacha Rault: "We try to encourage women, non-binary and trans people to participate. We also try to reduce stereotypical representations, for example not describing women according to their family and emotional relationships with powerful men, particularly in the introductory summary." A lexical bias had also been noted by a 2015 study by German researcher Claudia Wagner: in the French-language version, 27% of the 150 most used words in articles about women are related to gender, family or romantic relationships, compared to less than 4% for a man. Some members also engage on LGBT+ topics by paying attention to the use of dead names (the birth name abandoned by a person) and misgendering for people who have come out as non-binary or trans. The contribution of women to knowledge would be difficult for some to swallow. First wife of Albert Einstein, a physicist herself and originally from Serbia, "Mileva Einstein participated in her husband's research. But it is impossible to write it on Wikipedia. It is "reverted", deleted, rewritten under the pretext that these are pro-Serbian sources, totally fallacious arguments", regrets Anne. Elements were deleted from her biography, despite the contribution of reliable sources such as France Culture or a book published by Belin. This is what is called the "Matilda effect" (2), which ignores the discoveries of women. Natacha Rault also cites the example of Lou Andreas-Salomé, a woman of letters and one of the first female psychoanalysts. "In the 2016 version, she was presented as a panintellectual bohemian, who had conversed with the greatest thinkers of her time." The article devoted to her was structured by her relationships with powerful men: "Rilke's muse", "friend of the Freud family", "her meeting with Nietzsche" "While she published widely, as much as the others. You wouldn't see that on Nietzsche's page!" As sources become rarer, the gender gap is more pronounced in biographies of older personalities. Significant differences are also visible by socio-professional category. "We have few women scientists, but the worst are the military and religious professions. But if we don't have any female Catholic priests, we won't be able to write about it. We have nevertheless written a biography of a priest elected by her parish in Switzerland," we note at Sans pagEs. Muslim women are also underrepresented and the association is struggling to establish a list of French-speaking women working in video games. MAKING MINORITIES VISIBLE Many projects related to Sans pagEs make it possible, by narrowing the focus, to fill certain gaps and make minorities visible: the Women in Games group, that of Sans pagEs in Benin, or Noircir Wikipedia, a group founded by three contributors to the association. "They work on decolonization, with attention paid to people of African descent, particularly women," explains Natacha Rault. Another project, Sans imagEs, led by "Alacool" and "Des Lapilli" (their Wikipedia pseudonyms), aims to give visibility to these invisible women. "I launched an appeal to illustrators to contribute voluntarily to give an image to these women," says Alacool. "We are aware that their financial situation is not always comfortable, but this allows them to distribute their work" and for the pages to be more easily shared. But then, where are the female contributors hiding? "For me, there is a very strong link between the low number of female contributors and the low representation of women in Wikipedia. When our workshop was mixed, a contributor told me: "It's still not very interesting to write about women," says Anne. It's a reality, in our society, women are less valued, therefore invisible." Since then, she has decided to leave the workshops single-sex, in line with her initial objective. Beyond a problem of legitimacy, women do not have the time, says the president of Sans pagEs: "They have on average a lower salary. And if you add the mental load, the household chores, you understand that they contribute less." The higher you go in the decision-making universe of Wikipedia, the rarer they become. "It remains a leisure activity for the rich, for people who have time, money, an Internet connection, a computer, access to sources." Another obstacle, the technical aspect of this platform resulting from the free software movement, the code, "can put some people off." Contributing to Wikipedia, especially as a woman, requires tenacity. On a platform where everything is discussed publicly and where everyone can make changes, proposals to delete pages are not rare. On the English version, Donna Strickland, who received the Nobel Prize in Physics in 2018, and researcher Katie Bouman, who was instrumental in photographing the black hole, were the victims of these debates. A first draft of the Nobel Prize winner's article was deleted before being restored. As for Katie Bouman's, the vote leaned in favor of keeping the page. "A REFLECTION OF SOCIETY'S DEBATES" While the eligibility criteria and rules of use are defined by each community, argues Natacha Rault, these debates also exist on the French-speaking side. "Recently, the page of a Congolese minister was deleted while ministers are supposed to be all eligible," says Natacha Rault angrily. Same fate for a "matrimony" category. "This concept has been around for over fifty years, which should be enough to make a topic admissible since it requires two years of media coverage and at least two publications at a national or international level [editor's note: no interviews]. There are political and ideological issues in it that reflect societal debates," points out the president of Affs. She continues: "Wikipedia has a sexist reflection. At best, unconsciously, at worst, downright militant." Another obstacle to greater inclusivity is sources. Natacha Rault: "If writers, researchers, journalists don't write about women, feminism, gender issues, we can't write articles. We are an encyclopedia, therefore a tertiary source, we don't produce original work." Similarly, the feminization of job titles had to wait for the green light from the Académie française in 2019. Wikipedia is moving at the sometimes slow pace of society. "Wikipedia's bias is that it is difficult to faithfully reflect non-majority subjects because there are many antagonisms. African countries are also very poorly represented, particularly because oral traditions are not accepted," regrets Natacha Rault. The Affs are calling for the establishment of temporary rules for women, oral cultures and non-Western cultures. "There are specific rules for the admissibility of porn actresses and female football players," notes Anne. Will the gender gap ever be bridged? Natacha Rault has no illusions: "At this rate, it would take more than fifty years to get there, without there being any other articles created, so no." An acceleration is undoubtedly possible. To achieve this, the Sans pagEs, which currently rely on the energy of hundreds of volunteers, should pass the milestone of professionalization. A final obstacle? The lack of funds. ? (1) The first name has been changed. (2) In homage to the feminist activist Matilda Joslyn Gage who, in the 19th century, already denounced these men who tend to appropriate the ideas of women, especially intellectuals. "At this rate, it would take more than fifty years to succeed in [closing the gender gap], without there being any other creations of articles on men." Natacha Rault founder of the Sans pagEs

## ###ARTICLE\_START### ID:1988

SOCIAL MEDIA It's been six years since Facebook bought the encrypted messaging service WhatsApp for $22 billion. Its usage has taken off during this period, with more than 2 billion accounts worldwide. But it's also been six years since WhatsApp has brought in nothing, or very little, to its powerful owner. That could change. At the end of October, Facebook presented a plan that went somewhat unnoticed for the future of its messaging service. Its monetization will not be through advertising. The American giant wants to test another path: making WhatsApp an essential intermediary between merchants and their customers. Consulting a product catalog, placing and paying for an order, receiving a delivery notification... all of these actions can be carried out within the application. "If Facebook and Instagram are the showcase (for these merchants), WhatsApp will be the cash register," Matt Idemi, the application's number two, explained to Bloomberg in October. The potential is enormous: small merchants represent the vast majority of Facebook's advertising network customers. The American group will be able to control the relationship between a company and its customers from advertising to the act of purchase via customer service, and get paid at each stage. It is to carry out this plan that WhatsApp is about to modify its privacy policy. It informed its users on January 4. But the message sent, closer to legal gibberish than an educational explanation, caused a global panic (see opposite). Convinced that encrypted messaging would feed Facebook's advertising data machine, many users turned to the competition. The open-source messaging service Signal was downloaded 47 million times in two weeks; the Russian Telegram reached 33 million downloads. Over the same period, WhatsApp installations fell by 14%, and even by more than 30% in India. To give tempers time to calm down, the controversial update was postponed from February 8 to May 15. The Indian laboratory Seen from Europe, using WhatsApp to buy a sofa or order sushi may seem incongruous. However, this gesture is part of everyday life in India, the Facebook subsidiary's largest market with 400 million users and a laboratory for its new ambitions. There, 15 million small businesses use the WhatsApp Business tool to communicate with their customers, which means they don't need to have a website. This application for VSEs and SMEs allows them to create a product catalog and program automatic responses. The $5.7 billion invested in April by Facebook in the Indian giant Reliance Jio aims to accelerate the digitalization of the country's 30 million convenience stores, which is the same number of potential customers for WhatsApp. And soon, Indian Internet users will be able to pay for their purchases online without leaving the messaging service thanks to the WhatsApp Pay service. It is likely that Facebook will charge a commission from the merchant. The more messages a business receives, the more essential it is for it to turn to customer relationship management solutions. WhatsApp Business is compatible with the major software on the market. But Facebook also wants to offer its own solution. That's why it bought the specialist company Kustomer for $1 billion in December, a company that will obviously monetize its services. This is where the change in Facebook's privacy policy comes into play. As soon as messages sent between a company and its customers are processed by a third party (in this case, customer relationship software, including Kustomer's), these discussions will no longer be encrypted. The user will be notified. Facebook will also offer small businesses the option of saving their exchanges with their customers on its own cloud, free of charge. Here again, the conversations will no longer be protected. Questioned by Le Figaro, Facebook explained that it will not use the content of these messages to feed its marketing profiles. A pizza buyer will therefore not be inundated with ads for other pizzerias. But outside the European Union, nothing will prevent the pizza maker from using the information collected during the transaction (identity, telephone number, email, address, etc.) to feed his customer file and follow up with them. This could, for example, be done through... targeted advertising on Facebook. The American giant could therefore be a winner on all fronts. Now all that remains is to convince non-Indian consumers to do their shopping on WhatsApp. CW

## ###ARTICLE\_START### ID:1989

INTERNET When they launched their project "a free encyclopedia that anyone can improve" on January 15, 2001, Jimmy Wales and Larry Sanger, the two co-founders of Wikipedia, did not expect such a success. Twenty years later, the site is one of the most consulted in the world, with 500 million unique monthly visitors, local versions in 303 languages, and a database of more than 55 million articles that is constantly being enriched. The initial bet seemed a little crazy: to shake up the production and dissemination of knowledge by allowing everyone to write and modify articles. It was to undermine the dominant vertical model proposed until then by the large century-old encyclopedias. Technologically, this bet is made possible by an open source software called wiki, which Larry Sanger discovered somewhat by chance during a discussion with an acquaintance. At the time, his accomplice Jimmy Wales was struggling to get a first encyclopedia project off the ground, called Nupedia, which aimed to encourage academics to contribute online. The wiki computer software allowed each Internet user to modify the content of an article written by another, keeping track of each modification within the same database. The attacks of September 11, a few months after Wikipedia went online, validated the model and forever anchored its very close link with current events. In a few hours, an entire community of Internet users mobilized, collected data and posted dozens of articles online, offering different angles on the subject. "I told myself that it filled a gap in the processing of information, outside of the news of the day. We are in a reflective process that takes place over a long period of time," recalls Jimmy Wales in the documentary Once Upon a Time in Wikipedia. The mass of content produced, its very uneven quality, the presence of errors, the intervention of malicious authors, the pseudonymity of most contributors, as well as the sensitivity of certain subjects very quickly raises the question of the reliability of the information and sources proposed by the site. In its early years, this "encyclopedia" claiming to universalize knowledge online is condemned by an entire community of experts who give it no credit. The absence of any verification controlled by university "trusted third parties" is the subject of intense debates even internally, which will cause Larry Sanger to leave. Jimmy Wales remains confident in the idea that each contributor must be able to modify the content of another and that self-regulation by a large community of "Wikipedians", serious and involved volunteer editors, who constantly correct and monitor each other, is the best antidote to the flaws of the system. To address the issues raised and improve credibility, the site strengthens the common rules and principles imposed on contributors. Among its founding principles, verifiability: providing sources, which can come from journalistic articles under certain conditions or from scientific works and not from opinions. In 2002, it also introduced the status of "admin", granted to certain contributors. These volunteer "sentinels" - the site now has 3,900 - try to resolve conflicts and have the power to delete articles as a last resort, if the intense debates of the community have not been successful. "The quality of the encyclopedia's articles and the systems to improve it have evolved a lot since 2001. Wikipedia is betting on transparency by putting warning banners on many articles that it considers insufficient or on which there are controversies of neutrality," adds Marie-Noëlle Doutreix, author of the book Wikipédia et l'actualité (Presses Sorbonne Nouvelle). Wikipedia is also developing semi-automated tools to detect violations of its rules, acts of vandalism and to better hunt down "trolls". In 2021, Wikipedia will also implement a uniform code of conduct with sanctions against insults and harassment, which still plague the platform. In two decades, Wikipedia has managed to change its image and establish itself on many subjects as a primary source of information for many Internet users. Its articles often come back to first place during a search on a major search engine. The prominent place given to current events in the articles and the very high responsiveness of its community of contributors also reinforce its popularity. Who has never been surprised to see the Wikipedia page of a deceased personality updated within seconds of the announcement? At the same time, while Wikipedia was working on improving its processes, the rise of disinformation was wreaking havoc everywhere else on the internet. So much so that the Conspiracy Watch observatory calls it an "island of rationality in an ocean of rumors". Has Wikipedia, after 20 years, achieved the goal claimed on its home page "to offer objective and verifiable content that everyone can modify and improve"? Many controversies still haunt the platform. The very structure of the contributors producing the content, overwhelmingly male, North American and European, creates a distorting prism to Jimmy Wales' utopia "of a world in which every inhabitant of the planet has free access to the sum of all human knowledge". On Wikipedia, 80% of contributors are men and only 18% of biographies in English concern women, acknowledges Katherine Maher, the general director of the Wikimedia Foundation since 2016. Guarantor of the model, the community of "Wikipedians" can also be arbitrary in its eligibility criteria and very exclusive. Wikipedia must also constantly fight against companies, communication agencies, politicians who master the rules to better circumvent them and rework pages. "We know that Wikipedia is not perfect. We still have a lot of work to do," Jimmy Wales repeats in his interviews. Economically, the online encyclopedia is based on a fragile model but one that has worked for years. Managed by a non-profit organization since 2003, the Wikimedia Foundation, it lives mainly from its calls for donations from individuals and companies (129.2 million for the financial year ending June 30, 2020), 70% of which comes from North America. "At Wikimedia, we consider ourselves a public service," Katherine Maher likes to summarize.

## ###ARTICLE\_START### ID:1990

MESSAGING It was very complicated, Thursday and Friday, to register on the American encrypted messaging service Signal. "A lot of new people are trying to join our service right now. We are working with the telecom operators to resolve the problem as quickly as possible," the messaging service apologized on its Twitter account. Data from AppAnnie, a specialist in measuring and analyzing the mobile application market, indeed show a real rush. While it was at the bottom of the application download rankings, Signal suddenly found itself on Thursday at the top of installations in Austria, seventh in Finland, fifteenth in Hong Kong, twenty-sixth in Germany, thirty-second in the United States... This brutal comeback is linked to a controversy concerning WhatsApp, the encrypted messaging service bought in 2014 by Facebook. The latter sent its users a notification warning them that they had to accept a new privacy policy before February 8. One line has raised many eyebrows: with the update, WhatsApp will share some personal data with the rest of the Facebook group. Unfortunate for a service that presents itself as a protector of privacy. Mark Zuckerberg's empire has tried to put an end to concerns. European users will not see their WhatsApp data used for advertising purposes. And the update is supposedly intended to allow businesses to use WhatsApp as a transaction and customer service tool. But the fire is not going out. At the same time, Elon Musk and Edward Snowden have encouraged, on Twitter, to download the Signal messaging service. "I use Signal every day and I'm not dead yet," replied the American whistleblower who has taken refuge in Russia to an Internet user who asked him how this messaging service was better than another. Signal is an application created by the cryptographer and computer security researcher Moxie Marlinspike. After briefly working for Twitter, he devoted himself to the "Signal protocol", an open-source computer program that allows end-to-end encryption of messages and calls made over the Internet. The Signal protocol has been used by WhatsApp since 2014 to encrypt the exchanges of its messaging users and make them inviolable. No data captured The Signal application differs from WhatsApp in the total absence of capture of personal data. The messaging service belongs to a non-profit organization, the Signal Foundation, which lives solely on grants and donations. In 2018, it received an unexpected donation: $50 million from Brian Acton, co-founder of WhatsApp. The latter had slammed the door on the Facebook group a year earlier, outraged to see Mark Zuckerberg wanting to monetize his messaging service at all costs. He has since become executive chairman of the Signal Foundation. The $50 million was used to make Signal more mainstream. The messaging service has adopted features found in its competitors, such as stickers, group video calls and messages that are deleted once read. In 2016, only 2 million people had downloaded Signal. At the start of 2020, there were 10 million on Android alone. However, the encrypted messaging service remains a small step ahead of WhatsApp and its 2 billion daily users. And it is very difficult to change messaging services when all your friends and family contacts are on the same platform. However, Signal should take advantage of the WhatsApp controversy to strengthen its international reputation and position itself as an ethical alternative.

## ###ARTICLE\_START### ID:1991

On December 14, the Russian investigative website The Insider, in partnership with the Bellingcat website, CNN and Der Spiegel, published a long report revealing the surveillance that Alexei Navalny had been subjected to for several years and which led to his dramatic poisoning in August. These revelations are impressive in the precision of the data collected, the identification of the secret agents involved and the uncovering of their mode of action. They are not the first of their kind, they are part of a remarkable dynamic of development of investigative journalism in Russia in recent years. Ultimately, it is Alexei Navalny himself who popularized this genre since the success of the investigations carried out by his anti-corruption foundation. Thanks to the compilation of digital sources, he carried out virulent investigations against the country's leaders, and in particular against Prime Minister Dmitry Medvedev, in 2017. Since then, "investigation by data" has enjoyed growing popularity in the Russian journalistic world. “Could the worst period for media and political freedoms in post-Soviet Russia also be the best for investigative journalism?” asks Sheila Coronel of the international association Global Investigative Journalism Network. Journalist Elizaveta Ossetinskaia, who founded the Russian news site The Bell, believes that investigation has never been so dynamic and its quality so good. A hotbed of online data In fact, new online investigation projects have appeared in the country. Journalists code, collect data and visualize it. They learn the subtleties of the Osint (Open-source intelligence) method, based on open-source intelligence. In their investigations, they use geolocation data, communication metadata, telephone signals, facial recognition, the use of drones to fly over prohibited areas or photograph hidden places. This investigative journalism is claimed by Russian liberal media such as RBC, Meduza, Novaya Gazeta, the BBC's Russian service, but also investigative sites such as MediaZona, Proekt or The Insider. In this field, the latter site, created in 2013 by independent journalist Roman Dobrokhotov, has particularly distinguished itself. It promises "investigations, analysis, the latest news from Russia and the world, to know today what others will know tomorrow. During the Skripal affair in Great Britain, his team had already investigated with Bellingcat to identify the two men suspected of the poisoning of the former Russian double agent and his daughter in March 2018 in Salisbury (United Kingdom). Russian journalists thus benefit from strong international recognition. The Insider website has, among other things, been awarded the Council of Europe's Democratic Innovation Prize (2018), the European Press Prize (2019) and the Free Media Award (2019). As the European Press Prize points out, The Insider has participated in major investigations into Russian trolls and hackers, the invasion of Ukraine, the operations of the GRU (Russian military intelligence) in Europe, and corruption in the Russian government. Massive tracking Paradoxically, these successes benefit from the masses of data produced by the vast digital surveillance network that crisscrosses the country. The quantity of data collected by the State offers investigators remarkable opportunities to access particularly rich sources. In Moscow, as journalist Andrei Zakharov explained during an online conference in December, for example, it is "very easy to find where a person lives" thanks to video surveillance data with facial recognition. He also cited the Wi-Fi services in the metro, which can track a traveler's journey throughout the city. The data is open, accessible on the Internet. Their quantity and variety in Russia result from the weak protection of personal data in this country, denounced by defenders of digital freedoms. This weak protection, linked to the absence of regulations on data management, offers multiple opportunities to investigative journalists. Of course, the unveiling of surveillance is a dangerous undertaking for journalists themselves. Investigative media are taken to task by state or pro-government media and face incriminating articles aimed at discrediting them. Their international cooperation is seen as foreign interference. The newspaper Ekspress Gazeta thus claims that The Insider is controlled by "the special services of the West." The Ria Fan agency, with a dark reputation, presents it as a disseminator of "fake" justifying terrorism in Russia and seeking to destabilize the Russian internal situation. The Rambler website describes it as a "provocative" site, run by Roman Dobrokhotov, a "child of the Russian political opposition", a "follower of liberal ideas" leading anti-Russian activities. The Russian Ministry of Justice declared The Insider a foreign agent on December 5, 2017. Between access to data and direct threats, Russian investigative journalists are testing the boundaries of what is permitted and what is forbidden in the Russian public space, demonstrating their technical agility to reverse the digital balance of power and, at the risk of their own security, turn surveillance against the surveillance.

## ###ARTICLE\_START### ID:1992

TECHNOLOGY Imagine the following problem to solve: you have a week to travel between five French cities, with the constraint of never passing through the same city again. What is the optimum route? Now imagine the same question with 28 cities. The possible combinations are so numerous that it is impossible for a human brain or even a conventional computer to solve it. It is exactly for this type of so-called "combinatorial" phenomena that the future quantum computer - which is based on properties of quantum physics and not mathematics - will be a real revolution. The leap in parallel computing power will be such that it will be able to solve in an acceptable time what current computing cannot do. This is what we call "quantum supremacy". Such a quantum computer does not yet exist, because there are still many obstacles to solve. But the race between manufacturers in different countries to reach this technological milestone is already well underway. Manufacturers' dispute Last year, Google announced in a scientific article that it had achieved this quantum supremacy by performing a calculation much faster than the best classical supercomputer. IBM had contested this result. On Thursday, Chinese researchers claimed to have also achieved quantum supremacy, but with a different technique for manufacturing qubits, these "memory boxes" that allow quantum information to be stored in a system. Enough to get completely lost, especially for companies that are already working on concrete use cases while waiting for the day when the hardware will be up to par. Hence the desire of the French company Atos to establish a universal metric on which the community can agree, in order to measure the performance of a system and "quantum superiority". "The number of qubits is not a usable measure, because their quality is very variable. We need a metric that is as indisputable as possible, coming from a player who is not a stakeholder," explains Élie Girard, CEO of Atos. While the French company manufactures supercomputers, it is not in the quantum hardware market. Like the global ranking established each year for the most powerful supercomputers, the Q-Score will make it possible to establish a similar and evolving list for quantum processors from 2021. Instead of being based on theoretical performance, the Q-Score is based on the ability to solve a "real-life" combinatorial optimization problem, which is a consensus within the quantum community (known as Max-Cut). "We are going to make Q-Score open source. Any manufacturer will be able to run these optimization problems on their system and communicate the result," continues Élie Girard. Quantum computing is still in its early stages, but in 2020, several large European companies in the energy, finance and healthcare sectors are already working on concrete use cases such as CO2 capture or the treatment of specific cancers, which could be accelerated by quantum computing.

## ###ARTICLE\_START### ID:1993

Like France and other democracies, India, in its efforts to contain the Covid-19 pandemic, has had to balance individual freedoms with social responsibility, national response with federal governance, and lives with livelihoods. For a nation of 1.3 billion people, with some of the world’s largest and densest cities, the scale of the challenge and the enormity of the task were clear. As news of a virus began to filter through the opaque information surrounding its source, India took calibrated measures from early January, culminating in a nationwide lockdown in late March. As the response measures began to take shape, the lockdown eased from June onwards. India’s cumulative caseload is now approaching 9 million, a ratio of cases per million people that is, as of November, among the lowest in the world. More than 8 million people have recovered. The daily caseload has steadily declined to one-third of its peak in mid-September. The fatality rate is at its lowest of 1.4% in November. We continue to gradually reopen our economy and restore normal life while remaining vigilant to the risk of a surge in cases. The business-as-usual strategy of testing, tracing and treating has been accompanied by a sustained public campaign, led by Prime Minister Narendra Modi, to mobilise the nation and society and inspire responsible behaviour. Infrastructure and capacity to combat the virus have expanded rapidly. Testing capacity has grown from one lab conducting ten tests per day in January to 2,030 labs processing 1.2 million RT-PCR tests per day. More than 190 test kits, including 105 made in India, have been approved, a majority of which are RT-PCR tests. There are more than 200 registered manufacturers for reagents and components. New, faster and cheaper tests will be available in December. The number of ventilator manufacturers has increased from 3 to 25; their production capacity has increased 15-fold. There were no manufacturers of respiratory protection equipment in India; today, more than 1,600 units are producing at full capacity. In a few months, on this subject, India has gone from a rush to imported basic goods to an India that produces enough for itself and others. In a storm, the instinct is to close the door and turn inward. This may have been necessary to slow the spread and save the sick. But the way out of this crisis must recognize the imperative of international cooperation against a threat that has erased all borders. India convened a South Asian summit as early as March 15, set up a regional Covid emergency fund and training mission, sent rapid response teams and relief supplies to countries near and far, and shared essential medicines with 150 countries, including France. India called for a concerted initiative by the G20 and a more effective response by the World Health Organization (WHO). Global attention has turned to vaccines. Five vaccines, including three Indian ones, are undergoing clinical trials in India. In our country, preparations for the Covid vaccination strategy have begun, building on the already existing vaccination programme - the largest in the world - which covers 100 million children under 5 and 30 million pregnant women every year. The digital system that runs this program is being developed using the Electronic Vaccine Intelligence Network, accessible to health workers on smartphone apps, using open source software and exposed APIs (Application Programming Interfaces) to ensure transparency. India will offer it to the world as a global public good. India accounts for 25% of global vaccine production and meets 60% of UNICEF’s needs. Our country will play a critical role in global supply. In September, Prime Minister Modi assured the United Nations General Assembly that India’s vaccine production and distribution capacity will be used to help all humanity fight this crisis. France and India mirror each other in their strategic vision. Our strategic partnership is based on mutually reinforcing prosperity and promoting a stable and secure multipolar world order, anchored in the rule of law and multilateralism. The immediate and urgent call for our partnership supports a global effort to combat the pandemic. We must work together for universal access to vaccines, the development of new medicines, safe and resilient medical supply chains, a stronger and more responsive global public health system, and effective multilateral processes and institutions, including the WHO. As we work to recover from this disruption, we must also assume our responsibility to shape a more humane and healthier world. To emerge from this crisis, international cooperation is an imperative.

## ###ARTICLE\_START### ID:1994

Proteus looks like it came straight out of a science fiction film. "And that's intentional," says the Swiss Yves Béhar, the project's designer, amused. With its organic lines, inspired by Japanese capsule hotels and modular construction, the international submarine base was designed to rest at a depth of eighteen meters off the coast of Curaçao, in the Caribbean Sea. A new project for the industrial designer, who likes to dream of the future. But Proteus is not virtual with its 400 square meters of interior space that will accommodate up to twelve aquanauts from 2024 - if the $135 million budget is secured by then. There will also be on board, apart from the laboratory, bedrooms, an infirmary, a video studio and even a hydroponic greenhouse to grow fresh produce. "Behind the avant-garde aspect of the design, there is actually a very urgent mission to be taken up: to refocus scientific attention on the oceans, of which only 5% have been explored to date," explains the designer. At the helm of this underwater base is the film director and aquanaut Fabien Cousteau, grandson of the famous commander and explorer. The words "crazy" or "impossible" have something familiar to Yves Béhar. "The more of a challenge, the more it interests me," explains this 53-year-old designer, with the look of a Californian surfer and slightly disheveled wavy hair, based in San Francisco with his company Fuseproject, founded in 1999. Although he is now surrounded by a team of 90 people, it is still he who provides the initial impetus, who stimulates everyone's ingenuity. Insatiability, a common point with Fabien Cousteau, met within the media-friendly Helena Foundation which brings together "innovative personalities, eccentric specialists who think about finding solutions to different planetary problems", says the specialist in the marine world. "It's the first time I worked with a designer, but our passion for the sea brought us together, with Yves. We also sought advice from the oceanographer architect Jacques Rougerie, to think about the structure of the station that we want to last for at least fifteen years, about what could withstand the pressure of the seabed. It was very stimulating", says Fabien Cousteau. Preserving the environment remains one of the central concerns of the multi-award-winning Swiss designer. At the end of October, Yves Béhar presented a new pair of sunglasses made from recycled plastic, from Pacific waste. Modern, sea-blue, sustainable glasses (priced at 199 euros), designed in partnership with the young Dutchman Boyan Slat, environmental activist and founder of the organization The Ocean Cleanup, which aims to rid the oceans of plastic pollution through an ingenious cleaning system. "This production of recycled objects imagined in collaboration with Fuseproject is a new way to raise awareness and finance our next cleaning operations. Because our mission is also to find what we are going to do with this waste removed from the ocean," explains Boyan Slat, 26. Mad scientist airs An underwater station, recycled glasses... Is the Swiss designer a man of media "coups", ecologically correct, even opportunistic? "We can have this impression and, however, I follow a very fine and precise line that I have already maintained for twenty years. I initially founded Fuseproject to try to give meaning to design, which I see as a force for social and environmental change. I have been convinced of this since I started, and I have not changed much. I have been thinking about everything that is now emerging urgently for a long time," he defends himself in a soft but firm voice. When we meet him (virtually), at the end of September, he is chaining videoconference meetings with his team, from Portugal where he has been living with his family for some time. "We have moved away from the fires in California which made the air difficult to breathe. I have a daughter who is asthmatic. But we are about to return to the United States," he confides, saying he is very shaken by the pandemic and the concomitant worsening of environmental alerts on the American continent and elsewhere. In such a context, his brand new product, Icon, an indoor air purifier designed for the Korean brand Coway, is more relevant than ever. The design object with its attractive lines, slightly pink, slides discreetly against a wall like a small radiator. "We have been working with Coway for several years now to make this object, the future standard of our increasingly polluted interiors, as discreet as possible in the domestic context. I think that at home, even the most sophisticated technology must fade away," explains Yves Béhar, who also designed The Frame television for Samsung in 2017, which becomes a work of art when turned off. Fueled by technological innovations, the prolific designer sometimes takes on the air of a mad scientist, simultaneously inventing a keyless door lock, connected by Wi-Fi, robots for children or seniors using artificial intelligence or even a UV sensor to measure our exposure to the sun and therefore protect ourselves from cancer... "Whatever the field, Yves tries to immerse himself in everyday life to find new needs, track down new trends, but he also knows how to project himself so as not to offer people what they want now, but what they will want tomorrow, and of which they are not yet aware. This ability has become a rather rare quality among designers," says Ben Watson, creative director at the American furniture design company Herman Miller. Yves Béhar confirms: the projects he is currently working on will only come to fruition in the next four to ten years at best, in a post-Covid world that has become more than uncertain. "When Yves designed the Sayl chair for us in 2010, he was way ahead of the designs of the time. However, Sayl's success has not waned since then," continues Mr. Watson. The futuristic-shaped office chair, which even appeared in the Hunger Games series, has the particularity of being ergonomic for the back, built with a minimalist design to avoid waste and customizable as desired. Free to reproduce Tackling the office chair? "An epic challenge," Yves Béhar said at the time. Probably not as much as those he leads in the service of various humanitarian missions. This is the case of the project in partnership with the Californian NGO New Story, which will soon be launched in the Tabasco region of Mexico. New Story's pioneering idea is to use 3D printing to build a village of fifty concrete houses for poor agricultural communities in Latin America. Houses of around 50 square metres, which can be "printed" in twenty-four hours, with very little waste from this calibrated construction. "This technology is certainly fast, but it is also adaptable. We were able to modify the interior fittings by setting up several printing programmes to meet the different needs expressed by the families. This will later allow this new technique to respond to cultural differences depending on the construction locations," confides Yves Béhar, whose concept developed with New Story remains "open source", i.e. free to reproduce. "Since the goal is to combat homelessness in the world, it would have made no sense to keep this to ourselves," adds the creator. On his other current projects, the cautious Swiss will not say anything. One thing is certain, he is already planning our future. And, in these times, that is quite comforting.

## ###ARTICLE\_START### ID:1995

IT Defending European data sovereignty and claiming to be a "third way" in the face of American heavyweights does not mean depriving oneself of working with them, quite the contrary. This is the meaning of the strategic partnership announced Tuesday between the European leader in cloud computing, OVHcloud, and the giant Google Cloud. The two players will propose a joint offer to allow customers in Europe to host their data within the French group's cloud infrastructures, while benefiting from Google's cutting-edge technologies, including the powerful Anthos software platform. The latter allows companies to easily move and manage data stored in different locations (private or public cloud, internal servers). To benefit from this, these companies had to agree to data transfers to the United States or to data hosting linked to Google, with the potential risk of exposing themselves to American extraterritorial laws. With this partnership, 100% of the servers hosting the data will be managed by OVHcloud, with Google integrating its technology into a new infrastructure. "We are somewhat uprooting this Anthos application from its original infrastructure and placing it on the sovereign roots of OVHcloud," summarizes Sylvain Rouri, sales director of OVHcloud. European standards OVH had already entered into technological partnerships with the Americans VMware and Nutanix, to install their data protection software directly on their servers. By obtaining this time from a giant in the sector that it directly integrates its application into its infrastructures, the French group meets a very strong expectation of European private and public companies, concerned about the confidentiality of their industrial data but also about being able to benefit from the state of the art in terms of cloud technology. These partnerships therefore make it possible to remedy the criticisms of technological delay made by some. "This allows us to accelerate our marketing strategy for companies," adds Sylvain Rouri. For the French player, this partnership is based on open source technologies and therefore fits perfectly with the standards that it wishes to promote with its European partners within the Gaia-X project: interoperable, transparent, reversible cloud offers that will allow companies to move their data from one service to another as they wish. For Google Cloud, at the origin of the approach, it is about extending its presence on the European market by all means. In its race to become the world number two behind AWS, the group has clearly understood the importance of dealing with the growing demands for sovereignty in Europe to attract more companies. In a blog post published in September, its CEO Thomas Kurian set out his vision. "By listening to our customers, we understand their need for greater control and autonomy," he commented on Tuesday. The two groups did not specify the financial conditions of their agreement. They are just starting to work on this new offer which will not be available until mid-2021, but customers have already expressed interest.

## ###ARTICLE\_START### ID:1996

Caramel-colored and blond-haired, the draft horse advances at a walking pace in a field of leeks. The Comtois, named Quenotte, is harnessed to a shaft hoe. Its role: to pull out unwanted weeds, aerate the soil so that it remains permeable, so that the roots of the vegetables can take root deep down, and to "butter" them up to encourage their development. Quenotte is one of the two horses that work at the Cavale farm in Montoison (Drôme), where the crops are maintained solely by animal traction. The soil work is entrusted to a motorized tractor. This joint agricultural exploitation group (Gaec), run by three young partners, cultivates 3.5 hectares of market gardening. On this day, in mid-October, it serves as a practical work area for around twenty farmers. Eight women, twelve men, whose average age is around 40 years old. Some have followed an agricultural course, others are retraining. All want to learn how to use machines that are less aggressive for the land and participate in the emergence of renewed production methods. Associate of the Gaec, Vincent Bastard, 31, co-hosts this training day with Thomas Peyre on behalf of the Atelier paysan, which has become a cooperative society of collective interest (SCIC), within which employees all have the same pay slip (a little over 2,000 euros per month). Before it was adopted in 2014, this status was first the fruit of the vision of two men in favor of peasant self-construction: Joseph Templier, organic market gardener in Isère, and Fabrice Clerc, agronomist and carpenter. From the end of 2007 to 2013, the latter was an advisor within the Association for the development of organic farming in Isère. "A group of market gardeners had noted that the tools available in stores were bludgeoning the soil, causing chronic fatigue in the land," he recalls. Think tanks met, saying that if they continued like that, they were heading straight for a brick wall." An alternative to traditional plowing was then tested: permanent bed cultivation, pioneered by the German Hubert Mussler. This technique consists of determining strips of land where tractor wheels will never pass, in order to reduce the harmful effects of repeated compaction and the use of chemical weedkillers. It only took Joseph Templier one season to be convinced by this change of direction. New methods, new instruments: he began to tinker with dedicated tools. "In the spring of 2009, we made a promise to ourselves," says Fabrice Clerc, now co-manager of the Atelier paysan. These machines had to be drawn up in plans, listed in a book and farmers trained to make and use them." "Bureaucratic burden" In 2011, they organized six workshops, more than double the number the following year. The aim was first to learn how to work metal, weld, but also to model diagrams adapted to each farm. The first Guide to Self-Building by the Atelier Paysan was published in February 2012, under a Creative Commons license. All the plans are freely available on the cooperative's website. The founders did not expect such enthusiasm. The structure, whose headquarters are in Renage, in Isère, now employs 24 people and has created a training and research and development branch in Morbihan, in Brittany. "We are overwhelmed with work, not money," notes Fabrice Clerc, who earns the same salary, a little over 1,800 euros, as all his colleagues, regardless of their position. Since 2014, Atelier Paysan has benefited from the support for its operations and equity from the Citoyens Solidaires endowment fund (which collects donations from individuals and professionals). The SCIC is also supported by around thirty Cigales (investor clubs for alternative and local management of solidarity savings). These collectives of citizens, who pool their savings to support an organization of their choice, have made it possible to inject 67,800 euros into the initial project. France Active, a network of "committed entrepreneurs" and a pioneer in solidarity finance, has lent Atelier Paysan nearly 130,000 euros in five years. The Union des coopératives also provides, like the Cigales and France Active, equity or working capital financing, in the form of participatory loans or shareholdings. Finally, the ethical and cooperative bank Nef ("Nouvelle Economie fraternelle") and Crédit coopératif grant investment loans to the Atelier paysan, which have amounted to nearly 800,000 euros over the last three years. The SCIC team won the grand prize for solidarity finance in 2016 and a special "ten years" prize in 2019, awarded by Finansol, the leading association for the promotion and labeling of this very minority segment of the economy (read above). Making money more virtuous remains a challenge: these regular contributions are a vital lever for the Atelier paysan, but they also involve "a large bureaucratic burden and high interest rates", underlines Fabrice Clerc, who claims "access to financing reflects the reality of the general interest rate that we provide". The Atelier paysan is 60% self-financed, with its training, research and development, and equipment resale activities. The rest of its budget is supplemented by public envelopes (20% from the Ministry of Agriculture, European co-financing and the Brittany region) and by endowments from private foundations (20%). The latter offer "a form of recognition that does not exist sufficiently among public institutions", estimates Fabrice Clerc. The urgency, however, is there: there are today between 400,000 and 500,000 farmers in France. In ten years, a third of them will retire, more than half in twenty years. "Painful observation" "The current project is not to replace them, but to replace them with machines," says Fabrice Clerc. "However, at the same time, we are making the painful observation that agri-food production, which is the result of industrialization, is harmful in terms of public health and deeply unequal." For him, the "deproletarianization" of farmers must involve very concrete alternatives: rethinking machines, therefore, but also the organization of tasks, ergonomics - "the economy of the body", valuable "to free oneself and exchange among peers, to move forward," explains a manual from the Atelier paysan. "Should agriculture remain a shitty job, possible thanks to millions of liters of fuel?" asks Ca-Vincent Bastard, who studied agriculture and obtained a coachman's certification, on the farm. Driving an air-conditioned tractor has "never been his dream", but he knows full well that the two horses of the Gaec are not going to replace the engine overnight. However, organic farming is, according to him, "at a social and energy turning point": "We must ask ourselves what we want the workers to do, what efforts we are capable of to avoid fossil fuels." The mention of the Amish who are stubborn about their traditions makes him laugh: "At least they, in the United States, have kept tool manufacturers! We are a generation that still has a choice, the solution must involve a technical, economic and environmental compromise." A member since 2016 of the national association Inpact (Initiatives for a civic and territorial agriculture), the Atelier paysan has also been offering "political" training for the past two years, to popularize its ideal of social transformation. A bet that, in an increasingly near future, considers Fabrice Clerc, will necessarily have to go through a "power struggle" with the dominant agricultural model and its multiplied factory farms: "The ferment of the Atelier paysan is eminently political, he says. We deliver in creative commons plans for machines that do not exist anywhere, we create tutorials in open source. This raises the question of who controls and disseminates the information, the technique, the way of doing things. Because doing it yourself is a pretext for emancipation, for "doing together", for "making society".

## ###ARTICLE\_START### ID:1997

Following the American administration's offensive on October 20 against Google, the action taken by five alternative search engines (Duck DuckGo, Ecosia, Lilo, Qwant, Seznam) against the American giant is akin to a swipe. It demonstrates growing hostility towards the Californian giant. In a letter sent on Tuesday, October 27 to the Vice-President of the European Commission, Margrethe Vestager, these players urge her to call a meeting with representatives of the Mountain View firm. Their request: to be able to be present on the home screen of smartphones running Android, Google's operating system, which is between 70% and 80% of phones in France. In 2018, Google was fined €4.3 billion by the European Commission for abuse of a dominant position, particularly concerning its hegemonic presence in the field of Internet search. In response, the company agreed in 2019 to open the door to other search engines on Android devices on the Old Continent, but only as part of auctions that allow three of its competitors to offer their services to consumers each quarter. This is the principle that French players such as Qwant (which took part in the auction) and Lilo (which did not) are contesting. For Sophie Bodin, director of Lilo, the solution offered by Google is absolutely not satisfactory. "It favors those who have money," she laments, while her company already donates 50% of its turnover to associations or projects. Qwant is no better off. For Jean-Claude Ghinozzi, its boss, the system put in place by Google amounts to "paying fines" to the Californian company. He would like all search engines to be offered by default on each new Android device, and this without financial compensation. Highly critical of Google, the executive is, on the contrary, pleased with the agreement reached with the Chinese smartphone manufacturer Huawei, which now offers to install Qwant as the default search engine. Faced with these demands, Google is sticking to its position. The group believes that the concessions made offer users "even more choice. As for the auctions, he sees them as a way to continue to "invest in development and maintain the Android open source platform in the long term.

## ###ARTICLE\_START### ID:1998

Better hearing with a hearing aid whose hardware costs only $0.98 (0.83 euros). This is the promise of the LoCHAid prototype imagined by the frugal science laboratory specializing in low-cost manufacturing led by Saad Bhamla, assistant professor at Georgia Tech (United States). "Current equipment is very expensive, and only 20% of elderly people in developed countries and 3% in emerging countries have hearing aids," he explains. "Following the publication of the proof of concept of the hearing aid [PloS One journal, September 23], a Chinese team has already successfully built the prototype using the information and videos that we shared." The low price is achieved by using mass-produced open-source electronics. To make a single copy, it will cost around $20.

## ###ARTICLE\_START### ID:1999

QUEBEC COULD HAVE SAVED UP TO $9 MILLION BY MAKING A CALL FOR TENDERS The contract aims to "optimize the screening and tracing process" for $12.4 million over one year, with the possibility of renewing for two more years for $10.6 million more. All this without a call for tenders, which the health emergency allows the government. This is the solution "that best meets the needs of Quebec," said the ministry, which announced the agreement in a press release yesterday, after refusing to answer all our questions the day before. FINALLY BY EMAIL OR TEXT The ministry emphasizes that the solution will notably reduce the waiting time for screening and release the results more quickly. It is also finally planned that the test results will be communicated by email or text. Even if Deloitte was awarded the contract, the solution paid for by Quebec is rather that of the company Salesforce, we learned. Deloitte is only reselling Salesforce software to the government and will ensure that it provides consulting services on the ground for the application and integration of the software. Without a health emergency, this contract would never hold up and would never have seen the light of day due to the lack of healthy competition. The government can never target a single software, much less a single reseller. Several companies could have obtained the contract by reselling Salesforce software. And several companies could also have tried to obtain the contract with other software that can also meet the need. OPEN SOFTWARE IN ONTARIO Ontario, for example, has chosen a royalty-free solution. This is not as complete as the one that Quebec buys. But it would have been "easy" to make it as complete, and at a lower cost, according to a source close to those responsible for the Ontario solution. In Quebec, several companies are angry. With the computer scandals of recent years, companies are trying to wash whiter than white, we are told. And seeing the government act like this by invoking the health emergency, it doesn't go down well. "OK, it's urgent, but that doesn't justify giving $23 million without testing the market! How long would it have taken to negotiate with other companies? Two days?" protested the representative of a company in the field. According to all the players in this field with whom Le Journal spoke, Quebec would have paid between $4.6 million and $9.1 million less by opening up competition for this contract. Not holding a call for tenders also raises questions about the role of a senior civil servant in this contract. Jean Maitre, Assistant Deputy Minister of Health, was a senior director at Deloitte from 1998 to 2003, according to his Linkedin account. Asked about Jean Maitre's role in this contract, the Ministry of Health did not want to comment.

## ###ARTICLE\_START### ID:2000

Do we know why some recruitments are difficult? Tensions on the labor market have been increasing since 2015, noted the Research, Studies and Statistics Department of the Ministry of Labor (Dares) on October 8. IT executives, building engineers, home helps: this tension was, at the end of 2019, at its highest level since 2011, with "increasing recruitment needs. Covid has not put an end to the phenomenon. To "facilitate the retraining of employees whose jobs would be threatened", the Ministry of Labor submitted, on October 9, to the social partners the idea of creating a system intended for professions in tension: a personal training account "professions in tension" co-financed by the State, the retraining company and the recruiting company. Dares and Pôle emploi have identified six criteria to analyze the factors at the origin of the tensions: the high frequency of needs which, attenuated by the crisis, could improve the situation in the construction industry for example; the restrictive working conditions (physical constraints, rhythms, staggered hours, repetitive work, etc.) which complicate the employment of home helps or domestic workers in the long term; the non-sustainability of employment; the attractiveness of fixed-term contracts is relative; the lack of available labor, as for electrical designers for example; the geographical inadequacy and finally the link between the training specialty and the profession. This is not the first study to look at the mismatch between supply and demand for employment, questioning in particular the employability of job seekers. The Pacte civique collective proposes to change the paradigm by questioning the capacity of companies to employ, both to recruit externally and through internal mobility. What knowledge do companies have of the skills available within their workforce? Do they make the best use of the know-how of their collective? For many, the digital transformation has been an opportunity to update their job descriptions and rediscover their employees, to facilitate bridges between jobs in public works and those in wind turbines, at Orange, for example. The Pacte civique collective, a founding member of the Territoire zéro chômeur de longue durée association, proposes to analyze the capacity of companies to employ, by setting up a questionnaire co-constructed to measure with employees. This questionnaire allows them to rate, anonymously, the quality of dialogue in their company, the work of integrating new recruits, respect for personal constraints, their feeling of being useful to the company, the support they receive for training, etc. A dialogue tool accessible in open source which, unlike a social barometer (periodic questionnaire on employee morale) or an evaluation site like Glassdoor, where everyone expresses their opinion on their working conditions, aims to strengthen dialogue on a very operational basis. No doubt enough to improve knowledge of available skills.

## ###ARTICLE\_START### ID:2001

IT Arvind Krishna, IBM's new CEO since April, has taken just a few months to make his mark on the history of the world's oldest IT group and "redefine" it. In the hope of boosting its growth, IBM will split into two separate companies. On one side, a group refocused on its activities with high development potential: its hybrid cloud platform and services (which mix online and internal server computing), its artificial intelligence solutions and quantum computing. This scope represents three-quarters of its revenues ($59 billion), mostly recurring. On the other, a "new company" - which has yet to find a name and governance - will focus on infrastructure services for its 4,600 clients. In other words, managing servers and modernizing the internal IT equipment of these companies. It will bring together 90,000 employees out of the 352,000 that IBM has today (including 7,500 in France) Catching up "I am focused on prioritizing growth and winning the battle for architecture in the cloud (...). Our actions will accelerate our hybrid cloud growth strategy," explained Arvind Krishna when presenting the restructuring. The two companies will be listed. The split, which will not be completed until the end of 2021, is expected to cost around $5 billion, warned CFO James Kavanaugh. Shareholders will receive a cumulative dividend that will not be less than what they receive today, the company promises. At almost 110 years old, "Big Blue" is therefore clarifying in its structure the strategic shift that began several months ago. By appointing Arvind Krishna to succeed Virginia Rometty, IBM had already confirmed the central role of the cloud in its future strategy. Before taking over the full reins, the man was the vice president of the group's cloud business and cognitive software. He was the one who led the acquisition of the open source business software publisher Red Hat in 2018. A transformative acquisition worth $34 billion. But IBM's development, growth and investment capacity in these areas were weighed down by its infrastructure services business, which was shrinking quarter after quarter. Reinventing itself Freed, the new IBM will be able to invest more in the hope of catching up with its major competitors Amazon Web Services, Microsoft, Google or Alibaba in this market that it estimates at $1,000 billion, with more attractive margins. Because IBM has been outdone on all the new market opportunities, losing its strong position in business computing that it had in the early 2010s. With the migration of businesses to the cloud, the company has sold less hardware and software, and therefore fewer services. Since 2011, it has lost 30 billion in revenue, nearly 30% of its turnover. In more than a century of existence, IBM has already had to reinvent itself many times. After the heyday of computer hardware and server sales, the group sold its PC division (in 2005) and then its Server activities (in 2014) to the Chinese group Lenovo to focus on software and business services. A new page is turning again. Arvind Krishna assures that the two entities will maintain a "strong strategic relationship". Investors have very well received the surprise announcement of this split and its medium-term growth prospects, causing the stock to jump by more than 7%.

## ###ARTICLE\_START### ID:2002

The next stage of technology may be to work less well. The bug: nightmare for the designer, who works to make the interface ever more fluid, and ruin for the company, which capitalizes on the loyalty of its user. But the bug can also be a tool to repair technology. For a few years, a handful of computer scientists and digital activists have been working to create small problems to solve a bigger one: our relationship of dependence on technology. Their main weapon: friction, namely anything that makes using an interface more complex to use. On a daily basis, for example, it is a message that asks you if you are sure you want to make a payment before validating a bank transaction, or certain messaging systems that check before sending a message that you are aware that "Reply to all" will broadcast it to several hundred recipients. “Friction is a small element inserted into the interaction process that interrupts you and gives you the opportunity to think about what you were doing,” explains Anna Cox, professor of human-computer interaction at University College London (UCL). In a paper written with researchers in cognitive psychology, she borrows from psychologist and Nobel Prize winner Daniel Kahneman the identification of two ways of thinking, schematically called “System 1” and “System 2”. In System 1, the user interacts automatically. In System 2, they are aware of what they are doing. According to Anna Cox, it is when we are in System 1 that we experience that classic case where we check our phone to read an email and find ourselves twenty minutes later wondering where they went, after having swiped, scrolled, scrolled on a whole bunch of networks without really having decided to. A few grains of sand in these well-oiled gears can then tip the user from System 1 to System 2. Unlike nudge (soft influence) or dark patterns (interfaces designed to lead to a certain action), friction is not intended to influence users. "Maybe they will ultimately make the same decision, but at least they will have made a conscious choice," continues Anna Cox. "A lot of modern technologies were not designed to give people power, but to maintain engagement. Friction can be a way of freeing users from it." Critics of the "attention economy" remind us that the digital world has begun to conquer the available brain time of its users. The longer an Internet user stays on a site, the more value they bring to that site, because they will have been exposed to more advertising, or will have been able to make more payments. Everything is then done to cocoon him: the platform recommends content so that he does not have to make the effort to think for himself about what deserves his attention, and the interface is ergonomic so that he does not want to leave it. "A better system" The fluidity of interfaces has been theorized by designers under the pretty name of "frictionless": what must be avoided is friction. "Frictionless aims to fluidify an acquisition tunnel [the steps that separate a user from the desired action, editor's note], such as payment so that he buys as much as possible", underlines Karl Pineau, co-founder of the Ethical Designers collective. A consultant for a banking company recently gave us an example of frictionless used in the acquisition tunnel: the application developed by the bank offers, by playing on fluidity, to increase a loan from 10,000 to 14,000 euros. With one click, performed in an ergonomic universe that tends to keep him in System 1, the user has therefore requested additional credit. "Conversely, friction draws the user's attention to what he is doing," explains Karl Pineau. "Fundamentally, friction is also a device for capturing attention, but it can be used for ethical purposes." But friction is sometimes used for a less virtuous purpose: it is the tangle of knots that you have to untangle before unsubscribing from an email list, or the labyrinth that must be crossed to cancel your subscription to a telephone operator. To avoid this kind of breach of ethics, the responsibility rests on the shoulders of designers, if we refer to the definition of the discipline given by the French-Canadian design theorist Alain Findeli: "The goal of design is to improve, or at least maintain, the habitability of the world in all its dimensions." "The difference between the designer and the engineer," continues Karl Pineau, "is that the engineer seeks the most efficient way to respond to a given problem. The designer seeks to make a system better." Visible seams The reflection may seem paradoxical: can a dysfunction really make a system better? It all depends on what is contained in the idea of "better." In 1988, the pioneer Mark Weiser forged the concept of ubiquitous computing: he imagined omnipresent computing, nestled in the smallest interface of interaction in human life. According to his vision, set out in the article "Designing Calm Technology," a successful technology should "inform but without demanding our concentration or attention." Enough to fuel dreams of a Wall-E-style utopia, where all of human life is governed by a considerate and sophisticated technology. "We are still far from this model, and we can doubt that it will ever happen," jokes Matthew Chalmers, professor of computer science at the University of Glasgow. We should rather think about digital as it exists today, and not according to the ideal vision we have of it." Playing on a metaphor other than friction, Matthew Chalmers speaks of "seamful design", a design that reveals its seams, its imperfections, when the tendency is rather to sweep the grains of sand under the carpet. Since technology is imperfect today, it would be better to show it rather than pretend the opposite: it would be a way of improving it. To justify it, Matthew Chalmers takes the example of Heidegger's hermeneutic circle. According to the German philosopher, if we use a hammer to drive in a nail, we use the tool without thinking about it and our attention is directed to the nail. If the hammer breaks, then our attention is drawn to the tool: how can we repair it, improve it or find a better adapted tool? Friction in an interface can then "draw attention to the seams, and show us that these limits are part of the system," explains Matthew Chalmers. "We can then use these limits: try to repair them or change the way we use the tool, or even change it." Changing the tool: this is perhaps the crux of the matter. Rather than inserting elements of friction to make the user aware that they are absorbed by the thread of their social network, some are working to create tools that, more simply, do not rely on attention-grabbing devices. Because it is ultimately a question of economic model: as long as attention remains the commodity, companies are likely to continue to capitalize on it. "It seems to me that friction is a compromise between the desire to keep users and the concern not to make them too addicted," emphasizes Maïtané Lenoir, designer and member of the free software promotion association Framasoft. And to point out free software which, being free to use, does not rely on attention-grabbing policies. In the context of a technology that accepts its limits and does not seek to become ubiquitous, the question of friction would perhaps not arise. Given the current hold of digital technology on our attention, it will take a hell of a lot of grains of sand to throw into the cogs.

## ###ARTICLE\_START### ID:2003

“The Minister responsible for Digital Transformation [Éric Caire] looked at the application from every angle. He concluded that it is reliable and secure,” François Legault said during a press briefing yesterday. Membership is free, anonymous and not mandatory, the premier said. When a person is diagnosed with COVID-19, they simply enter the information into the application and everyone who has been within 2 metres of them for at least 15 minutes in the previous two weeks will be notified. However, the app only works if it is used by a lot of people, a challenge the government is facing. “The crux of the matter is usage. We need as many citizens as possible to download the application for it to be effective,” said Mr. Caire. “THE BEST” According to a cybersecurity expert, COVID Alert is the most secure. “Of all the choices the government had, this is the best application. It was developed so that it does not collect information about people,” explains Jean-Philippe Décarie-Mathieu, specifying that this does not mean that there are no issues. If Quebec did not deploy the application this summer, it is in particular because there were risks of leaks of personal information, according to Steve Waterhouse, former IT security officer at the Department of National Defence. The problem is now resolved, he assures. However, Mr. Waterhouse has a reservation about the application, which uses Bluetooth as a location tool. “It is damn ineffective for measuring distance,” he says. “And it does not take into account certain factors, like whether people are wearing a mask or even if they are on two different floors.” This will therefore generate false positives that will show up for nothing [at screening centres],” he adds. Quebec becomes the eighth province to offer the COVID Alert application to its citizens. \*\*\*\*\* OPEN SOURCE SOFTWARE The COVID Alert application was developed with open source software. This means that the entire international community can go and see how it works. This helps make it more secure, according to two cybersecurity experts consulted. “If there had been security breaches, they would have been detected a long time ago,” says the Minister Delegate for Digital Transformation, Éric Caire.

## ###ARTICLE\_START### ID:2004

Imagine a pair of glasses, with a classic appearance, which, once put on, are capable of deciphering a driver's brain activity in real time and alerting them, by vibration, if they doze off at the wheel. This prototype, which would be perfect for an anticipation scenario, does indeed exist. It is called AttentivU and has earned artificial intelligence (AI) researcher Nataliya Kosmyna, 30, a lot of courtship. Since her first scientific publication on the subject in October 2018, the postdoctoral fellow at the Massachusetts Institute of Technology (MIT) has already been invited by around twenty companies, from Google to Facebook, from Microsoft to NTT Data, from Ford to Honda, to "present the project and discuss possible collaborations. These requests have continued "even during the lockdown period via screens," she says. At the heart of such enthusiasm, a research topic that fuels many fantasies: the brain-machine interface. In perfect French, the young woman of Ukrainian origin, naturalized French for just a year, immediately wants to demystify her discipline: "It is not about telekinesis [paranormal ability to exert a direct action of thought on matter]. When a person thinks about something or feels an emotion, their neurons emit electrical signals. My work consists of designing algorithms that learn to analyze them and associate a command with them that will be transmitted by Wi-Fi or Bluetooth network." And to list, in an increasingly connected society, the hoped-for applications of her research: "We can imagine controlling a robot, a household object, a wheelchair by thought..." Chemin de crête It was in 2012 that the global scientific community first heard about Nataliya Kosmyna. Precocious, she started coding at the age of 7, the young woman has just received a scholarship offered by the French government and flew to Grenoble to follow a "Master of Sciences and Artificial Intelligence in English", she remembers. It was from there that at the age of 22, she published an article on controlling a drone by thought. Franck Tarpin, who co-signed the article and would become her thesis director, remembers a researcher with extraordinary talent, mastering the practice of French in just one year and who, he adds, "has this rare and very useful quality of knowing how to stage her work. "It was she," he continues, "who wanted to work on a drone so that it would be visual, and therefore more understandable." Mission accomplished. The images of the student piloting the flying machine, with the control headset on her head, which were relayed by the press, are spectacular. This work earned her the L'Oréal-Unesco "Génération jeunes chercheurs" prize in 2016, and was subsequently recognized as one of the ten best innovators under 35 in France by the MIT Technology Review. From MIT, Pattie Maes, who supervises her postdoc and is interim director of the Media Lab, believes that Nataliya "is already one of the best in the world in her discipline, the brain-machine interface. She has," she continues, "more ideas and leads than we have the means to develop them. And what's more, she's not afraid. Not afraid? The head of the Media Lab, marked by the 2016 American presidential election and the "Facebook Cambridge Analytica" affair (under the cover of a scientific study, the personal data of 50 million Facebook users were sucked up by this political influence company and used for the campaign of candidate Trump), measures the ridge path followed by the young researcher. "Some current technological developments, including Nataliya's work, are of great interest and great potential, but they can also be subject to abuse in their uses, admits Pattie Maes. We are collectively aware of this and discuss ethics at length. It is not only about the protection of personal data but also more generally about the negative impact that these technologies can have on our lives." At the age of 10, from the small industrial town of Polohy, in Ukraine, young Nataliya had already seen the futuristic film Matrix 18 times, in which intelligent machines enslave human beings without their knowledge. Two decades later, from Boston, the scientist does not shy away from the potential risk of her invention, "which could make it possible to monitor a person's mental state," she acknowledges. Hence a series of safeguards imagined on the glasses: the electrical signals from the brain and eyes captured by mini-electrodes remain stored on the uprights without going through a mobile phone application, in order to avoid any attempt at fraudulent "suction" of this information. "Keeping control" The artificial intelligence algorithm is designed in such a way that anyone who finds this object and wants to decrypt its content would then discover "random sequences of data without head or tail," she specifies. Finally, this follower of open source, which consists of leaving the source code of a software freely accessible, has decided this time not to share anything about her program. "My publications on the subject are technical, without details, and only give the operating principle of the algorithm", in order, she explains, to "keep better control of it. For the scientist, these safeguards are "so many ways for citizens to regain control over the use of their personal information. No naivety, however. Research in her discipline is evolving at high speed, without necessarily displaying the priorities she defends. Faced with the media announcements of the American billionaire Elon Musk, presenting on August 28 a new generation of brain implants tested on pigs, the young woman keeps her distance. "These new implants, which contain 1,024 sensors, almost 20 times more than the previous ones, show that the state of the art in terms of miniaturization and power of brain-machine interface tools is progressing. But these experiments clearly raise the question of the intrusion of these technologies as well as the power of control and reversibility that the end user will be able to have. » Taking the opposite view of this invasive path, the young researcher launched, with her own money, a project for a removable helmet for children with Lou Gehrig's disease. It was after receiving, by email, a request from several French families that she embarked on this path. The promise? That these patients, who can neither speak nor walk, could activate, by thought, an audible alert at night in the event of a problem. Initial tests will begin at the end of September in French and American homes. The young woman would like the debate around her discipline to broaden. "After the Internet of Things [IOT], we are entering the phase of the Internet of Bodies," she predicts. All the signals that our organs produce, whether cardiac, cerebral, electrodermal or ocular activities, will gradually be captured and analyzed by AI algorithms. "This trend, already current in many global research programs, from America to Asia, "is still little perceived in society," she regrets. While the European Commission's White Paper on Artificial Intelligence, published on February 19, recommends that future high-risk AI systems be certified, tested and controlled, as are cars and toys, the researcher advocates for a "global legislative framework to govern the capture of biometric data" so that it is "transparent and for the sole benefit of users.

## ###ARTICLE\_START### ID:2005

DIGITAL On its website, the American videoconferencing company Zoom, valued at $130 billion, boasts that it is used by "96% of the best American universities". The company, whose use has exploded since the lockdown, could also boast of its success within French higher education. Over the summer, many institutions acquired user licenses from it. The aim: to reduce the number of students on site by broadcasting classes live, and to be ready in the event of a new outbreak of the Covid-19 epidemic. Caution is advised. At the end of September, schools such as Sciences Po have already had to close their doors, while clusters are multiplying in higher education. Nearly twenty major French universities have signed contracts with Zoom. Among them: Paris-I Panthéon-Sorbonne, University of Paris, Sorbonne University, University of Bordeaux, Toulouse Capitol, University of Reims Champagne-Ardenne, Aix-Marseille University, University of Côte d'Azur... In addition to the faculties, there are major schools such as Sciences Po, as well as a myriad of private schools. "We offer institutions more advantageous pricing than companies," Loïc Rousseau, director of Zoom France, explains to Le Figaro. The appeal of the videoconferencing solution goes beyond borders. "Faced with demand, we have created sales teams dedicated to education in Europe," he continues. Zoom's Paris office will soon have an employee dedicated to this new market. Already well established in higher education, Microsoft is also seeing growth in user licenses for its Teams collaborative work software. "Teams was mainly used by administrative staff. With the lockdown, usage has shifted to teaching,” explains Kristine Naltchadjian, director of Microsoft Education France, citing the examples of Paris-Dauphine, the University of Burgundy and Rennes Business School. Some establishments have taken out licenses for both solutions. “Teachers have the choice between Teams and Zoom. Our goal is to have only one tool for the start of the 2021 school year,” says Romuald Arnold, digital director at the University of Reims. “We hope that this can be a French solution.” Until now, universities have been using open-source videoconferencing tools such as BigBlueButton, or institutional ones such as Rendez-Vous de Renater. But these software programs did not hold up during the lockdown. “Our French players were not ready to move to mass usage,” says Jean-Michel Mis, LREM MP specializing in digital issues. In the emergency, pragmatism therefore prevailed. “We needed a tool that could scale and be easy to use. Zoom was the obvious choice,” explains Guy Melançon, vice-president for digital at the University of Bordeaux. “We wanted to go all-out on BigBlueButton,” says Frédéric Pomies, director of IT systems. The University of Strasbourg has managed to strengthen this open-source solution and has been able to do without American solutions for this new school year. This is not the case for Bordeaux. The university has opted for Zoom, which can flawlessly manage video conferences bringing together hundreds of people. BigBlueButton is used for small group courses. Prohibited for research The University of Bordeaux spent €2 million to equip 400 rooms and 100 lecture halls with 4K cameras, powerful microphones and screens, and to acquire one-year Zoom licenses. “This equipment is agnostic.” We could abandon Zoom next year if an alternative presents itself," emphasizes Guy Melançon. A reflection shared by other establishments. Because the use of videoconferencing is likely to continue, even after the pandemic. "We started using Zoom in 2018 for certain courses," explains Christophe Kern, IT manager at the Léonard de Vinci management school in Courbevoie. "The aim was to attract foreign students who could not travel to France. Videoconferencing also allows us to increase the number of courses without being limited by the size of our premises." It could also relieve congestion in lecture halls. "It is important for our young graduates to be on site," tempers Cora Beck, director of digital pedagogies. "But hybrid or distance learning courses also allow us to train our students for the professional world of tomorrow." However, the use of Zoom and Teams is prohibited for research activities, in order to protect this strategic data. Under the Cloud Act, American intelligence agencies can indeed demand access to information stored by American cloud computing providers, even if their servers are in Europe. French researchers can turn to the encrypted videoconferencing solution Tixeo, certified by Anssi, for the most sensitive exchanges. Why is this not the case for education? "We analyzed the risks, and a law course in a bachelor's degree is not a major sovereignty issue," smiles Frédéric Pomies. But the use of Zoom "has caused debate," adds Romuald Arnold of the University of Reims. "Yes, there are risks, but they are measured in the context of education. A lot of reassurance was needed." Universities are questioning the legality of their contracts with Zoom more since the European Court of Justice invalidated the Privacy Shield, an agreement that governed the transfer of data to the United States. This decision has plunged European companies into an ocean of uncertainty, with a real legal risk (see our September 24 edition). "Even if Zoom has servers in Europe, some data goes to the United States," says Romuald Arnold. The latter hopes that a European tool will emerge "to remove all these uncertainties. We have the capacity to do as well as the Americans, we must be given the means." This is also the wish of MP Jean-Michel Mis. "We must bring out credible competitors to Gafa, who will ensure the security and confidentiality of data. But we must think about this on a European scale, as for the GaiaX project for the cloud. It would be a mistake to want to be 100% sovereign." In the meantime, universities are working to strengthen their own internal digital tools. As Guy Melançon sums up, "Zoom is a choice for today." Not necessarily for tomorrow.

## ###ARTICLE\_START### ID:2006

Covid-19 has shed a harsh light on the priority for democracies to relocate the production of many essential goods, which has become a monopoly of Asia, and particularly China. But relocation is an art that is all about execution. However, it is far from being won. Not all activity can be relocated, either for geographical reasons (energy and raw materials), or for technological reasons (disappearance of skills and equipment), or for economic reasons (too little added value). Furthermore, the history of reindustrialization policies is marked by bitter failures. This is particularly the case in France, since the disastrous attempt to reconquer the domestic market in 1981. Despite the proliferation of support plans, industry in our country has seen its share of added value fall to 11% (16% in the eurozone and 22% in Germany) and has lost 2.5 million jobs in a quarter of a century. Worse still, many strategic companies and technologies have disappeared or come under foreign control amid indifference. The situation is all the more critical today as the Covid-19 crisis is hitting two of our last sectors of excellence hard, generating major knock-on effects: aeronautics and the automobile industry, whose activity will fall by 31% and 29% respectively in 2020. Far from easing, competition is also intensifying under the pressure of trade, technology and currency wars (the euro has appreciated by 8% since June), and the sharp rise in international tensions. And this includes within the large market towards which German industry, whose activity has grown by more than 40% since 2000 and which benefits from the €1,300 billion bazooka plan, is redirecting its exports in response to the closure of China and the threats of American sanctions. France must not squander its last chance to rebuild its industry through an effective relocation strategy. First, public money is essential and relocations require the mobilization of sums much higher than the billion euros of the recovery plan. But public money will remain useless if it is not put to the service of a strategy that breaks with past mistakes. And this around five priorities. Target high value-added activities compatible with the French cost structure, which is the case in health or digital technology. Focus on the sectors of the future instead of vainly trying to maintain or resuscitate the activities of the past. Prioritize equity, which is the primary weakness of SMEs and mid-cap companies. Integrate from the outset the industrialization phase and the returns to scale that are the key to any industrial development. Relocalize from the bottom up, based on skills and technologies. Two examples illustrate the success of this type of approach. During the lockdown, an alliance of industrialists, researchers and doctors brought together by a Nantes entrepreneur, Quentin Adam, developed an open-source artificial respirator in five weeks, dividing its cost by tenfold. Since May 2020, the energy sector has launched calls for projects to aeronautics manufacturers to mobilize the expertise of their under-utilized design offices in the fields of chemistry, surface treatment, robotics and data management. Secondly, while the State must not interfere in the strategy and management of companies, it is entitled, as the United States does, to control the export of technologies developed with public funds. Above all, it must build a favorable environment because competitiveness remains the primary condition for relocations. By loosening the fiscal and regulatory straitjacket. But above all by strengthening skills, particularly in the field of scientific education which has fallen into disrepair, by accelerating the deployment of high-performance digital infrastructures throughout the territory, by proposing a mix of decarbonized electricity combining nuclear and renewables. Finally, the relocation strategy involves rethinking competition policy, industrial policy and trade policy to put them at the service of a principle of European preference based on respect for the standards, rules and fundamental rights of the Union. Relocations will be done by skills and technologies, by companies and by Europe, or they will not happen.

## ###ARTICLE\_START### ID:2007

Mixing technology and feudal times could have been an opportunity to tell the adventures of King Arthur and his lightsaber. Forget the song of gestures: far from a rewriting of the past in the light of futuristic technologies, the history traced by the economist Cédric Durand in Technoféodalisme (published by Zones) rather points to the resurgence of feudal mechanisms in the digital economy. It all begins on the West Coast of the United States: liberating technologies tinkered with by sympathetic hippies give rise to fierce monopolies governed by libertarian entrepreneurs. The framework of this new economy encourages less a flexibilization of the market than a relationship of exploitation of workers and the data they produce. Because these companies no longer produce value, underlines the lecturer at the University of Paris-XIII and member of Economistes Atterrés: the digital giants have become simple predators. Unlike bosses who exploited employees, making profits from work provided for them, platforms capture the value generated by other workers, without producing in return. As a result of this new logic, the economy is running out of steam, growth is collapsing. To govern this increasingly unwelcoming jungle, the economist warns: relying on competition is not the right solution. Has the pandemic shaken or strengthened the digital sector? I would say that it has mainly played a role in accelerating the changes in capitalism that were already underway: confinement has disrupted behaviors and constraints on travel have favored a shift towards online activities. This is manifested by the rise of teleworking - especially among executives - and online purchases. The main beneficiaries of this logistical restructuring of the ways of working and consuming are the companies that provide digital services and organize their physical infrastructure. The financial markets have not been mistaken: the collapse of values linked to mobility (aeronautics, oil companies, etc.) has as its counterpart the soaring market capitalization of Amazon and Zoom, which each embody, in their own way, the economic hegemony of digital technology. The analysis of these trends leads you to say that we are entering an era of feudalization of the economy. What does this mean? To summarize it in a caricatured way, social change is due to two elements: on the one hand, conflicts that lead to the creation of institutions - this is politics; on the other hand, ways of being together, which today translate into new practices of production and consumption. The two are, of course, closely linked; but we often tend to focus on institutional changes, and I want to emphasize material logics, which are not explicitly political but nevertheless alter the quality of social relations. It is sometimes said that information technologies promote neoliberalism, by facilitating the extension of a model in which everything is sold and everything is bought. This is not wrong, but it is not the whole story. The regime in which we live is not that of the market economy (governed mainly by changes in supply and demand), but of capitalism. However, capitalism is made up of social relations whose stakes are control over the means of production, forms of work organization, modes of consumption, appropriation of surplus. I sought to understand what capitalism does with digital technology. I realized that, far from promoting market fragmentation and individual autonomy, the digital economy leads to a return to relationships of dependency. Algorithms are social: they are tools that organize social relations, that allow us to coordinate and interact. Individuals and organizations can no longer do without them, so much so that their control by private companies leads to a new relationship of domination that is inseparably political and economic, as in the days of peasants' attachment to their seigneurial lands. Is this dependence linked to the emergence of large monopolies? That's true, but I am wary of the discourse that says that the problem comes from large monopolies that should be broken up. First, there has never been any capitalism of small producers; but above all, the very configuration of digital capitalism can only lead to the emergence of monopolies. Why? It's a structural reason. Take the example of land for agriculture: the more you exploit the land, the lower the yield will be. Furthermore, the available land area is strictly limited. If we now study industry, we observe that you can increase the quantities produced and that the more you produce, the less each unit costs to produce: you achieve economies of scale. In digital activities, the logic is still different: first, the more your software or service is used, the more profitable it is. There is no significant difference in the cost of production - whether you sell one software or a hundred, you will have spent as much to produce it. In addition to this, the more it is distributed, the better it will become, since each user brings you data on the uses they make of it, which allows you to improve it. The possibility of replicating digital products at infinitesimal costs has led us to believe that the digital age would be an age of abundance. But this is an error of analysis. There remains a form of decisive scarcity: the scarcity of original data. It's about knowing who will have access to the data that you produce using digital interfaces - data on your social behavior, on your preferences - and to those resulting from the operation of machines. The actors who can capture this original data have an inestimable advantage over others. It is this combination of infinite economies of scale and the absolute scarcity of data that gives extremely strong power to monopolization in the digital age. You compare digital services to feudal fiefdoms. What do they have in common? The idea is quite simple: the serf is attached to his land. This means that he does not belong to the lord, but to the land - which, in turn, belongs to the lord. When we use a service like Facebook or Google, we become inseparable from the data that is generated - the digital land in which we are inserted - because we leave in this digital universe a whole series of data that facilitates its use. As soon as there is a crystallization in the digital world of our personal preferences, and this crystallization produces useful effects, an extremely strong relationship of dependency is created. And it is difficult to escape from it because it implies losing access to useful services. Imagine, for example, living without using all the services offered by Google: it is possible, but you are seriously complicating your life! The same relationship is formed for workers who go through these platforms. The issue, for them, is to know whether or not they are in a relationship of subordination. Even if we exclude the question of the pressures and sanctions that are exerted on workers, we must consider another element: dependency. Workers cannot provide the service without the platform; and this relationship of dependency alone justifies social protections. You analyze the functioning of platforms as an attitude of predatory behavior. Why? There are currently two ways of making profits. The first is exploitation: you use workers and pay them a little less than what they bring in. The second, predation, is at another level: it is the capture of value created elsewhere. a This is an essential dimension for companies that exploit intangibles (databases, software, brands): most of their profits come from the added value extracted by other companies, which themselves derive it from the exploitation of employees. It is important to emphasize the rise of this logic of predation. If you invest in predation, you are not investing in production. This logic of capture without investment explains why our economies are tired and why extreme inequalities persist: not only is there not enough investment, but investment is not going where our real needs are, in the ecological transition, health, quality of life. What I call techno-feudalism is therefore a kind of cannibalistic capitalism, where certain large groups that control intangibles divert resources to their own benefit. What are the means of resistance? One option would be escape - for example through free software. But I do not think that this is immediately accessible to the majority of the population. We must therefore also find self-defense mechanisms against this intellectual monopolization. This starts with three elements. First, protect employees by recognizing the status of dependency, as I mentioned earlier. Then, make algorithms more transparent, that is to say, establish public diagnoses to understand their effects. Finally, being able to regulate them: we must think not in terms of obligation of means, but of results, that is to say, we must include an ecological imperative, think about their impact on consumption, their social purpose, etc. It therefore seems important to me to think about the need to regulate companies or, better still, to consider entrusting their management to non-profit social organizations or public companies. From the moment that most of these services are standardized, it is not complicated to replicate them publicly. And this is one of the points on which I would like to insist: let us not trust competition to resolve the challenges and opportunities that this new space opens up to humanity. ? te à p

## ###ARTICLE\_START### ID:2008

DATA The French company OVHcloud and the digital services subsidiary of the German company Deutsche Telekom are laying the first concrete brick in the project to build a sovereign European cloud offering. Starting in 2021, the two groups will jointly offer a public cloud solution that will meet the standards set at the beginning of June by the Gaia-X project. Led by 22 players - including OVH and T-Systems - and supported by the French and German governments, this project aims to build a European alternative to the offers of the major American and Chinese cloud players that dominate the market. To enable European companies to control the sovereignty of their data, Gaia-X's ambition is to create a genuine "European infrastructure" within a few years that is capable of providing, storing, connecting and sharing data, while respecting the common standards that Europe sets for itself: full compliance with the GDPR, open standards, reversibility and confidentiality of data, as well as the highest possible security standards. Strategic sectors “Thanks to an efficient and fully integrated model, our offer is free from the influence of the Cloud Act, which is an absolute priority for us,” insists Michel Paulin, CEO of OVHcloud, in reference to this American law which gives almost all powers to the American authorities to demand data. “For a European sovereign cloud infrastructure to be a success, we must evolve quickly. And for this we need the support of the public sector,” emphasizes Frank Strecker, head of the public cloud business at Deutsche Telekom. “This cooperation is a very encouraging first step towards the realization of a European cloud infrastructure, which is an essential component of digital sovereignty,” commented Bruno Le Maire, Minister of Economy and Finance, who had kicked off the Gaia-X project in June. This first offer is aimed primarily at operators of vital importance (those companies whose activities are deemed essential for a country, whether in health, energy, water, etc.), the public sector and more broadly at all companies operating in strategic or sensitive sectors. Specifically, the French company OVH will provide its range of servers, its "eco-responsible" water cooling technology, as well as its open-source information system. T-Systems, the largest German integrator, will provide its data centers, its services, the telecom networks of Deutsche Telekom and its sales force. "For us, this is very good news. It will also help our growth in Germany," adds Michel Paulin. According to Bloomberg, OVH could go public by the beginning of 2021. The French cloud computing champion is said to have called on the consulting bank Rothschild & Co, but discussions are still at a very early stage. "We are considering all the scenarios to enable OVH to continue its growth," Michel Paulin comments simply.

## ###ARTICLE\_START### ID:2009

Baudelaire was right when he wrote: "Remember that Time is a greedy gambler/ Who wins without cheating, every time! That's the law." In a few years, who will remember smartwatches? Who will still wear one? And above all, which one will be in working order? Already today, the first generation of Apple Watch is no longer able to simply tell the time, because it is not always compatible with the ecosystem of its own designer... The planned obsolescence that strikes them is as inexorable as the passage of time. "You will never completely own a Patek Philippe. You will simply be its guardian for future generations." At the opposite end of the spectrum, what better slogan to describe mechanical watchmaking than the one imagined in 1996 by the famous Geneva manufacturer? The formula has not aged a day, with its intergenerational message emphasizing that our beautiful watches will outlive us, to one day end up on the wrists of our daughters and sons. This promise of eternity takes on its full meaning in the face of the low life expectancy of smart watches. "The heritage nature of watches, particularly the fact of passing them on to one's children, is very often highlighted by brands," confirms Sébastien Lepage, manager of the Lepage house located in Lille, Rouen and Le Havre, and which offers both classic and vintage or connected models. It is also a sales argument used by us, in addition to the ecological dimension, the durability of the object itself. In watchmaking, planned obsolescence does not exist. If there is a problem, it will be quickly resolved and repaired. That a timepiece older than oneself still works is mind-boggling, when you think about it." An object of transmission How many objects that surround us remain in families in this way, creating an intergenerational bond? "Some of the pieces we offer in our CPO (Certified Pre Owned) space are over thirty years old," explains Gonzague Levert, a young enthusiast who is head of this department at Bucherer, the largest watch boutique in France, on Boulevard des Capucines in Paris. "In addition to those who want a model from their birth year, many people want to acquire a vintage timepiece to continue writing its history. You can very well buy a piece from 1991, wear it for another thirty years, and pass it on to your children and grandchildren." So, you don't throw away a mechanical watch. "For many, it remains an object of transmission," says Stephan Ciejka, head of La Revue des montres. I've met many women who told me they wear their father's watch. But for it to retain heritage value, it must be more than a name: a model with its own identity, its own history. »Well aware of the treasure they have in their hands, watchmakers want to be sellers of eternity: is the promise kept? The major brands now offer a five-year warranty, but beyond that, a mechanical watch remains (almost) always repairable. "We see models from the 1950s on the market that work perfectly, and there is no shortage of components to repair them," explains Stephan Ciejka. We can wonder about parts made from materials whose aging is not yet known. But steel lasts for hundreds of years, and a silicon balance wheel is easy to reproduce. Of course, when it comes to recreating a component for an old timepiece, it is long and quite expensive. As a result, only very high-end models deserve it. The question to ask tomorrow will be whether to offer components in open source. We could thus, even from Mars, download the plan of a part to reproduce it in 3D printing. » Two products, two uses Modernity is not necessarily where we think it is... However, is it a question of opposing classic and connected watches? Basically, even if they are worn on the wrist, are smart watches really watches, beyond telling the time? "The real objective of these products is the connected dimension, analyzes Nathalie Celia, head of Bucherer. Receiving messages, emails, or even temporarily replacing your phone in meetings, while reading your alerts on your wrist. We are not in competition in terms of purchase." As for its limited lifespan, imposed by its connectivity, does it, deep down, bother those who buy it? "The fashion for connected watches is the antithesis of sustainability, concedes Sébastien Lepage. The smart watch is an extension of the phone, so it will be obsolete after two or three years. However, I sell these products to the same customers who buy mechanical timepieces, without this posing any metaphysical problem for them. They know that these are two different products for two different uses." And they make the distinction all the more easily since most connected models, starting with the most famous, are far from costing as much as the best mechanical watches.

## ###ARTICLE\_START### ID:2010

ADVERTISING A little respite for application developers, publishers and players in the world of online advertising. Apple will not finally integrate this fall into the new version of its mobile operating system iOS 14 a measure feared by a whole part of its ecosystem: the mandatory consent of iPhone users to authorize advertising tracking. The group postpones this measure by several months. "To give developers time to make the necessary changes, applications will have to obtain authorization from the beginning of next year," it explains in a blog post. With the argument of wanting to increasingly defend the privacy of users of its devices, the next version of iOS plans to display a notification that will ask them whether or not they authorize an application to track them via a unique advertising identifier. Invisible to the layman today, this "IDFA" is essential for the various players in the advertising market to be able to "track" browsing habits and thus offer targeted messages. It is also necessary for advertisers to track the effectiveness of their campaigns. This change in Apple's schedule comes a week after the high-profile announcement by Facebook - also directly impacted - which warned that the limits on advertising targeting would seriously harm application developers, "in an already very difficult period". Bitter pill The impact on the advertising market is not easy to quantify. "In the short term, we expect a reduction in the number of IDFAs available for advertising targeting and measurement. However, we cannot say with certainty what percentage of users will give their consent," estimates The Trade Desk, an independent AdTech player, which is working on a new unique open-source advertising identifier. According to calculations, some publishers could see their mobile revenues reduced by 20 to 30%, or even more. By unilaterally announcing this change last June at its developer conference, Apple left little time for the main stakeholders to digest this new bitter pill, which has serious consequences. Especially since in Europe, these players are already subject to the request for consent imposed by the GDPR. Enough to put off the user of an application... In a letter sent at the beginning of July to Apple CEO Tim Cook, a coalition of European players called for consultation. "The postponement to 2021 gives us time to negotiate," believes the European Publishers' Council, which brings together several major European media outlets. A meeting is planned with Apple to discuss. "It's interesting to have more time to prepare for it, but the problem is more global," emphasizes David Folgueira, deputy executive director at Prisma Media. The question becomes: what do we offer to an Internet user who comes to an application for free but that we cannot monetize? Publishers will have to ask themselves about the value proposition to offer to an Internet user, depending on their browser and their level of consent. "For its part, Google has given advertising players until 2022 before third-party cookies can no longer be used on its Chrome browser.

## ###ARTICLE\_START### ID:2011

IN QUEBEC CITY - Shopify is the notable absentee from the consultations on contact tracing applications that opened Wednesday at the National Assembly. This Canadian e-commerce company, which participated in the development of the federal application to fight the COVID-19 pandemic, had been invited to the parliamentary committee to answer questions from members concerned, among other things, about data protection. "It seems ironic to me that Shopify is not present, it's as if Uber had not come to a consultation on the taxi industry," said Liberal MNA Marwah Rizqy at the outset. Québec solidaire co-spokesperson Gabriel Nadeau-Dubois also deplored Shopify's absence. "We were met with a refusal to invite the individuals linked to Shopify who programmed this application," he said. The company declined the invitation because the app is "owned and operated by the Canadian Digital Service," a federal agency that, as its name suggests, is dedicated to developing digital services within the Canadian government. "They built the app from open-source code, created by a group of Shopify volunteers," said company spokesperson Rebecca Feigelsohn. "We have supported their work and believe the app is beneficial to Canadians, but it was done outside of their official duties at Shopify and is not a Shopify initiative." The COVID Alert app launched in July by the federal and Ontario governments tracks all contacts of people with COVID-19 in the two weeks before their diagnosis to encourage them to get tested. Ottawa is hoping the rest of the country will join so that a single app is available across Canada, but only four other provinces appear willing to adopt it so far. The application requires the collaboration of each province's public health to identify positive COVID-19 diagnoses. The Legault government is among the undecided. It has not yet decided whether it will join or develop its own application. "We can't say that it's a success story," acknowledged the Minister Delegate for Government Digital Transformation, Éric Caire, in an interview as he left the Council of Ministers on Wednesday. There are a few states, including Germany, that have had a little more interesting success, but if we look at France, it's not great. If we look at Sweden, they have even completely eliminated the use of the application." His former chief of staff, Joëlle Boutin, had adopted a more enthusiastic tone in a press scrum a few hours earlier. "We will not wait for the end of the consultations before deciding to act and to rely on fundamental principles," declared the CAQ member. "We have already decided that, if Quebec ever went ahead with such an application, there would be no geolocation, no GPS technology, that we would rely on Bluetooth-type technology, that the application would be completely anonymous, and that there would be respect for personal data." An online consultation conducted between July 8 and August 2 revealed that 76% of respondents believe in the usefulness of such an application and that 66% believe they need it, according to information provided by Mr. Caire's office. Nearly 17,000 Quebecers responded. All of the results have not yet been made public. Risk of drift? Science historian Yves Gingras warned the government on Wednesday against the temptation to quickly invest large sums in technology whose effectiveness has not been proven. "There is a cost to making decisions too quickly," he said. "In France, the effectiveness is almost zero and it costs 2.4 million euros for a gadget that doesn't work." MPs Marwah Rizqy and Gabriel Nadeau-Dubois expressed doubts about the usefulness of artificial intelligence in limiting the spread of the coronavirus and fear for the protection of citizens' personal data. "How would the "tracking" of people have prevented our CHSLDs from turning into death traps?" asked Marwah Rizqy. "A "tracking" application can be a tool, but the tool still has to work, otherwise it's just an unnecessary risk," argued Gabriel Nadeau-Dubois. "We have to weigh up the lives that can be saved," objected Yoshua Bengio, founder of the Quebec Artificial Intelligence Institute (Mila), during his testimony. "So, we have to estimate what the gain in human lives is [...]. We can't just take into account privacy and not the other side of the coin, [which is] what can the use of data do to save lives or improve people's health?" The contact tracing application developed by Mila had not been retained by the federal government. The Parti Québécois is waiting to hear all the testimony of the experts summoned to the parliamentary committee before judging the merits of such an application. "We have to give the runner a chance, in the sense that it is a technology that can help us add together what we already do and what works well," said MP Martin Ouellet, who is nevertheless concerned about the accessibility of this technology to the most disadvantaged, which requires a fairly recent smartphone. About twenty speakers will be heard during this parliamentary committee, which will end on Friday.

## ###ARTICLE\_START### ID:2012

Just yesterday, Shopify did not deign to appear before the National Assembly's parliamentary committee studying its COVID-19 tracking application. This is unfortunate, especially given the importance of the issue. The federal and Ontario governments have adopted the application called COVID Alert. The tool allows users to share their health status with those they meet, anonymously. Quebec wanted to consult the population and experts before moving forward. The Legault government now seems ready to take this step, with the majority support of the population. But this support does not justify Shopify's notable absence yesterday in Quebec City. This absence only attracts the distrust of those who have legitimate questions about the protection of their personal data, among other things. In this regard, the digital giants do not deserve the benefit of the doubt from the population. MORE QUESTIONS At first glance, Shopify did things by the book. Its application was created in open source code, which means that we know what's under the hood. As soon as we download it, we are informed that our location, name, address, contacts and health information will remain anonymous. The application has also received the blessing - with some reservations - of the strict federal privacy commissioner. But questions remain. The application uses the operating systems of Apple and Google. Do these two giants have access to our personal data? If so, how do they plan to use it? Shopify's absence would be more shameful if the Legault government gave real importance to this parliamentary commission, the outcome of which seems a foregone conclusion. To be truly effective, the COVID Alert application must obtain broad public support. Its creators missed the opportunity to maintain this necessary bond of trust.

## ###ARTICLE\_START### ID:2013

The suddenness of the announcement of his death is enough to leave one speechless. The philosopher Bernard Stiegler, who had worked so hard on words to express the upheaval that new technologies are causing our world, died Thursday at the age of 68. "An extraordinary contemporary, who sought to invent a new language and new subversions," wrote the Collège international de philosophie when announcing his death on Twitter and Facebook. In March, Bernard Stiegler gave another interview to Libération on the occasion of his latest book, Qu'appelle-t-on panser? La leçon de Greta Thunberg (published by Les Liens qui libèrent). Evoking the powerlessness of governments and multinationals in the face of the climate crisis and the anger of younger generations, he confided: "Even if they wanted to, States would not have the concepts to change. To be able to do so, we would have to establish a new critique of science in the industrial world." For over forty years, Bernard Stiegler has contributed greatly to establishing such a critique. "He was a pioneer of contemporary thinking on the place of technology in our society, on technology as an active and constitutive part of our civilization," explains the philosopher Jean-Luc Nancy to Libération. His books, La Technique et le Temps (three volumes, including La Faute d'Epiméthée, between 1994 and 2001, published by Galilée), Mécréance et Discrédit (three volumes, 2004-2006, Galilée) or Dans la disruption. Comment ne pas devenir fou (2016, les Liens qui libèrent), were of "extraordinary intelligence and knowledge," reports the philosopher and poet Michel Deguy, who met Bernard Stiegler over forty-five years ago. "He was a profound scholar, a poet and a mechanic, he had a continuous relationship with poetry." Desire to transmit Former director of the Institute for Research and Coordination in Acoustics and Music (IRCAM), former deputy director general of the National Audiovisual Institute (INA), founder of the Institute for Research and Innovation (IRI) at the Pompidou Center, Bernard Stiegler led a work of reflection of the order of the "experimental", according to the philosopher Mathieu Potte-Bonneville, who succeeded him as director of the cultural development department of the Pompidou Center. "He worked at the intersection of different fields, around the figure of hybridity, in a kind of inventive vigilance, drawing bridges between aesthetics, technology and politics. He renewed the lexicon and notions to think about a situation, which could have made him difficult to read at times. He invented his vocabulary while walking." Bernard Stiegler had a sometimes arduous thought process, but he compensated for the demands of it through his interventions in the press and his inexhaustible desire to transmit through intellectual collectives (such as the "Internation" collective on climate change, with the art historian Hans-Ulrich Obrist, the mathematician Giuseppe Longo, the sociologist Richard Sennett or the lawyer Alain Supiot) or more concrete experiences, such as when he helped to set up "contributory learning territories" with the inhabitants of Seine-Saint-Denis. Stiegler sought to socially revalue low-skilled skills such as street mechanics, known as wild, and all the small jobs in the informal economy to integrate them into official circuits. He also wanted to use the video game Minecraft with middle school students to set up contributory urban planning projects. "He was not an intellectual who cared about what application could be made of his thinking," says Patrick Braouezec, former PCF deputy and mayor of Saint-Denis and president of the Plaine Commune. "He wanted to transcribe concretely, at the local level, his thoughts on the consequences of technological developments on work and sought to anticipate these changes so that the least qualified professions would not find themselves on the sidelines." Bernard Stiegler had a spectacular ability to bring projects to life, to mobilize collectives, believes Mathieu Triclot, philosopher of technology, lecturer at the University of Technology of Belfort-Montbéliard: "His way of linking highly speculative conceptual work and technological transformation companies here and now seems to me to be one of the great singularities of his commitment. He is a model of philosophy of technology: capable of both a radical critique of contemporary technology and of providing keys to understanding for action. A bit of everything we can expect from philosophy." Inevitability Rich and complex thought, extraordinary career. In 2003, while he was head of Ircam, Bernard Stiegler revealed that he spent five years in prison, from 1978 to 1983, for bank robbery. He would recount his journey in the book Passer à l'acte (Galilée, 2003). It was within the walls that he discovered philosophy. But well before that, it was with his father, an electrician at the radio transmitter in Villebon-sur-Yvette (91), the town where Bernard Stiegler was born in 1952, that he had his first approach to technology: "A magnificent cube, very Space Odyssey, dangerous, too", he recalls in a portrait published in Libé in 2003. Already, he tinkered, he built, familiarized himself with technology, which would become the heart of his future research and which he would never reject en bloc, aware of its inevitability and its sometimes beneficial contributions. At high school, he got closer to Voix ouvrière (the ancestor of LO), discovered Marx and Trotsky. In May 68, he was 16 and joined the Communist Party. He was expelled from high school, struggled, became a courier then a laborer, a farm worker then a bar owner in Toulouse. At only 19 years old, the birth of his first child, his daughter Barbara, now a philosopher and professor at the University of Bordeaux-Montaigne, was like the arrival of a "light" in his life, he said on France Culture. But financial difficulties caused him to fall. He held up his bank branch alone, wearing a wig and a fake moustache. Then three other banks. And was arrested. He was 26 years old. At the Muret detention centre, the philosopher Gérard Granel, a former customer of his bar, brought him books and advised him to write to Jacques Derrida, who wrote back. Stiegler accumulated degrees. He finished his thesis under Derrida's supervision in 1993. When he was released from prison in 1984, he became a research director at the Collège international de philosophie and then a teacher at the Université technologique de Compiègne (his lawyer, Henri Leclerc, had in the meantime obtained the expungement of his criminal record). Stiegler's thinking is organized around the concepts of disruption (the acceleration of digital innovations and mass media lead to the standardization of lives and the impoverishment of culture), proletarianization (which according to him affects all professions, employment and automation having replaced work and know-how) or entropy. The philosopher draws inspiration from physics, where entropy designates the process of energy degradation, to describe the crazy energy dissipation of our societies leading to global warming and "informational entropy", when algorithms and big data erase the human. He also transposes the notion of "pharmakon", inspired by Derrida and Plato, to the digital question. The pharmakon means both remedy and poison, "the impossibility of drawing a clear line between what would be on the risk side and what would be on the promise side", specifies Mathieu Potte-Bonneville, a way of marking the fundamental ambivalence of digital technologies that continue to provide as many solutions as new problems. "Bernard Stiegler's intuition has continued to be confirmed with the development of social networks", believes Potte-Bonneville. "Transmission" However, faced with the disruptions in the world, Bernard Stiegler repeated that pessimism was "indecent". With Ars Industrialis, the association he created in 2005, he tried to democratize knowledge about new technologies and to imagine a "contributory economy" based on the "commons", collaborative work (like free software or Fab labs) and a contributory income, ensuring the redistribution of productivity gains resulting from the automation of work. For him, only human knowledge could avoid entropy and disruption and he called on the State to finance hundreds of scholarships dedicated to the impact of digital technology on research and teaching in all disciplines. Close to the activists of Extinction Rebellion and Youth for Climate, Bernard Stiegler had just set up the international collective Friends of the Thunberg Generation with the writer Jean-Marie Le Clézio, bringing together both researchers and young activists. In Libé, in March, he said: "There is a destruction of relationships between generations. And we must rebuild them because a society stops when there is no more transmission between them." It will now be necessary to do this without him, but always in the light of his reflections. ?

## ###ARTICLE\_START### ID:2014

During the first weeks of the Covid-19 crisis, it was a factory relocated throughout France that provided the essential protection for caregivers. According to calculations by specialized sites, two million visors were thus designed, manufactured and distributed in an artisanal way, all over France, during the lockdown. At the beginning of March, groups of volunteers spontaneously organized themselves in a large number of regions to provide hospitals and retirement homes with the equipment they lacked: masks, visors, respirators and syringe pumps. At a time when neither the State nor the private sector were able to provide immediate answers, unprecedented cooperations emerged. Designers and engineers designed respirators and visors online, owners of 3D printers manufactured them, and carpooling chains distributed them. Derogatory processes, often at the local level of a university hospital, have validated the temporary use of certain devices. "The spontaneous governance that was put in place had in common that it was very horizontal," notes the co-founder of the Covid-initiatives.org website, Constance Garnier, who is completing a thesis on the organization of fab labs. Open tools Multiple open and supportive digital initiatives have emerged in other areas: mutual aid and mediation platforms to meet the needs of teachers and teleworkers, tools for sharing health data and information, etc. In March, the online participatory science platform Jogl (Just One Giant Lab) saw its membership surge: around 4,000 researchers from more than 120 countries have thus committed to the OpenCovid19 initiative. The online services of the popular education association Framasoft, which campaigns for open tools, have been stormed by teleworkers looking for effective, transparent and data-friendly sharing and videoconferencing tools. This decentralized movement has been driven by informal communities but also by more structured networks such as fab labs, these collaborative digital manufacturing workshops, or those of free software and open data. "People couldn't travel more than a kilometer, but they had the Internet and, sometimes, tools that allowed them to produce in their garage or living room," notes Hugues Aubin, vice-president of the French fab lab network and co-founder of Labfab in Rennes. Without the free movement and the commons of "makers", none of this could have existed. The concept of digital commons was embodied." What exactly does this notion cover? Digital commons are open resources, co-produced and maintained by a community that defines its rules of governance. Their origins date back to the creation of the Internet, which was conceived from the outset as a gigantic global commons. "The "founding fathers" of the Internet, the engineers who designed this network, had a major ambition: to create a solid, open, cooperative network that guaranteed horizontality and freedom of expression," notes Hervé Le Crosnier, a lecturer and researcher at the University of Caen and author of En communs, une introduction aux communs de la connaissance (ed. C & F, 2015). However, from 1976 onwards, the United States decided to protect software under American copyright law. Communities self-organized to continue producing, managing and circulating digital resources without subjecting them to property rights: they diverted the classic forms of intellectual property by creating specific licenses that regulate a bundle of usage rights. From the iconic Linux operating system to the online knowledge platform Wikipedia, the free, open source and open science movements have managed to survive the heyday of Gafam (Google, Apple, Facebook, Amazon and Microsoft) and contribute to it. Limited, until now, to communities of activists and insiders, they have been brought to light by Covid-19. The crisis has, in fact, shown "the relevance of the values of openness and co-organization of this movement", notes Célya Gruson-Daniel, associate researcher in social sciences at the University of Technology of Compiègne. Including among private sector players. Faced with the emergency, a Czech company, Prusa, was the first to publish the plans for its anti-Covid visor under a Creative Commons license. Other manufacturers, such as the respirator manufacturer Medtronic, have also opened their patents. Panic movement After the emergency, however, the sequence has closed. On April 23, a circular from the Directorate General of Labor dampened the enthusiasm of several thousand "makers" by specifying the conditions for assessing the conformity of certain materials. On social networks, a movement of panic took hold of the community, worried about being prosecuted for "illegal manufacture of medical devices" or "unfair competition" against manufacturers. After negotiations, the fab lab network obtained certification for its visors, but only as "anti-projection equipment", not as a "protective device". The episode left its mark: for the fab lab board of directors, it is at the origin of the "great tensions" which "fuel the feeling of generalized distrust among citizens. Public-common partnerships For sociologist Sébastien Broca, researcher at the Centre d'études des techniques, des connaissances et des pratiques de la Sorbonne and author of Utopie du logiciellibre (ed. du Passager clandestin, 2013), the end of the emergency has led to "the return of the idea that only the State can be the guarantor of the general interest. "However, the crisis had shown the opposite: in the emergency, these commons had also become the guarantors. What was at stake here was a little more than a tinkering in times of crisis that we could do without afterwards. There is much to learn from this mobilization, including for less troubled times. The State should be more attentive to this creativity and to these forces coming from civil society." What place should be given to the commons in an economic system dominated by the dichotomy between the public and the private? The sequence highlighted the necessary articulation between the citizen mobilization of the commons, the administration of the public sector and businesses. Free movement activists have been calling for greater support from public authorities for several years: public-common partnerships could thus be built on the model of public-private partnerships that have multiplied in recent years with companies. In a memorandum, around thirty digital commons stakeholders call for "thinking about the future", so that "the interest of free, open and collaborative dynamics is officially recognized and supported, by considering the creation and maintenance of digital infrastructures essential to these projects of general interest. They also insist on the capacities of digital commons to "re-establish links" and to make citizens "actors in the decisions to be made. "It is often through experience that learning and awareness are achieved, they affirm. The moment we are living is a possible inflection point that must be seized so that digital uses are made with the values and principles of free and common and open knowledge. "Commons collectives and platforms need the support of public authorities," adds Sébastien Broca. "There is a huge gap between the funding allocated to the start-up world (5 billion euros since the beginning of the crisis) and that allocated to digital commons." Are things starting to move? In the education sector, where the fragility of the tools offered by public authorities has led many teachers to resort to private sector platforms to the detriment of security and respect for personal data, open-source software has made a discreet entry into the Ministry of National Education. Similarly, while the supply crisis has brought the relocation of the production of essential goods to the forefront, the ability of fab labs to deploy "distributed manufacturing" on a territorial scale is attracting the interest of local authorities: the Nouvelle-Aquitaine region has provided the network with 500,000 euros of support. In fab labs, we are anticipating what comes next. International coalitions are supporting the manufacturing of low-cost equipment in poor countries hit by the pandemic, and in France, working groups will “experiment with territorial approaches” to facilitate “product certification. The time has already come to prepare for the next crisis.

## ###ARTICLE\_START### ID:2015

The first cryptocurrency Bitcoin, the Linux operating system, the computer languages Ruby and Python... All the codes of these open source software are now stored in a vault, under several meters of Norwegian ice. In order to leave a trace for future generations, the largest developer platform, GitHub, acquired by Microsoft in 2018, had 21 terabytes of data burned onto 186 reels of special microfilm, a long-term archiving medium presented as being able to withstand the test of time for a thousand years. Everything was deposited in July in a vault, inside a former coal mine in the Svalbard region, which also houses the global seed reserve, securing seeds of all the food crops on the planet to preserve their genetic diversity. The idea behind this Arctic Code Vault is a bit similar. "Today, 90% of the world's existing software comes from initial open source code," explains Thomas Dohmke, vice president of strategic programs at GitHub. "It's a whole section of computer culture that we felt was essential to preserve." The feat is both technological and logistical. The stored data is accompanied by an index and a guide explaining how to retrieve it. This "digital Alexandria library" will be regularly reassessed, based on the evolution of technologies and conservation techniques. INGRID VERGARA

## ###ARTICLE\_START### ID:2016

In his 2016 autobiography Playing the Bass With Three Left Hands, Will Carruthers, who arrived at age 20 as a bewildered bassist in Spacemen 3, recounts one of his first mornings in the late 80s as a member of the band with co-founder Sonic Boom, aka Peter Kember. A morning that began with a breakfast of hashed yogurt, before acrobatic seated on a rope under a lush canopy. In 2020, Peter Kember is 54, and has moved to Sintra, a seaside town near Lisbon known for its inspiring mountain ranges, whimsical castles, and gardens conducive to conscious trips. LIGHTER WITH A WHEEL “I have a natural tendency to isolate myself. Here, when I leave my house, the clouds, the wildlife are magical. It’s the perfect place to work on sound,” he tells us remotely. The songs of birds whose species he will not help us determine and the rolling of the wheel of his lighter mark this interview around his first solo album under the name of Sonic Boom, thirty years after the first. This pseudonym, he had adopted it at the beginning of his career in Spacemen 3, formed with Jason Pierce, whom he had met at the art school of Rugby in 1982, the land of origin of the oval ball certainly, but also and above all for what interests us, of one of the last decisive avatars of psychedelic rock. The equivocal psychotonic monuments of the group, from Taking Drugs to Make Music to Take Drugs to, to Playing With Fire, roasted a Revolution in repetition, fascinated by Alan Vega, and exploiting the effects of immersive drone to spiritually take off a legion of admirers on the fringe and in the dazes. Then the band split up in the early 1990s, Jason Pierce evacuating the ship following a falling out to form his sublime project Spiritualized - whose album And Nothing Hurt released two years ago remains faithful to the thwarted optimism of Spacemen 3. Optimism that we still find in Sonic Boom, motivated by the desire to encourage his fans to extract themselves from a chaos that he had long anticipated. "The world has never made much sense to me, that's why I called an album from my project Spectrum Forever Alien and the first Spacemen 3 record is called For All the Fucked Up Children. But psychedelic drugs can give it meaning, and allow you to change your perspective, to see what's really happening on this planet. I have a small audience but I wanted, in my own way, to bounce back on what I observe of obsessive consumption, Kim Kardashian being a good incarnation of it. Buy, buy, buy, it turns my stomach. I wanted to produce a vibrant album on this subject. I apply it to my own life as much as possible, I get a real physical and emotional well-being from it", he attempts on the breach between rock'n'roll of all excesses and wise man with a peace pipe. His missing In an hour of discussion, we will collect from Kember data on the tragic disappearance of insects and the ethics of open source as much as on the inflorescence of his compositions. Probably because everything is simple, despite the paraphernalia: computers and analog synthesizers, mini-keyboard imitating the vanished sound of old internet modems. "Keep it simple, play one note, nothing sophisticated", he recommended to the young bassist of Spacemen 3 before their first concert. In the book mentioned above, Will Carruthers recounts his first concert with Spacemen 3, in an art center surrounded by ducks. "We could play mainly on one note, a monkey could have done as much. But could a stoned monkey have done as much by putting emotion and without losing the sense of its identity in this glorious and enveloping "om"? "he asks. Before trying to share with the reader the effects of repetitive music on his brain through a little experiment whose modus operandi we share: take a deep breath and repeat in cadence the word "strawberry", until losing your breath, then its verbal and auditory meaning, the coherence of its beginning, middle and end. Then linger on its subtle variations, invite friends to do the same and end up confusing your own senses and theirs. Peter Kember's work on the distortion of time, sensations and therefore sound has always been nourished by a fusional connection to electricity, even more pushed with his more confidential project Experimental Audio Research (aka EAR), a collective for indestructible eardrums, including Kevin Shields of My Bloody Valentine, among others. "The return to nature still involves electricity and what we decide to do with it. We only understood how to use it about two hundred years ago, we're taking it step by step," he prophesies. Animism On his new album, the guitars fade away completely and the machines used are rather spiffy, with new editions of analog synthesizers connected to the latest technologies, the motherboards (nature) still reigning over his ecosystem. The album is called All Things Equal in echo of his "deep spiritual conviction, not necessarily aligned with a religion but close to the animist part of the Buddhist religion. His concept is that everything, plant, mineral, animal, has a soul and a personality." The power of the imagination is celebrated at length, with a heady lightness on the poppy Just Imagine, inspired by a child who cured himself of cancer by himself, by imagining making it rain on his illness. In contrast, the album ends with I Feel a Change Coming, whose parting line is: “I see dark clouds again / I hope it’s just rain.” On “Spinning Coins and Wishing on Clovers,” Kember ponders in a modified, monotone voice what direction he would take his life if he had to live it on repeat, if he too were like this sample of sound that has been extended a hundredfold. For the Brit, a longer life would not necessarily result in more albums produced, as the new generation of musicians pile on the releases. “Music made in sterility is sterile, and that’s my idea of hell,” he warned us in the announcement message for this record, which he hesitated for a long time to release on vinyl, a format that is inherently polluting. He will cure his guilt by donating to environmental protection associations for each purchase. "The music and cultural industry causes a lot of entropy and loss. But you can't survive without music because it is of course important for the soul. I never wanted to release albums and this is probably the last one I will release in this form. I only wanted to do it if I had something useful to do and good to say." In the inner sleeve of the vinyl, Kember lists and thanks his "musical co-conspirators", friendly groups whose records he has sometimes produced, and who have underground made the musical panorama more soaring. We come across Panda Bear, MGMT, Beach House, Cheval Sombre, Moon Duo, Stereolab, electro pioneer Delia Derbyshire and the French Zombie Zombie, with whom Sonic Boom is preparing a joint live in October at the psychedelic Levitation France festival in Angers. But the first band to contact him to produce one of their records was a group from Rennes, the elusive European Son. "Every band I've worked with has been part of my apprenticeship. My job is to make myself useful within a system, which is always different." Britta Phillips from Dean & Britta plays bass on I Feel a Change Coming, Panda Bear (nucleon of Animal Collective) sings on Just a Little Piece of Me, and it's hard to tell who has had the biggest influence on the other in recent years. Because it was Noah Lennox, his real name, who lured Kember to Portugal to produce his tracks, and revealed the wonders of the country to him. "The lyrics of the song came to me in my garden, while I was digging holes, pulling weeds, all these things that don't require much thought but which allowed me to see things more clearly than ever in my life." He is also lucid about a possible reformation of Spacemen 3, which would not displease those nostalgic for their psychotropic anthems that we are: "Jason is more opposed to this idea than I am, Spacemen 3 has always been a partnership between us, so it would be useless to try it. We don't always get what we want in life and we shouldn't always want to get what we want." Other Stones couldn't have said it better.

## ###ARTICLE\_START### ID:2017

While the world is still living in the era of the new coronavirus, Amazon is accelerating its offensive to create a world without cashiers. On July 14, the company announced an “express cart,” the Dash Dart, capable of identifying and billing itself for items picked up by the customer. The latter can therefore leave the store without waiting in line... The technology used is a mix of sensors and cameras equipped with computer vision, like in autonomous cars. This system is also installed on the ceilings and shelves of Amazon Go convenience stores. And, since March 11, it has been sold by Jeff Bezos’ company to distributors who also want to set up cashier-free stores. “This is a game changer,” says Max Hammond, an analyst at the Gartner research institute. Industry observers are enthusiastic: "The lockdown and distancing measures related to Covid-19 have installed in our minds the notion of contactless and frictionless commerce," says Andrew Lipsman, author of a report on these trends for the eMarketer firm, published in May. The analyst also points out that Amazon Go, launched in 2018, is changing scale, with now 27 stores in the United States. Amazon's cashierless stores are not yet present in France. For now... "We have no reason to delay their implementation in France, because they are popular with customers," assured, on April 28, the director of Amazon France, Frédéric Duval, during a senatorial hearing organized in the midst of the controversy over health measures against Covid-19, without however "being able to give a precise date. The arrival of Amazon Go in Europe would in any case be imminent: an English developer announced on Instagram on March 10 an “upcoming” opening in the London district of Notting Hill, before hastily deleting his message. Until recently, Amazon Go was seen as an experiment with an uncertain future. The project was developed in secret, from 2012, around Jeff Bezos’ advisor, Dilip Kumar, who became head of the “physical stores” branch. But it took years and millions of dollars before the opening, at the end of 2016, of a “fake” test store in Seattle (Washington), then, at the beginning of 2018, of a “real” store. “At the beginning of 2018, there was a hype around Amazon Go and other cashierless solutions, but these technologies were not yet totally reliable,” says Mr. Hammond. The system had glitches in the event of large crowds. Observers questioned its very usefulness. And many were worried about the impact on employment. The American company had to revise its initial objectives, which envisaged up to 3,000 Amazon Go stores by the end of 2021. "A big offensive" But the mood has changed since then: "You're going to see a big offensive of cashierless technologies, in various forms," says Mark Mahaney of the investment bank RBC Capital Markets. "Once you've tried it, you become less patient," assures this Amazon Go fan, while admitting that changing habits will take "five to ten years. "The best proof that it works is that Amazon has opened more stores," he assures. Since 2018, Amazon Go has opened six stores in Seattle, five in San Francisco, eight in New York and seven in Chicago. All are small spaces, around 200 m2, between a grocery store and a convenience store. Adapted to the urban worker in a hurry who wants to grab a sandwich or a drink. And competitors to 7-Eleven, Pret A Manger or Subway. Amazon Go is "a vending machine on steroids," says Mr. Lipsman, laughing. But Amazon is already thinking bigger and opened, at the end of February, in Seattle, Amazon Go Grocery, a convenience store five times larger, measuring 1,000 m2. With fruits and vegetables or products from partners, such as Beecher's cheeses. "And we could build five times or ten times bigger," assured Mr. Kumar, during the launch. The "express cart" will be used in a 3,000 m2 supermarket that Amazon will open in Los Angeles, by the end of the year. The objective: to overcome the difficulty of equipping large stores, equipped with many products. In the future, Amazon could, according to some, convert the 508 organic supermarkets of its Whole Foods chain, acquired in 2017. The rise of "cashierless" techniques will depend on their cost. But one element could accelerate it: Amazon has started selling its solution, under the name "Just Walk Out." The group offers to equip, "in a few weeks," new or existing stores. And then to provide "24-hour assistance." The only difference with Amazon Go: at the entrance, customers identify themselves by scanning their credit card and not their smartphone equipped with the Amazon application. The first to adopt Just Walk Out, the airport retail group OTG will install it in snack bars. The distributor Levy Restaurants will equip stadium stores, such as the stronghold of the Chicago Bulls basketball team. What about the data collected? Just Walk Out's business model has not been revealed: does Amazon charge a flat fee, recurring licensing fees? For the software part, the group co-founded a structure called "Dent", with the Linux Foundation, a semiconductor manufacturer, a network operator... This open source approach ("open source code") aims to "impose a standard", analyzes Mr. Lipsman. Generally speaking, Amazon is known for knowing how to market activities initially developed for its own account, such as in cloud computing or logistics. The offensive of the number one in e-commerce against checkout lines raises, of course, questions: on respect for privacy, on the right to use cash if you do not have a smartphone or want to pay anonymously... But also, for Just Walk Out, on competition and access to purchase data. "As a retailer, you don't necessarily want to partner with your biggest rival," warns Jordan Fisher, CEO of Standard Cognition, which has developed its own "cashierless" solution, in the eMarketer note. Giants like France's Carrefour or Germany's Metro may choose an alternative to Amazon like Standard Cognition, Zippin or Grabango. Or they may try their own technology, like Walmart. For its part, Amazon assures that it "prohibits the use of Just Walk Out data for purposes other than serving merchant-customers. In any case, the consumer will see their journey in store more closely monitored." A launch of Amazon Go would likely arouse resistance in France, where the online retailer is already accused of destroying jobs at the same time as it creates them. According to Amazon, in stores without cashiers, employees remain "essential" and can "focus" on "welcoming, restocking shelves or making product recommendations." That didn't stop the American retail union from denouncing Just Walk Out as a "direct threat": "Will the 2020 election candidates kowtow to billionaire CEOs like Jeff Bezos or will they fight for quality American jobs?" asked Marc Peronne, president of the UFCW union, which has 3.6 million cash register workers. Part of the answer could be given on Monday, July 27, when the Amazon CEO will be heard by the US House of Representatives' antitrust committee.

## ###ARTICLE\_START### ID:2018

AUTOMOBILE Renault has been working on the digitalization of its industrial sites for a while now. In 2016, the car manufacturer installed Wi-Fi in its factories. Two years ago, it began connecting its machines to collect a multitude of data on their use. Today, the group is accelerating on factory 4.0. On Thursday, Renault announced a partnership with a division of Google, Google Cloud. The tech giant had already worked with manufacturers (GM, Fiat, Kia, etc.). "But this is the first time that we have concluded such a broad agreement in the industrial sector," says Dominik Wee, Director of Industry and Transport at Google Cloud. First, this contract, in force since the beginning of the year, will allow Renault to better process its data (more than 500 million per day). Until now, this data did not appear in the same way depending on whether it came from robots of different brands and generations. With Google, which has specific tools, the diamond brand will now retrieve information presented uniformly. A real advantage. "This will allow us to break the glass ceiling in terms of operational efficiency," says Éric Marchiol, vice-president in charge of the digital manufacturing and supply chain project at Renault. Because the improvements that can be achieved thanks to this software are numerous: better adjustment of the temperature on the painting lines, changing parts that are out of breath before they give up the ghost, identifying manufacturing defects that are not necessarily visible to the naked eye, calibrating cooling units in machining centers more precisely, etc. With the key to better finished products and substantial savings. Data stored in Europe Especially since this data will now be analyzed in real time by Renault's field teams, who will be better able to find solutions to resolve the problems identified. To do this, in six months, Google will train 40,000 people in the thirty-four Renault factories, or in cross-functional functions such as process engineering. "This can range from small five-minute modules to two- to three-day sessions, particularly for maintenance personnel," explains François Lavernos, vice-president in charge of manufacturing and the IS supply chain at Renault. Amazon, Microsoft... The car manufacturer had the choice among the giants positioned on the cloud. Two arguments made it prefer Google: "Our data, which is our property, is only accessible to Renault and is stored in Western Europe," says Éric Marchiol. In other words, Google cannot sell this data. And this data, which is not hosted in the United States, is out of reach of a possible seizure by the American government. In addition, Google works in open source, which allows Renault to continue to operate, in certain specialized fields, with start-ups whose data can also be hosted and processed on the group's global cloud. On Google's side too, this partnership is key. It shows the tech giant's desire not to be a simple provider of cloud storage capacity but to support the digital transformation of large groups. In this spirit, it has also just signed a global partnership with Deutsche Bank. It is by succeeding in this bet that Google Cloud will be able to continue its growth which reached almost 53% in 2019, for a turnover of 8.9 billion dollars.

## ###ARTICLE\_START### ID:2019

VIDEO GAMES"Fortnite is a video game. But ask me again in a year." Posted last December on Twitter, this message from Tim Sweeney, CEO of the Epic Games studio, is now taking on its full flavor. Played by 350 million people, Fortnite will mutate this Friday into a movie theater. Three films by director Christopher Nolan - Batman Begins, The Prestige, Inception - will be screened for free in this virtual world. "Navigating between the different distribution rights and the different translation languages for films is complicated," Epic Games acknowledged in a press release. But sixty countries will be able to see one of these three feature films. For France, it will be Batman Begins, with two screenings at 7 a.m. and 7 p.m. This operation was set up with Warner Bros. while the Hollywood giant will release Christopher Nolan's new film, Tenet, in theaters in a month. The partnership between Warner and Epic Games is not new: in May, a trailer for Tenet had already been previewed within Fortnite. But showing a full film marks Epic Games' ambition to transform its phenomenon game into an entertainment platform. To host these events, the development studio has created a new game mode called Party Royale. In this mode, players can no longer use weapons. They find themselves on an island dedicated to leisure, with a dance floor and a giant screen, and can chat with each other using their headsets. "Party Royale is an experimental and evolving space," explains Epic Games. For the past two months, it has hosted singers and DJs who perform for free in front of this crowd of avatars. This stage connected to 350 million homes around the world has the music industry salivating, which has been unable to organize concerts in real venues since the Covid-19 pandemic. While the sensations are very different from those of a live performance, these virtual shows are a way for artists to stay connected to their audience and to be discovered by others. At the end of April, 27 million players followed a concert offered by the American artist Travis Scott in Fortnite. Within 24 hours, the number of listens to his albums on streaming platforms skyrocketed. Advertising operations Offering concerts and films while concert halls and movie theaters are still closed in much of the world contributes to the appeal of these virtual events. At the beginning of July, the video game Minecraft will host the Rave Family Block Fest festival, where 850 artists will perform. The entrance ticket costs $10. But Minecraft is open source software, its owner, Microsoft, is not involved in this operation. This is not the case for those carried out in Fortnite, where everything is controlled by Epic Games. These partnerships are designed to be win-win. The music, film, and perhaps tomorrow the television and sports industries find in Fortnite and its Party Royale mode a new gateway to a (very) young audience in order to expose them to their content. The game was already popular for advertising operations around films (Star Wars) and series (Stranger Things), but which were limited to obtaining costumes for its virtual character. On the Epic Games side, these collaborations obviously bring in money, but are also seen as a way to keep players even more in this virtual world. Why disconnect from Fortnite when there will be so much to do beyond a video game? "Getting together with friends in front of a movie inside Fortnite is an exciting idea," says Epic Games. The company suggests that other "movie nights" will be organized in the future.

## ###ARTICLE\_START### ID:2020

The hunt for Gafam (Google, Apple, Facebook, Amazon, Microsoft) is not a hobby reserved for ministers or European commissioners alone. Companies, too, are concerned about their digital sovereignty. The world's leading car manufacturer, Volkswagen (VW), is loud and clear that the subject is strategic. It could even cost the current boss of the group his job. The glitches of the brand new Golf, whose production was stopped to correct a bug, have reminded us that, without good software, a modern car is worthless. And this will be even more the case with the electric vehicle. In September, the firm will launch its first mass model, the ID3. The first car built on the MEB platform, which will constitute the basic building block of the manufacturer's entire electric range. But bang! the software is not ready. VW therefore advises waiting until the end of the year to buy the model. Tesla has been around for sixteen years, all experts now recognize that the car of the future will be software on wheels, but the king of the car, the owner of VW, Skoda, Audi, Porsche, Seat, can't do it. Hence the current commotion. First, the creation of an autonomous entity, Car Software, destined to become one of the richest start-ups in the world: a budget of 7 billion euros and 5,000 experts, a figure that will increase to 10,000 in 2025. With one goal: to go from 10% VW software in a car to 60% by that date. The brand new boss of this activity, Christian Senger, claims that a car from the group currently includes software from 200 different suppliers. His first task will be to develop an in-house operating system, the VW OS, the real brain of the car. It will be developed in open source, but this is not good news for Google, Apple or Microsoft, as well as for traditional automotive equipment manufacturers. Digital mess Cleaning up the digital mess that has become the automobile industry will not be easy, and the company recognizes that it is years behind Tesla in this area. Collaboration is often the fastest way to catch up. But German manufacturers believe that the priority is now internal development. BMW has announced that it is abandoning its supposedly "long-term" alliance with its competitor Daimler on autonomous cars. The crisis has sharpened priorities and dictated choices. The world of tomorrow will be one of every man for himself.

## ###ARTICLE\_START### ID:2021

The ravages of Covid-19 are enormous. To date, it is estimated that there have been nearly 30,000 deaths in France and more than 410,000 worldwide. We have just experienced a 55-day lockdown in France that has led to an economic slowdown, unemployment, insecurity, domestic violence, psychological disorders, etc. Given the scale of the damage, the medical, economic and social repercussions of a drug (treatment or vaccine) against the disease would be considerable. It would in fact prevent this amount of damage from multiplying over time. Does this mean that society as a whole is ready to pay a high price for it? Yes, certainly. However, should it do so? Not necessarily. The price in question here is the one charged by the pharmaceutical laboratory, a private company that would market a new drug. Often, this price does not meet the traditional laws of the market between the supply of available goods and the demand of buyers. In countries with a developed social protection system, the price of a drug is in fact largely subsidized by the public sector to protect patients from an unwelcome financial risk. Ultimately, the majority of the profits of large pharmaceutical companies come from public funds devoted to health and social security. The State is therefore similar to a single buyer. For innovative medical products, this single buyer faces a single seller who enjoys protection of his innovation by patent and the commercial exclusivity associated with it. This is the reason why the price of innovative drugs is in many countries the result of a negotiation between the two stakeholders, namely the pharmaceutical company and the public authorities. This negotiated price must be to the advantage of both negotiators. It must therefore not be lower than the sum of the pharmaceutical laboratory's expenses to avoid losses and discouragement of future research. But it must not be higher than the maximum amount that society as a whole is prepared to pay. The negotiated price, influenced downwards or upwards by the public authorities and by the private company, is therefore theoretically between these two limit amounts. Concerning the upper limit, the methods of medico-economic evaluation make it possible to define the maximum amount that one is prepared to pay. This is called the willingness to pay. It is natural to think that this willingness to pay is proportional to the gains associated with the new treatment, and it is probably very high for a treatment against Covid-19 for the reasons mentioned above. Pharmaceutical companies are well aware of this. Concerning the lower limit, on the other hand, we are in the dark. The expenses of pharmaceutical companies are certainly very high, they often remind us of this. Research and development activities are long, risky, and they encounter various failures before resulting in a possible marketable innovation. The amount of these expenses is, however, known only to the pharmaceutical company, which of course has no interest in disclosing it. The location of clinical trials and drug production does not make it easy to estimate these expenses. We are therefore in a situation of information asymmetry between the two negotiators and it is to the advantage of the pharmaceutical laboratory which, by its traditional legal form of private enterprise, must maximize its financial gains. All this explains quite naturally that the prices of new drugs are so close to the upper limit, namely the willingness to pay. There remains an important parameter to consider: the public sector is also an important contributor to the development of new treatments, and this in at least two ways. On the one hand, it directly finances a large part of basic research. In France for example, this is carried out in public institutions: universities, research organizations, such as Inserm or CNRS. The State finances the salaries of many researchers and teacher-researchers, as well as the operation of public laboratories. The fundamental part of the research is a cornerstone of the process and private laboratories benefit from the transfer of this knowledge. On the other hand, the State distributes research aid to the private sector, in the form of research tax credits for example. This is certainly not about reducing private and public investment in research in the future, quite the contrary. However, the transfer of knowledge and public aid could be subject to conditions. This is exactly the nature of the agreement between Sanofi and the American Department of Health and Human Services (Biomedical Advanced Research and Development Authority or Barda) which conditions the sharing of Sanofi's financial risks on the first marketing of a possible new anti-Covid-19 vaccine on American soil. In a different style, this is also the nature of the Product Development Partnerships (PDPs) which bring together private and public actors through contracts with the aim of developing accessible drugs to treat endemic diseases in developing countries. For example, Fexinidazole, a new drug against sleeping sickness (or human African trypanosomiasis) is the result of such a public-private partnership structured around the DNDi foundation (Drugs for Neglected Diseases initiative), with the participation of experts from endemic countries and Sanofi. This partnership operated in collaborative and open-source mode, and Fexinidazole was put on the market without a prior patent application. Nothing prevents France and Europe from also proposing conditions that match their values. The transfer of knowledge and the payment of research grants could, for example, be conditioned by a moderate final price, worldwide access to the new drug or even the assurance of availability of production. Paying the high price is therefore in no way inevitable. Should our countries be creative?

## ###ARTICLE\_START### ID:2022

A new kind of battle has recently been taking place, at street level, with paint, concrete blocks and plastic bollards. On Monday 25 May, it was a little after 8pm when teams from the Aix-Marseille metropolitan area's technical services began to cover in black the yellow bicycles drawn barely two weeks earlier on the ground of the Avenue du Prado. The temporary cycle path that ran along this 60-metre-wide urban axis has been removed. "The experiment has not found its audience", the metropolitan area justified in a press release. The route has not had time to prove itself, responded furiously cyclists and members of the Vélos en ville collective who tried to physically oppose the dismantling. On Thursday 28 May, hundreds of people met up to cycle in the same place. The car horns were answered by the bells of the demonstrators. They suspect the elected officials of having given in to pressure from the Confédération des comités d’intérêt de quartier. On May 11, this Marseille institution considered it “difficult” to remove cars from certain roads “to allocate them specifically to bicycles. A few days earlier, in mid-May, it was in the heart of Paris, opposite the Hôtel-Dieu, that concrete blocks installed the day before had to be immediately removed during the night, on the orders of the Police Prefecture. However, “a technical agreement had been reached,” assures Ariel Weil, the mayor (PS) of the 4th arrondissement. Other episodes of the same type have taken place in the outer suburbs. In recent days, routes set up in the Yvelines, between Le Pecq and Chatou, and in Montigny-lès-Cormeilles, in the Val-d'Oise, have been erased. "A nation of cycling", But, at the same time, for the first time, cyclists were riding peacefully, in Paris, on the Bastille-Concorde axis, free, or almost, of any cars. And on the other side of the ring road, in Montreuil, an impassable four-lane road has become, in a few days, a 30 km/h avenue on which cyclists pass on the right, in two lines, confining cars to the other half of the roadway. In Montpellier, Grenoble, but also in Besançon, at the foot of La Défense or in Villeurbanne, the scenes are similar. For a little over a month, in anticipation of the deconfinement, cycle paths have been urgently traced along the roads, most often by removing a lane from motorized traffic. This race to occupy public space by bicycle is also taking place in Germany, Italy and the United States. The transformation is not happening smoothly, but, if it were to be confirmed, could change the face of cities. The time has come to make France "a cycling nation", Elisabeth Borne repeated on May 29. The Minister for Ecological and Inclusive Transition, who announced new funding in this direction, insists "that we give the bicycle its rightful place. It was in mid-April, just after the announcement of the deconfinement, that the need to quickly build cycle paths became apparent. Health requirements were going to drastically limit the number of places on public transport. But switching to cars was unthinkable. For obvious ecological reasons, and also because there is a lack of space. In the Ile-de-France region, we usually count 400 km to 500 km of traffic jams at peak times. For the associations within the French Federation of Bicycle Users (FUB), who have been calling for networks worthy of those in Freiburg in Germany or Utrecht in the Netherlands for years, this is an unexpected moment. Normally, the creation of a cycle path requires "a diagnosis, a preliminary study, a feasibility study, a preliminary project, a call for tenders, a contract and, when all goes well, the project is completed, at best, in two or three years", acknowledged Emmanuelle Gay, director of the regional and interdepartmental department of equipment and development of Ile-de-France, during a webinar on May 19. There, the paths are created in one or two weeks. This method, "tactical urbanism", was born across the Atlantic, where, since the 1970s, activists have transformed parking lots into temporary gardens, or streets into playgrounds, to denounce the excessive importance given to cars. By dint of traveling the city and attending public meetings, today's pro-bikers have mastered the codes of urban planning and cartography by heart. On Streetmix or Neore software, they draw the cycle paths of their dreams, sharing them in open source. For a month, they have had the full attention of the administrations. The practical applications vary. Some cities are moving forward slowly, and without spending too much, with plastic bollards and yellow road markings, the color associated with the works. Others are more straightforward. "Everywhere I wanted to make small sections of paths, I was confronted by local residents or shopkeepers. So I started to go there all at once," explains Christian Estrosi, the mayor (LR) of Nice, to Nice-Matin, who is promising an additional 60 km. In Montreuil, in Seine-Saint-Denis, they are betting on the irreversible by assuming white markings and the purchase of elegant black markers, even if it means spending 100,000 euros per km, compared to 20,000 to 50,000 euros elsewhere. Grenoble is even reversing the logic when it comes to thinking about the width of the developments. On the banks of the Isère, "we have set 3.20 meters for cars, and all the rest is allocated to bicycles and pedestrians," says Marine Peter, project manager at Grenoble-Alpes Métropole. There are some places where there is a problem The momentum is not sparing cities that are usually rated the worst by users, such as the Cergy-Pontoise urban area or Argenteuil (Val-d'Oise). After pressure from the Vélo utile association, Saint-Brieuc has also agreed to "reserve a lane, on an axis between the city center and the hospital, for bicycles and buses," explains Louise-Anne Gautier, deputy for the environment. Obviously, there are some places where there are serious problems. On the old national roads that crisscross the Parisian suburbs, in Pantin or Saint-Mandé, the new lanes are being transformed into temporary parking lots. With the gradual resumption of traffic, motorists are getting annoyed at having to wait in their lane when the neighboring cycle path seems deserted. "You're going to make enemies," warned Medy Sejai, the director of public spaces in Montreuil, during the webinar on May 19. "Dictatorship", "totalitarian leftists", "escrolo", these are the flowers gleaned from the networks. Nothing very terrifying, in the eyes of Frédéric Héran, economist, specialist in urban travel. "New practices are first ignored, then contested, and finally trivialized. Now, we are in the confrontation phase." This academic calls for rethinking the hierarchy of modes of travel, by favoring walking, then cycling, public transport and, lastly, the car. In the meantime, some elected officials, a month before the second round, are tempted to give in to pressure. Even in Paris, the battle is not won. Christophe Najdovski, deputy to the socialist mayor, notes that the Police Prefecture has been less accommodating in recent days. "The prefect is demanding instructions, one-month deadlines, on the pretext that the developments could become permanent. » However, for the elected official, there is no point in dismantling what has just been installed. "We need to give new behaviors time to settle in, and cyclists time to discover the network." The new routes still need to be made visible. Few paths are marked with signs with directions and travel times, as the Rennes metropolitan area has done, for example. Despite everything, cyclists are out and about. Counts in Paris and Lyon show a sharp increase in the practice. The Vélo & Territoires association, which brings together around a hundred communities, notes, for the first week of deconfinement, an average increase in the use of cycle paths of 11% compared to 2019, while teleworking was still recommended. The increase can be seen even on the outskirts and in the countryside, even if new paths are still very rare there.

## ###ARTICLE\_START### ID:2023

The European Union (EU) and its Member States are facing the greatest challenge since their creation with the coronavirus crisis. The disease has already claimed thousands of victims and is affecting every aspect of our lives to an extent that is still beyond our control. This pandemic and its economic consequences do not stop at borders. Two of the European Union's greatest achievements, the freedom of movement of goods and people, are being called into question. No Member State can fight this crisis alone, and this is particularly true in digital terms. Returning to normality in the European Union, reviving our economies and resuming the free movement of people require a coordinated European effort. Digital solutions have enabled us to remain permanently connected in Europe, despite the physical distance. Today, they can also contribute to the recovery from the crisis. The work of epidemiologists has shown that technology can thus provide new tools in the fight against Covid-19. We believe that they must be mobilised. Contact tracing and notification applications are an important element in identifying the contacts of infected people. They can help limit the spread of the virus and break the chains of transmission by speeding up the notification process: alerting all contact persons as quickly as possible is a daily challenge. Challenge for Europe Contact tracing is, of course, only one possibility among other digital solutions. Digital tools are themselves only integrated and complementary tools of a broader medical strategy to combat the virus. But it is our responsibility to make these types of tools available to our countries to combat the pandemic. Today, the challenge we face is to develop technical solutions that will be effective, including across borders between Member States, while respecting national specificities. All the technological solutions we develop are in line with our common principles and in accordance with national and European legislation on data protection and privacy. In particular, we are committed to developing open-source, privacy-friendly and voluntary applications. Different technical approaches are being developed. We reaffirm that it is up to the States to choose the technological architectures that best fit their national context and their health system. Our national teams are working, in an unprecedented effort, with our best research institutes to develop national applications in record time. But at the same time, we are engaged in a joint effort to ensure the interoperability of tracing applications across borders, and to continue working together. Joint research initiatives are underway to strengthen the interoperability of these tools at European level in the medium term. The technical and ethical issues surrounding the development of tracing applications are a challenge for Europe, in its relationship with the major digital players. Digital sovereignty essential In this very special period, when technology is crucial to combat a global crisis, we, as governments, expect large technology companies to take into account the needs and general interest of countries when defining their standards of use. The use of digital technologies must be designed in such a way that we, democratically elected governments, can assess them for the benefit of our citizens and in accordance with European values. Trying to undermine this right by imposing technical standards is a misstep and a missed opportunity to deepen open collaboration between governments and the private sector. On the contrary, we need States and companies to work together to help our societies and economies recover and to emerge stronger from the pandemic, thanks to better collaboration and accelerated digital transformation. Digital sovereignty is the foundation of sustainable European competitiveness. Our ambition must be, in this globalised world, to set the standards for the development and use of digital applications, particularly when it comes to key digital technologies, and this independently of the companies or economic zones concerned. Together, we will work at the various relevant levels, national and international, to ensure that, as Europeans, we build and strengthen our digital sovereignty. It is our common duty to advance a strong European digital sector, the engine of our economic growth. Europe is under severe strain at this time. This crisis of exceptional proportions requires decisive action from all Member States and European institutions and bodies. It can only be faced and overcome collectively. With coordinated and interoperable solutions, we will find a way out of this crisis, while preserving what is dear to us: a united and progressive Europe.

## ###ARTICLE\_START### ID:2024

START-UP It's not just Zoom that is benefiting from the videoconferencing boom during the "Great Lockdown". The French start-up Livestorm is not far behind. Since March, this "video communication" specialist has seen the use of its webinars (online videoconferences) and videoconferences increase by 200%. It gained more than 100 paying customers between March and April and now has 2,600, 80% of which are international. These include Sanofi, Bred, the British NHS, universities and the French government. "We reached our end-of-2020 targets in March. In one month, we gained a year of maturity," rejoices Gilles Bertaux, CEO and co-founder, who is now aiming for ten million euros in turnover by the end of 2021. Easy to access Livestorm remains a small player in a very competitive market, offering a service that is expensive to produce - streaming video - and dominated by the American Zoom. A blessing in disguise, the founder of the young company believes: Zoom has democratized the practice and Google Meet, highlighted last week by the internet giant, uses the same open-source technology as the French company. To stand out, Livestorm is playing on two fronts. It offers an integrated data analysis service for marketing purposes, around webinars. It is also even easier to use than Zoom, which is known for its simplicity. Livestorm is part of this new generation of corporate services that play on consumer codes, such as Slack or the French Slite. Its service works directly in the internet browser. A wise choice, approves Jérémy Taïeb, analyst at FaberNovel: "With the sudden arrival of confinement, teleworkers needed an immediate and easy-to-access solution." Operating under a browser also makes it possible to offer end-to-end encryption, assures Gilles Bertaux. A security that Zoom does not currently have, although it bought a start-up, Keybase, a specialist in the subject, on Thursday. Today, Livestorm is hesitant to raise funds in order to accelerate its development. Unless it is the subject of a takeover proposal by a major player in the future. The possibility cannot be ruled out, especially since it uses the same technology as some Gafa, acknowledges Gilles Bertaux. The sector has already seen this type of operation recently. Houseparty was bought by Epic Games last summer and BlueJeans by Verizon in April.

## ###ARTICLE\_START### ID:2025

Have you noticed? They are everywhere. The "tutorials". At every moment of the crisis and the lockdown. Tutorials everywhere and masks, gowns, respirators nowhere. First, there was "How to wash your hands". And its infinite variations: state, musical, illustrated, drawn, in augmented reality, offbeat. Then came the time of "How to make masks". With or without elastic, with or without sewing, with or without fabric. Tutorials delivered by all that humanity has in diversity: Mexican cleaning ladies, Spanish seamstresses, teenage beauty youtubers, chief medical officer of the armies, former special forces soldier, survivalists who have finally found the social utility they were seeking. We are now entering the time when the "How to wash your mask" are advancing in cohorts. In fabric. At 60 degrees. With old sheets. Without needing to do a washing machine for three masks every four hours. With an iron. With Marseille soap. With white vinegar. Without damaging the fibers. Each step is dizzying. Each question is an abyss. Each dizzying and each abyss leads to other tutorials, forums and Wikipedia pages (at best) or Doctissimo (at worst). On the tutorials, always groping, we move forward. Faced with these tutorials of "Get by, good people" stand the dominant postures of "Let us do it and have confidence" as soon as it comes to technosurveillance or dyed-in-the-wool solutionism conveniently masking the shortcomings of the State. Our society has long seen the emergence of the figure of the hacker, who is also that of the maker. Makers who are also much older sociologically and technically than hackers (who are linked to the contemporaneity of computing), since ma-kers also refer to the "workerization" of social and technical action preceding Fordism and the first industrial revolution; a time when each household had its makers who held operational knowledge that is today often generationally forgotten or neglected: sewing, knitting, gardening, and so many others. So much knowledge transmitted yesterday by social inheritance and today by capital tutorial. A society of makers therefore. And the concomitant advent of the do-it-yourself. The "DIY" - pronounced Di aïe waï. And its question often forgotten or refusing to be asked head-on: Do it? Why? "do it? ourselves? why?". Why do we find ourselves in the situation of agreeing to do ourselves, in an emergency, what others should have done for us in the future? Others that we finance through our taxes, for example. Others that could be financed through a fairer and more redistributive tax policy, another example. Because DIY, "Do it yourself", naturally goes beyond the sole framework of DIY to extend, in our liberal States, to entire sectors of social and humanitarian support: let's think here of the associations solely responsible for welcoming migrants, let's think here of the Restos du Coeur, let's think here of everything that for want of "doing" it ourselves we "finance" ourselves: from the Telethon to the countless calls for donations replacing sustainable public funding and budgetary choices that are unthought of or unthinkable for the liberal doxa. Do it yourselves. Rescue migrants in the Mediterranean. Do it yourselves. Housing underage exiles on the streets. Do it yourselves. Providing hot meals to people in poverty. Do it yourselves. Funding public research into genetic diseases. Do it yourselves. So, we did it. Some of us, anyway. And that's why this world has held up and is still holding up. The courage and humanity of a few allow everyone else not to throw up in their face when they see themselves in a mirror. The head of the start-up nation likes to remind us of this in his measured tone of a bad stage actor: "Ask yourself every morning what you can do for the country." And do it yourselves. But what has the country done for the incessant, insistent, inviting testimonies of caregivers, teachers, lawyers and so many others? To silence these questions, there is only this haunting music: "Ask yourself every morning what you can do for the country." Wash your hands. Make masks. Wash your masks. Start over. The tutorial as a political injunction. Since there are tutorials, what are you waiting for to get to work? And DIY as a public health policy. Make your masks, your respirators. And tomorrow your hospital beds and your medications. We came very close to a chloroquine tutorial with devastating effects. There are of course remarkable initiatives. Everyone knows some in their immediate environment. In La Roche-sur-Yon, volunteers make and assemble 3D printed visors every day in the local fablab. In Nantes, teams of researchers from the world of robotics and health, allied with entrepreneurs, industrialists and government agencies, have developed in a few weeks a remarkable project for a low-cost and open-source artificial respirator: the Makair. Literally vital actions and projects. Because, without these people, others would have died today and others would die tomorrow. But this very reality raises questions. Not to denigrate the actors. Nor even to conveniently use it as a pretext for stigmatizing the State's failings. This reality raises questions because this reality is taking hold. And as it takes hold, it also establishes us in the belief that the manifest negligence of a State could be compensated for by the efforts of each individual. And that this would be enough to resolve the Gordian knot of the lack of "magic money" and "whatever it takes". This idea is as toxic as the one affirming that the State can do everything. The State cannot do everything. We cannot do it either. But beyond the State and the citizens who are both its wheat and its chaff, there are policies. Public health in particular. Access to care. Care for the weakest. The right to housing. And so many others. For these policies, and for those who are currently their governmental guarantors, the linguisticomanagerial environment of the "platform state" and the "start-up nation" legitimizes a set of drifts from the primary social functions of altruism that becomes a simple do-it-yourself but for others. "Do it yourself for others". An injunction as convenient as it is multi-layered. Because this "do-it-yourself for others" is yet another form of techno-exploitation: from the classic forms of digital labor (which is a "do it yourself instead of the algorithm") to circumstantial forms aimed at compensating for the negligence of states and public health policies, as with these seamstresses (women, again) coming together in a collective (Down with the masks) to denounce the systematic nature of the requests for volunteer work addressed to them. This is the logical and above all tragic continuation of Macron's speech of wishes to the youth, of "Ask yourself every morning what you can do for the country." A continuation that is unspoken because it cannot be said publicly. But that everyone understands, hears, and integrates by resignation, by assimilation, by contagion, by imposition of the invisible hand of the liberal market, the hand of capitalism which, whatever the cost, pays shareholders their share of magic money: "Ask yourself every morning what you can do for the country." And if you do nothing, then, above all, do not come and complain. But there are legitimate complaints. Let's continue to make them heard. ?

## ###ARTICLE\_START### ID:2026

This is shown in a secret document from the Department of Artificial Intelligence and Data Valorization, which our Investigation Bureau got its hands on. One of the 11 proposals received comes from the Quebec Institute of Artificial Intelligence (MILA), which offers a “mobile application that would improve strategies for maintaining the population’s distance from people infected with COVID-19.” For example, the application could provide “alerts of too close proximity to another user” in real time, using Bluetooth technology on cell phones. It could also “provide hand-washing reminders.” It is based on a solution developed in collaboration with the World Health Organization (WHO) and Stanford University in the United States. The MILA project is described as “very ambitious and very interesting” by the department’s experts. LIKE IN SINGAPORE The Quebec firm Ubisoft, for its part, wants to sell the government a "mobile application for identifying geographic areas at high risk of contagion." The tool would include "the use of spatio-temporal data to alert individuals potentially at risk of having contracted COVID-19." Another project called Triago is promoting geolocated bracelets that would generate "location data for patients, staff and critical equipment to better understand the current dynamics of the situation." One firm is proposing the Quebec adaptation of TraceTogether, the solution used in Singapore. This system has "proven its worth," notes the ministry. And since "the code is open source, the adaptation price should be reasonable." As of April 20, no meetings had taken place with suppliers, according to the ministry. \*\*\*\*\* In early April, our Investigation Bureau revealed that the Sûreté du Québec was considering using geolocation to enforce lockdown guidelines. To date, only one case of the use of geolocation has been publicized in Quebec, in the Capitale-Nationale region.

## ###ARTICLE\_START### ID:2027

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## ###ARTICLE\_START### ID:2028

On Tuesday, April 28, French parliamentarians will be asked to vote on StopCovid, the mobile application for tracking individuals imposed by the executive. We hope that, through their vote, they will convince the executive to abandon this idea while there is still time. Not to improve it, but to abandon it altogether. In fact, even if all the legal and technical guarantees were put in place (data anonymization, open source, Bluetooth technologies, user consent, decentralized protocol, etc.), StopCovid would be exposed to the greatest danger: that of soon transforming into "StopCovid Analytica", a new version of the Cambridge Analytica scandal [siphoning off private data from tens of millions of Facebook accounts]. The StopCovid application was imagined as a tool to help the French population get out of the situation of restrictions on public freedoms caused by Covid-19. In reality, this technological "solution" would only be a continuation of the lockdown by other means. If, with the latter, we experienced collective house arrest, mobile surveillance applications risk trivializing the wearing of electronic bracelets. All citizens, sick or not This is already the case in Hong Kong, which imposes a sensor on the wrist of people in quarantine, and it is the subject of tests and proposals in Italy, South Korea and Liechtenstein for certain categories of citizens at risk. StopCovid, on the other hand, is intended to be installed in smartphones, but it concerns all citizens, sick or not. Every day, all the human interactions of each of us would be recorded by a state surveillance tool, over which weighs the shadow of private interests of technology companies. The Cambridge Analytica affair, revealed in broad daylight in 2018, had as its starting point the work of researchers from the English university. An application called "Thisisyourdigitallife", presented as a simple psychological quiz, had first been offered to users of the microwork platform Amazon Mechanical Turk. Then, the latter were led to give access to the Facebook profile of all their contacts. This was, in a way, digital contact tracing before the letter. At no time had these subjects consented to the reuse of their information in the Brexit campaign, in that of Donald Trump, or in elections in India and Argentina. This happened later, when the researchers wanted to monetize the data, initially collected for a theoretically disinterested purpose, through the company Cambridge Analytica. In principle, this approach respected the laws of the different countries and the rules of these large platforms. Nevertheless, powerful algorithms were put to the service of personal interests and the thirst for power of unscrupulous politicians. The same ingredients are combined here: "good-willed" scientists, "tech" giants, political interests. In the case of StopCovid, it is the European university consortium Pan-European Privacy Preserving Proximity Tracing (PEPP-PT), which was created following the pandemic. These scientists have taken on the task of urgently designing the most powerful contact sensor, in compliance with the law. This is linked to the economic interests of private players, such as large national industrial groups, the automobile sector and banks in Italy, telecoms and IT hosting professionals in France. But above all, the GAFA, the American digital giants, have taken up the subject. This time, it is not Facebook and Amazon, but Google and Apple, who have immediately offered to host contact tracing applications on their platforms. The threat that looms beyond all these players comes from the ambitions of certain European political circles to display their determination in the fight against Covid-19, by boasting of a large-scale technical solution, using personal data for the "deconfinement campaign. The StopCovid project offers no guarantee on the exact purposes of the collection of this data. The French executive does not allow itself to think about the phase that follows the collection, that is to say, the processing that will be done of this sensitive information. What algorithms will analyze it? With what other data will it be cross-referenced? Its short-termism is accompanied by a myopia on the social dimensions of the data. What would happen if, as several scientists from Inria, CNRS and Informatics Europe are shouting themselves hoarse to tell us, companies or foreign powers decided to create "parasitic applications" which, like Cambridge Analytica, would cross-reference the anonymized data of StopCovid with other nominative databases? What would happen, for example, if a home delivery platform decided (this happened recently in China) to provide real-time information on the health of its couriers? How could we prevent an employer or a client from profiting in the future from data on the health status and social habits of workers? The Cambridge Analytica affair has allowed us to understand that violent and partisan power games around the control of our personal data have direct consequences on all of real life. This is not an abstract whim. The case of StopCovid is just as striking. By focusing resources, the attention of the public and that of parliamentarians on a probably ineffective technical solution, the government is distracting us from the most pressing emergencies: the shortage of masks, tests and medicines, or the inequalities of exposure to the risk of infection. Fundamental step back This unfortunate diversion would not take place if the government did not impose its digital strategies, vertically, being guided only by the urgency of pretending to act. Faced with these challenges, we should instead actively and equally involve citizens, institutions, organizations and territories to rethink our relationship with technology. The governance model that will accompany StopCovid will clearly be centered in the hands of a handful of state and commercial actors. Such verticality offers no guarantee against the rapid evolution of the application into a coercive tool, imposed on everyone. This system would lead to a fundamental step backwards in terms of freedoms, both symbolic and concrete: both on freedom of movement, particularly between countries that refuse to have tracking systems or that use this pretext to strengthen their fortress, and on freedom to work, to meet or on private life. The public authorities, companies and researchers who, in recent weeks, have gone ahead with this disastrous proposal, resemble sorcerer's apprentices who wield tools whose destructive power escapes them. And, as in Goethe's poem, when the sorcerer's apprentice can no longer hold back the forces he has summoned, he ends up imploring an authority figure, a higher power to restore order. Except that, as the poet tells us, this "clever master" only takes up these tools "to make them serve his purposes."

## ###ARTICLE\_START### ID:2029

Nantes correspondent - What drives a 31-year-old man, who is a "homebody" by nature, in his own words, to go into "ultra-speed" mode and pull sleepless nights in the midst of the Covid-19 epidemic? Probably the pleasure of orchestrating "an incredible human adventure" and "the desire to help save lives. Monday, March 16. Emmanuel Macron has just disappeared from television screens after announcing the confinement of the population. In Nantes, Quentin Adam, an engineer by training, starts scribbling equations and ideas on a sheet of paper. The boss of Clever Cloud, a company specializing in digital engineering and with around twenty employees, he tries to theorize the pandemic risk as best he can with his partner, a 4th-year medical student, mobilized by the health crisis at the SAMU of the Nantes University Hospital. "At the end of the discussion, we came to the conclusion that the major risk in the world was the lack of artificial respirators," he reports. "So, can we create a machine in record time that can cope? I watched a few videos on the subject and I told myself that there was a way to do something. I probably couldn't see myself waiting for the end of the crisis holed up at home while my partner was on the front line..." "Smart and ingenious" Phone calls were made and, from the first evening, the Makers for Life collective was in orbit. It brings together Nantes residents at the head of start-ups operating in the digital field, "makers" - specialists in creating products using 3D printers and open-source data - and health professionals. All are focused on a promise of prowess: to develop and launch industrial production, before the end of April, of a mechanical ventilation device called MakAir ("making air"), at a price that sweeps away all competition. That is to say around 1,000 euros, when an industrial model costs from 10,000 to 45,000 euros, depending on its degree of sophistication. Despite the urgency, the collective has set itself another imperative: not to sacrifice anything to regulatory requirements. "There is no question of compromising with the safety of patients or caregivers who use our machines," emphasizes Pierre-Antoine Gourraud, university professor at the Faculty of Medicine of Nantes and hospital practitioner, specialist in digital technology and immunogenetics. In medicine, when we innovate, we validate. The device designed therefore complies with all the rules in force. » Mobilized from the beginning of the project, Mr. Gourraud, also head of the data clinic at the Nantes University Hospital, praises the development of "a smart and ingenious device", using standard electronic components. The machine, developed after a mad race against time, is "robust and very simple; it is not the Rolls Royce of respirators, but it has all the standard functions, and it is easy to use. For a month, the collective stretches its days and compresses its nights. Brings together varied skills and cutting-edge expertise. Mobilizes all directions by using "the free software community and collaborative platforms. Intensive care physicians from major hospitals join the project on a voluntary basis. The University of Nantes sends researchers and equipment, obtaining an envelope of 355,000 euros from the Defense Innovation Agency to develop the project. The town hall supplies the group with food and sends couriers to collect parts. From the outset, the collective rejects the idea of creating a "self-filling balloon with one-way valve" type insufflator with a triangular mask placed on the patient's face. It opts for an invasive ventilation model, reserved for severe respiratory syndromes such as those induced by Covid-19, therefore for intubated patients, previously sedated. "This is a controlled pressure breathing solution entirely imagined, designed and produced outside of traditional medical equipment circuits," explains Mr. Adam, who assimilated in record time the information provided by professors of medicine on board the project. Its uniqueness lies in its valve and booster system: from the valves to the motors, including the filters and controls, everything was designed from raw materials and readily available components." First machines The initial sketches are a bit of a DIY project. The first videos are produced. "We put Pierre-Antoine Gourraud forward to make it more serious," Quentin Adam jokes. "He has a white coat, a doctor's look, and speaks medical language." The team weaves its web and "broadcasts under the hood" the progress of its research to institutions and engineers. Electrical diagrams are put online, 3D prints of parts are launched, thanks in particular to the machines that the vice-president of the University of Nantes in charge of digital technology, Francky Trichet, has delivered. Cramped, the collective finds refuge in the vast premises (3,000 m2) of the Nantes innovation platform Le Palace. There, under a ceiling of diodes freezing time in full afternoon light, the group switches to "complete confinement" to avoid any risk of contamination. On Saturday, March 21, Erik Huneker, CEO of Diabeloop, a company based in Grenoble that has developed a system to automate and personalize the treatment of type 1 diabetes, joined the game, offering to take charge of drafting the regulatory quality of the project. The next day, Sunday, March 22 at 9:30 a.m., Régine Brochier-Mosbach, correspondent for the General Directorate of Armaments for the Pays de la Loire region, forwarded the MakAir file to Patrick Collet, boss of Tronico, a Vendée company with 450 employees working in the manufacture of electronic cards. He sent an engineer to the site that same afternoon. Four other Tronico employees were seconded as reinforcements. Among them, Morgane Soulard, 24, responsible for ensuring the purchase of all the parts used in the manufacture of the respirator, "in very large quantities and within very short deadlines", in a context of crisis weighed down by the lockdown. "Now is the time to act to try to cure the virus as best we can," says the person concerned. "We started with a core of five people and grew to nearly 250 contributors," emphasizes Mr. Adam. "And we managed to bring on board public and private partners, institutions and large industrial groups like Renault Sport." In addition to know-how, the collective has access to an expanded address book. Erik Huneker is thus promoting the program to the Laboratory of Electronics and Information Technology (LETI) in Grenoble, one of the components of the Atomic Energy and Alternative Energies Commission (CEA). This research center got its hands on an ASL 5000, a machine simulating the behavior of a lung, which it sent to Nantes on March 25. That same day, Henri Seydoux, co-founder of the Parrot company, received "a message from a geek acquaintance" who informed him that researchers in Nantes were "looking for a drone engine to make an artificial respirator. A Skype interview later, the industrialist offered to activate his networks. An engineer was tasked with contacting a Chinese supplier, experienced in the problem of artificial respirators. Two engines were delivered to Nantes. A courier brought back 30 more from Brussels. A prototype of the respirator was developed. "Things got complicated to ensure a larger supply," says Mr. Seydoux. But we were able to benefit from a small place in the airlift between China and France to bring back 450 additional copies. » As soon as they are received on the tarmac at Roissy-Charles-de-Gaulle airport, the "engine turbine" assemblies are sent to LETI in Grenoble, which is now hosting around twenty members of the Makers for Life collective to prepare for the industrialization phase. "The CEA chartered a bus on the night of March 31 to April 1 to pick us up in Nantes and take us to Grenoble," reports Mr. Adam. "It was the first time we had spent a seven-hour night since the start of the adventure." The first machines are assembled in the LETI clean room, which guarantees "a more sterile atmosphere than an operating theater. "Preclinical tests have shown that the device is operational and extremely reliable," reports Mr. Gourraud, who specifies that new features aimed at enhancing the device are currently being finalized. The conduct of clinical trials on human patients is now subject to the green light from the National Agency for Medicines and Health Products and the Committee for the Protection of Persons. On April 10, Mr. Gourraud himself delivered three first machines to the Nantes University Hospital, the official promoter of the future tests, and three others to the Brest University Hospital. "The machines were tested by technicians from the biomedical departments of these hospitals and the feedback is excellent," says Mr. Gourraud. Proof of the hope that the project arouses: the CEA and the Auvergne-Rhône-Alpes region, which has taken on the responsibility of being the manufacturer of the medical device in the clinical phase, have purchased the parts needed to launch the production of 500 machines. Open access plans A consortium associating the Auvergne-Rhône-Alpes and Pays de la Loire regions, the Nantes University Hospital and University, the CEA and also manufacturers is being studied to bring the production stage to a large scale. India and Romania, assures the collective, are closely following the launch of the MakAir. "The idea is to offer the most technically appropriate tool in times of crisis, while respecting the rules of regulatory quality, and therefore the ethics of care," says Professor Erwan L'Her, head of the intensive care and resuscitation department at the Brest University Hospital, researcher at Inserm and director of the Health Simulation Center, co-investigator of the clinical study. Whatever the outcome of the project, the MakAir plans will be left open access: "We want any manufacturer in the world to be able to produce the MakAir quickly, at the best cost, to save lives," says Mr. Adam. "Without the world of free software, the project would not have been possible," continues Mr. Gourraud. All the "makers" in the world are welcome to improve the plans. But any changes will have to be validated by the health authorities." "We may not be short of respirators in France, and that's a good thing," continues Mr. L'Her. But the machine was not created for nothing. It will be used elsewhere than in France, or another time, in its current configuration or in a new version.

## ###ARTICLE\_START### ID:2030

The tracking tool proposed by the government is neither effective nor safe. And above all, far from simply threatening privacy, it is neither more nor less than a form of generalized electronic bracelet and therefore the global detention of all French people that is today being advocated by the government. In reality, it is a question of compensating for its own shortcomings in the management of the epidemic. As people who use connected headsets or who try to pay for their taxi by credit card know, the use of Bluetooth technology is extremely complex and subject to numerous and frequent failures. The choice of using a smartphone immediately excludes 13 million French people who do not have one - particularly children and the elderly. As for the development and maintenance of an application of this type, even though its effectiveness will be extremely limited, we can only wish courage to the team that will have to develop in record time a software capable of working on the thousands of different smartphone models existing in France with all their specificities that can pose problems, of ensuring the monitoring of breakdowns, bad installations, hardware specificities. The memory of the bitter failure of the Population Alert and Information System (SAIP) should serve as a lesson. Also using technologies that were complicated to implement, this application that was supposed to warn the French in the event of a terrorist alert never really worked. There remains the reversal of the rhetorical framework that would be impacted by the implementation of this virtual tracking bracelet. Indeed, if everyone agrees today to criticize to varying degrees the government's crisis policy, the latter has regularly defended itself by placing the responsibility for the epidemic on the citizens themselves. The French have been criticized for going for a walk in the parks when they were asked to vote on the same day, for creating panic by trying to get masks when they should now be made mandatory, etc. In the same way, an application of this type will easily allow the executive to escape its responsibility by transferring it to citizens who have used the application too little or badly. In reality, it matters little that its installation is voluntary and that it is accompanied by any ethics committee whatsoever. Consent is not a sesame for all attacks on freedoms, and even less so when it is forced by fear of the epidemic, or by direct or indirect coercion through more or less informal sanctions - do we think of the possibility that the application is imposed on employees by employers or on students by their educational establishments? This is nothing more or less than imposing on the French what in fact appears to be an alternative form of deprivation of liberty. In this regard, and in view of the opposition it arouses, it should be added that the possibility of seeing the project succeed within the allotted time seems particularly difficult since, since it is a form of detention limiting the freedom of citizens to come and go, a legal text would be necessary - as would imposing this application on the platforms' stores. But in any case, it is useless to pretend that this solution would only have an exceptional vocation and that it would be limited to the period of the crisis. On the one hand, no one knows how long the health crisis we are going through will last. On the other hand, it must be remembered that this project is part of a continuity of tracking projects developed by the government, particularly with regard to facial recognition - which already raised the same questions, both technical, moral and societal. In other words, the virtual electronic bracelet project represented by the StopCovid application is not a response to Covid-19: it is an ideological approach intended to limit people's freedoms according to a logic based both on the meritocratic guilt of individuals, and on the fantasy of a technology that allows them to be constrained by standards, surveillance and sanctions. However, in a period of crisis, the role of the government should be to preserve the dignity of the human person, to provide masks, medicines, to ensure the logistics of the crisis, not to take advantage of the situation to implement ideas that were rejected until then. It is with the same methods that the United States implemented after September 11, 2001 the surveillance system that was finally revealed and denounced by Edward Snowden in 2013. This is why we must absolutely oppose this project regardless of the government that promotes it and regardless of the guarantees. If it is useful, many companies or associations will be ready to develop functional solutions more efficiently, using open standards, source code made available in the form of free software, and with levels of guarantee that will make them accessible to citizens' claims. If it is not useful, it is not only the guarantees offered by the General Data Protection Regulation (GDPR) that are threatened, it is the first sentence of the first article of the Declaration of the Rights of Man and of the Citizen: "Individuals are born free and equal in law." And since it is fashionable to use war analogies and quote Clemenceau, it was he who recalled in his 1918 war speech: "Our duty is to wage war while maintaining the rights of the citizen, by safeguarding not liberty, but all liberties." ?

## ###ARTICLE\_START### ID:2031

This is no longer just a question that is "still open", according to the Prime Minister's formula last week, but a work in progress. In an interview with Le Monde on Wednesday, the Minister of Health, Olivier Véran, and the Secretary of State for Digital Affairs, Cédric O, announced the launch of the "StopCovid" project, i.e. the development, under the leadership of the National Institute for Research in Computer Science and Automation (Inria), of a "prototype" of a digital tracing tool intended to "limit the spread of the virus by identifying transmission chains". An application that is "open source, installed voluntarily, protective of privacy and respectful of the general data protection regulation", insists a press release from the Secretary of State. Nothing has been decided yet - a possible deployment will only be decided "later", after a "broad debate", indicated O - but this "optional building block" of a deconfinement strategy is in the pipeline. Anonymity. What are we talking about? "When two people cross paths for a certain period of time, and at close range, the mobile phone of one records the references of the other in its history," the Secretary of State explains to Le Monde. Detection is carried out via Bluetooth, without collecting geolocation, and the data is stored locally in the terminals. When a user tests positive, they report it in the app so that the people who have been in contact with them are notified, without their anonymity being lifted. Inspired by the "TraceTogether" app in Singapore, "StopCovid" is part of a European project involving Inria, which works in conjunction with the authorities and the National Commission for Information Technology and Civil Liberties (CNIL). Objective: to automate "epidemiological investigation" in order to "guide" screening tests, Vittoria Colizza, research director at the Pierre-Louis Institute of Epidemiology and Public Health (attached to Inserm), recently explained (see Libération of April 4). "Surveillance." The fact remains that the initiative is raising debates and opposition, particularly among parliamentarians (see page 5). Auditioned by the deputies of the Law Commission, the president of the CNIL insisted: such a device should be implemented for a "limited period", without "any consequences" for those who refuse to install it. On the side of the association for the defense of freedoms, La Quadrature du Net, there is a report of "strong mistrust": "Even by respecting all the technological and legal criteria, it remains a tool for tracking people, for surveillance," emphasizes Martin Drago, lawyer and member of the association. The question of effectiveness also arises - "Do we really need a digital tool to combat a public health problem?" - of freedom of consent when there is "social pressure" to install it, of the security of Bluetooth technology, or of non-smartphone owners "There is a mark of goodwill, judges Charles-Pierre Astolfi, the secretary general of the National Digital Council (CNNum). Transparency, consent, anonymity, these are fundamentals. We must wait to see the technical and architectural details and the safeguards that will be put in place." Especially since many elements need to be refined: at what distance, after what duration are contacts recorded? Is there intervention, in the information chain, of a health authority? For the time being, one of the options being considered is that of a "code" that would be provided to the user who tests positive, Cédric O's entourage tells us. In any case, in the opinion of many, such a device can only be useful if it is widely adopted and combined with a much more massive practice of screening. In the columns of Le Monde, O acknowledges this: while he rejects any idea of a "liberticidal application", he warns against the "opposite fantasy, that of the magic application that would solve everything".

## ###ARTICLE\_START### ID:2032

THEY COULD BE USED FOR VENTILATOR PARTS Thanks to parts made with a 3D printer, the collective is about to transform diving masks from the retailer Décathlon into respiratory assistance machines. A prototype of this type is already being used in Italy to save lives. The mask covers the face and also helps reduce the spread of the virus. The other prototype aims to automate a manual ventilator. To do this, they need parts made with a 3D printer. “The idea is to come up with the cheapest kit possible and to manufacture it entirely in Quebec,” explains Jacopo Profili, a bioengineering specialist at the Centre hospitalier universitaire de Québec. These ventilators would be useful if the health network were to run out of ventilators like in Italy. “I’m going to be honest with you, I hope it stays a project, because if we start manufacturing this, we’ll be in a total crisis situation.” Quebec currently has 3,000 ventilators. Our Investigation Bureau revealed on Saturday that the network has ordered 1,200 more and hopes to receive them quickly to meet their needs. However, the situation on the Island of Montreal is of particular concern to Mr. Profili. SEVERAL PARTNERS To develop the prototypes, the physicist is counting on his partner ProtoLab Québec, affiliated with La Centrale -Espace entrepreneurial -Université Laval. Experts from the Institut de cardiologie et de pneumologie de Québec and a researcher from ÉTS are also collaborating on the project. "What we are doing is to lend a hand. Not to make money," says Jacopo Profili. The research and development will be offered free of charge on the Internet, in open source code, in order to allow all researchers around the world to have access to it. "We want to find a solution in Quebec for Quebec. We need to find a network of local producers who can print our project if it is used," says Mr. Profili. He is also launching an appeal to anyone who has 3D printers.

## ###ARTICLE\_START### ID:2033

How to get out of lockdown? Once the epidemic peak has passed, like many Asian countries before us, Europe will be faced with this formidable challenge: how to enable everyone to return to normal life, and our economies, which have been profoundly disrupted, to restart quickly, while avoiding a resurgence of the epidemic? The first response will obviously be health-related. More than ever, we will need our healthcare workers whose commitment and mobilization, since the beginning of this crisis, command respect. We will also have to maintain the barrier gestures to which we are now accustomed over the long term, and continue screening tests on a large scale so that no embers rekindle the fire. But the second response, it is increasingly obvious, will be technological. I am convinced that technology and intelligent and reasoned use of data will be the essential complement to health action. The subject is sensitive, even instinctive. It is also complex, both legally and technically. The goal here is to provide as much factual insight as possible into a debate that is too often passionate and without nuance. Personalized prevention Let's say it right away: this is not about imposing, as in Taiwan, intensive digital control of movements or giving, as in Israel, the police the ability to geolocate, via their phone, infected people to ensure compliance with quarantine. My position is simple. We are fortunate in the European Union to have a protective regulatory framework: the General Data Protection Regulation (GDPR). Let's know how to use it in all its provisions! The GDPR allows, first of all, the processing of anonymized geolocation data, i.e. sufficiently aggregated to not allow the identification of a particular individual. Orange has thus developed a tool for modeling population flows based on anonymized geolocation data that we make available to the National Institute of Health and Medical Research (Inserm). This makes it possible, for example, to measure population movements following containment measures, or to refine epidemiological models which, without this, are based only on air transport data, which are necessarily non-existent during this period... All this essential information for health authorities to be one step ahead of the disease and to size the healthcare provision in the territories accordingly. While they are useful, this aggregated data does not, by definition, allow for personalized prevention, i.e. to warn someone that they have been in contact with a person carrying the virus, and that they are therefore at risk. Entering into this logic requires organizing the processing of individualized location data. So, what does the GDPR tell us? As the National Commission for Information Technology and Civil Liberties (CNIL) recently reminded us, the processing of individualized geolocation data is possible, under certain conditions, as long as the user consents to it. We must therefore imagine what an effective prevention solution based on individual consent could be. Use of Bluetooth Clearly, when it comes to processing personal data, comparison is not reason. However, let us dwell for a moment on the example of Singapore, which has developed a technologically very efficient solution, but respectful of public freedoms. The principle is simple. Citizens are encouraged to download an application called TraceTogether on their phone. The application uses the device's Bluetooth connection to identify other phones located nearby. If close and sufficiently long contact is observed, the data is recorded by the application and stored, in encrypted form, directly on the phone. If the user subsequently learns that he is carrying the virus, he sends the file containing the phone identifiers of the people he has come into contact with during the incubation period to the health authorities. These people are then contacted to be warned of the risk of contamination and to be screened preventively. On a technical level, using Bluetooth is much more effective than a solution based on GPS data or cellular data to detect nearby phones, including inside buildings. This solution, which is based on consent, would be compatible with the GDPR. Many additional guarantees could be provided in a logic of protection of individual data. Under the control of the CNIL, the conditions for expressing consent should be perfectly clear and explicit. As soon as the crisis is over, the system would be completely deactivated and all data deleted. Finally, putting the application code in open source could allow the developer community to guarantee its security and integrity. Obviously, this application will only be useful if a sufficient number of users agree to download it. Let's bet that civic-mindedness, the collective will to put an end to this virus, and above all the guarantees of protection of personal data, will be all factors that will allow a massive adoption of this approach. In addition to a large screening campaign, an application of this type, compliant with the GDPR, built and configured with the health authorities and based on informed consent and the spirit of individual responsibility, could be particularly useful in France to ensure the end of confinement in the best conditions, and guarantee the future.

## ###ARTICLE\_START### ID:2034

The notes are picked in space, the musician's fingers launched into a choreography on an invisible thread. "The sound of the theremin is always there, which makes it very different from other instruments. It is up to you to enter the field, to change it, to transform it into what you want it to be," vibrates the young German virtuoso Carolina Eyck when asked what she liked so much about the theremin. It was at the age of 7 that she began to practice the mythical instrument, recognizable by its ghostly howl and its quivering vibrato and which for a century has allowed humans to become a conductive body for music. How does it work? As soon as a body enters its electromagnetic field delimited by two antennas, one straight, the other forming a horizontal loop, it emits sounds, not always very easy to tame. "The theremin is the freest instrument that exists," assures Carolina Eyck during a masterclass given in February, in front of an already captivated audience, many of whom came from abroad to follow this Theremin Academy, organized in parallel with the NODE Festival in Lausanne. New dimension This ancestor of electronic music is at the heart of celebrations for its centenary, spread over 2019 and 2020, for want of having reached an agreement on the precise date of its invention. Its creator, on the other hand, no one questions: the Russian Léon Theremin (read opposite), a sort of Soviet Edison who created this monophonic instrument (capable of playing a single note at a time) when television did not yet exist. From the musical avant-garde of the 1920s in New York to his activities as a KGB spy, Lev Sergeyevich Termen, his real name, was as elusive as his instrument - Einstein himself had gone to try it out at its inventor's house (he wasn't very good at it, according to the Russian). A hundred years later, the vibrato and portamento techniques instituted by Clara Rockmore, the first virtuoso of the instrument thanks to her technique acquired on the violin and who was the engineer's muse, are no longer the only ones to set a precedent. The instrument's undulating "good vibrations" with its woohoo, which can indeed be heard in the Beach Boys hit of the same name, have resonated with Led Zeppelin, Pink Floyd, Ennio Morricone. They have been played by a drone, by cats on YouTube. They were also the sound signature of ghosts, of aliens, the theremin having been immensely requested by Hollywood to illustrate horror and science fiction films (including one of the first, The Day the Earth Stood Still by Robert Wise, in 1951). "For many people, the theremin is this absurd object with which Sheldon Cooper plays in The Big Bang Theory, or the characteristic sound of aliens in science fiction films of the 50s", explains the Frenchman Grégoire Blanc, considered one of the new champions of the instrument. "Oddly enough, I don't fundamentally have any particular desire to "evolve" the theremin. I find that the existing balance is magnificent, and as such, the instrument is a finished object, which does not need more", he explains, while others work to bring it into a new dimension. “The theremin has a very pure sound that nothing can match, even if we could replicate it with other technologies. It’s a very theatrical instrument, a mix between the human and the otherworldly. It’s important for the theremin to have a good repertoire, to give it a platform,” Caroline Eyck also believes. On stage, she improvises on Fantasias with the Ensemble Contrechamps, grafting her voice to the vibrations, adding effects to each movement using a ring. This controls the surround sound that sends the notes around the audience like flocks of starlings, a moving and stunning process. A little earlier during the performance, she ordered the audience in the front row not to move an eyelash. “If someone enters the frame, it becomes a duet.” "Invisible Strings" There is more than one reason to be intimidated by collaborating with the woman who, at the age of 16, developed her own technique, which consists of measuring the air with a hand length, each corresponding to an octave, which she develops in a manual, soon to be republished. To ensure that the theremin remains an instrument of the future forever, enthusiasts gathered in Lausanne are talking about an "augmented theremin", which can be used as a Midi controller, to control electronic effects. The co-organizer of the Swiss NODE festival, Coralie Ehinger, gives it her all: "We must open up the fields of the theremin because using it to copy the sound of the violin or the human voice has its limits. Other avenues are opening up for the theremin with a synergy of arts and techniques, including interaction with the computer or other synthesizers and media, such as video or dance. I started playing the theremin over ten years ago, people asked me if I had pulled invisible strings or if it was ventriloquism, but today people have seen videos. It's when the music is well executed that the magic lasts." A young mother, Coralie Ehinger had to adapt to the entry into the field of a round belly during her pregnancy, but that is not the only whim of this instrument: "If the humidity level is high or if you have drunk two liters of water, your body becomes much more conductive. There is something strong in the falseness of the theremin, it is like a tightrope walker with a hyper lively and magical sound. If the same piece is emulated with a synthesizer it does not take you to the guts in the same way," she explains. FAMILY HERITAGE Although the theremin community has expanded considerably in recent years, only one company has offered a model commercially: Moog Music Inc., and has done so since 1954. Its founder, Bob Moog, who died in 2005, built his first instrument himself based on a DIY (do-it-yourself) model suggested in a magazine. Fortunately, this tradition has continued: in an Open Theremin workshop organized by the NODE festival, participants build their own open-source theremin, with Thierry Frenkel, co-organizer of this meeting and initiator of the Colmar theremin academy. "Since Moog died, no one has put heart and emotion into the theremin anymore, the company has been taken over by people looking to make a profit for shareholders," he explains. For ten years, he has been developing modules to improve the instrument: increasing the range, improving the sound quality of the timbre. He is said to have sold around 500 of them in the last ten years. "When the instrument was invented a hundred years ago, Léon Theremin imagined that it would one day become part of the canon of classical instruments in symphony orchestras. That didn't happen, but the theremin opened up a lot of avenues. If it hadn't been presented in 1924 at the Universal Exhibition in Paris, Maurice Martenot would never have been encouraged to work to finalize his development of the Martenot ondes," explains this rare European theremin teacher, referring to the French grandfather of the synthesizer. We also attend his individual lessons, which students come to take once or twice a year. "We can play very precisely, but people switch to the opposite, do pseudo-random things, that's also part of the evolutions and discoveries." He himself learned to play alongside Lydia Kavina, of the Theremin clan, to whom Léon had passed on his knowledge in Russia. His great-grandson, Peter Theremin, 28, is also involved in the family legacy by founding the first theremin school in Moscow, the only other school of its kind being in Japan, Europe operating with the system of itinerant Theremin Academy. "Each of these formations has its own approach, its own concept, its own tradition, Peter Theremin explains to us by chat. Moog theremins have greatly damaged the perception of the authentic theremin in society. In my opinion, today, theremin models should return to Léon Theremin's initial approach, it is the only way to promote the development of the classical theremin." Peter Theremin has just closed a major video competition called Theremin Star Competition and crowned the Frenchwoman hYrtis, who taught herself and "aspires to develop a repertoire dedicated to sacred music." She will perform in front of the Theremin family at the Thereminology Festival in Saint Petersburg in the fall on the occasion of the instrument's centenary. "Léon Theremin made a great gift to humanity, it is normal for people to express their gratitude and joy," says Peter Theremin, who is due to share during workshops in Paris, postponed to the end of June, as the theremin virus is transmitted without noticeable effects in the air. ? Dates of the next theremin workshops and concerts on the French platform etheremine.com

## ###ARTICLE\_START### ID:2035

"Until today, I have refused to apply these measures to the civilian population, but we no longer have a choice." This is what Israeli Prime Minister Benjamin Netanyahu said on March 14. The "measures" in question? A euphemism for giving the Shabak, the all-powerful internal security agency, the green light to extend its anti-terrorism surveillance capabilities to coronavirus carriers, in order to map their recent movements and identify people who may have been infected through contact with them. Cold sweats "In itself, it's nothing very sophisticated," says computer security researcher Iftach Ian Amit. "It's simply a matter of using for new purposes the metadata that the intelligence services have been amassing for years." According to revelations by investigative journalist Ronen Bergman in the New York Times and then in the daily Yediot Aharonot, telecom operators have been discreetly transferring their customers’ data to the Shabak since 2002, on the orders of the Prime Minister, which has built up a database as gargantuan as it is opaque, in principle limited to preventing suicide attacks. “All calls, all messages, all locations, all the time,” summarizes Bergman. “All Netanyahu and the Health Ministry had to do was deactivate the security use of this repository, and enter the names of patients infected with the coronavirus.” For Isaac Ben Israel, former cybersecurity adviser to Netanyahu, “if it’s not a question of technology, then it’s a question of law. Until now, the Shabak could not draw on this data without the authorization of a judge.” The other important point is that this type of surveillance only works in small countries, the size of Israel, where the mass of data on patients remains manageable." Imposed first by decree, bypassing Parliament, then paralyzed by the trench warfare between Netanyahu's Likud and the opposition, the decision to give free rein to the intelligence services to deal with a civil crisis caused cold sweats among defenders of freedoms. The cause was the levity with which this yellow line was crossed during a restricted ministerial committee. Ami Ayalon, head of the Shabak from 1995 to 2000, expressed concern in the media about the apparent absence of parliamentary oversight, until the Supreme Court demanded that the Knesset subcommittee in charge of intelligence be informed. "Stupid idea" "Given the circumstances, the committee tried to limit the damage," assures Tehilla Shwartz Altshuler, in charge of media and digital freedoms at the Israel Democracy Institute. But no one answered the main question: why involve the security services to this extent in the battle against the coronavirus? Most Western democracies have not made this choice." The outbidding of the Israeli Minister of Defense, Naftali Bennett, who does not hide his ambition to supplant the Ministry of Health in the management of the crisis, has only reinforced the concerns of lawyers and activists. While the Mossad has been tasked with accumulating respirators and masks by all means, Bennett, politically in the hot seat, multiplies the proposals. Like that of entrusting the sulphurous Israeli firm NSO, at the heart of several recent spy scandals, with the establishment of a population rating program, in partnership with the army. Based on the analysis of metadata collected by Shabak, each citizen would be classified according to the probability of their infection on a scale of 1 to 10. For Ben Israel, it is "a stupid idea, potentially dangerous. What will happen the day when supermarkets ask you for your grade to let you in?" On Tuesday, the Justice Ministry made known its opposition to this "unusual" collaboration. The Health Ministry went one better by recalling that it had already launched an open-source application called HaMagen ("shield" in Hebrew), allowing everyone to cross-reference already public information on the places where sick people have been with their own movements. Amit considers that the app, designed by independent developers, is the example to follow: "Never could civil servants code such an app so quickly, with so much attention paid to confidentiality. But you will never have this level of transparency with NSO." According to Bloomberg, NSO's technology is said to be in the testing phase in a dozen countries.

## ###ARTICLE\_START### ID:2036

A small group of countries have massively used artificial intelligence to avoid the coronavirus crisis (Taiwan, Singapore) or to curb it (China, South Korea). Last week, a Western country, namely Italy, tried to reproduce the Asian experience by means of a maxi-decree (120 articles) called "Cura Italia". Among other measures, it was a question of detecting risky behaviors by using geolocation data. All over the world, governments collect information on their citizens: income tax, property tax, passport and immigration, health care payments, etc. But this information remains compartmentalized. The novelty begins when a country like Taiwan merges health data with data on entries and exits from the country for the last 14 days. In this way, people at risk can be immediately detected and summoned for testing. In South Korea, people who test positive for the coronavirus have been systematically tracked using digital camera images, credit card usage and GPS data. When an infected person breaks the mandatory quarantine, they are automatically fined $2,500. China has taken the tracking a step further by launching a new smartphone app called “close contact detection” that allows people to check their level of risk of catching the coronavirus. Each time a user crosses paths with a person infected with the coronavirus, a vibration on the phone alerts them. That’s not all. When users want to enter a shopping mall or other public building, they have to show their phone screen, which displays a QR code. The optical eye of the gate delivers its verdict: green code, the door opens, red code, no one goes through. The debate over privacy In all cases, these are countries with a Confucian tradition. What does this mean? Confucian philosophy is based more on individual responsibility than on individual freedom. The Confucian legacy says: my freedom ends where my responsibility begins. This does not mean that Asian culture does not value freedom, but it considers it a social achievement, not a structuring value. When Italy publicly announced that it was tracking people who left their homes despite the lockdown requirement, the European Data Protection Board (EDPB) gave its approval, but with strict reservations: any emergency legislation derogating from the general rule of processing anonymous data must necessarily "ensure the protection of the personal data of the data subjects". However, Italian tracking is much more limited than what has been deployed in Asia. In Canada, Toronto Mayor John Tory raised the possibility of using smartphone geolocation to track where residents gather on March 23. According to the mayor, this data was to be processed in an aggregated and anonymous manner. However, the very next day, the mayor apologized and stated that this was simply a working hypothesis: he had never, ever intended to implement it. Choosing responsibility over privacy This timidity seems outdated at a time when the global economy is paralyzed and the death toll is in the tens of thousands. This is why the World Health Organization (WHO) has given the green light to the development of an open-source application intended to be used by all countries that want it. This application is the equivalent of a GPS for coronavirus screening: on the one hand, it provides geolocalized information to users, on the other hand, it sends individual data back to public health officials. The first version of the app called Private Kit: Safe Paths will contain only basic features; the WHO’s priority is to get the app into the Google and Apple stores as soon as possible. The question is whether countries with a Western tradition will embrace this collaborative technology that, despite all the precautions taken by the WHO, cannot help but redefine the limits of privacy. Will we accept limiting individual freedom in the name of the principle of collective responsibility? For societies with a Western tradition, this is an open question. Where the Confucian tradition prevails, societies have approached the current pandemic with a clear response in favor of responsibility. When it comes to a choice between life and death, the response of Asian countries is clearly the most effective. Western countries are perhaps for the first time in the position of those who receive lessons from the rest of the world and not those who give them. This is a new phenomenon. To evolve and integrate a dose of culture of responsibility, we will have to demonstrate a humility that has been sorely lacking in the West until now.

## ###ARTICLE\_START### ID:2037

Although it was generally not ready for it, higher education has shifted in an unprecedented way to the world of distance learning. For some institutions, two days were enough to organize themselves and a few offered an online teaching alternative as early as March 16. For many others, it was necessary to interrupt teaching for between eight and fifteen days, as at Edhec or Sciences Po Paris where classes are due to resume online during the week. The validation of the second semester is not in question, nor is the value of the diplomas awarded, the institutions are saying to reassure students. The national exams scheduled until April 5 will be rescheduled and the entrance exams for the grandes écoles, as well as those organized within universities to access the second year of medical studies, will be rescheduled from the end of May, the Ministry of Higher Education announced on Tuesday March 24. The lockdown is exposing a sort of digital divide between students and also between teachers. "Our students are sent back to areas that are often poorly connected," warns a teacher at the Val-de-Seine high school in Grand-Quevilly (Seine-Maritime), which has around a hundred BTS students. Half of them have problems with their computers and a poor quality connection at home. They tinker... Some even end up typing their internship report on their mobile phone!" "The digital flow is exploding" In universities, it is the moment of truth for the vice-presidents in charge of digital technology. In one week, the University of Burgundy has gone "from 15,000 connections per day to 40,000", the University of Angers has recorded "25,000 connections for 9,000 to 10,000 distinct users each day since the beginning of the week. In Caen, the activities of the online platform have quadrupled. "Our infrastructure is strained to absorb the exploding digital flow," explains Stéphane Amiard, vice-president in charge of digital technology at the University of Angers. Apart from a few isolated cases, improvisation prevails. "Universities are the poor relation of EdTech [digital teaching technologies] for budgetary, ideological and governance reasons," says Marie-Christine Levet, founder of the specialist investment fund Educapital. "The tools are there, but their large-scale implementation cannot be improvised. So everyone tinkers in their own corner." "My biggest worry is staying at home to work. It's complicated in terms of concentration and space," says Raphaëlle, 18, in the first year of a multidisciplinary higher education cycle at the University of Paris Sciences and Letters. On March 16, she tested a two-hour math course on Microsoft's Teams application. "We saw the professor writing the exercises on the screen of her tablet. She did a survey to see if we had finished and whoever wanted to answer spoke into the microphone." For the time being, the experiment remains limited to this discipline, with other teachers preferring to send courses by email. "It's a total myth to talk about educational continuity at university. We can provide help, contact, but not real continuity," says Nicolas Offenstadt, lecturer in history at Paris-I-Panthéon-Sorbonne. In addition to the readings he sends them each week, the teacher has created a Twitter account for his students dedicated to the writing of history and historiography, but he does not plan to send his courses in extenso or even a summary. Almost all universities have a distance learning platform, "some for over twenty years," says Nadia Jacoby, president of the digital transformation consulting agency Simone et les Robots and former digital officer at Paris-I-Panthéon-Sorbonne. Most of them rely on Moodle, the most popular digital campus in the world, which is free and open source. It remains to be seen whether these systems are large enough to switch from an average of 10% of users (mainly those "prevented" by reasons of distance or disability) to 100% of students connected. WhatsApp, YouTube and Instagram "If we were to generalize the use of videoconferencing, it is not clear that all of our facilities could support it," worries Joël Alexandre, president of the University of Rouen. In addition, some colleagues live in "white zones". We are reaching the limits of this type of tool. » "The major telecom operators did not see fit to invest in renovated infrastructures, due to a lack of sufficient and profitable customers in rural areas or in peripheral neighborhoods," confirms Nadia Jacoby. In solidarity, some players such as OpenClassrooms or Esiea, a digital engineering school, offer free course catalogs or training sessions to all higher education establishments in order to share best practices. "We realized that this challenge was not so great for us who work in digital technology," confides Loïc Roussel, CEO of Esiea. EdTech France, which brings together the education technology sector, is also providing tools and resources for the duration of the health crisis. The University of Angers, in addition to its fifteen "educational engineers", is activating a "digital reserve" of thirty people who can be mobilized "on the model of the health reserve", says Stéphane Amiard. Student evaluation is the most delicate point. At Esiea, it will be done on Moodle. "It is possible to limit the response time. In addition, 10% of the grade will depend on the participation of students on the forums," explains Loïc Roussel. The oral exams and thesis defenses will be held by videoconference in front of the jury. "This experience will enrich our teaching methods," believes José Milano, general director of the Inseec U group, which has 16 schools and 25,000 students. If we just say: "Give me back this practical case by such and such a date," it is not enough. We need support, more human and contacts during this period." To avoid losing anyone along the way, this group uses WhatsApp and YouTube and has launched a television on Instagram where serious and sometimes lighter elements are posted. A yoga class is provided at the start of the day, to create good learning conditions at home, a challenge when you follow the course from your smartphone, sitting on a sofa. Giving a marketing course live and on camera, Nadim Barradia did it on the Zoom application for the first time in front of his students at the Digital College. "We try to frame ourselves well and to find ourselves beautiful because we have to be ready to see our reflection for two hours! Thirty students with the webcam following you simultaneously, it's a more exhausting exercise than that of the face-to-face course. It gives us a YouTuber side," he says ironically. This episode, expected to recur for months, could change the notion of knowledge transmission, believes Nadim Barradia: "Once back in front of students face-to-face, teachers may have to manage to give new legitimacy to their courses." For Cyril Bedel, co-founder of Edunao, a provider of learning platforms, "it is time to get in tune with a student generation that uses their mobile more than their pen..."

## ###ARTICLE\_START### ID:2038

Let's not lie to ourselves, confinement with children is nice, but it shouldn't last too long. To spare you from "I'm bored", P'tit Libé, a news site dedicated to 8-13 year olds, has selected sites, videos and podcasts to keep your children busy and give you a little breathing room. Logbook for unexpected confinement They may sometimes seem bored but they definitely have things to say about this very strange period. So suggest that they make a logbook to write down their thoughts, relieve their anxieties and keep a souvenir of this interlude. To help them, they can find out on the P'tit Libé site how to make one with the means at hand. And if your children prefer a digital souvenir, no problem: there is do?doc, a free and open source software designed by designers, which will allow them to create an interactive logbook. Photo and video captures, sound recordings and even the possibility of creating stop-motion animations Enough to keep them busy for a few days. https://bit.ly/ptit-carnet Create monsters by merging “random things” Gilles Roussel, aka Boulet, cartoonist and father of the hilarious Boulet-Corp, invented a game for his goddaughter a few years ago. Its name: Hybrides. We invite you to go see the rules on his site (or his Twitter account): basically, it's about drawing unknown and monstrous creatures, by merging two things that really have nothing to do with each other. To do this, a simple table of six by six squares, to end up with baroque crosses: a cat-zucchini, an elephant-couscous or even a terrifying lion-fork. It's up to you to imagine what these horrors might look like Egg custards, nothing better Tired of cooking every meal of the week? Get your kids cooking with this recipe that doesn't require a trip to the local supermarket (unless you're already broke). You'll need: ½ litre of milk, 150g of sugar, ½ sachet of vanilla sugar (optional) and 4 eggs. In a saucepan, pour the milk and vanilla sugar, then heat them over low heat for a few minutes. In a salad bowl, mix the eggs and sugar until everything turns white. Add the hot milk. The preparation is finished, you can pour it into ramekins. Place them in a large dish with water up to the edge to make a bain-marie. Bake them in the oven at 180°C for 30 minutes, or longer if you like them golden brown. All you have to do is let your creams cool and they will be ready to eat! Little tip: don't throw away your egg cartons. On leptitlibe.fr, children are invited to make chicks with it. It's eco-friendly and will allow you to take a good nap after your meal. Meet the great names in history From the revolutionary Pauline Léon to Martin Luther King, from Calamity Jane to the Loch Ness monster, the podcast Les Odyssées, offered by France Inter, is a great way to get children interested in history. Laure Grandbesançon's stories, with her unique phrasing and all the energy she puts into bringing parts of history back to life, highlighted by amazing sound effects, will hold their attention. Each episode lasts between 12 and 18 minutes and, for once, women are not forgotten. Dr Nozman on YouTube Are aliens everywhere? How to make the cube from the video game Fortnite? Why do we fall in love? These are the kinds of topics covered by Dr. Nozman on his YouTube channel, which has over 3.5 million subscribers. Germain O'Livry, his real name, explains a whole bunch of things about science to your teens in a simple, educational, and often funny way. Who hasn't asked themselves existential questions like "how was the Earth born?" or more prosaically "does my nose grow at the same time as me?" We can't guarantee that everyone will find all the answers, but it's worth a try. In museums, without dragging your feet Normally, going to a museum with children can seem like a way of the cross. Problem solved with the virtual tour: several establishments open their doors to Internet users who can discover impressive collections from their sofa. The Muséosphère platform, for example, offers an exploration of different museums in Paris, right down to the basements of the terrifying catacombs, which can be explored in 360 degrees. Also not to be missed is the junior area of the Cité des sciences et de l'industrie with a range of games, experiments and videos on science, technology and the environment, among other things. http://www.cite-sciences.fr/fr/ressources/juniors "Tintin" podcast Peru, Egypt, China There is no age limit for great journeys all over the world with the most famous of reporters. To do this, just listen to the podcasts of France Culture, with a series devoted to four albums of Tintin, Hergé's hero: The Temple of the Sun, The Blue Lotus, The Seven Crystal Balls and Cigars of the Pharaoh (five 24-minute episodes per album). This adaptation is by Katell Guillou, with the actors of the Comédie-Française to tell all these adventures. Tintin, Snowy, Captain Haddock, they are all there and everything comes to life thanks to the atmospheres, the sounds but also the music performed by the Orchestre national de France. Intense and exciting. We escape with Ghibli Spirited Away, My Neighbor Totoro, Kiki's Delivery Service Even without having seen them, these films surely resonate in your ears. If not, it's time to catch up with your children. Fifteen feature films from the Japanese studio Ghibli, examples of the know-how of masters Hayao Miyazaki and Isao Takahata, have been available on Netflix for a few weeks (seven more will be offered on April 1). The opportunity to relive these stories inspired by Japanese legends, renowned for the poetry of their "universe. And since happiness never comes alone, in this period of confinement, sound is added to the image. The soundtracks of these masterpieces are available on some streaming platforms. Enough to spend all your days (and nights, why not) listening to the dreamy and soothing melodies of Princess Mononoke for a guaranteed escape. Books in the public domain Have your children already read and reread all the books lying around their room? Alas, there are no libraries or bookstores open to renew their stock. Fortunately, some children's books are available for free on Gallica, the digital equivalent of the National Library of France. Les Malheurs de Sophie by the Countess of Ségur, Around the World in Eighty Days by Jules Verne, La Fontaine's Fables, but also children's newspapers dating back a century: there's plenty to keep them busy for a while! https://bit.ly/gallica-jeunesse Yoga to relax Those who don't go out enough can end up feeling really angry. A proverb invented by us and which is being verified every day at the moment. So, before the argument breaks out, we breathe in and out calmly with a good yoga session. You can find several online courses on YouTube but we particularly recommend the videos of teacher Lise Bilien, who offers sessions adapted to the age of your children. There is, for example, special circus yoga, to stimulate creativity or to sleep well. Nothing better, for an adult as for their offspring, than to stretch your body and concentrate on your breathing to stay zen. https://bit.ly/2QyTdyp Video appointment Every day, at the appointed time, plan an appointment for your children on Skype (or another app allowing group video calls) with their cousins, grandparents or similar. It is up to the latter to find each time an activity that can be done via video and keeps the children busy for half an hour: reading a book, playing mime, Jacques a dit, scientific experiment like Fred and Jamy in C'est pas sorcier Or less fun but useful: reviewing multiplication tables. Who knows, this technique could keep an adult busy, who is also starting to seriously go round in circles, confined on their side. ? Every day on leptitlibe.fr, discover new free content, for 8-13 year olds. "Can I still hug my parents?" "Can the virus spread to my animals?" "When will it stop?": P'tit Libé answers children's questions to keep them informed of what is happening. And to keep them from going round in circles, find a rich selection of activities! To discover the other content of P'tit Libé, take advantage of our subscription offer at 1 euro for three months.

## ###ARTICLE\_START### ID:2039

The European Commission announced at the end of February its desire to regulate artificial intelligence (AI). It arouses fantasies, fears and fascination. European industrialists fear the financial cost of such regulation and brandish that it would be a brake on innovation. Consumers fear discrimination. Could this be the future or the peril of humanity? We hear both: artificial intelligence will save lives, artificial intelligence will decide our lives. Is there a single definition of artificial intelligence? The answer is no, there are as many definitions as there are schools of thought and scientific communities. For example, between statistical AI and symbolic AI, weak AI and strong AI, some are explainable and others not yet. No exercise to define AI has led to a real consensus, and sometimes the exercise has even been abandoned. Moreover, it is a mistake to personalize AI. AI algorithms and their potential abuses of all kinds (ethical or legal) are only a codification of the opinions of their designers and those who deploy them. The temptation is very strong to regulate everything that seems to escape our understanding and control. This approach assumes that the simple fact of establishing new legal rules will be a protective bulwark against potential abuses. A new playing field for lawyers The need to legally regulate the use of AI algorithms is not in doubt, as their fields of application are so broad and as the loopholes for certain abuses in the service of their designers are so possible. The regulation of algorithms in general, and that of AI in particular, is a completely new playing field for lawyers. A digital transformation of the legal profession would be needed to hope for real efficiency. Lawyers would have to be trained in algorithms without becoming specialists in them, and law firms would have to hire AI specialists to identify the issues to be resolved. Otherwise, regulation will only result in top-down measures that translate the principles of what must be done but which will remain unenforceable. How could a lawyer ensure that an AI algorithm would respect the new jurisdiction that will be put in place? What must guide regulation of this new type is the analysis of the risk of algorithmic decisions for humans. The health sector is well ahead in this area for the approval of software services as medical devices, to guarantee the control of bias and repeatability. Often, a human cannot realize on his own whether or not he is a victim of algorithmic abuse. An example of the inadequacy of "theoretical" laws: even if several laws are supposed to protect personal data, do they really? No objective guarantee, apart from those that service providers are willing to promise, but which remain unverifiable. Regulation will only be possible through digital tools for auditability and control. I have already heard that we need to develop the auditability of open source algorithms to guarantee their transparency. Is this the right approach? In reality, the answer is far from trivial, because putting the control methods of certain algorithms in the public domain will only facilitate the ways to circumvent them and, in fact, this transparency will serve malicious actors more. The project of optimal regulatory measures is really important. Interdisciplinary governance based on technological skills on the functional diagram of the whole is essential.

## ###ARTICLE\_START### ID:2040

Women may only represent 20% of workers in the science, technology, engineering and mathematics (STEM) sector, but some have impressive careers. Le Devoir presents two of them. Humans before machines "I entered mechanical engineering to design airplanes. Ultimately, what we were doing had nothing to do with that, but I loved it!" says Ève Langelier, who is now a full professor in the Department of Mechanical Engineering at the Université de Sherbrooke. Throughout her studies, the engineer specialized in human bioengineering, a sector that combines medicine, technology and mechanics. In her research, Ms. Langelier works to better understand the workings of the human machine. "We can design surgical equipment and medical instruments, but also try to understand how tendon lesions form, for example. We still have a broad spectrum of action," she emphasizes. Understanding, therefore, but above all offering solutions to tangible problems, such as those of Paralympic athletes. For the Vancouver Games in 2010, the professor's team worked with cross-country and alpine skiing professionals to improve their performances. "This is perhaps the place where there is the most innovation to be made, since the athletes all have different abilities and limitations," she explains. Ms. Langelier also holds the Chair for Women in Science and Engineering in Quebec, an initiative of the Natural Sciences and Engineering Research Council of Canada (NSERC) to counter the problem of female underrepresentation in the field. "If we wait for time to pass and for things to improve, we're going to wait a long time! We have to continue to take concrete action," says Ms. Langelier. The Chair organizes activities, meetings and workshops in schools from elementary to university, as well as training for teachers. To encourage people to pursue science studies, yes, but above all to ensure that they go well. "We organize workshops to help girls integrate into a predominantly male environment," explains the engineer. Diversity and gender diversity, the Chair's hobbyhorse? The organization offers training to help researchers take these factors into account in the composition of their teams, but also in their research methods. "We want to encourage researchers to think about the impact on women and minority groups when they set up studies," she concludes. Divide and conquer Joëlle Pineau divides her time between McGill University, where she holds a position as associate professor in the School of Computer Science, in addition to co-directing the Learning and Reasoning Laboratory, and Facebook's Montreal artificial intelligence research laboratory, where she works as director. In both spaces, her research focuses on reinforcement learning, a branch of machine learning: "We train intelligent agents with the goal of optimizing their behavior," explains the researcher. Thus, her teams program mathematical algorithms within the machines in order to send reward or punishment signals depending on the task accomplished. And since computers are programmed to want to access the reward, they improve their behavior quickly. "It's a bit inspired by psychology," notes Ms. Pineau. At McGill, most of the research is carried out within Mila, a pan-university research entity that brings together specialists in the field of deep and reinforcement learning. Concretely, their advances benefit the health sector, for example: "We work to optimize treatments for epilepsy, cancer and heart disease by using large data sets to personalize them." And at Facebook? The research overlaps a little, concedes the researcher, even if, ethically, we work less on it in health. The Montreal lab has only about thirty people, but Joëlle Pineau leads the entire research team, which is spread out in California, Seattle and Pittsburgh, among other places. "The unique thing about the group is that it's a research lab that's completely focused on open science. The projects I work on are published, the code is shared in open source. I can talk about it very explicitly and, most importantly, I can collaborate with university researchers. All of this allows the work to move forward much more quickly," she says. Although the name of the social network is attached to the lab, it's important to know that the projects lean toward fundamental research and not toward direct application for the platform. At McGill, as at Facebook AI, the goal is to move quickly... and keep up.

## ###ARTICLE\_START### ID:2041

The Ethereum digital platform, based on blockchain technology, is still relatively unknown to the general public. However, it could enable significant advances in various fields, including finance, believes Jeremy Clark, holder of the Industrial Research Chair in Blockchain Technology at Concordia University. Blockchains are most associated with bitcoin, a virtual currency that appeared in 2009. "It is the first completely decentralized currency to have been created," explains Jeremy Clark. Bitcoins are not associated with any bank or government. While bitcoin is just a currency, Ethereum is a blockchain platform "on which you can program whatever you want," explains the professor at the Institute for Information Systems Engineering in Concordia's Gina Cody School of Engineering and Computer Science. "Blockchains are based on a peer-to-peer network on the Internet," he continues. "These are computers, connected to each other, that operate the system. There is no one who is responsible for the system as such." Because of their decentralized and cryptographic operation, blockchains offer a secure environment for all types of transactions. Applications created on Ethereum are called decentralized applications. Their computer code is "open source" and they do not depend on any central authority. Ethereum has its own cryptocurrency, called ether. "The main problem with ether is its extreme volatility, like bitcoins." A much greater volatility than for state currencies, which are struggling with the most significant hyperinflation problems, he notes. Multiple applications With his research team, Jeremy Clark is exploring the different possible applications for blockchain technology. Among these: a contribution to the development of a more stable cryptocurrency, called stablecoin, and the establishment of a platform for order books. "We're looking at how we can build a marketplace for buyers and sellers directly on blockchains. So no one is responsible for the platform, but anyone can use it. Regulators are really interested in the feasibility of this project." Jeremy Clark is also exploring the issue of prediction markets. "It's a way of betting on future events." A prediction market can be created for any event where a winner will be crowned: an election, a sports match, a prestigious award. Each market participant bets on the competitor of their choice. So, the price of each competitor represents the probability that it will win. "It has been shown that the predictions of these markets are closer to reality than polls," notes Jeremy Clark, attributing this to the fact that participants bet their own money, which makes them more honest in their choices. Jeremy Clark is also working with the Autorité des marchés financiers and major accounting firms to determine how companies that use blockchain technology can be audited. "It's such a new technology. It's hard to establish exactly what it means to own a bitcoin," he says. "Our work helps establish how audits can be carried out. Our conclusion is that companies that operate in this new environment are facing the same issues as other companies, but simply in a different form." This content is produced in collaboration with Concordia University.

## ###ARTICLE\_START### ID:2042

Paria Shirani moved to Montreal from her native Iran six years ago. After earning a bachelor's and master's degree in Tehran, the young researcher came to begin a doctorate in information systems engineering, specifically in cybersecurity—a field where women are rarely found. "I've always been interested in problem solving, critical thinking, and anything encrypted," she explains. "I think cybersecurity and computer engineering are a bit of all of that. You have to innovate, look at problems from all angles, and above all, it's a hyper-practical and dynamic field." In her doctoral research, Shirani is interested in binary code analysis and fingerprinting software as vectors for virus or hacker attacks. And since the components of the codes of the tools that most companies use on a daily basis today form a whole, an attack could be fatal. "Our job is to do vulnerability analysis, that is, to check whether potential hackers could exploit vulnerabilities in the code, and therefore the entire system, since almost all devices and appliances are interconnected," continues the doctoral candidate. A threat to public safety For high-calibre companies with which Paria Sharini and her group work closely, such as Hydro-Québec and Google, a flaw could mean a threat to public safety. A general power outage in the middle of winter, for example, would represent a great danger for the population. In parallel with her doctoral project, the researcher works within the new Open-Source Cyber Fusion Centre, a pan-university research project that uses data from several companies to, for example, develop "cyberpersonas", groups of fictitious employees who have specific computer behaviours and, by the same token, different cybersecurity risks. "Some send confidential emails, others download a lot of data... With the help of artificial intelligence, we can uncover certain abnormal behaviors that could lead to cyberattacks or massive data leaks," continues the young researcher, who plans to continue her postdoctoral studies at the prestigious Carnegie-Mellon University in Pittsburgh next year. In the meantime, she wants to stay up to date on the trends in her field, which is evolving at a breathtaking pace.

## ###ARTICLE\_START### ID:2043

This cloud helps beat cancer. It's Microsoft's cloud." The advertising poster makes Evgeny Morozov, an American academic of Belarusian origin who is very critical of Silicon Valley, sigh. Annoyed, he posts a photo of the poster on Twitter and denounces its "solutionism" - a term he uses in his work to designate the tech giants' ideology according to which technology can help solve the most serious problems. A few months later, it happens again. The researcher comes across a poster from the same company, this time aimed at video game fans: "This cloud can turn gamers into titans." "I have a better slogan for Microsoft," he reacts on Twitter: "This cloud can turn any lame speech into gold." It's 2014, and the cloud has been the buzzword for several months, brandished and marketed at every turn. And what does it matter if passers-by don't understand much about it: in fact, the experts themselves don't always agree on the exact contours of this notion. Individuals are sold and forced to "save" their photos, music and files in this cloud, accessible from anywhere, on any device. Companies and communities are sold powerful hosting and computing capacities, adaptable in the blink of an eye to demand and its whims. In short: data storage and software operation are outsourced to remote servers, rather than using one's own device. Vincent Mosco, professor emeritus of sociology at Queen's University (Canada) and author of To the Cloud: Big Data in a Turbulent World (Routledge, 2014), places the emergence of the term "cloud computing" in 1996, used by the computer manufacturer Compaq, even though the technical concept, he writes, dates back to the beginnings of computing. According to the researcher, the choice of the word, which means "cloud," comes quite simply from the appearance of the diagrams representing the interconnected elements of a computer network. "It was not until 2006 that the term was used more widely, when companies like Google, Dell and Amazon began to seize it," Dell even having tried, in vain, to trademark the term "cloud computing." In the meantime, the Internet developed, as did the storage capacities and computing power of machines, paving the way for the cloud as we know it today. The general public began to take an interest in it a few years later, inundated with advertisements and services linked to this famous "cloud. Liberation of knowledge The term chosen to designate it is "the perfect metaphor for today's computing," believes Vincent Mosco. In the same way that clouds produce rain, [data centers] release a resource considered essential in today's world: knowledge. (...) The clouds of vapor in the sky soften the harsh contours of data centers (...). The image of the cloud naturalizes computing, gives it an organic aura," continues the researcher. In French, the cloud could have benefited from a translation avoiding the meteorological metaphor, just as "bogue" had officially replaced "bug," which literally meant "insect. The Académie française, for the moment, has not ruled on the translation of "cloud," and the Larousse and Robert dictionaries prefer "informatique en nuage." In Quebec, they opt for "infonuagique." The aerial image established by the industry is thus preserved. The word is pretty, summons poetry and proves very practical to make us forget the very concrete functioning of this system: far from the light and ethereal cloud, the cloud is based on countless machines, crammed into hectares of data centers scattered all over the planet, and extremely energy-hungry. In 2012, Greenpeace set the record straight. The NGO published a report entitled "Is Your Cloud Clean?", in which it highlighted the considerable environmental impact of the cloud, specifying that "these cloud data centers, many of which can be seen from space, consume an astronomical amount of electricity, some consuming the equivalent of 180,000 homes. But the black cloud of pollution is not the only one to threaten the beautiful narrative of the cloud. As early as 2008, the precursor of free software Richard Stallman described the rise of the cloud as "stupid" in the British newspaper The Guardian. “It’s worse than stupid,” he added, “it’s a marketing ploy. People say it’s inevitable, and the minute you hear someone say that, it’s probably a marketing ploy to make it happen.” In 2012, Apple co-founder Steve Wozniak expressed his concerns. “With the cloud, you own nothing. (…) The more you move to the cloud, the less control you have.” The company, which he left in 1987, has nevertheless become one of the main vectors of the democratization of the cloud, having imposed it on all its mobile devices. In 2012, it punctuated the advertisements for its iCloud service: “It’s automatic. It’s everywhere.”

## ###ARTICLE\_START### ID:2044

New developments after the attack on an LGBT activist during an anti-PMA demonstration close to "La Manif pour tous" in December in Nantes. On Monday on Twitter, the RN candidate, Eléonore Revel (photo), and her campaign manager, Wilfried Van Liempd, were accused of being linked to the thugs who attacked the counter-protesters that day - radical nationalists at the crossroads of neo-fascism and neo-Nazism. The information was revealed on Monday by the Twitter account @Primeralinea, which specializes in searching for open source information. The latter presented identification elements of one of the attackers. This young man with a Nazi symbol tattooed on his hand (an Odal rune, symbol of several SS units) is a regular martial arts practitioner who served in the French army. Presented as Valentin D., he belongs to the Arsouille Naoned group, fascist thugs gathered in this informal structure to throw punches. In September, for example, he participated in the boxing tournament organized by Génération identitaire Lyon. Above all, photos show him, accompanied by his accomplices, walking or talking with Wilfried Van Liempdet Eléonore Revel. Contacted by Libé, the latter acknowledges the veracity of the photos published on Twitter but denies any form of proximity with the young man or this group, about which she says she knows nothing.

## ###ARTICLE\_START### ID:2045

TELECOMS A strange atmosphere for a launch. Richard Yu, CEO of Huawei Consumer, makes his entrance on stage. In front of him, a huge and empty room. And for good reason, he is in Barcelona, where the Mobile World Congress (MWC) was to be held before its cancellation. Only a handful of Spanish journalists are therefore present. This is not the only paradox of this day. Despite the embargo put in place by Donald Trump since May, the group posted sales growth of 17% in 2019, with 240 million smartphones sold worldwide. A volume that makes the group the world number two, with a market share of 18.8%. And at the start of 2020, Huawei is already on 5G. In January alone, it has already sold more than 10 million 5G terminals, which places it at the top of this category. But Huawei is facing a huge strategic problem. Indeed, Washington has banned American companies from trading with it. It can no longer use the commercial version of Android, Google's smartphone operating system, nor Google's app store, Google Play. Richard Yu has found a way around it: its new smartphones are equipped with the free (opensource) version of Android and it has developed a new app store, Huawei AppGallery, which will have to be imposed against the major players Google and Apple. Richard Yu therefore devoted a long part of his speech to this app store, keen to promote it to the general public and developers. The group's message is simple: the users are there, there are already 400 million of them in the world and the essential applications are available, i.e. a few tens of thousands. Huawei is rolling out the red carpet for developers around the world, in order to enrich the available offer. It is multiplying events for them, the next one will take place in Paris on March 27. Security issues At the same time, the group has invested in facilitating the transition of applications from Google Play to the AppGallery. Some are transferred directly, others are specially developed. The third can be downloaded from websites. This is the case for all Facebook apps (Facebook, Instagram, WhatsApp, Messenger) and those of Google, notably YouTube. This bias did not please Google, which recommends its users not to use it, arguing that it poses security problems. Google has, in fact, every interest in stemming the rise of a serious competitor to its own application store. Especially since Huawei has rallied other Chinese manufacturers, notably Xiaomi, to its cause. The battle therefore continues, on commercial and political grounds, not to mention, communication, between the Chinese and the Americans. Keen to demonstrate that his group is innovating, Richard Yu also unveiled the Mate Xs, the new version of its folding smartphone. It is thinner, more powerful... and more expensive. The price is set at 2,499 euros! Like the previous one, it folds in two, like a tablet. Folded, it offers two screens of 6.4 and 6.6 inches and unfolded, one of 8 inches. It is equipped with the latest processors, 512 gigabytes of memory and already works with 5G. With this smartphone, Huawei intends above all to occupy the field of foldable devices. No question of taking the risk of seeing Samsung alone in the running, while the Korean unveiled its second foldable phone, the Z Flip, in mid-February. For more mainstream smartphones, at more affordable prices therefore, from the P range, we will have to wait until March 26, with the scheduled launch in Paris of the P40. In the meantime, Huawei will have opened its first Parisian store, on March 6, at Opéra. With these events, Huawei affirms, once again, that it intends to maintain, or even strengthen, its presence in France, despite the American embargo on its products and technologies.

## ###ARTICLE\_START### ID:2046

CITY Without context, transportation data is worthless. That's where geodata scientists come in, like Jean-Marc Favaro, co-founder of the start-up Fluctuo. This company has designed an application programming interface (API) that consults self-service bicycle, scooter and scooter applications every 15 minutes. It extracts raw data from which the geodata scientist will learn. "Mobility data is static: we only have the latitude, longitude, battery level, and the time at which we spotted a vehicle," explains Jean-Marc Favaro. My job is to build algorithms that analyze these millions of data points every day to reconstruct the number of journeys made, know their trajectories and count the available devices," he explains. These analyses are then presented in the form of visualizations, maps and tables available on a platform covering around forty cities. The geodata scientist is a mix of several pre-existing professions. Jean-Marc Favaro therefore considers himself to be a "Swiss army knife". "I do geomatics, geography, statistics and computer processing of databases. It takes a wide range of skills to manage the entire data chain." A mix that his career illustrates. He was first responsible for geomarketing studies in the private sector until the early 2000s, after a master's degree in econometrics and a DEA in geography. Then a statistician for four years at the CNRS, where he worked on modeling and simulations of human behavior on a city scale, as part of a doctorate in geography. Before returning to the private sector and statistical analysis, until a first position as a geodata scientist at AdMoove, a geolocalized marketing company, where he met one of the partners with whom he would found Fluctuo in 2017. "Big geodata" If this profession already existed before, split between several professions, it has evolved considerably. "The advent of big data (the processing of massive volumes of data, editor's note) has changed everything," assures Jean-Marc Favaro. "A few years ago, we had to deduce and guess more. Mobility was analyzed via surveys or small samples. Today, we use enormous samples with hundreds of millions of spreadsheet lines." Enough to allow the advent of "big geodata", the appearance of mountains of geographic data from GPS integrated into smartphones or bicycles, scooters and other scooters. The profession has also become more affordable, thanks to the appearance of open data, offering a quantity of information on the city and its public transport accessible for free. But also open source, free software whose code is freely reusable, and which has democratized the use of cartography. To support him and accompany the growth of his company, Jean-Marc Favaro plans to recruit other geodata scientists. What profiles is he looking for? Ideally the same as his, because "if you are not a geographer, you will spend your time reinventing the wheel. However, the tools used are very quantitative, so you need a statistical and computer science profile." "People who are strong in maths who loved history-geography at school," he sums up.

## ###ARTICLE\_START### ID:2047

SHERBROOKE - François Plante can barely move. A resident of the Argyll CHSLD, who suffers from a disease affecting his muscles, has not given up: thanks to 3D printers and with the help of technicians, he has built a mechanical arm that helps him open his drawers or hold a towel every day. And thanks to students from the Université de Sherbrooke, his arm could be even more useful. Two groups of five second-year robotics engineering students will help him improve his mechanical arm this semester. "We want to give him more autonomy than he has right now," explains Jacob Kealey, one of the collaborators. One team will focus on the tool, while the other will improve the application that Mr. Plante uses on his computer to operate it. The students will also try to develop an application for his mobile phone. The students aren't starting from scratch, since the arm that Plante developed was "pretty impressive," according to Kealey. "It's pretty exceptional. When I first heard about this project, I thought, 'Wow!' What he did is incredible. Before we saw it, we were wondering. When we saw it in real life, we were wondering what we could improve, it was so well done. We wanted to build on what he had done, not start from scratch, because there are parts that can be reused." "Every day, he has new ideas," he continues. The students will be able to fix a few shortcomings. The motor that moves Plante's arm up and down has a problem: in addition to overheating, it takes three minutes to go from one extreme to the other. "It's an easy problem to fix," assures Jacob Kealey. "This motor is too weak." It can be replaced to allow his arm to move faster so that his arm moves better vertically." His classmate Vincent Pelletier thinks that other details can be improved on Mr. Plante's tool. "It was pre-made equipment," he says. "It's made of aluminum, it's very rigid. Everything is open and something is missing to cover it. The gears are open, the wires are not hidden. These are some things we want to improve." Royalty-free In addition to helping François Plante, this university project could give a helping hand to many people, since the students' report will be royalty-free. "We are students, so we see a lot of theory. Here, we have experience that we would have at a professional level. Our project is "open source" so yes, we are helping François, but anyone can take this project and redo everything we did. They will have access to all the documentation," the young man rejoices. "People can take it, improve it and republish it. Without copyright, it’s a good approach for continuous improvement,” he continues. Since Mr. Plante has difficulty speaking, the students communicate with him mainly by email. “We don’t often have the chance to go see him. We come about once every two weeks to understand his needs and to take measurements on his arm. François communicates very well by email and responds quickly. Verbally, he has a little more difficulty expressing himself. But as we spend time with him, we understand him more. We take the time to understand what he’s telling us,” summarizes Jacob Kealey. tbrochu@latribune.qc.ca

## ###ARTICLE\_START### ID:2048

IT A page of history is turning for one of the oldest technology groups in the world. After eight years at the head of IBM, Virginia "Ginny" Rometty will hand over her position on April 6 to Arvind Krishna. The latter was promoted last year to vice president of the "cloud and cognitive software" division, which generates a third of the group's revenue. Arvind Krishna joined IBM in 1990 and has long led the group's technological developments. He is also considered one of the architects of the 2018 acquisition of Red Hat, a specialist in open source software for businesses. This $34 billion transaction is IBM's biggest bet. The former CEO of Red Hat, James Whitehurst, is also becoming president of IBM. This new organization chart clearly reflects the change of direction taken by "Big Blue" for the coming years. "Arvind is the right CEO for the new era at IBM," said Virginia Rometty. She will remain Executive Chairman of the Board of Directors until the end of the year, before retiring from the group. Profound transformation The first woman to become CEO of IBM, Ginny Rometty did not expect, after her arrival in 2012, to have to manage one of the most complicated periods in the life of the group. The emergence of "cloud computing" has completely shaken up the IT sector and IBM was not prepared for it. In 2012, the group held a strong position. In its first letter to shareholders, it congratulated itself on a triple record of profitability, available cash flow and earnings per share. At the time, IBM generated revenues of $104.5 billion, from sales of IT equipment and infrastructure to large companies. Revenues are recurring, margins comfortable at more than 22%. But AWS, Amazon's cloud subsidiary, turned the tables. Customers are attracted by this new approach to online data storage and processing, which allows them to access IT services without the costs of an internal infrastructure. They are shifting their IT spending to new players such as Amazon, Google or Microsoft, which are adapting much more quickly and strongly to the new market situation. Overwhelmed by this new wave of competition, IBM has been struggling for seven years, with a continuous decline in its revenues. Its heavy investments in artificial intelligence, with the Watson platform, are struggling to produce the expected results. In 2018, the acquisition of Red Hat is intended to strengthen its offering in the "hybrid cloud", which allows customers to manage their data between their internal servers and those of their cloud providers. At the beginning of January 2019, the IT group symbolically returned to growth, reaping the first fruits of its refocusing on "strategic imperatives" (cloud, data analysis, mobility, etc.). IBM has also positioned itself strongly on disruptive technologies such as blockchain or quantum computing, but their contribution is still small. With $77.1 billion in 2019, revenue remains 26% lower than in 2012. As does the share price. Rometty's detractors say the transition was too slow; her defenders say she put the group on the right track. The market welcomed this change of captain: the share price jumped nearly 5% after the announcement. Ginny Rometty's departure also marks the end of another era. After Meg Whitman (HP), Marissa Mayer (Yahoo!), Ginny Rometty was the last woman to lead a major technology group. A sector that regularly complains about its lack of diversity. At the last Tech for Good summit in Paris, 45 major groups including IBM committed to putting more women in their management by 2022.

## ###ARTICLE\_START### ID:2049

The 4th conference of the "Amazing Mathematics" cycle, Tuesday, January 28 at Paris-Jussieu University, takes us into the geological study of subsoils and large-scale digital simulations. Mélanie Plainchault and Julien Tierny, who have worked in particular on oil exploitation, present their mathematical approach, the topological analysis of data, for which they used "free algorithms and software such as the Topology ToolKit," explain the researchers. This mathematical field created by Poincaré in 1895 is very much alive.

## ###ARTICLE\_START### ID:2050

In one of these old covered passages in the heart of Paris, between shops and small restaurants in the Passage des Panoramas, behind a large bay window, stand out a large wooden table, vintage armchairs and a ceiling that looks like a work of art made of a tangle of wooden slats that descend on the walls of Bearstech. A huge teddy bear greets the visitor. At first glance, nothing distinguishes this company from one of the many start-ups located in this district of the capital. Nothing, except its status since it is a cooperative society (SCOP). Specializing in the digital services company (ESN) software libre (Cloud and DevOps), the SCOP of fourteen employees achieves a turnover of 1.2 million euros. Its clients are both large groups such as BNP Paribas and smaller companies such as Armor-Lux or Lagardère Plus. All employees are partners and together own the entire capital. "Our aim was to curb the powers of management," explains Pierre Arlais, the director. "To do this, we have three co-managers as well as a management committee, the "board", where, every month, all the salaried partners discuss important issues," such as defining salaries (increases are exclusively collective, but in fixed amounts and not as a percentage), hiring, strategic directions, investments, etc. Decisions are made by majority vote. Like any company, "we fight to be profitable and generate profit," explains the director, but all profits are redistributed to employees and invested in the company. Employee engagement The salary scale varies from 1 to 1.8. A family mutual insurance is 100% covered, gift vouchers and Chèque Déjeuner are at the legal maximum. Ten out of fourteen employees are 100% teleworking. Maurice Audin, a system administrator, took the plunge at the end of October 2019 and left Paris for Haute-Vienne. Participatory organizations are all the rage. "People are happier because their work has meaning. They have joined a project that aims for the sustainability of the business and not for quick profits," says Pierre Arlais. Management sees these models as a way to increase the responsiveness of their company, while improving employee engagement. Clément Ruffier, project manager at the National Agency for the Improvement of Working Conditions (Anact), confirms: "Numerous studies have shown that involving employees has an overall positive effect on the quality of life at work, but under certain conditions," he warns. "Thus, participatory spaces can be very disappointing if they remain in the hands of management. Beware of instrumentalization!" The participatory model is not associated with a single management style. For ergonomist Philippe Negroni, "SCOPs don't just assert their "participative" operation, they put it into practice." "I'm afraid that participatory models are shaky if they are not accompanied by sharing the fruits of labor," says Pierre Arlais. At Bearstech, 50% of the latter are devoted to work, 25% to dividends and 25% to reserves (a "war chest" in case of difficulty.) "As some companies practice "green-washing", others do "collaborative washing", explains the director. At Bearstech, everyone highlights the strengths of their company. For Emilie Garcia, administrative and financial manager, co-manager since June 2019, the advantage is "being integrated into everything the company does." Maurice Audin emphasizes "the democratic aspect and the absence of hierarchy. Mathieu Lecarme, R&D engineer, believes that the quality of life at work is nothing like that of the many IT services companies he previously worked for. "We are not just in the execution. We make efforts for ourselves and not for someone else." A major drawback for employees: salaries are lower than those of the market. But, although in a sector under extreme tension, Pierre Arlais remains calm: "The status of associate that we offer compensates for the salary." For Maurice Audin, "the quality of life at work is much higher than the salary gap. As for Mathieu Lecarme, he brushes the question aside, considering the salary "sufficient." According to the Association pour l'emploi des cadres (APEC), the median salary for executives is 38,000 euros in cooperatives and 40,000 euros in the private sector. SCOPs are not immune to internal problems either. "There are tensions and difficulties linked in particular to co-management and, sometimes, to the non-sharing of values," explains Philippe Negroni. New recruits are most of the time looking for a position and not to work specifically in a SCOP." Finally, SCOPs suffer from an image problem. "We are sometimes looked down upon by other companies, particularly those in our sector. Our environment is very entrepreneurial with great success stories whose aim is to generate a lot of profits," explains Pierre Arlais. The SCOP model is little and poorly known. It is very left-wing and we are seen as activists, embittered against capital. We do not have a dynamic image." Nevertheless, Pierre Arlais is convinced: "We offer a less consumerist, less rapid model, which is in line with the direction of our societies." "SCOPs represent a very virtuous model that has stood the test of time," notes Clément Ruffier. "Traditional" companies would benefit from taking inspiration from it.

## ###ARTICLE\_START### ID:2051

Few people have noticed, but the world of computing was the first to experience the crisis it itself caused. Not so long ago, it was not unusual to see computer software appear on the market with price tags of several thousand dollars. And the person writing these lines knows something about it, having made a living from it at a certain time, now gone. Due to scarcity, computer intelligence was expensive, very expensive even, and large companies made fortunes selling hyper-complex software that only large organizations and governments could afford. Think of Oracle, AutoCAD, SAS, WordPerfect, there are many examples. Of course, computers cost a fortune, but software did not give up its place. The hegemony of flagship products was such that none of their smaller competitors could even hope to attack their empires. Cause heard and judged: no one could have imagined that this could change one day. And yet, that changed, and here's why. One day, analysts and programmers began to deposit their source code into the public domain, for no compensation other than the personal satisfaction of making their work useful to society. This was called "open source" in English, or open software in French. The quality of the resulting software varied, of course. The products were not always easy to use and were generally very poorly documented, but those that stood out from the crowd, by attracting the attention of experts, almost automatically created around them a community of volunteer contributors who worked together to improve them, to the point where they began to threaten the flagship products and drive down prices. This gave rise to many of the computer software programs that support most of our activities today. The computers embedded in our cars are largely based on Java, a computer language that emerged from this movement. And Linux, this evolution of Unix developed by a certain Linus Torvalds, has invaded most of the computer servers and telecommunications equipment on the planet, in addition to running almost all of the cell phones and tablets in the world. In fact, there is almost no commercial software today that does not contain a significant dose of software components from the public domain. Fruitful volunteering Of course, large companies have taken advantage of the fruits of the work of these volunteer programmers in the shadows to make commercial products. But against all odds, volunteering has proven fruitful for everyone! The recognition of their contribution has allowed many of these developers to find paying jobs supporting and improving their work, or to earn their living as independent freelancers. And many others have been content with the recognition of their peers, earning their living in other ways, sometimes even in other sectors of activity. And the hegemony and excessive profits of companies holding flagship products have suddenly dissipated. The worker cooperatives that have just taken over the newspapers of Groupe Capitales Médias are, in the current circumstances, the closest thing to "open source" computing applied to the news media sector. They are home to passionate people, ready to invest themselves fully and collaborate in achieving common goals. For those who have not noticed, the "Opinions" section of the newspaper Le Soleil is increasingly rich and substantial, even though it is the result of the work of a small army of volunteer contributors like me, who still find their account there and ask for nothing in return other than the satisfaction of contributing to our democratic life. Of course, it takes strong, solid teams and organizations, with people whose paid job it is to select, correct and format the texts of volunteer contributors, in addition to providing their own professional service in journalistic research and the production of in-depth articles, but that's the beauty of it: the results are there for the synergy thus created. Do you want proof? Think of your iPhone, which is a professional and very neat layout of the Linux operating system on which it is based and without which it would not even exist! Still not convinced because your phone is an Android model? Google did exactly the same thing as Apple to develop Android and offer it to all other device manufacturers. There is no getting away from it, the collaborative/commercial model has imposed itself on all sectors of IT and it will do the same in the media. The giants that Apple and Google have become may ultimately be nothing more than flashy and, all things considered, vulnerable commercial facades, sitting on assets and software components that belong more to humanity than to their own shareholders. Their time will come when their commercial empires will collapse if they continue to squeeze the lemon, but Linux will survive them, because it does not belong to them. On the other hand, cooperatives, like open source software, are ultimately the best that humans have to offer: their cooperation in achieving common goals, with the added bonus of increased economic and commercial strength and vitality. They will never become commercial empires, but they will certainly be more resilient to the vagaries of technological, economic and social change. André Verville, Lévis

## ###ARTICLE\_START### ID:2052

Leipzig (Germany) - special correspondent - Nearly 18,000 participants, dozens of conferences twenty-four hours a day, four days in a row, at the Leipzig convention center in Germany... the reputation of the Chaos Communication Congress (CCC), which ended on Monday, December 30, 2019, is well established. Organized every year for thirty-six years, this gigantic gathering of hackers, militants and activists, dedicated to computer security and individual freedoms, placed the 2019 edition under the sign of the environment, around a slogan referring to both a computer attack technique and the preservation of the planet: "Resource exhaustion. "It makes sense: it's a major issue, and the environmental movement is a highlight of the year, right?, notes, with pink hair and megaphone in hand, Rune, a member of Fridays for Future, one of the international movements behind the youth marches for the climate. We are very happy that the CCC has opened its doors to us and supports us." The program of the gathering did indeed give pride of place to ecological themes and to organizations such as Fridays for Future or Extinction Rebellion, which each hosted one of the main conferences. The audience of the event, marked very left, is quite sensitive to environmental issues. The review of the year of Fridays for the Future was sold out; a conference on the way in which scientists establish their climate models had to turn people away. This "do it yourself" spirit, omnipresent in hacker culture in general and at the CCC in particular, lends itself easily to an environmental translation. The collective Runder Tisch Reparatur, which campaigns for the adoption at the European level of a "right to repair", was thus invited for the first time to the conference. The philosophy of the movement, which aims above all to reduce the amount of waste produced by obsolescence, whether planned or not, is very similar to that of the free software movement, say Eduard and Erik, who are running the association's stand. "An object that you can't repair doesn't really belong to you," they say, just as the promoters of free software believe that software that you can't modify yourself deprives you of certain freedoms. Minimal consumption But the main issue, at the heart of many conferences during the four days of debates, is that of the energy impact of the Internet. No one in the aisles of the Leipzig congress center is considering reducing its use, but everyone concedes that the network consumes a lot of electricity unnecessarily, or by using too much fossil fuel. "There are simple things to implement to improve the carbon footprint of a site or a service," explains Chris Adams, environmental activist and member of the Green Web Foundation. "If your service uses Amazon Web Service [AWS, a very popular cloud computing service], you can, for example, choose the data center you want to use. The one assigned to you by default may be in a country that produces little renewable electricity and uses a lot of coal for its power plants..." There are also tools, sometimes updated, such as off-peak hours at night when electricity is both less expensive and less environmentally impactful. A digital equivalent of the old programmers that let you run a load of laundry at night, Chris Adams praises the Low Carbon Kubernetes Scheduler, a tool that optimizes a server's electricity consumption to limit its environmental impact. But the "greenest" electricity is still the one you don't use. Here too, promising solutions exist: Hannes Mehnert, a German computer scientist, presented at the opening of the CCC his MirageOS project, an ultra-minimalist server operating system, coded in a language known for its lightness, which runs each process in a dedicated virtual machine. A radical approach reserved for connoisseurs that allows the software to only embed the strict minimum of lines of code in each compiled version. "Reducing complexity mathematically reduces the number of calculation operations required," assures Mr. Mehnert. Result: "A carbon footprint that drops drastically, with ten times less computing power used by the processor, and up to twenty-five times less memory used," according to his measurements. A strong argument in an arena devoted above all to computer security, minimalism is also a real advantage in terms of potential vulnerabilities: the more compact a code is, the less likely it is to contain flaws or errors. Operating systems that are less memory-hungry are also better protected, with many security flaws exploiting cases of machine memory saturation. Beyond these technical aspects, the alliance between environmentalists and privacy advocates seemed to take shape at the convention center. In the halls, stencils denounced CO2 consumption; posters from anarchist and anti-fascist movements were mixed with flyers from the Hackers against Climate Change collective. This common ground between hackers and climate activists is hardly surprising in Germany, where both movements are very present, and even less so in Leipzig, a flagship city of the former GDR, where the pre-Internet mass surveillance tools of the Stasi, the East German secret police, were also directed against environmental activists in the 1980s. Some environmental movements feel close to the anarchist spirit of the German hackers of the Chaos Computer Club, which organizes the CCC: a conference hosted by Extinction Rebellion explained in detail the security measures, but also the way in which the movement had freed itself from the tools offered by Facebook, Google or Amazon, suspected of both complicity in mass surveillance and "green washing". However, in this general atmosphere of sacred union, some questions remained unanswered. In some cases, better computer security can also be more resource-intensive. A conference devoted to encrypted messaging, for example, presented numerous tools that make it possible to strengthen the confidentiality of exchanges, but also require using more computing power to encrypt or decrypt messages, or to send large quantities of data to scramble the origin or volume of a message.

## ###ARTICLE\_START### ID:2053

JUSTICE Artificial intelligence applied to law was supposed to be the new digital El Dorado, capable of generating French-style unicorns. In terms of success, legal publishers and start-ups run by dynamic young wolves loaded with degrees are floundering in the dark. "We only have one certainty today, which is who will be responsible for dissemination," smiles Fabien Girard de Barros, one of the historic founders of Lexbase, the first legaltech created twenty years ago and with a well-established reputation. After four years of political procrastination, a fierce war between the first legaltechs and legal publishers to collect court decisions, and warnings from traditional legal professionals, the provision of court decisions has almost come to a standstill. The luckiest operators manage to collect 80,000 first instance decisions out of the 3.3 million coming out each year, particularly from the high courts and district courts. Very few of the 210,000 decisions of administrative courts are also filtered. That is, much less than before 2015, when Emmanuel Macron, then Minister of Economy and Finance, decreed open data for public data in order to revive the digital economy. Two databases exist: Ariane, piloted by the Council of State, which for six years has been putting online a selection of its decisions and those of its courts of appeal already anonymized. In total, 140,000 decisions and 230,000 documents. And Jurica, marketed by the Court of Cassation, which totals 2 million judicial decisions digitized since 2007, and which offers 4% of the decisions of courts of appeal already published on Légifrance, as well as a limited supplement for the use of publishers. It is up to the latter to anonymize them under penalty of prosecution for invasion of the privacy of the parties. An oddity, since the Court of Cassation is theoretically responsible for what it disseminates, and is therefore itself liable to prosecution in the event of a breach. Last November, however, the Chancellery finally released its draft implementing decree for the Lemaire law on the liberalization of public data dating back to... 2016. However, no application date is given. The date of 2022 is being circulated under the table. "The courts do not have the tools to send these first instance decisions up to the supreme courts given the volume," publishers and legaltechs point out. Over the past year, the Court of Cassation has hired around ten data scientists to build new software to anonymize the decisions sent up. "Among the best," smiles Michaël Benesty, an engineer in the research and development department of the publisher Lefèbvre-Sarrut, who is kindly supporting the Court of Cassation's research. "We have taken the logarithms of the online seller Zalando in open source and boosted them to accelerate the pseudonymization of court decisions." But the solution of the Court of Cassation, which is valid for a few hundred thousand highly formalized decisions of the courts of appeal, is inapplicable to millions of first instance decisions whose wording is almost specific to each magistrate. Because the heart of the debate is always that of the anonymization of decisions made available to the general public. Over time and difficulties, the Chancellery has gradually slipped from the concept of anonymization to that of pseudonymization, which consists of only masking names. Enough to increase the risks of "re-identification" and therefore of prosecutions for invasion of privacy. At the same time, magistrates who had already obtained that no statistics could be drawn up from their name, will be able to request on a case-by-case basis that their name be hidden. "We are going to arrive at this paradox that the litigant will be more identifiable than the magistrates, while open data aims to ensure the proper functioning of justice, the application of the rule of law and not to monitor citizens", regrets Fabien Waechter, another founder of Lexbase who is worried about a debate that has not advanced one iota for ten years. "If we truly want to anonymize, human intervention is inevitable", believes Michaël Benesty. A point well understood by the magistrates, some of whose representatives, including the Magistrates' Union, denounce "the obligation tomorrow for magistrates to have to anonymize their decision by hand". A titanic and Kafkaesque undertaking. But the decree also introduces a new concept that bristles even traditional publishers: the possibility of hiding the name of any person (magistrate, lawyer, third party, expert... but also any company). Names, addresses, all personal references will then be replaced by three small dots. "How then do you want to understand the meaning of the decision?" worries Michaël Benesty. In any case, the text establishes a first principle: the supreme courts - the Court of Cassation and the Council of State - will be "responsible for making the decisions rendered available to the public". A point that partly reassures the National Council of Bars through its president Christiane Féral-Schuhl. A year ago, the latter signed an agreement with the Court of Cassation for the establishment of an algorithm regulatory authority. Even if this committee is still in limbo, it is preparing to do the same with the Council of State. Christiane Féral-Schuhl is fighting so "that the consolidation and management of this future database is not in the hands of private actors. "Court decisions - both judicial and administrative - are not commercial data to be placed in the hands of private operators, some of whom have been bought by foreign players and who can bias analyses through the use of algorithms," she says. However, she has not obtained access for lawyers, like magistrates, to the raw database. "An inequality of arms," she denounces. For their part, legaltechs are concerned about the opacity of the selection of decisions by the supreme courts. Indeed, the decree is silent on this point. "We have no guarantee on the pluralism of decisions, on those that will, for example, diverge from the Court of Cassation. However, we need all the subtleties of the decisions to understand the law," insists Fabien Girard de Barros. The work is still on the job.

## ###ARTICLE\_START### ID:2054

The French government is proposing the deployment of a platform called Health Data Hub (HDH) to develop artificial intelligence applied to health. The HDH aims to become a one-stop shop for access to all health data. The data concerned are those from hospitals, pharmacies, shared medical records and research data from various registers. The quantity of data hosted is set to explode, particularly with the emergence of genomics, imaging and connected objects. It is planned that this data will be stored at Microsoft Azure, the public cloud of the American giant Microsoft. This choice is at the heart of our concerns. The Gafam (Google, Apple, Facebook, Amazon and Microsoft), start-ups and even insurers could access health data and the financial power that it represents, if these companies demonstrate that their research projects can be used for the "public interest", a relatively vague concept. In addition, the use of Microsoft is regulated by paid licenses. Even if discussions are being held to ensure the reversibility of the American platform, it seems difficult to change it. We know the risks of digital captivity, particularly with the contracts between Microsoft and hospitals. In 2018, the American government adopted a text called the Cloud Act, which allows American justice to have access to data stored in third countries. In September, the president of the National Commission for Information Technology and Civil Liberties (CNIL) stated to the National Assembly that this text is contrary to the General Data Protection Regulation (GDPR), which protects European citizens. In concrete terms, patients could be subject to a breach of medical confidentiality, which constitutes a danger that is both personal and symbolic, with the integrity of the Hippocratic oath being called into question. In addition, the HDH is developing on a centralized model, with the consequence of a higher impact in the event of a computer hack. One might think that Gafam offers ultra-secure solutions. This argument does not hold water. Indeed, attacks often come from the inside, that is, from personnel who have access to the data. Although the data hosted by the HDH is de-identified, complete anonymity is impossible, because it is enough to cross-reference a limited number of data to re-identify a patient. In addition, the medical-administrative database of the National Health Data System (SNDS), integrated into the HDH, has been criticized by the CNIL for the obsolescence of its encryption algorithm. The trust that constitutes the care relationship between patients and caregivers is based on multiple factors, including secrecy, which is essential. According to a recent survey, the hospital is even the institution in which the French have the most trust. What would be the impact of a loss of trust, if massive data leaks were proven? Promoting decentralization We are convinced of the interest of data research and the development of statistical tools in medicine. However, there are alternatives that protect privacy and medical confidentiality, by guaranteeing the independence and collective control of infrastructures. For several years, hospitals have been creating health data warehouses with the aim of collecting locally generated data for analysis. An effort is being made to promote decentralization and exchange between regions and our European neighbors, while preserving data security. Researchers and hospitals have significant expertise, because they produce and collect data with the aim of moving towards digital hospitals. Thus, the development of new technologies within hospitals will strengthen the interconnection between care and research. The European Organization for Nuclear Research (CERN) recently launched the Malt project, for Microsoft Alternatives, aimed at replacing as much commercial software as possible with free software. We could follow this example and promote self-managed "clouds". Decentralization combined with the interoperability of information systems and federated learning (as opposed to the centralized approach) helps promote networked research by preserving, on the one hand, the confidentiality of data and, on the other hand, the security of their storage. This technique allows algorithms to travel to each partner center without centralizing the data. Decentralization maintains the skills (engineers, caregivers) needed to qualify health data locally. The exploitation of health data on a "proprietary" platform, such as Microsoft's, exposes multiple risks. The Cloud Act-GDPR incompatibility, Europe's digital autonomy and the possible loss of patient trust are important issues to put at the center of the public debate. As the National Council of the Order of Physicians had done, we reaffirm a fundamental principle: "Let us act so that France and Europe are not vassalized by the supranational digital giants." "Health data is both a commodity for patients and the inalienable heritage of the community. It is essential to keep control over the technologies used and prevent the privatization of health. We call for the sharing of algorithms and analysis software that are transparent and useful to patients. By promoting free software and culture, we will commit to innovative, supportive, affordable health that is accessible to all.

## ###ARTICLE\_START### ID:2055

If social networks allow a company's products to be given visibility, it must also open an online store where Internet users will make their purchases. 1 Register a domain name For your website, choose a short and punchy name, avoiding a name that is too French if you plan to sell abroad. You can check the availability of a domain name on the website of the French Association for Internet Naming in Cooperation (Afnic). The name of the site will be the same as that of the brand that will have been protected by a registration with the INPI (National Institute of Industrial Property). If you entrust the creation of the site to a service provider, check that you are the owner of the domain name and that they are simply the administrative contact. A shady service provider "could ask you for money to resell your own domain name to you", warns the DGCCRF, Directorate for Competition and Fraud Control. 2 Build your e-commerce site You don't need to be a seasoned coder to set up your online sales business. Most businesses use an online store engine, also called CMS for Content Management System. In France, 80% of businesses use an open source web application (Prestashop, Magento, WooCommerce developed by Wordpress). The other option is to take a subscription solution in SaaS (Software as a Service) mode such as Shopify, Oxatis or BigCommerce. More than half of American e-retailers have opted for this possibility. "SaaS platforms provide all the necessary features for your online store," explains Julien Sylvain, who founded the mattress sales site tediber.com. The price of the basic version of Shopify is 2% of the transaction amount, to which is added a monthly fee of $29. The advantage of open source applications like Prestashop is that there are no limits on customization, but you have to pay for the services of a developer. "It becomes interesting when sales exceed a million euros," says Julien Sylvain. 3 Take care of design and features E-commerce is a ruthless world where the competition is always just two clicks away. "99% of consumers who enter a supermarket buy at least one product, but around 2% of Internet users who visit an e-commerce site make a purchase," says Marc Schillaci, founder and CEO of Oxatis. To stand out against already well-known platforms, an online store must above all inspire confidence. Clear positioning, an attractive design, a complete description of the products and attractive photos will give the site credibility. If you use a service provider for the design or content of the site, demand a transfer of copyright upon signing the contract, referring to Article L.131-3 of the Intellectual Property Code. It is also important to describe the delivery, return and cancellation conditions precisely and to provide you with a customer service worthy of the name. Otherwise, the reputation of your e-store will quickly be tarnished on the forums. It is important to give Internet users the choice between several payment solutions, as some consumers prefer to pay for their purchases with Paypal or Paylib rather than with their credit card number. Payment features are managed by major platforms such as Oxatis or Magento. Finally, selling abroad involves adapting to local habits. For example, in Germany, "you absolutely must offer payment by direct debit, otherwise you will only make 30% of your sales," emphasizes Marc Schillaci. 4 Comply with the GDPR Coming into force in Europe in May 2018, the General Data Protection Regulation (GDPR) requires, among other things, securing the information collected on your customers: postal address, email, etc. It is therefore better to use well-established platforms such as Shopify or WooCommerce, which invest significant sums in cybersecurity. "You have the right to send newsletters to customers who have left you their contact details and even to simple prospects if your e-commerce site targets professionals, as long as these recipients can unsubscribe and provided that they have been informed," says Sandra Azria, a lawyer specializing in new technologies. The GDPR requires that information on your customers be stored on servers located in Europe. It is therefore better to favor French publishers such as SendinBlue or MailJet rather than American services like MailChimp to manage the sending of newsletters and email campaigns. "Cookies that allow more flexible use of your site are authorized provided that the user is notified. But targeted advertising or social media cookies require the user's consent, the validity period of which cannot exceed thirteen months," adds Sandra Azria. To check that you are complying with the regulations, download the CNIL guide for VSEs and SMEs. 5 Write the T&Cs There is no standard model for general terms and conditions of use (GTC) and general terms and conditions of sale (GTC). Depending on whether you are selling to businesses (B2B) or individuals (B2C), it is either the commercial code or the consumer code. With notable differences depending on the type of goods sold. "The right of withdrawal, for example, does not apply to certain products such as customizable clothing," explains Sandra Azria. Similarly, if you sell toys, remember to specify that they are not suitable for children under a certain age. Otherwise, you could be sued in the event of an accident. "Most entrepreneurs simply copy and paste the competitor's T&Cs, which results in a rather disgusting result, our Sandra Azria. To be sure of being in line, you need to go through a lawyer. Expect to pay 1,500 to 2,000 euros. Those who cannot afford it should at least consult the Service Public Pro website." 6 Select a delivery service provider The majority of French e-commerce sites use Colissimo, a La Poste parcel delivery service for individuals. If the goods are bulky, you will need to use the services of a specialist carrier such as France Express. 7 Don't forget the legal notices The mandatory legal notices specify the name and address of the company, indicate its Siret number, the amount of its capital and the name of the website host. The exhaustive list of information to be entered on the government website is available on the Service Public Pro website. 8 Open an account on a marketplace In addition to an e-store, it may be wise to offer your products on the marketplaces of large e-commerce sites such as Amazon, eBay or Cdiscount. "It's a good channel to launch at a lower cost outside your borders," explains Marc Schillaci. These platforms charge a commission of 10 to 15%. "I recommend only putting your flagship product on Amazon," says Julien Sylvain de Tediber. The bet is that Internet users will then go to your site to discover the rest of your offer. - Useful links for creating your online store: .French Association for Internet Naming in Cooperation (Afnic): www.afnic.fr .National Institute of Industrial Property (Inpi): www.inpi.fr . Public Pro Service: www.service-public.fr/professionals-entreprises .National Commission for Information Technology and Civil Liberties (Cnil): www.cnil.fr

## ###ARTICLE\_START### ID:2056

With his white beard and discreet smile, Franck Pfeiffer has more the attributes of Santa Claus than those of a web star. And yet. This former model maker, reconverted into a master soap maker, regularly puts himself in the spotlight on Instagram. With Philippe Maradan, his "teenage friend", met around a table football, they created the soap brand Gaiia just ten years ago. Thanks to their blog first, and to social networks today, the two men now sell several tens of thousands of soaps per year, almost without intermediaries! Craftsmanship, French manufacturing, in Montelier in the Drôme, slow cosmetics label, vegan: the project is at the crossroads of multiple "Instagram friendly" consumer trends. For Gaiia, the story began in 2009. At the time, the two friends who described themselves as "soap enthusiasts" wanted to restore the nobility of this product. "I am a loyal user, I have never switched to shower gel," assures the entrepreneur. At one point, I committed to using liquid shampoo, but it didn't last." Their passion would be their only baggage. The two men started with 5,000 euros of personal funds and no particular knowledge. In India, Philippe Maradan discovered an ancestral manufacturing method: cold saponification. Very energy-efficient and low-polluting, the technique made from vegetable oils (coconut, olive, sunflower, shea, etc.) produces a soap that is gentle on the skin and biodegradable. Convinced of their recipe and its benefits, the two men began evangelizing the masses on the cold process. "When we started in 2009, there were barely five cold soap makers in France, today there are 350 of us enthusiasts who have created our micro-soap factories," rejoices the creator. "We didn't have much money." At the time, Instagram didn't exist, Facebook was just starting to make a place for itself in conversations. It was on a blog that Franck Pfeiffer decided to tell his adventure, his discoveries and his disappointments. Very quickly, a small community was loyal. "The blog quickly brought together quite a few people," says Franck Pfeiffer. "It became a sort of star that attracted people who were interested in soap, cosmetics, do it yourself... We had up to a hundred comments per post." When in 2011, the two friends began to sell their first soaps on their website, the orders poured in immediately. "Recently, I heard about the concept of DNVB and I recognized myself," smiles Franck Pfeiffer. "That's exactly what we did empirically: we didn't have a lot of money, we weren't famous, but we used the internet as a vector for communication and sales." His initial training as a graphic designer helped him create the site, the blog's communication, the logo and understand the mechanisms of natural referencing on the internet. "We created a product, a brand and a distribution channel," adds the soap maker. "This year, we have already made 400,000 euros in sales, not counting Christmas." To accentuate the community effect, the entrepreneur created a logo to identify products made using cold saponification and made it available to everyone in 2010, in open source, free of rights. Here again, the concept appealed beyond his expectations. It was picked up by an entire community that meets on the Facebook page of the Association of New Soap Makers (ADNS). When comments on the blog became rarer, Gaiia made its debut on Instagram. Today, the brand has nearly 5,000 fans on this network and 6,000 on Facebook. You can see Franck's apron whitened with the day's products, or Philippe whipping up the next batch. "We share our daily life with those who follow us. Our community is certainly small, but very active,” says the soap maker. In addition to the website, Gaiia now makes 10% of its sales in pharmacies. The company, which employs 5 people, makes 900 soaps per day and ships all its orders directly. On the evangelization side, the founders have a new hobby horse: sodium tallowate. This ingredient “from rendering waste” is apparently present in most soaps on the market. And the duo is counting on the echo chamber of social networks to denounce it.

## ###ARTICLE\_START### ID:2057

DOCUMENTARY - What is the acronym OSINT, still little known to the general public, the name of? "Opensource intelligence" and its derivative, "opensource investigation", are at the origin of resounding scoops and major investigations published in recent years. Last May, the European Press Prize rewarded the work of investigators belonging to the Bellingcat organization, an investigation based on public data and which was completed thanks to a handful of employees and dozens of independent and volunteer contributors. The key was the identification of the poisoners of the former Russian double agent Sergei Skripal and his daughter Yulia. Led by Eliot Higgins, a thirty-something Englishman with an atypical profile, fired from his last administrative position and a compulsive and obsessive tracker of information on the Internet, this team, which has members all over Europe, works to authenticate videos posted on social networks, geolocate photographs, track suspicious movements... in order to, ultimately, thwart propaganda and disinformation. Their list of conquests is impressive: it is to them, among others, that we owe the clues allowing us to attribute the attack on flight MH17 to pro-Russian militia fighting in Ukraine. Their methods, accessible to everyone provided they know how to use them, are based on software, images and freely accessible databases Google Earth and YouTube, in particular and, above all, on the meticulous work of contributors, who devote a number of hours to research that few newsrooms are able to provide. It is to pass on this know-how that Eliot Higgins created Bellingcat, he explains in this fascinating documentary, directed by the Dutchman Hans Pool, which shows the unsexy daily life of these citizen journalists, most of them self-taught, whose work allows, beyond informing the public, to gather evidence for criminal prosecutions. Richly informed, sometimes moving, the film does not avoid delicate questions, such as that of the legitimacy of these "geeks" glued to their screens night and day, and gives us a look at what investigative journalism offers that is most exciting at the moment. Bellingcat, the freedom fighters, by Hans Pool (PB, 2018, 90 min).

## ###ARTICLE\_START### ID:2058

FESTIVALS This year, Christmas is celebrated in blue-white-red. Because innovation is not limited to the productions of large American groups and Asian manufacturers. In Paris, Lyon, in the north or south of France, a number of companies regularly demonstrate France's ability to imagine bold and attractive new products. An opportunity for those looking for original and national gifts. A concrete speaker! THE PARISIAN PAVING STONE (1) Made in Paris, this minimalist Bluetooth speaker is not lacking in allure. And for good reason: it is made of a concrete block, an inert material that guarantees the total absence of parasitic vibration. The object is heavy, certainly (3 kg), but it will easily fit on a bookcase shelf (ideally in double to benefit from stereo listening). The speaker can also be installed outdoors, on a terrace or in a garden, since it has a battery that gives it a day of autonomy. The sound is powerful (20 watts) and detailed, even if it mainly gives pride of place to the midrange. In addition to the wireless connection, it can be connected to other devices thanks to its mini-jack input. All the components, from the speakers to the electronic card, are "made in France". 350 euros. More info on lepaveparisien.com The alternative from elsewhere Bose Portable Home Speaker, a portable speaker with both Bluetooth and Wi-Fi that broadcasts 360-degree sound. 369.95 euros. Good vibrations STUDIO-DUROY BASSME (4) The idea is original: to immerse yourself in a big-budget film, a video game or during a concert broadcast, this small belt is placed on the shoulder and its miniature subwoofer resonates on the chest, using the ribcage as a resonance box. Created by a start-up from Perpignan, BassMe is aimed in particular at those who use headphones or virtual reality headsets and who want to feel more of the sound effects produced in the lower end of the frequency spectrum. It is also used in some movie theaters. The rendering is particularly interesting in action games, amplifying the sounds of gunfire and impacts. The device connects via Bluetooth or audio cable to a game console, computer, television or tablet. 129 euros. Order on bassme.fr The alternative from elsewhere Sennheiser Momentum Wireless 3, a comfortable and effective noise-canceling Bluetooth headset that produces excellent sound quality. 399 euros Reading in freedom VIVLIO TOUCH HD PLUS (3) We are familiar with Kindle, Kobo or Bookeen e-readers, and now a small French company intends to make a place for itself in this highly sought-after sector. Founded by Guillaume Decitre and supported by several French book manufacturers, Vivlio offers three models of e-readers that can store texts on a memory card, with a catalog of more than a million e-books (including audiobooks and mangas) including digital works that can be consulted freely at bookstores and an "open source" file format. The Touch HD Plus is equipped with a 6-inch backlit e-ink screen and is splash-resistant. It can be connected via Bluetooth or an audio cord to headphones to listen to audiobooks or voice synthesis. 150 euros. Available at Furet du Nord, Cultura, LDLC, Boulanger and several independent bookstores. The alternative from elsewhere Rakuten Kobo Forma, an extra-thin and ultra-light, waterproof e-reader with an 8-inch anti-blue light screen, 250 euros. The BIONICBIRD METAFLY dragonfly drone (2) Should a drone necessarily stick to the utilitarian look that characterizes most current models? No, says the start-up BionicBird, which launched a surprising flying machine in the shape of a bird in 2015. Today, its latest creation takes the form of... a sort of butterfly crossed with a dragonfly! It's the Metafly, launched on Kickstarter and now available commercially. Controlled remotely with its remote control, the object weighing only 10 g behaves like a lepidoptera: it flaps its wings to fly, spreads them to glide and lands on its legs. Its small size and adjustable speed (between 5 and 20 km/h) mean it can be used both indoors and outdoors. The flexible material parts are shock and fall resistant, says its creator. 119 euros. More information: bionicbird.com The alternative from elsewhere DJI Mavic Mini, a miniature drone that is particularly easy to pilot and capable of making superb videos in 4K and Full HD. 399 euros.

## ###ARTICLE\_START### ID:2059

In the early 2000s, the monopoly granted to pharmaceutical industries by the patent system was at the heart of the fight for access to HIV treatments in countries of the South. In those most affected by the AIDS pandemic, infected patients died by the millions due to the cost of treatment. The scandal thus provoked forced countries of the North to react. In 2002, the Global Fund to Fight AIDS, Tuberculosis and Malaria was thus created, whose sixth replenishment conference, held in Lyon from October 8 to 10, raised $14 billion (€12.7 million). According to its estimates, 18.9 million people were on HIV treatment in 2018 in countries of the South, thanks to the financial support of the Fund which allows access to generic medicines. A central issue, that of intellectual property, was absent from the program. However, it continues to divide, and more and more voices are denouncing the inequalities caused by the patent system, which are now reaching countries in the North due to the exorbitant costs of new treatments for cancers, rare diseases and hepatitis C. "The Global Fund concerns three diseases: AIDS, tuberculosis and malaria. The question of intellectual property arises with AIDS because antiretrovirals are very profitable [and patented] drugs, and the pharmaceutical industry is investing in them. Tuberculosis and malaria, on the contrary, are diseases of the poor for which it develops very little research," denounces Khalil El Ouardighi, of Coalition Plus, which brings together fifteen international organizations fighting AIDS. On tuberculosis, apart from bedaquiline and delamanid, which were recently marketed, most of the drugs available are old, and the labs do not market them because they are not profitable. " "From the moment you have a monopoly, you can lock down the market and you tend to make the product expensive and limit access to it, adds Jean-François Alesandrini, advisor to Drugs for Neglected Diseases Initiative (DNDI), an organization created in 2003 to promote the development of drugs against neglected diseases that are prevalent in countries of the South. The discourse that justifies the patent system by the need to finance innovations in research and development does not hold up. It has been demonstrated for twenty years that, if misused, patents can constitute a brake on innovation and access. " Denouncing the abandonment by the Coalition for Innovation in Epidemic Preparedness (CEPI) of a bold intellectual property policy, the battle engaged in recent months by Doctors Without Borders (MSF) bears witness to the resistance. Created in 2017, in response to the 2014 Ebola epidemic, at the instigation of the World Economic Forum, CEPI is funded to the tune of $750 million by Norwegian, German, Canadian and Australian public funds, as well as by the Bill & Melinda Gates Foundation and the Wellcome Trust, two powerful foundations involved in public health in countries of the South. CEPI's mission is to finance research and development of vaccines against emerging diseases causing epidemics in these countries, including Ebola, chikungunya, dengue fever, and the coronavirus responsible for Middle East respiratory syndrome (MERS). In addition, it is not only about developing these vaccines, but also making them accessible to the populations concerned. "The reason for CEPI's existence is to accelerate the development of vaccines in countries where there is no commercial interest," explains Peter Piot, member of CEPI's "audit and risk" committee. During the Ebola epidemic in 2014, one of the recommendations was to promote support mechanisms for vaccine development. CEPI must not favor labs to the detriment of the taxpayer." Hence the importance for CEPI to adopt an access policy that, without dissuading pharmaceutical laboratories, prevents monopoly taking. According to its initial intentions, the beneficiaries of its funding were not to make a profit from the products developed beyond a reasonable margin agreed in advance. CEPI's first policy thus provided for specific commitments in terms of intellectual property, pricing, transparency and sharing of knowledge and information: "CEPI must have access to intellectual property, know-how, trade secrets and any other knowledge necessary for technology transfer in the event that the beneficiaries of its funding withdraw from the development of a vaccine. » But in the fall of 2018, this policy was replaced by five broad general principles that leave significant room for maneuver to the beneficiaries of its grants, particularly manufacturers. In its new standard contracts for the development of vaccines against chikungunya and Rift Valley fever, CEPI offers them the possibility of “owning and using all intellectual property, data and materials resulting from this research,” thus promising a return on investment. “CEPI’s [new] policy (...) is a worrying step backwards, because it no longer guarantees that vaccines funded by CEPI will be made accessible at an affordable price,” warned MSF in an open letter on March 5. The NGO, which had contributed to the development of the first policy, sees it as “a textbook case on the issue of public return on public investment. “We are losing the ability to control the price, so we are putting ourselves in a position where we cannot guarantee accessibility,” insists Gaëlle Krikorian, head of MSF’s campaign for access to essential medicines. The WTO to promote free trade To understand the stakes of this battle, we must go back to the 1990s, when the World Trade Organization (WTO), an international body designed to regulate trade in order to promote free trade, was created. Several pharmaceutical giants led by Pfizer saw it as a way to impose rules on member countries that would restrict the production of generic drugs, freely authorized in poor countries where they competed with them. This is how the agreements on trade-related aspects of intellectual property rights (TRIPS) were born, which made the use of patented drugs mandatory by all member countries, with the justification being the need for the industry to make the costs of research and development of its drugs profitable. The figure regularly announced by its defenders was 2 billion euros per molecule, without the details of the costs being known, nor the degree of innovation represented by these drugs. The TRIPS agreements also provided for exceptional measures authorizing governments to produce or import generic drugs in the event of a health crisis. But the appearance of antiviral drugs marketed in 1996 revealed their limits. In practice, the application of these measures was often followed by sanctions or legal action, as when, in South Africa, Nelson Mandela's government found itself sued by thirty-nine pharmaceutical groups in the late 1990s after a law was passed that circumvented the patent system. This resulted in a trial in Pretoria in 2001, from which the South African government, supported by numerous international organizations, emerged victorious. By revealing the mercantile nature of the patent system, which favored the interests of the market over those of public health, the Pretoria trial marked a historic turning point. The pharmaceutical industry's investments were also focused on drugs for which it was guaranteed a market, giving it the power to prioritize public health priorities. Some diseases affecting the poorest countries, such as Chagas disease, malaria and sleeping sickness, were neglected. A study published in 1999 in the journal Tropical Medicine & International Health revealed that, among all the drugs authorized worldwide between 1974 and 1997, less than 1% concerned tropical infectious diseases. The need for a rebalancing was therefore imposed, and several organizations financed by public and philanthropic funds such as those from the Bill & Melinda Gates Foundation were thus created. In addition to the Global Fund to Fight AIDS, Tuberculosis and Malaria, other organizations were created including the DNDI, the International AIDS Vaccine Initiative (IAVI) and the Global Alliance for Vaccines and Immunization (GAVI). But funding was not enough. It was also necessary to move away from the market logic and rely, for research and development, on alternative models to that of the patent system. Hence the product development partnership or PDP model, based on platforms specific to each product, involving independent researchers, public institutions, pharmaceutical laboratories and philanthropic organisations at different stages of the research and development process, depending on the skills and resources required. "New ways of doing science" Created in 2003, following a reflection initiated by MSF on access to medicines for neglected diseases and funded to the tune of 60 million euros per year by a group of foundations, governments and international institutions, the DNDI has thus developed seven new treatments based on existing molecules, notably against malaria, Chagas disease and leishmaniasis, as well as a new molecule against sleeping sickness. Its credo? A rigorous policy of supervising its relations with its partners focused on access to medicines. "What makes the DNDI model original is that we are a virtual conductor," summarizes Jean-François Alesandrini. "We promote the development of drugs by bringing together the skills of public and private actors, from the North and the South, and by maintaining control over the entire drug chain. This involves new mechanisms and funding, and sometimes also new ways of doing science by circulating knowledge, in particular by sharing information freely in open source." The initiative is based on clearly defined fundamental principles, keeping in mind access to treatments for so-called "neglected" patients. "Our approach is pragmatic. Depending on the needs, we involve different actors in the different phases of the R&D process," adds the DNDI advisor. In terms of intellectual property, we seek compromises that encourage manufacturers to work with us, while ensuring that access is not compromised. If it is in the interest of the project to leave the intellectual property on the product to the manufacturer, we will do so on condition that they commit to this issue." In 2007, the DNDI entered into a partnership with Sanofi for the development of a treatment against malaria, ASAQ. The product was distributed at cost price by major international public health programs, while leaving Sanofi the intellectual property for distribution in the private sector. "For the development of a new treatment from existing molecules, the costs for the DNDI are between 3 million and 18 million euros, and between 55 and 58 million euros for new molecules against sleeping sickness, for example," adds Pascale Boulet, member of the DNDI. This is far from the 2 billion euros announced by the pharmaceutical industry. » In 2016, the DNDI also created the Global Antibiotic Research and Development Partnership (GARDP), whose objective is to develop treatments to overcome bacterial resistance. "In a first step, we establish public health priorities in collaboration with the WHO and we take a look at the horizon in order to define the most interesting product," explains Manica Balasegaram, director of the GARDP. The idea is to regain control over the entire drug chain, from the definition of public health priorities to the use of drugs whose misuse promotes the emergence of resistance." "Mixed results" If the DNDI manages to impose itself through the rigor of its policy, what about the other organizations created on the model of product development partnerships, after awareness of the flaws in the patent system? There are about fifteen of them in total, dedicated to the development of treatments against tuberculosis and malaria or to the development of diagnostic tests. In the United States, the Food and Drug Administration (FDA) recently authorized pretomanid, an anti-tuberculosis drug developed by one of them, TB Alliance, to combat forms of tuberculosis that are multi-resistant to antibiotics. "In practice, these organisms produce mixed results," comments Benjamin Coriat, an economist at the University of Paris-XIII. "We need to look at the real conditions in which they are applied. That is the essential question." While praising the authorization granted to pretomanid, MSF expressed concern, in a press release published in August 2019, about the conditions in which the American company Mylan, to which TB Alliance granted a license, will allow access to the treatment. "The authorization of this new treatment by the FDA is a first step," insisted Sharonann Lynch, HIV and tuberculosis advisor within the NGO's campaign for access to medicines. “We now need pretomanid to be registered and available at an affordable price in all countries, with priority given to those most affected by TB,” she said. Within CEPI and in the global public health community, the power struggle continues between those who support the patent system and those who increasingly want the public sector to regain control of public health. “When CEPI’s first policy was reviewed by all stakeholders, it was found to be lacking in flexibility and to have rules that were far too restrictive. Each vaccine candidate is unique, as is the way in which it is going to be developed, and these rules risked being a disincentive,” explained Rachel Grant, CEPI’s communications director. “CEPI is committed to the issue of access, and we recently created a committee dedicated to this issue. And the first step in access is the development of the vaccine that we must guarantee. This is why CEPI does not seek to hold intellectual property, because that would constitute an insurmountable barrier for some of our partners. The technologies and platforms that we are going to finance the development of will in fact be used for the development of other products than our vaccines,” she insists. “CEPI has the power to discuss with pharmaceutical companies. It must impose obligations on the beneficiaries of its funding grants. There is no market for the vaccines it develops, but we must find a solution so that the private and public sectors work together while maintaining principles,” retorts Manica Balasegaram. "The issue of access is increasingly seen as a critical issue, and the pharmaceutical industry is beginning to realize this," concludes Charles Gore of the Medicines Patent Pool, a UN body that promotes the production of generic drugs. "The unethical dimension of this system is becoming increasingly visible."

## ###ARTICLE\_START### ID:2060

The development of artificial intelligence (AI) is quite ironic: it requires a lot of manual and sometimes ad hoc effort to build accurate predictive models. A technology that aims entirely at automating human tasks involves several tedious steps: annotation and labeling of training data, which sometimes require colossal human work; exploration and selection of representative data; model selection; adjustment of model parameters in addition to testing and generalization phases. The path through the entire development chain is complex, even for specialists and data science experts. In many industrial contexts, bringing a solution based on predictive models to market is quite long. This impasse is disappearing with the emergence of self-learning (AutoML, or Automated Machine Learning), which consists of automating the search for the optimal architecture of a neural network. The technological maturity of AI now makes it possible to develop deep neural network architectures more efficiently than human experts could, for example in object recognition and computer vision. Doing away with certain expertise Double irony: we will be able to do away with some of the expertise in data science and automate it. In the context of AutoML, engineers will be able to focus on more critical phases that require more human intelligence, such as analyzing complex business situations and business questions, instead of getting lost in the tedious process of building the solution. In reality, this approach will help non-data specialists to build AI solutions more easily. Specialist scientists will be able to do complex work more quickly, thanks to AutoML technology, which could well place AI at the heart of business growth. AutoML is a trend that will fundamentally change the landscape of machine learning-based solutions. It focuses on two aspects: data acquisition and prediction. All the steps that take place in between these two phases will be handled by AutoML processes. Users bring their own dataset, identify categories and press a button to generate a perfectly trained and optimized model, ready to predict. These AutoML approaches will facilitate the democratization of AI for the benefit of the greatest number. Various industrial players are preparing to deliver AutoML services, whether they are giants like Google, Amazon, Baidu, Uber or Microsoft, open source platforms (Auto-sklearn, Auto-Keras, Ludwig), or AI start-ups, such as Dataiku, Prevision.io, H20.io and RapidMiner. A few companies, such as DataRobot, specialize in this field, enterprise software providers, such as Tibco, offer AutoML functionalities. The success of self-learning has led researchers to explore the effectiveness of these approaches in other areas, such as generative adversarial models (GANs), which are particularly effective in generating realistic images. The result of a joint research between the University of Texas and the MIT-IBM Watson Joint Lab combining AutoML and GANs showed that the performance exceeds that of human experts. We are seeing the birth of a new branch of AI, called “AutoGAN.”

## ###ARTICLE\_START### ID:2061

TECHNOLOGY In 2016, when the retailer Walmart called on IBM to think about a solution based on blockchain technology, it wanted to solve a specific problem: to be able to quickly trace the origin of a product in the event of a health problem. Two years later, the Food Trust platform opened to the public and brought together a dozen founding members at launch, including the manufacturers Nestlé, Unilever and the retailer Carrefour. In the meantime, Walmart and IBM have worked actively to convince partners, and even competitors, to pool certain information and documents and thus enable better product traceability. The network currently has more than 140 players. The story is quite similar for the TradeLens platform, in maritime transport, for which IBM this time formed a joint venture with the world's leading container shipping company, Maersk. A few years later, the consortium brought together 100 partners, including 5 of the main players in the sector. Data from almost half of container shipping is available on the platform. IBM positioned itself very early on in this emerging technology that is blockchain. In 2015, it actively contributed to the open source hyperledger community, hosted by the Linux Foundation. In addition to the technological aspects - the group provides its clients and partners with the protocol layer and the software platform layer - IBM intervenes upstream with the participants to define both an economic model to be applied and governance rules. "This last point is perhaps the most difficult," explains Luca Comparini, blockchain manager for IBM France. "We are not only addressing a founding member. We must arbitrate so that the economic model is inclusive and it can be complicated to bring people who do the same job around the table. We must also plan from the beginning the rules for entry and exit of the participants." Concrete benefits Each consortium has a different economic model, depending in particular on the involvement and initial risk-taking of the players, including IBM. But some are already showing concrete benefits. Carrefour has seen an increase in sales of its "blockchainized" products (which allow end customers to have full traceability) over the past year and will extend the experience to non-food products. On we.trade, a platform dedicated to international trade, initially launched by nine European banks, participants have not only simplified processes, they also sell new services. But when the model works, initiatives quickly extend to adjacent sectors. "It is necessarily easier to demonstrate that the use case is relevant when there are results behind it," smiles Luca Comparini. All sectors are now getting involved. "In France, we have projects in energy, automotive, distribution, banking, cosmetics, agri-food and even the public sector," he explains. While IBM has not yet provided any figures on this activity, which is still recent for the century-old group, its workforce dedicated to blockchain projects is growing rapidly. They have reached several thousand worldwide. "There are many companies developing blockchain technologies, but none of them have reached the scale and commercial status of IBM," says a financial analyst. "Many start-ups are developing interesting solutions and have mobility going for them. On the other hand, they do not have the geographical coverage. Confirms Luca Comparini. But today you have to be able to move very quickly to industrial scale." For IBM, this emergence of start-ups is very positive. "It is a sign that the market is growing." IBM annual report 2018 $79.591 billion Total revenue $8.7 billion Net profit 85 active networks worldwide based on IBM blockchain technology

## ###ARTICLE\_START### ID:2062

START-UP The return of Jon Snow and Cersei Lannister has caused the death toll in the Seven Kingdoms and the piracy rate on the Internet to skyrocket. In the spring, the first episode of the 8th and final season of Game of Thrones was reportedly viewed illegally by more than 55 million fans in 24 hours. Many of them downloaded the film from a pirate platform and then launched playback with VLC software. This famous program, recognizable by its logo - an orange construction cone - has exceeded 3 billion downloads this year. It boasts 400 million users, mainly in Europe, India and the United States. Much more renowned than BlaBlaCar or Deezer, it is undoubtedly the French Tech gem that has been exported the best. It all began in 1996, in the corridors of the École Centrale Paris. Engineering students campaign with management to install a more powerful computer network so they can... play Doom, a bloody network game that delights alien fans. The Bouygues group then agrees to finance a new Ethernet network on one condition: that it be capable of broadcasting television channels without a satellite dish. A group of motivated students takes up the challenge and develops one of the very first video streaming services in history, called VideoLAN. Among them, Jean-Baptiste Kempf, who will later create a company around the software, and also Christophe Massiot who will later design the first Freebox. The laboratory where these young geeks work is littered with construction site blocks stolen from the street. The orange cone becomes their icon. They later create a non-profit association VideoLAN, within which the VLC software is housed. It has built up unrivaled expertise in decoding video formats or codecs. In 2001, the project decided to make VLC an "open source" software: anyone can now consult the program code and modify it to adapt it to their needs. "Everyone types in the VLC source code. Giants like YouTube and Netflix draw from our library to encode their videos in different formats," explains Ludovic Fauvet, who has been part of the VLC software adventure since 2008. With Jean-Baptiste Kempf, he founded VideoLabs in 2012, a commercial company, juxtaposed to VideoLAN and of which he is the technical director. It sells companies tailor-made solutions for streaming, sending and receiving video images. VideoLabs employs 22 employees, some of whom are also members and volunteers of the VideoLAN association. "YouTube and Samsung have called on our services, as has Free for the video player of its new Delta box," explains Ludovic Fauvet. Thales even had us work on the video players for Rafale aircraft!” According to him, all the intelligence services in the world, starting with the DGSE and the CIA, rely on VLC to play videos from surveillance cameras. The versatility of the software makes it possible to manage formats that are often obsolete and come from a wide variety of camera models. Prestigious references, therefore, but a modest turnover: 3 million euros in 2018. Far from dreams of unicorns and high-priced buyouts, the Parisian company keeps a cool head. “I was “hunted” by large companies but I prefer to stay here,” says Ludovic Fauvet. Our engineers are very talented. They are paid less than at Google or Netflix. But they are passionate and love the work atmosphere. We take the time to do things well, properly. » While it has established itself as the most comprehensive video player, much more efficient than Microsoft's Windows Media Player and Apple's QuickTime, VLC must nevertheless deal with competition from platforms like Netflix, YouTube or Twitch, which are taking users away from them. "Usage has changed, Internet users are downloading fewer files and watching more in streaming," acknowledges Ludovic Fauvet. But the drop in downloads observed in the United States and Europe is offset by the rise in emerging countries where the number of computers is exploding. Nevertheless, VLC's management is preparing for the future and thinking about diversifying its activity. It has set up a research team at Station F, the large Parisian start-up campus. It is developing a video recommendation platform covering all the platforms to which the user is subscribed (Netflix, Canal+, etc.). "We are going to take advantage of this to analyze consumption and create a sort of global Médiamétrie for video," confides Ludovic Fauvet. There is no doubt that Game of Thrones will feature prominently. Our engineers are paid less than at Google or Netflix. But they are passionate and love the work atmosphere. We take the time to do things well, properly" LUDOVIC FAUVET, VIDEOLABS

## ###ARTICLE\_START### ID:2063

Climate disruption, depletion of resources, species and biodiversity, but also fragility of the social and economic system: for collapsologists, the industrial era has reached its limits. They see this as an imperative for degrowth, the opposite of the "techno-solutionist" approach, and advocate in particular the adoption of low-tech. Collapsology is a transdisciplinary approach developed in France by the Momentum Institute, created by Yves Cochet, mathematician and former Minister of Regional Planning and the Environment. It was promoted by Pablo Servigne, agronomist and biologist, and Raphaël Stevens, expert in the resilience of socio-ecological systems, via their essay Comment tout peut s'effondrementr (Seuil, 2015). It encompasses the study of the collapse of industrial civilization, also called the "Anthropocene", and what could succeed it. Ecological awareness While the theory of collapse is new, the anxieties aroused by the environmental crisis are not. And our era is not the first to awaken its ecological awareness (Introduction to environmental history, by Jean-Baptiste Fressoz, Frédéric Graber, Fabien Locher, Grégory Quenet, La Découverte, 2014). In the 18th century, there was already concern about the impact of deforestation on the climate; and in the 19th century, before agricultural globalization, about soil depletion and the risks of famine. It was in the middle of the 20th century that the observation of the collapse of industrial civilization emerged. Experts publish essays that sell millions, even tens of millions of copies for some: Our Plundered Planet by naturalist Fairfield Osborn (1948, Actes Sud, 2008), World Hunger by ecologist William Vocht (1948, Road to Survival), The Population Bomb by biologist Paul Erlich (1968, Fayard, 1970), or the Meadows Report (published in French under the title The Limits to Growth?, Fayard 1972) commissioned by the international think tank the Club of Rome from researchers at the Massachusetts Institute of Technology (MIT). Today, faced with the ecological crisis, many scientists see innovation and new technologies as the solution. But this is not the opinion of Philippe Bihouix, engineer, member of the board of directors of the Momentum Institute, author of Le Bonheur était pour demain (Seuil, 384 pages, 19 euros), who denounces the promises of "smug techno-solutionists". He criticizes this "cornucopian" vision - from the Latin cornu copiae, horn of plenty according to which progress and technological innovation must allow humanity to indefinitely provide for all its needs. He instead proposes a series of concrete measures (reducing the size of cars, establishing an environmental tax policy, banning disposable packaging), and a new utopia, composed of slowness and simplicity, of questioning our notions of comfort and desire, but also of new human connections. He also advocates the development and use of low-tech solutions. These simple techniques aim to enable us to live better with less, to encourage collaborative modes of consumption and production, and to change our relationship with technologies by encouraging us to use them more sparingly. Many companies and start-ups in the social and solidarity economy (SSE), and citizen movements of free software are working on this. The magazine Socialter ("The future will be Low Tech", special issue no. 6, May-June 2019, 9.90 euros) lists several of their initiatives. For example, in the automobile sector, some start-ups have managed to design electric vehicles weighing 425 kg, compared to an average of two tons for models from current major manufacturers. For construction, which represents 45% of energy consumption and produces more than 25% of greenhouse gas emissions, architectural firms are banking on a return to bio-sourced materials: wood, earth, hemp, or even straw. And on sober devices such as natural ventilation, greening of surfaces, collection of river water, solar water heaters and heating, recycling showers, wastewater phyto-purification systems, etc. In agriculture, the development of "-pony" techniques (ponos, which means work in Greek) is multiplying. Aquaponics (growing plants in symbiosis with fish), hydroponics (market gardening without soil), aeroponics (market gardening above ground) allow for up to 90% water savings compared to traditional agriculture. Innovations In digital technology, which will be responsible for 7% to 8% of greenhouse gas emissions in 2025, and which threatens to exhaust resources in rare metals (copper, tin, rare earths, etc.), innovations are also developing. Like the Raspberry Pi, a computer the size of a credit card that has already sold 25 million copies, which consumes very little electricity and uses recycled material. And the probabilistic processor designed by researcher Avinash Lingamneni which, with a few bugs that are almost imperceptible to the user, is fifteen times less energy-intensive than a traditional processor. These innovations could multiply, in particular thanks to the future Low-tech Skol, which will open its doors in the fall of 2019, in Guingamp (Côtes-d'Armor). Or the Low-tech Lab, which offers an open-source research and documentation program to promote successful initiatives.

## ###ARTICLE\_START### ID:2064

TELEPHONY In a chaotic atmosphere, Huawei unveiled its two new high-end smartphones, the Mate 30 and Mate 30 Pro, on Thursday in Munich, Germany. But beyond the technical specifics of these two products, the main question was the presence of the Android operating system in these devices. Richard Yu, the president of Huawei's consumer division, kept the suspense going, before finally half-heartedly admitting that no solution had been found to date to circumvent the American ban on using the commercial version of Google's Android. Indeed, since May 15, Huawei has been on the blacklist of companies with which American groups are not allowed to trade. Two moratoriums, each lasting 90 days, allow the parties concerned to continue doing business until November 19. After that, it's a big leap into the unknown. The situation is extremely complex for the brand, which is still hesitant to launch its new high-end smartphones in many countries, including France. No avenue is overlooked, not even that of marketing at the end of the year, but without the Google suite. Specifically, the smartphones presented on stage by Richard Yu are equipped with Huawei's EMUI10 operating system, which is based on a free version of Android (open source). For consumers, the main change comes from the absence of Google's application store, the Play Store. It is replaced by Huawei's, App Gallery. This means that most of the major American applications are not available on this phone. The brand claims to have 11,000 applications "among the most popular". "All countries have the mission of encouraging the development of applications for the App Gallery," explains a spokesperson for the group. Richard Yu also announced the establishment of a billion-dollar investment program intended to encourage and finance the development of these new applications. And consumers have the possibility of finding certain services through their website. 5G Phone Faced with American restrictions that prevent it from working with its main American partners, Huawei is banking more than ever on the technological specificities of its new smartphones. It hopes to convince distributors to include them in their offer. The Mate 30 and its Pro version have a new screen, new colors, a matte metal shell that does not slip in the hand and even a "vegan leather" edition! As usual, Huawei is giving pride of place to photography - still in partnership with Leica - with even better performance. The manufacturer continues to push its pawns in fast wireless charging, with a more durable battery. The device is also equipped with the latest generation of 5G chip from Kirin, a subsidiary of Huawei. This choice is not insignificant, illustrating the Chinese company's desire to free itself from its American suppliers, in order to be less exposed to American decisions. But the exercise has its limits, as evidenced by the thwarted launch of the Mate 30 and Mate 30 Pro. While no release date has been announced, the prices have been made public. You will have to pay 799 euros for the Huawei Mate 30 with 128 GB of storage, 1,099 euros for the Mate 30 Pro 256 GB, 1,199 euros for its 5G version. Huawei is also continuing its partnership with Porsche, via the Mate30 RS sold for 2,095 euros. Although these models will not be marketed quickly in Europe, they will be in China, where Huawei's app store is well-stocked with local services.

## ###ARTICLE\_START### ID:2065

The fate of the Internet is, as we know, similar to that of the oceans. Both began as a space of freedom and anarchy. Little by little, zones of exclusivity, barriers and restrictions appeared, but they only concerned specific areas. In recent years, the Internet has reached the next stage, becoming not only a critical space for global trade, but also a zone of confrontation and more or less latent war, in which commercial and industrial operators and their governments must face the aggression of a growing number of actors who are not always private, rightly called "pirates". With Google's decision to comply with the demands of the American state to no longer collaborate with the Chinese Huawei, a new step has been taken. According to a well-established model in history, a technologically advanced power uses its technology and its strong position to improve its influence in a strategic space and weaken or push aside its rivals. This expected action will have profound consequences. The first reaction to expect is an arms race. America's rivals will want to equip themselves with what the United States restricts their access to. To finance these developments, state investment and exports are often vital. This is where the second consequence comes in: the creation of spheres of influence within the Internet. At the time of the Cold War, Eastern countries equipped themselves with "Soviet" equipment. Tomorrow, countries cyber-aligned with the United States will have American network cores. Will cyberspace be intersected by borders? In 2018, former Google boss Eric Schmidt predicted an Internet split in two, one Chinese and the other American. Today, we are there! On the other hand, we are beginning to see a third zone emerging: in addition to the Western sphere and the Chinese sphere, a disparate group of third countries that are also claiming a share of the action (France, Russia, Japan, North Korea, etc.). In this restructuring, the place of Europeans is uncertain. In 2018, with the General Data Protection Regulation (GDPR), we opted for an Internet capable of guaranteeing and respecting the protection of personal data and, in France, we introduced this reference text (art. 34) into the Constitution, erected as a guarantee of our fundamental rights and freedoms. This text must be the vector of our civilizational model and our sovereignty in the digital world. Are we capable of making it a global standard? Today, we have choices to make, with major issues at stake. We can either remain the vassals of a large Western sphere by remaining users of an IT industry that is not ours, or continue and unite around our own standard to convey European know-how to our digital allies. This is already the case with Japan, recognized by the European Commission as having "an adequate level of protection" for the GDPR; or California, the headquarters of the tech giants, which is adopting the California Consumer Privacy Act, which will come into force on January 1, 2020. In the current state of American legislation, the Cloud Act in particular, joining the American sphere would mean accepting the supremacy of American law over ours in terms of consumer rights, and gradually losing control of our communications and data. A unique opportunity Defining a European sphere would, on the contrary, make it possible to uphold our values, to protect the digital lives of our fellow citizens and our businesses, to be able to trust the competence of the courts of our countries with real means of action, to enforce our requirements in terms of the environment, energy consumption or social dumping, and finally to develop our businesses to create industrial jobs. It is likely, in this case, that Google, Amazon, Facebook, Apple, Microsoft (Gafam) will not want to cut themselves off from the European market after having lost the Chinese market, and even less want to see us move closer to the latter: there is little risk that the United States will lock itself into digital isolation. It is therefore up to us to define the terms of this future collaboration. We have the technological and financial capacity to be autonomous through our industry, our research and free software. We also have the necessary infrastructure, including in terms of localization thanks to Galileo. The arrival of a new European Commission is a unique opportunity for Europe to give itself an ambition in terms of influence within the Internet, to avoid one day no longer being able to make our own decisions. It is time for France to bring this ambition to its European allies and propose another path in digital: that of a "trusted digital continent." This would bring together digital spaces protected from extraterritorial laws such as the Cloud Act or equivalent, with full respect for the protection of personal data and the transparency that we owe to users and our children. It is also about protecting ourselves from the monsters brought about by the hyper-commercialization of data, such as the Cambridge Analytica/Facebook affair or the generalization of social ranking in China, which, by themselves, suggest the famous "Big Brother is watching you" described by George Orwell in his novel 1984. Europe has led the way with the GDPR, it is up to us to make it a global standard.

## ###ARTICLE\_START### ID:2066

SMARTPHONE The highly anticipated release of Huawei's next high-end smartphone is likely to be disrupted. Called the Mate 30, it will not benefit from the latest licensed version of Android, depriving it of Google applications, according to statements made by a spokesperson for the American company to Reuters. This surprise decision is forcing the Chinese smartphone manufacturer to change its plans. In concrete terms, the next Mate 30 smartphone, the brand's flagship, could be deprived of essential services for consumers such as Gmail, YouTube or Google Maps. The same goes for applications from the Facebook group (Facebook, Messenger, WhatsApp, Instagram). The social network announced in June that it would no longer offer them on the Chinese firm's next devices. Worse, it will not even be possible to download them, since Google's application store, the Google Play Store, and its four million mobile services will also not be accessible. This decision comes at the worst possible time for Huawei, which planned to present its Mate 30 on September 18. The smartphone is announced as one of the most advanced in the sector with 5G compatibility and four camera lenses, among other things. It will be the first device to be marketed by the firm since the implementation of US sanctions against it last May. Huawei was counting on their postponement until next November to slip through the cracks and continue to use Android and Google applications on the Mate 30. Sales decline Forced to find a solution quickly, while the situation with the United States improves, the firm could fall back on its own operating system, Harmony OS, presented at the beginning of August. It will soon equip a connected television from the Honor brand, owned by Huawei, and at least one smartphone from the group before the end of the year, according to its managers. However, on the market, many doubt the ability of Harmony OS to compete against Android, which occupies 80% of smartphones in operation in the world, and iOS, the operating system tailor-made for iPhones. A decision will have to be made quickly by the Chinese group, which is already feeling the effects of American sanctions on its wallet. Between the first and second quarters of 2019, its market share in Europe fell from 24.9% to 19.3%. In an attempt to bounce back, Huawei can count on its Chinese experience. On site, it has gotten used to doing without Google and Facebook services, which are banned there. The brand has developed its own app store there, AppGallery. The Mate 30, which will only run on a limited version of Android offered in open source, will be able to integrate it.

## ###ARTICLE\_START### ID:2067

TECHNOLOGY Huawei has taken note. Three months after Donald Trump announced sanctions against it, the Chinese group has decided to develop without its American suppliers. On Friday, on the sidelines of the launch of a new processor, its deputy chairman, Eric Xu, outlined the group's ambitions, particularly in terms of artificial intelligence. "We are implementing a program to allow as many engineers as possible to access artificial intelligence. We want to attract more developers to our ecosystem," he explained. To expand its footprint, it plans to make its MindSpore program available in open source in early 2020. Huawei intends to impose its solutions dedicated to artificial intelligence in many areas, from smartphones to smart cities and autonomous cars. In this last area, it has signed a partnership with Audi. Eric Xu was clear: there is no question of his company going it alone. It will continue to collaborate with many partners. The Chinese giant, the world's second largest smartphone manufacturer after Samsung, is thus opening a new front against the Americans. Condemned by Donald Trump's measures to eventually do without Android, Google's mobile operating system, for its smartphones and connected objects, Huawei is preparing alternatives. In "battle mode" These involve a new operating system, announced in mid-August, Harmony OS, and the construction of a community of developers. A key point to play on equal terms with Google. But not enough to reassure the American authorities, who remain convinced that Huawei is "a threat to American national security" and that it spies on behalf of Beijing. "It's a matter of life and death," declared Ren Zhengfei, the founding president of Huawei, on August 20, who calls for putting oneself in "battle mode". To achieve its goals, Huawei is not skimping on the means. The group is expected to spend more than $17 billion this year on research and development (R&D), or a third of France's R&D budget! For Huawei, that's $2 billion more than in 2018. This means that the share of its turnover dedicated to R&D will increase from 14.8% to 19%. Over the period, the group expects to see its revenues drop by $10 billion over a year, due to American sanctions, to reach $90 billion, and not $125 billion as initially planned. The reprieve granted by Washington, which runs until November 19, does not change anything fundamentally. If American companies still have three months to do business with Huawei, the process is underway. In the long term, the Chinese will do without them. Eric Xu also mentioned the importance of India in the group's R&D system. The country has quality engineers and it is a great outlet, with 1.3 billion inhabitants. By combining the populations of China, India and Southeast Asia, the catchment area directly addressable by China has 3.2 billion inhabitants. Enough to build a solid ecosystem.

## ###ARTICLE\_START### ID:2068

- She is 26 years old, her name is Antoinette Hervouët. She works in Paris as a "quality mission manager" in the medico-social sector. Very committed to Christianity, she was one of the organizers of the unprecedented OpenSource pilgrimage, which just brought together in Lourdes, from August 6 to 8, nearly 1,000 young people in connection with the diocese of Paris and the Even movement, the Anuncio evangelization movement, the Saint-Martin community and the diocese of Nantes. "Many of us," she explains, "had already been to Lourdes as volunteers, serving the sick, but without ever taking the time for ourselves, to immerse ourselves in the place, its grace and its message. The paradox is that we, young Catholics of France, have discovered the inner richness of this sanctuary, which is nevertheless very well-known throughout the world. But we also found that a large number of pilgrims or visitors to Lourdes do not know the Christian faith." The other strong point of the pilgrimage, she assures, was to experience "a deepening of our encounter with Christ, through the motherhood of Mary. "To Jesus through Mary", we summarize in spiritual language. Notably by the simple gesture of the pools where we experience a kind of letting go, a form of self-abandonment, conducive to the encounter with Christ." Another "fruit" of this pilgrimage designed by the organizers to better help young people discover Lourdes: "Graces of inner healing, liberation, appeasement, testifies Antoinette, for a youth wounded in its freedom and who carries many burdens or rough experiences." J.-MG

## ###ARTICLE\_START### ID:2069

LOURDES, which many saw dying out, is reborn. The National Pilgrimage, organized from August 11 to 16 by the Assumptionist monks and which will reach its high point on Thursday, August 15 for the feast of the Assumption, had to turn away, due to lack of places, the faithful for its 146th edition. Nearly 8,000 registered all the same. Not forgetting those who will approach the grotto for the Assumption mass, one of the major Christian feasts where the Catholic Church commemorates the end of the earthly life of the Virgin Mary. The sanctuaries of Lourdes will thus welcome on August 15 nearly 27,000 people, all pilgrimages combined, individual and organized. Father Vincent Cabanac, Assumptionist, director of the National Pilgrimage, notes: "Contrary to a previous trend, the participation of all pilgrims is on the rise again. » Figures in hand, he certifies: "This recovery is manifested by a growth of more than 15% this year, as last year, including many first-time pilgrims." That is to say, people who have never yet set foot in Lourdes. Another sign is the astonishing success of a completely new pilgrimage. Called OpenSource (read below), it brought together from August 6 to 8 more than 1,000 young students and professionals in Lourdes, at the invitation of Mgr Nicolas Brouwet, Bishop of Tarbes and Lourdes, with the support of Mgr Michel Aupetit, Archbishop of Paris, and in partnership with the groups Even, Jeunes à Paris, the Communauté Saint-Martin, the diocese of Nantes and the evangelization movement Anuncio. Among the recent explanations for this timid but notable surge, Father Cabanac first notes the influence of the "testimony" of Sister Bernadette Moriau (read below). Her "miraculous healing" was recognized by the Church on February 11, 2018. It is the 70th in the history of this Marian sanctuary. Her story is decisive for many. This priest also mentions the success of the documentary film Lourdes (read page 3), which played an important role this spring. And so of the current musical show Bernadette de Lourdes, which has already reached 42,000 spectators in just one month. "These works speak positively about what is experienced in front of the grotto, by telling a story and highlighting what is at the heart of the sanctuary's message: a simplicity of relationship, attention to the most fragile, to those whose lives are at stake," explains Father Cabanac. Father Olivier de Saint Martin, a Dominican monk, is the director of another important pilgrimage, the Rosary pilgrimage. It has been held for over a hundred years, every October in Lourdes. It is too early to measure a revival, because registrations are not yet closed, but nearly 24,000 people are expected, and this priest notes a "real stability in attendance", even "an increase in the number of high school students". A study conducted among the pilgrims of this autumnal meeting shows that the primary motivation, at 40%, is to "reconnect with the faith and the Church". "These are often people who consider themselves far away for multiple reasons, analyses this Dominican. Lourdes appears to them as an ideal place to find a path to God. Bernadette was far from all the "good people". Yet it is to her that Mary appears, directly, outside the mediation of the Church." He observes: "Here, nothing is asked of anyone, no certificate of good conduct. Mary can look at each person in the deepest depths as a person, whatever their situation, and tell them the joy that God has in seeing them exist." This could therefore be the end of the downward trend in attendance, observed over the last ten years. Alongside structured and organized pilgrimages, a new way of coming to Lourdes, more qualitative and personalized, seems to be emerging. This place nevertheless remains a profound mystery of faith for some and an enigma for many: 2 million visitors flock there each year, and this city is still the second largest hotel city in France... Father André Cabes, rector of the sanctuaries of Lourdes, confirms: "Lourdes cannot be explained. Even today, the latest documentary film bears witness to this, people from all social or geographical backgrounds come here to deposit their requests and their thanks." He assures: "Many would not know how to say why they are here, how they end up in the grotto or even in the confessional... But there is something, a source, at the very bottom of our dungeons. A path is open at the bottom of our dead ends. Today as yesterday, man needs to be connected to the Invisible.

## ###ARTICLE\_START### ID:2070

MONTREAL - What do Quebec rappers Koriass, FouKi and Loud have in common? Some of their songs have managed to penetrate FM airwaves, which were once considered impenetrable to the hip-hop phenomenon. What's more, one name keeps coming up when you look at the credits for the pop-polished hits Cinq à sept, Toutes les femmes sais danser and iPhone. That name: Ruffsound. To the light and intoxication of the spotlight, Marc Vincent, his real name, prefers the darkness and comfort of his two studios, in Pointe-aux-Trembles and Lorraine, where he receives La Presse in his peaceful and large home. A shy and essential player on the rap scene, the beatmaker - or rhythmic designer, according to the Office québécois de la langue française - seems to have found the key to rallying the greatest number of people without being mocked by purists. "For me, it's not a science, there's no recipe, it's inspiration," he says. "Yes, sometimes I'm concerned about addressing a wider audience in terms of sounds, but it's mostly a matter of simplicity. Some artists sometimes want to put in a lot of shit, too many ideas. Except that the more stripped down it is, the easier it is to digest and, in general, the better it is." Daring POP In the recording room, keyboards and consoles share space with the awards collected in the wake of the Loud phenomenon: we quickly notice the Félix for record producer of the year 2018, shared with Ajust, for the album Une année record, and the "platinum certification" frame for Toutes les femmes sais danser, to which producer RealMind also added himself. As an anecdote, the landmark song of the summer of 2018 was recorded in extremis. “At first, the beat really reminded me of J. Cole, but then it turned into a kind of dancehall. It was the last track. We had three days to get the song into the final mix, and we screeched it down Loud’s throat. When Ajust and I listened to it, I joked, ‘That’s a CKOI number one.’” Like that dance hit, Loud’s new album, co-produced by Ruffsound, borrows heavily from pop codes. Koriass, FouKi, and other rappers produced in whole or in part by Marc Vincent don’t skimp on the unifying choruses, chord variations, and clashing genres. To the diehards who look down on this mix, he says, “Those who don’t want those sounds just don’t have to listen to me. Artists, it’s their choice.” I listen to a lot of so-called "purist" rap in my car, but when I compose, I also want to have a career, longevity." If rap flirts with pop sounds, the opposite is also true. Singers like Cœur de pirate (Ne m'appelle pas) and Eli Rose (Tôt ou tard, Soleil) have called on Ruffsound to boost their offering. Proof, according to the 35-year-old producer, that borrowing goes both ways. And "that's a good thing." Fifty dollars for a beat Ruffsound - a nickname that is "cheesy as fuck," according to the person concerned - was born musically in the early 2000s in the Fabreville district of Laval, with only a laptop and free software as equipment. "I wasn't particularly good, it was trial and error. The first beat I made, I burned it on a record that I brought to school. We played it in a friend's car. I thought, "Yo, I might have something." The third or fourth beat, I'd sell it for $50 or $75." The quantity and market value of his compositions never stopped growing. "One of my boys told me, 'You're going to have to do Walmart if you want to make a career out of it, because right now, you're nobody.'" Word of mouth doing its job, Quebec rappers who had rocked his youth - Sans Pression, Yvon Krevé, Connaisseur Ticaso - came to solicit his services, mainly influenced by the American scene. Collaborations followed with Imposs, Souldia, Loud, Koriass, Rymz, Larry Kidd and Yes McCan. Ruffsound has always been able to count on a tight-knit clan, motivated by "healthy competition." "I always wanted to have the biggest circle of beatmakers around me, never to be the best in the room, to exchange and learn from others. I hang out with boys like AC or Billboard, who evolved with Shakira, Britney Spears, etc." In light of his recent collaborations with British sensation Dua Lipa and Michigan rapper Maejor, Ruffsound can also dream of an international career. Other major participations are in the pipeline. Which ones? "I'm a little superstitious," he abbreviates. Let's bet that the radios will let us hear the answer soon enough.

## ###ARTICLE\_START### ID:2071

Jean-Philippe Balança Smile For its international development, the French free software services company is calling on a new international director. A graduate of ISC Paris, this 46-year-old man, father of 4 children, is passionate about digital technologies. A specialty that he has been implementing for 20 years for companies such as Sopra Steria or Devoteam. Salesperson, business unit or subsidiary manager, Jean-Philippe Balança has been able to intervene in many countries in Europe and Africa. Christophe Duchatelle Volvo Car France The former sales and network director of Hyundai Motor France now occupies the role of sales director of the Swedish car manufacturer. At 50, this graduate of the Ecole supérieure des techniques aéronautiques et de construction automobile has been working in the sector for a long time. A young General Motors shoot in 1995, he then became sales director of several brands such as Opel, Saab and Chevrolet before returning to the company that trained him from 2008. Emmanuelle MOUREY La Banque Postale Asset Management The general secretary of the financial management company of La Banque Postale has been promoted to chairwoman of the board of directors. Aged 50, this EM Lyon has worked in many companies such as Crédit Lyonnais in New York, Crédit Agricole and JPMorgan France. Olivier Chabanon France Biotech The members of the association of healthcare entrepreneurs elected him general delegate. A 44-year-old specialist in business law and management, he works for the HSBC group where he has held several management positions. henri Assila Neuflize OBC New Senior Advisor of the private bank, he will work in collaboration with Laurent Garret, chairman of the board of directors. A graduate of the Sorbonne, this 50-year-old man has more than twenty years of experience. He worked for the UN in New York and Geneva before collaborating with various wealth management companies.

## ###ARTICLE\_START### ID:2072

Sociologist Isabelle Berrebi-Hoffmann, a CNRS researcher, co-authored Makers. Enquête sur les laboratoires du changement social (Seuil, 2018). When did DIY originate? This practice can be traced back to the Shakers, a Protestant sect born in England in the second half of the 18th century, which was very attached to the values of aesthetics, sobriety, and elegance. This trend then continued in the United States with William Morris's Arts & Crafts movement and, in France, through the Castor houses of the post-war period. It is not only a desire to tinker with an object or to tinker oneself, but also a reaction to the rationalization of work and the standardization of lifestyles. We demand freedom of access to the object. We are trying to re-appropriate the piece production process, which is often much cheaper than when we go through intermediaries in the traditional economy. Does the "maker" movement come from the same phenomenon? The maker model is indeed rooted in the old American tradition of autonomy of building your own house, repairing your bike, making your own furniture or creating your own jewelry. The development of the Internet and open source opened up new possibilities. Suddenly, you could find models of computers, robots, kit houses online at very affordable prices... This led, in 2005, to the launch of Make magazine and Maker Fairs, these big do-it-yourself (DIY) festivals. At the same time, the first fablabs were born from 2002 on the initiative of the Massachusetts Institute of Technology (MIT). Originally, it was about creating open learning spaces where there were no universities, particularly in poor, black neighborhoods, and democratizing technology. Very quickly, other countries around the world, such as China and Japan, took it up. In France, the movement really took off following Fleur Pellerin's call for projects in 2016. Today, we have nearly 600 workshops of all types. And this is probably just the beginning. On June 17, the government announced that it would invest 45 million euros in "third places", which include fablabs. These third places are at the crossroads of several social movements: short circuits, the circular economy, degrowth, and recovery. Is this a challenge to the market economy? Makers defend the principles of reuse, but are not against the market economy. They are against integrated capitalism, against a vertical rent economy, which is content to exploit a privilege to capture value. This is the case, for example, of a company like Booking.com, which captures 20% of a value without producing anything. Just by playing the role of intermediary. What impact does the development of DIY have on the traditional market economy? The DIY culture has penetrated marketing, of course, but also the entire economic fabric. Thus, in April 2018, Nintendo released a console to assemble yourself: Nintendo Labo. Leroy Merlin opened a do-it-yourself workshop in Paris based on the techshop model, called Make It. Nike has developed customizable shoes with millions of possibilities. Faced with the success of IPA craft beers, which now represent more than 50% of the market in the United States, Kronenbourg and other major brands are in turn looking for solutions to allow people to make their own beer and personalize it. Is the maker model contributing to a complete transformation of society? In any case, many makers have the desire to question the world that does not suit them and to change it. Exactly like those who participate in the Solve conferences, organized during Hub Week, the week of innovation, in Boston. Their ambition? To solve all the major contemporary problems that man faces: world hunger, education for all... As if, deep down, we were in the process of reclaiming utopias. Since Google and Facebook claim to be able to change the world, makers are saying to themselves: why not us?

## ###ARTICLE\_START### ID:2073

Capitalism is the enemy of the planet, it is predatory and doesn't give a damn about social justice. This idea, often correct, is widely spread in green, red or pink activist circles. But here's the thing: capitalism or, more precisely, the market economy, is not going to vanish like a bad dream, nor disappear by the magical effect of a great ecological or socialist evening. Better still: none of the political organizations hostile to the all-market and the hegemony of finance predicts its disappearance. Even La France Insoumise, the most radical, does not advocate an old-fashioned "collectivization of the means of production", but refers to a "mixed economy" where the market will occupy by definition a prominent place. Under these conditions, private enterprise, even in a fairer and more ecological framework, will continue to govern for a large part the working life of Earthlings, and therefore life in general. Hence the crucial importance of its mode of organization, its culture, its principles of action and direction. Since the 1980s, a dogmatic vision has been imposed in this area: the role of the company is limited to the satisfaction of its shareholders, its criterion of success is strictly financial, it is measured by its rate of profit which is supposed to reflect the satisfaction rate of its customers. All the rest is socialist and right-thinking literature. Spread throughout the planet, this conception has produced great material progress, but also social and environmental devastation. In a system of competition and private property, can it be otherwise? The question largely governs the future. It is therefore interesting to hear the response of a practitioner, himself a business leader, who believes in another form of business. Pascal Demurger, director of Maif, a mutual society for teachers and many other members, is a boss. Not quite like the others: head of a mutualist company, he is not appointed by shareholders but by the mutual's customers, the members, who elect delegates, who themselves elect a management. No capital, and a profit that is redistributed in the form of investment or rebate on insurance contracts, the basic principle of the mutualist "third sector", which plays the market game but not that of capital. For him, the case is closed: the company of the future will be political. Not only social or ecological, but political. Or it will be contested, reviled and soon paralyzed by a general revolt. This is of course a pro domo plea. Proposing a new model, the boss of Maif gives his company as an example, describing in detail the beneficial innovations it has implemented. All this deserves verification by investigation. But finally the author got Nicolas Hulot to preface his book, which gives him a certain credibility; and above all, there is a collection of new ideas, of concrete examples that deserve to be considered to reflect on the market economy of the future, subject to ecological constraints and dedicated, as much as to customer demand, to the satisfaction of its employees and to a concern for the general interest. Thus, Maif defines itself as a "mission-based company", according to the new label defined following the Notat-Senard report on the social and ecological vocation of the company. Maif has implemented a range of green measures: incentives to avoid car transport for office-home journeys, by systematically subsidizing other means of transport, zero-emission buildings, recycled paper, elimination of single-use plastic objects, waste management, etc. But above all, it acts on its environment. Taking charge of some 300,000 damaged vehicles per year, it favors repairs using old parts taken from used cars, but still usable, establishing a circular economy for spare parts. Collecting savings, it invests mainly in green energy and companies that are themselves responsible and social. It refuses to borrow from countries where human rights are violated. It sold its Bayer shares when the company was bought by Monsanto, it puts its digital developments in open source, etc. The management method is in unison. A symbolic measure: the human resources department has been renamed the "human wealth department". Decisions, says Demurger, are made according to several criteria, efficiency, of course, for customers and the company, but also the satisfaction of the employees themselves, which involves both responsibility, delegation and requirement, which he sees as a condition for success and one of the key elements of Maif's "mission". An isolated experiment, led by snipers, one might say. Not really: the entire mutual sector is tending in this direction, with ups and downs, failures and successes, but with an intention that is not in doubt. Impossible to generalize in a world of fierce competition where employers reflexively balk at any additional constraint? Not sure: Demurger proposes extending the movement to the whole of Europe, thanks to the establishment of a single label "mission-based company" throughout the Union, which would become a reference and a preference for consumers and for public authorities, who would encourage them as a priority. Utopia? For the moment, yes. But also a useful perspective for developing a European economic model that distinguishes itself from Anglo-Saxon capitalism. A model that any left worthy of the name should include in its projects.

## ###ARTICLE\_START### ID:2074

Laura (not her real name) never “counted sheep” before she went to sleep. She never even understood the phrase literally, which she considered a “stupid saying,” as metaphorical as the expression “raining cats and dogs.” Until she learned that most people were actually capable of imagining sheep. That was three years ago. On her computer screen, she discovered the testimony of Blake Ross, co-founder of the open-source software Mozilla Firefox, who described what life was like for someone “imaginatively blind.” "It was edifying, I functioned exactly like him," says this 32-year-old translator, then "stunned" to realize that the people around her have a "projector in their head" that she did not even conceive of. How could she have, she for whom it is impossible to visually imagine the birth of her children, her house, her last vacation spot or a rhinoceros? "I know that it is something rather big, gray, with two horns," she lists while concentrating. "I would recognize one without problem in reality, but my mind does not "see" it. It is only a concept for me." No "mental eye" This inability to consciously form mental images was first mentioned at the end of the 19th century by Francis Galton and then by Doctor Désiré Bernard, who worked with the neurologist Jean-Martin Charcot in Paris. However, it was not until 2015 that a team of British neuropsychologists put a name to this disorder: aphantasia, from the Greek phantasia, "imagination." Research, still in its infancy, estimates that 2% of the population is affected. However, it is difficult to know what is due to this absence of a "mental eye." "We only know that the brain of the first patient I studied [aphantasia following an operation during which he apparently had a brief stroke] was unable to "activate" the visual areas when he tried to form a mental image," explains Adam Zeman, co-author of the 2015 study. With his team at Exeter Medical School, he is currently comparing brain imaging data from people with aphantasia (or afantaisists, both terms exist in French), hyperphantasia (whose mental images are very vivid) and those with average imagery. No results have been published yet, but the researcher notes that "there seem to be interesting differences." What he already knows, however, is that aphantasics are not a homogeneous category. "There are at least two types of aphantasia," says the researcher. "Congenital aphantasia, which seems to be the most common form, and acquired aphantasia, which results from brain damage or psychological disorders." This is the case for Julien, 33, who remembers creating mental images until adolescence, by imagining role-playing games or reading books. Without understanding why, he is now unable to visualize what he ate for lunch or imagine his future vacation spot, even with a precise description. Laura, for her part, has always had aphantasia. Today, she observes her daughter inventing stories in which she seems to "see" herself or imagine herself as a unicorn when she plays, and she is categorical: she herself has never been capable of it. For most people, "the use of mental images is almost constant, even when we are not paying attention to them," explains Lilianne Manning, professor of neuropsychology at the University of Strasbourg until 2018. Traveling in time, in the past, the future, projecting oneself into another place, all this is possible thanks to the imagination and amounts to opening a sort of book of images stored in our brain." For aphantasics, who must do without images, the consequences are diverse. "Some have a very poor autobiographical memory, others do not; some have difficulty recognizing faces, others do not; Some dream in images, while others don't at all," explains Dr. Zeman, who a priori explains these differences by the complexity of the network of areas of the brain involved in mental visualization. Laura and Julien admit to having "bad memories. He got married a year ago and can't imagine a single scene from that day. "I know I danced because I saw photos, but I absolutely can't see myself doing it," explains this developer, who is nevertheless capable of memorizing computer languages and technical manuals. She remembers that as a child she always asked her parents to buy as many postcards as possible from their vacation spots, without sending a single one. She accumulated them all in a box, which she reopened each time she wanted to mentally return to the places she had visited. "This box must have been a bit like the imagery that others have in their heads," she says today. But this is not the case for Patrick, 52, who was born with aphantasy. Although he never gets rid of the "dark veil" that obstructs his imagination when he is awake, he does not feel diminished by it. His memories are expressed in conversations, emotions, sensations, and are "no less vivid." Aphantasy sufferers thus unconsciously compensate for what most people do easily through visualization. Laura, for example, is unable to spell a word out loud because she cannot "write it" in her head, which has never prevented her from "always getting 20/20 in dictation": "I use sounds, logic, I read a lot, spelling is very intuitive for me." Her biggest problem, like Patrick's, comes from the difficulty in recognizing faces. Anyone who leaves her field of vision disappears visually from her mind, so much so that she may not recognize an acquaintance who dyes their hair. Mental Notes She has no gallery of portraits or places in mind, only verbal descriptions based on the "mental notes" she forces herself to take constantly. When she doesn't, she can find herself helpless when faced with seemingly simple questions, such as describing the shape of a lion's ears. Information that she has never "mentally noted down" and learned, and which she is therefore unable to reproduce because she cannot imagine the animal. "I write a lot to compensate. When I meet someone, I write down a description on paper when I get home because I know I won't see it again in my head, except perhaps in dreams. I keep a journal where I write down every night what I did, what I saw, and I regularly make summaries. This is what helps me to fix in my mind what others seem to keep in images." However, she is not sure she wants to change. For example, she appreciates never being "haunted" by an image. Even the most frightening ones disappear from her mind once the photo is covered, her eyes closed or the television turned off. She also cannot help but smile at those who "get upset about the adaptation of a novel into a film because the actor does not correspond to what they had imagined. For her, who loves to read but always skips the descriptive passages that never evoked anything for her, "there is no such thing as a casting error. No more than the disappointment of discovering a place or a person that does not correspond to the image you would have had of them. Do these aphantasics consider themselves devoid of imagination? Laura assures us that she is incapable of drawing a world in her mind, but she knows how to imagine "scenarios, concepts and especially sounds. "I have a real radio in my head!" she says. Julien, for his part, even wanted to be a writer when he was younger, he plays music, draws very well and says he is "rather creative. A statement that is not at all paradoxical for Dr. Zeman: "Visualization is an important aspect of imagination for most of us, but many aphantasics are very creative, in the fields of science as well as the arts." Patrick also does not believe that his aphantasia prevents him from imagining and escaping. "We don't perceive only with our eyes," assures this hypnotherapist, who is passionate about poetry and photography. When I invent, when I project myself, I imagine with all the other senses, it is perhaps what allows me to be creative, different from others. I just encode the world with data that is not visual. " As if to emphasize that imagination is sometimes misnamed.

## ###ARTICLE\_START### ID:2075

Sociologist Sébastien Broca is a lecturer in information and communication sciences at the University of Paris-VIII. Author of Utopie du logiciellibre (Le Passager clandestin, 2013), he works on digital commons (free software, Wikipedia, etc.) and new forms of online work ("digital labor"). He analyzes the strengths and weaknesses of Shoshana Zuboff's work on surveillance. What does Shoshana Zuboff contribute to the critique of the capture of personal data and that of technological surveillance by Gafam? The starting point of Shoshana Zuboff's The Age of Surveillance Capitalism is a fairly classic critique of surveillance enabled by digital technologies. This critique has been made for years by defenders of digital freedoms, such as the association La Quadrature du Net in France, and by academics, within the framework of what has been called "surveillance studies." The interest of the book is that it does not stop at this criticism: it shows that this surveillance leads to behavioral modification devices. The purpose of monitoring our online behavior through the collection of browsing data is to "manufacture" new behaviors: "liking" certain content, clicking on certain advertisements displayed according to our preferences, buying certain goods or subscribing to certain services. It is these behavioral modification practices that most concern Shoshana Zuboff: they mean that individuals are dispossessed of their autonomy and freedom to become simple agents whose actions are modeled remotely. This system conceals dangers from a democratic point of view: the modification of behaviors for economic purposes can quickly transform into control over political behaviors, as we saw with the Cambridge Analytica affair. These strategies are not new: Edwards Bernays, in the 1920s, already invented advertising for tobacco... Since the beginnings of the consumer society, in the 1920s, in the United States, companies have always sought to shape individual behaviors. This strategy traditionally involves advertising and marketing devices, whose purpose is to shape purchasing behaviors by creating new desires. I do not think that "surveillance capitalism" is radically different from this point of view. One of the weaknesses of Shoshana Zuboff's book is that in wanting to show that "surveillance capitalism" constitutes a new capitalism that is perverted in relation to Fordist capitalism, she forgets to inscribe this contemporary reality in a broader history, which would allow us to see a certain number of continuities. What form could the fight against surveillance take? Shoshana Zuboff's book is very long, some 700 pages, but the passages devoted to activists who have been fighting for years against the deployment of surveillance are few. In my opinion, from the point of view of sociological analysis, there is a lack here which is undoubtedly due to her desire to position herself as a whistleblower. However, she is not the first and she is not alone. Furthermore, the fight against surveillance can take different forms. Political-legal regulation, through laws such as the General Data Protection Regulation (GDPR) of 2018, is a first step, although it remains timid. Technical regulation, for its part, develops technologies and platforms that are more respectful of individual freedoms. Finally, economic regulation can dismantle, through antitrust policies, the major digital players such as Google or Facebook. Shoshana Zuboff sticks to fairly general recommendations. This is a good foundation, but there are many other things to explore, and in more detail.

## ###ARTICLE\_START### ID:2076

Her name is Shoshana Zuboff. She is the Charles Edward Wilson Professor at Harvard Business School, and her work chronicles the excitement, disappointments, and anxieties of those who have watched new technologies take over our societies. Zuboff was one of the first to analyze how computers were transforming the world of work. A pioneer in the detailed study of the upheavals of management, she initially welcomed the arrival of “knowledge workers.” She saw early on that the spread of the Internet and the generalization of personal computers would create a “new economy” capable of meeting the needs of individuals and strengthening the power of consumers. Then she was terribly disappointed. In January, Zuboff summarized her fears in The Age of Capitalism Surveillance (Public Affairs). The Anglo-Saxon press, from the liberal Wall Street Journal to the very left-wing The Nation, from the Guardian to the New York Review of Books, but also the anti-capitalist Naomi Klein and the professor of communication Joseph Turow, have hailed this book as a major essay. The title, "The Age of Surveillance Capitalism", announces the concept: in twenty years, "without our meaningful consent", a mutant capitalism led by the web giants Google, Apple, Facebook, Amazon and Microsoft (Gafam) - has interfered in our social relations and introduced into our homes "from the smart vodka bottle to the rectal thermometer", summarizes Shoshana Zuboff. It has mapped and photographed the streets of our cities, captured our faces and expressions, tracked our connections, recorded our desires, recorded our affects. Based on artificial intelligence, it has developed a generalized surveillance of our behaviors. It then resold this big data to companies, but also to political movements. The American investigative magazine The Intercept called the essay "a masterpiece of horror. Shoshana Zuboff's intellectual journey is worth the detour. A student of social psychology, she had a "revelation" in 1980 after three years of investigations in the world of work: "Computers are coming to businesses," she explains. "Our societies are on the cusp of a structural transformation as profound as the industrial revolution of the late 19th and early 20th centuries." In 1982, she became one of the first female professors at Harvard Business School, teaching "organizational behavior. "There were so few women professors at Harvard," she recalls, "that there weren't even bathrooms for them in the faculty club!" A "panopticon of information" In 1988, she published a vast study on the arrival of the computer in business: In the Age of the Smart Machine. The Future of Work and Power (Basic Books, not translated). Based on hundreds of interviews with employees, executives and managers in banking, commerce, large industry and telecommunications, the book highlights the transformations brought about by the IT revolution: it produces work that is more abstract, more symbolic, more disembodied, more isolated. "If computers make it possible to automate and lighten bureaucratic tasks, substantially reducing costs," she continues, "they also generate a quantity of new information, developing new areas of learning and knowledge for employees." According to her, this new circulation of information challenges traditional management: "subordinates" seize new knowledge about the company, express themselves, take initiatives. A new type of "informed organization" is emerging, less hierarchical, more flexible, mobilizing new "knowledge workers" - ideas that are today taken up by supporters of the "liberated company." But this democratization immediately raises "conflicts of authority on the theme of 'Who knows?', 'Who decides who knows?', 'Who decides who decides?'", so much so that many managements, she says, cannot "resist the temptation to use these new data flows to centralize information and control their employees even more. Some are implementing a new management of generalized surveillance, which she calls, referring to Michel Foucault's work on the disciplinary society, "the panopticon of information. In the Age of the Smart Machine has become a classic in the analysis of work in the era of computerization: in this book, Shoshana Zuboff underlines both its emancipatory possibilities and its risks of total control. The future is still open, but, six years after the publication of the work, in 1994, doubts take hold of her: she believes that the utopia of a company renewed by information technology has not ultimately been realized. “The broader possibilities of an informed and cooperative workplace were ignored,” she sums up. Disappointed, Shoshana Zuboff changed her life: she took a sabbatical and moved with her husband to a farm in Maine in 1996. A few years later, she decided to conduct a multidisciplinary investigation into consumption, value creation and the impact of high technologies on our lives. In 2002, she published with the entrepreneur James Maxmin The Support Economy (Penguin, not translated), a book that attempts to describe “the next episode of capitalism.” Shoshana Zuboff’s analyses evolved: the researcher, who was pessimistic about the changes in the world of work, became optimistic about the transformations of the consumer society. "Behavioural surpluses" For her, as for many analysts of the time such as Jeremy Rifkin in The Age of Access (La Découverte, 2005), Siobhan O'Mahony in her work on open source or Thomas W. Malone, a specialist in collective intelligence at the Massachusetts Institute of Technology, the generalized circulation of information is profoundly transforming the mass consumer society dominated by advertising: it is generating, and this is good news, "a world of informed individuals seeking to control the quality of their lives" and to impose it on companies. This is what Shoshana Zuboff calls "psychological self-determination" - which is reminiscent of the "reflexive modernity" based on the "individuation" of sociologists Anthony Giddens and Ulrich Beck. Thanks to networks, portable technologies and personalization, she writes, the consumer can take control and impose himself on producers. “In 2001, the iPod broke the music industry’s mass-purchase model of CDs,” she says. “Music assets are distributed directly to the consumer, who demands the music they want, when they want it, where they want it.” She sees this as a sign that new technologies can offer new powers to the consumer. She writes as much in numerous articles in BusinessWeek and Fast Company: we are witnessing, according to her, “the arrival of a new ‘distributed capitalism,’ where value creation depends on a new logic of distribution attentive to the needs of individuals. But nothing is going as planned.” The year 2001 was the year the Internet bubble burst: the 4,300 Nasdaq companies, overvalued, lost 145 billion dollars between 2000 and 2001. To deal with the loss of confidence of their investors, Google's leaders, relying on the ideas of the economist Hal Varian, decided to monetize the personal data of their millions of users: they understood that it revealed their desires and documented their behavior. It was a real war chest of "virgin wood extracted at very low cost", estimates Shoshana Zuboff. Google decided to resell it at a high price to merchant capitalism. Between 2001 and 2004, the year of its IPO, Google's revenues increased by 3,590%. In 2006, the firm bought YouTube for 1.65 billion dollars. In 2008, a Google executive whom Shoshana Zuboff calls "Typhoid Mary" - moved to Facebook and communicated Google's methods to her new employer by taking advantage of the network's "social graph", which displays all users' connections. The distribution giant Amazon and the Microsoft company, which bought LinkedIn and its 400 million affiliates in 2016, also converted to these methods. "Surveillance capitalism" is being established. One of its central concepts is, the academic assures in his essay, the notion of "surplus behavior. The Gafam, but also telephone operators like AT&T or companies of the Internet of Things and the "smart city", do not just collect usage and service data: they integrate invisible spying devices into network pages and intelligent machines. They thus identify, thanks to algorithms, our most intimate habits. They recognize our voices and faces, decipher our emotions and study their diffusion using “affective computing” in order to capture “the entirety of human experience as free raw material. These masses of behavioral data are resold as extremely lucrative “prediction products.” “You are not the product,” summarizes Shoshana Zuboff, “you are the abandoned carcass of the elephant hunted by poachers!” “A Faustian contract” The logic of this hunt leads to what she calls “instrumentarianism”: the ability to shape behaviors in order to obtain “profitable results,” or even to “automate” conduct. “It’s become hard to escape this market project whose tentacles extend from innocent Pokémon Go players being directed to bars and stores that pay to lure them to the ruthless exploitation of Facebook profiles to direct individual behavior”—by “clicking yes to the new sneakers offered after your Sunday morning run,” or by targeting “your weekend vote,” as seen during the Cambridge Analytica scandal, the consulting firm whose slogan proclaims “Data drives all we do.” “They want our souls,” concludes Shoshana Zuboff. “We’ve signed a Faustian contract with them.” Since its release, “The Age of Surveillance Capitalism” has received a barrage of criticism. In The Nation, Katie Fitzpatrick, a professor of education at the University of Auckland, argues that Zuboff’s “bleak assessment” is justified, but that she “fails in her political analysis” because she is blinded by her confidence in the democratic capacities of liberalism. “We don’t need a new alarmist political theory to understand what’s going on,” she concludes. For digital scholar Evgeny Morozov, author of The Digital Mirage (Ordinary Prairies, 2015), Zuboff’s analysis, which is all the more disturbing given that she has worked for “two bastions of techno-optimism,” Fast Company and BusinessWeek, focuses too much on surveillance and not enough on capitalism: “By treating surveillance capitalism as our new invisible Leviathan, she misses the point that power has been working for centuries: the invisible Leviathan has been with us for a long time.” » For Shoshana Zuboff, these critiques fail to take into account the fact that "the situation is unprecedented" in the history of capitalism. "It was not inevitable," she adds, that we would move from the immense possibilities offered by the World Wide Web and new technologies to surveillance capitalism. "This capitalism goes against the primitive digital dream," she explains. "It removes the moral content that the network itself has, it abolishes the fact that being 'connected' is, in any way, inherently prosocial, or naturally tends towards the democratization of knowledge." She denounces "a coup d'état dictated by the market, disguised by a technological Trojan horse, annexing and spying on human experience, producing an unprecedented asymmetry of knowledge, which hinders the normal mechanisms of defense of democracy. How to counter it?" She doesn't talk about it much in her essay, but she says she doesn't believe in antitrust laws that would dismantle Gafam: "That would only multiply the number of companies developing the same strategy." She also doesn't believe in campaigning for data ownership: everything is played out, according to her, on "surplus behavioral data" constantly extracted in secret. She applauds the European General Data Protection Regulation (GDPR) and defends new encrypted search engines like Tor; but, for her, they only chip away at Google's intrusive power. So? We don't yet know what forms the resistance will take, she concludes, but users and digital workers will, according to her, do like "the poor classes of the 19th century," who organized themselves into unions and associations to fight industrial capitalism, impose social laws on it, contain rampant exploitation and demand a representative and democratic political system. Could this be Shoshana Zuboff's latest utopia?

## ###ARTICLE\_START### ID:2077

Conceived by Emmanuel Macron as a political find to get out of the yellow vests episode, the great national debate immediately revealed itself as an unexpected scientific subject. On February 8, two days after the deadline for submitting contributions, the government responded to the researchers' request and put all the texts in open data ("open source"). The National Research Agency then launched a call for expressions of interest to exploit them. A small Grenoble start-up specializing in improving written communication, Orthodidacte immediately siphoned off the 170 million words. Because, even before analyzing the occurrence of the exasperations of nearly a million and a half French people (older and more educated than the average of the population), the corpus makes it possible to measure their degree of possible quarrel with spelling. Unfortunately, no one had the idea of putting all the writings of the press on the same platform over the same period and on the same subject. Not sure that the winners would have been where we think... Combining linguistics with computer processing for language analysis, the company founded by Michael Hiroux develops French language training exercises for businesses. "We analyze employees' output and build courses based on the mistakes they make," he explains. With the great debate, "we found ourselves faced with the only corpus of everyday writing of this size," says Michael Hiroux. Of course, it is not an exact reflection of French spelling, he analyzes: "The consultation framework provides some guidance: people are careful, they often wrote together." Result: 1.8% of words with a linguistic "error" - a term that replaces the moralizing "fault." A good score? "That's still one mistake every 50 words, which makes 2 or 3 mistakes per email," Hiroux qualifies. This is said without value judgment. "Freedom of expression comes before spelling!" can be read in the conclusion of the study. Accents It really takes tenacity to master accents. In the corpus of the great debate, the accent causes 78% of errors. It is missing or wrong in 680,000 words and the absence of the small acute on the "e" alone causes 460,000 errors. This is all the more unfortunate (circumflex) since the contributions often mention the State (98,006 times "etat") and education (24,049 "education"). The most tricky accents (in descending order): ô, ê, è and â. The coexistence of acute and grave accents in the same language, or even in the same word, is a refinement of cruelty (1,771 "trés"). In defense of the writers, the study points out "the inadequacy of writing tools such as computer, smartphone and tablet keyboards. In the absence of tools that are truly adapted to writing accents (whether they are difficult to produce or simply inaccessible), they are sacrificed." Silent letters Another of the great perversities of the French language: some words contain silent letters, those that are not pronounced. No doubt aware of the risk of the missing silent letter, the writers of the great debate tend to add a letter where it is not needed. There are 1,992 "soit" said (instead of "so-called"), but also a good frequency of "parmis" or "chaques". The deletions of silent letters also exist in the corpus. Examples: "interdir", "moin". But let the one who has never wondered whether one writes "exorbitant" or "exorbitant" throw the first Bescherelle at the unfortunate contributors. 73% In French, the most annoying agreements are not the ones you think, namely the famous agreement of the past participle with the auxiliary "avoir". Finding the subject in a sentence in order to agree the verb is not always easy. Examples: c'est "cela qui les pousse" or ce sur quoi "porte les frais". Even more surprising, nearly three quarters of the agreement errors found in the contributions (73%) concern the banal agreement around the noun. Thus 250,000 adjectives are not agreed according to the noun that precedes them. Examples: "de manière direct", "les profiters important", "sa situation social", "les hommes politique". The same goes for determiners that make the singular and plural waltz: "la discriminations", "à deux vitesse", or 150,000 errors. The authors of the study, good princes, attribute this type of blunder to "carelessness" and estimate that they "could have been avoided by a simple rereading". 14,000 Pleonasms represent 14% of all the errors recorded in the contributions to the great national debate. This is quite significant, but this way of adding "a repetition (conscious or unconscious) to what has been stated", as defined by the National Center for Textual and Lexical Resources, is perhaps experienced as a way for the writer to be sure that it has been understood correctly. We participate in the great debate to convince. Nevertheless, the most used pleonasm in the contributions is "selective sorting", identified 14,000 times. But since the public authorities have consecrated the expression, can we blame citizens who use it for an error? And besides, is it really a pleonasm? A sorting can be random and still remain a sorting... NLMP In which case do we forget to double the consonants? Or, on the contrary, in which case do we place one consonant too many? This pitfall (or trap) of French, which makes us write "chariot" but also "charrette", did not ultimately trap the contributors too much. "29,000 errors involving double consonants: this seems quite few compared to the other errors in the spelling of words", note the authors of the study. Among the consonants to be doubled (or not), the "n" is the most perilous, with 6,638 errors. Either it is superfluous, when it is a question of "carbonne", or it is missing when it is a question of "proportionelle". And since the great debate has addressed both a lot, the risk of making a mistake was increased accordingly. Hyphen We don't know the exact number of citizens who contributed to the great debate, but one thing is certain: they all faced the problem of the hyphen. Roundabout or roundabout (the right one)? After six months of the yellow vest crisis, even journalists sometimes hesitate. In the corpus of contributions, it is the absence of a hyphen that dominates the field of errors with, at the top of the list, "au delà" (11,256 times), then "vis à vis", "au dessus", "ci dessus" or "centre ville". Almost all departments lose their "div", as the correctors say, as do the "Etats Unis" or the "Pays Bas". On the other hand, other terms gain one ("parce-que", "entre-eux"). To which must be added the words that are victims of undue truncating ("platform", "main mise"). "Coup de la vie" Here it is, the absolute trap of the French language: the homophone. It sounds the same but is not written the same. And the difference is sometimes very small: with or without an accent, "a" does not say the same thing. Hence the 140,000 errors of "a" and "à" in the contributions to the great debate, a score followed at a distance by "des" and "dès" (35,000 errors). As always in stories of graphic accents, "it is difficult to know what the real share is error and what share is negligence", write the authors of the study. However, the homophone has an unexpected quality: it opens the door to poetry and the unconscious combined. Doesn't the "public voice" perfectly say that it was necessary to seize the "way" to make one's "voice" heard? As for the "blow of life", isn't it the excellent synthesis of the way in which difficult ends of the month dent existences? 130 million Out of the total package of 130 million words of contributions, how are the 2.39 million errors distributed? Almost equally, between lexical spelling errors (36%) and agreement errors (34%). On the lexical spelling side, real traps such as doubled consonants or silent letters are quite marginal and represent less than 4% of errors. It is accents that massively fail writers. On the agreement side, same surprise: past participles, subject-verb agreements and confusions between "er" and "é" - all the things that cause trouble at school - only generated a quarter of the total. 54 The contributions to the great national debate, as found on the government's open data platform, represent 170 million words. After removing duplicate contributions, we recover 130 million. The equivalent of 250 times Les Misérables. In this total, how many mistakes? 2.39 million. That is 1.8% of the words. Put like this, it doesn't seem like much, but the probability of making a mistake is not that low: 1.8% is equal to one blunder every 54 words. On the scale of sentences, if we consider that there are 10 words on average per sentence, we therefore find one every 5 to 6 sentences. Paronym The paronym is the principle of the word for another which, pushed to the extreme, gave the Belle Lisse Poire of Prince de Motordu with which Pef made generations of kids laugh. In a less funny genre, we find in the contributions to the great debate laws to be "edited" when they should be enacted and taxes to be "recovered" when it would be appropriate to recover them. But rest assured: a simple search in the Google news feed reveals a fair amount of taxes to "recover", even from the pens of established media outlets.

## ###ARTICLE\_START### ID:2078

The US government has granted a delay until mid-August before the sanctions are put into practice. After that, phones sold by Huawei will no longer be able to use American technologies, which include certain components, the Android system and several very popular applications. Until then, nothing changes for current owners of Huawei smartphones. They will still be able to use Android, Google services such as the Play Store and YouTube as well as Facebook applications and update them. The same principle applies to those who buy their device before the summer. Huawei has also stated that it will provide "security updates and after-sales service for existing Huawei and Honor smartphones and tablets worldwide". There is no indication how the situation will evolve. If an agreement is reached between the American and Chinese authorities, the sanctions could be lifted, in which case business will resume between Huawei and its American partners. Otherwise, Huawei will have to develop alternative system software and applications itself, which it has the means to do. The group could also produce a modified version of Android (in open source), independent of Google. With, perhaps, arguments that will make us forget the original... DS

## ###ARTICLE\_START### ID:2079

Patricia dreams of "neighborhood fridges" to store her unnecessary food and "avoid waste." Hélène, for her part, advocates for shared vegetable gardens. But it's "Ravon" who wins the day with 100% positive votes for the "tide mill" he wants to install on the Scorff, the local river. Since May 2, the 22,000 residents of Lanester (Morbihan) have been able to put forward their ideas for the fourth year in a row as part of the participatory budget. A system for which the municipality is using the services of the start-up iD City, which is renting it a turnkey digital platform in its colors. The city chose this young local start-up in 2015, "because one of the co-founders is from the neighboring city of Concarneau," explains Damien Fournel, the director of citizenship. Like Lanester, 130 communities implemented such a process in 2018, half of which used a service provider, according to the annual survey by the website Lesbudgetsparticipatifs.fr. A movement that is part of a broader participatory dynamic, launched in France by the urban struggles of the 1970s, continued with the creation, in 1995, of the National Commission for Public Debate, and which culminated in recent months with the great debate, in response to the "yellow vest" movement. While it constitutes a major political issue at a time of disaffection for the ballot boxes, participatory democracy has also become a market "subject to the commercial logic of competition", says Alice Mazeaud, co-author with Magali Nonjon of the book Le Marché de la démocratie participative (Ed. du Croquant, 2018). To meet demand, a multitude of companies are now established - a guide published in June 2018 by the Caisse des Dépôts lists more than fifty of them, with objectives as varied as the profiles of their founders. At their head, we find activists for citizen participation converted to entrepreneurship, as well as highly qualified researchers who have become "collective intelligence consultants", engineers specializing in the publication of "civic tech" software (consultation platforms, online petition sites, etc.) or communicators in search of meaning. "Getting out of the DIY era" Before co-directing the consultancy firm Missions publiques, one of the service providers of the great debate, Judith Ferrando wrote a thesis in sociology on "the citizen, the politician and the expert in the face of participatory systems. Cyril Lage, whose company Cap collectif also took part in the great debate, worked for nine years for the firm Spin Partners, which specialises in "influence communication" and lobbying for businesses and communities. Former director of Deezer, Axel Dauchez left the presidency of Publicis France to find, he explains, "a kind of fulfilment" by launching the consultation platform Make.org. A "nebulous" one, believes Ms Mazeaud, who sees in the "porosity between sectors a very French specificity. A curious mix of genres that is not without consequences on practices. "Participatory democracy does not always have the same meaning depending on the actors," she says. When she talks about her work, Judith Ferrando does not use the word "market". "I prefer to talk about a field of activity," warns the person who organizes consultations on behalf of both communities, for example, citizen debates on autonomous vehicles in Rennes and Toulouse, and international institutions, such as in 2015, on a European scale, on the ecological transition. Julie de Pimodan, co-founder of Fluicity, an application that aims to strengthen ties between elected officials and residents, has no difficulty with commercial vocabulary. She is in the process of completing a fundraising of several million euros (the second in three years) and worked for five years in a sales team at Google, before launching into entrepreneurship. "Of course citizen participation represents a market since there are shares to be taken," she assures, "but it is not a market like the others. Commercial relations are much more regulated there than elsewhere. You also have to find politically neutral investors." In ten years, the deployment of these professionals has had the effect of structuring practices. Training courses have emerged and have "helped us move beyond the era of tinkering", says Ms Ferrando, for whom "best practices, such as transparency, traceability of speech, commitment of public authorities to accountability, are now well known, if not always implemented. However, with rare exceptions, companies in the sector depend heavily on sponsors, elected officials and administrations, who do not always differentiate between participation and communication. "There is an imbalance in the balance of power, which can lead the sponsor to impose its rules", notes Clément Mabi, lecturer at the University of Technology of Compiègne, for whom the digital component of the great debate was "a revealing test. The national consultation organized by the government was first marked by its scale and cost. According to the Prime Minister's office, it cost "a little over 11 million euros", of which some 10% was for the Cap Collectif platform (1.07 million), the rest being divided between the organisation of regional and youth conferences (2.65 million), the analysis of contributions (3.28 million), the "communication plan and restitution event" (2.18 million) and additional expenses. Guaranteeing the independence of the debates However, for many observers, the system also represented a step backwards from a methodological point of view. Certain rules were not respected, despite the reservations of the guarantors: repeated interventions by the President of the Republic during local meetings, leading questions that excluded subjects such as the wealth solidarity tax (ISF), voting and comment functions disabled on the online platform... A system for which Cyril Lage, co-owner of the platform, does not want to take responsibility. "As a software publisher, we rent our tool to a client who is the sole master on board," he believes. "Of course, I would have liked the government to use it differently, but we have to be patient. In France, institutions are discovering participatory democracy." But, for Clément Mabi, "it is the economic model that poses a problem. "Cap Collectif was paid by the State to reduce its deliberative capacity. Such practices can be dangerous for democracy." How can you guarantee the independence of debates when part of your income depends on one of the stakeholders? Among those involved in citizen participation, the issue is not avoided. "Some public actors have understood the methodological issue and even adopted charters, such as the City of Paris or the Haute-Garonne department, but others are not yet familiar with them," notes Judith Ferrando. Before accepting a service, the consultant therefore ensures in advance that the dice are not loaded: "We sometimes do not go there, when we feel that the project seems already tied up. We are not there to make citizens swallow the pill." Other professionals take a step back by adjusting their governance model. "We do not respond to calls for tender so as not to find ourselves in a dominant-dominated relationship," explains Stéphane Vincent, from the 27th Region, a structure that supports communities in the co-construction of projects with residents. In Dunkirk, it has worked on a "scholarship" to combat energy insecurity or, in Mulhouse, on a "leisure card" intended for 12-25 year-olds. The team has kept its "non-commercial association status in order to enter into more horizontal partnership agreements", and also uses private funding from the American foundation Bloomberg Philanthropies, named after the former mayor of New York. Mr. Vincent nevertheless acknowledges having "learned from [his] mistakes. "I know what a broken promise is, when a community does not implement a project and the residents feel betrayed." Coming from the associative sector, Virgile Deville and Valentin Chaput opted for the social and solidarity economy when they founded, with two other partners, their start-up OpenSource Politics, which supports the Lille metropolitan area and the city of Nanterre in participatory approaches. A way, for them, "to remain in line with an activity that aims to be collective intelligence. The company uses Decidim, a platform developed by the city of Barcelona and which has the dual particularity of being under free software (it can be reused for free) and associated with a "social contract", a sort of ethical charter that "allows us to display [their] values loud and clear", notes Mr. Deville. "With this imposed framework, we are stronger to negotiate. » In the field of civic tech, the question of access to data and software is central, but often remains variable. Business models vary from one company to another. Fluicity remains the sole owner of both the data and the voting algorithm, while on iD City and Cap Collectif the sponsor can access personal data, but not the software. Should a code of good practice be defined that is valid for all consultations? This is what the Code for France collective is defending, which would like to write down in black and white the obligation to use open software, in order to avoid the risk of "black boxes" of democracy. "For people to have confidence, we need guarantees on how the algorithm that will sort their contributions works," emphasizes Benjamin Jean, the president of Open Law, an association that supports this approach and contests the use of "proprietary" tools (whose access to the computer code is not authorized) for the collection and analysis of the great debate. For political science researcher Alice Mazeaud, the implementation of good practices is necessary but not sufficient: "We can design a methodologically exemplary system, but it makes no sense from a political point of view," she believes. This is even the main pitfall for her: "The professionalization of participation leads to the multiplication of systems that are unrelated to important issues. We vote for beehives on the roof of the city hall, more rarely on taxation or the place of real estate developers in the city." Crowdfunding With other researchers, she is thinking about funding methods that would allow the emergence of autonomous citizen participation. As in Quebec, where the city of Montreal has equipped itself with independent systems called "neighborhood tables" - which bring together associations and residents, and have a budget. "Such public funding, independent of the powers in place and managed jointly, would allow citizens themselves to initiate debates," confirms sociologist Marie-Hélène Bacqué, who detailed this idea in a report submitted to the Minister of Urban Affairs in 2013. For the moment, in France, only calls for donations allow such steps to be taken. To pay their bills, the "yellow vests" of the Vrai Débat, a competing platform of the great debate, have thus resorted to crowdfunding. And they are preparing to repeat the experience to finance the organization of citizens' assemblies planned for June.

## ###ARTICLE\_START### ID:2080

What do the cities of Helsinki in Finland, Waterloo in Belgium, Barcelona in Spain, the Nancy metropolitan area and the Nouvelle-Aquitaine region in France have in common? All of these communities use the same digital platform to involve their residents in the development of public policies. Launched in collaboration with researchers from the Open University of Catalonia, the "Decidim" project ("we decide" in Catalan) was born in Barcelona from the desire of former mayor Ada Colau, elected in 2015 on a programme called "Barcelona en Comù" ("Barcelona in common"), to promote long-term participation by residents. A guarantee of transparency Participatory budget, consultation spaces, call for ideas, referendum... The digital platform offers the usual participation tools, but it has the particularity of being part of a "digital commons" approach, designed under a free license, meaning that their code is open. A guarantee of transparency for its creators, and also a way to share the tool that can be copied for free and improved by other players, as part of a "social contract. In France and Belgium, a civic tech company, OpenSource Politics, has been supporting communities and administrations that want to deploy the platform for two years. "Many cities invest in private digital solutions, which is a shame," explains Arnau Monterde, researcher and coordinator of "Decidim" in Barcelona. Public money must be invested in public projects that can benefit everyone." Could the defeat of the outgoing team in the municipal elections on May 26 call the project into question? No one knows whether the future coalition in power will continue its funding. "We designed the project to ensure its continuity, regardless of the color of the government," assures Mr. Monterde. The team of researchers and developers from Barcelona has organized itself into an association. And relies on the user community to help maintain the platform.

## ###ARTICLE\_START### ID:2081

AERONAUTICS After acquiring Socata, a subsidiary of Airbus and manufacturer of the TBM business jet, in 2009, the Daher aeronautics group has just completed the acquisition of KVE Composites, a Dutch technological gem. This transaction is part of the 2018-2022 strategic plan "Succeed Together" of this family-run ETI, present in aeronautical construction, equipment and systems as well as services and logistics. "KVE Composites is two years ahead in thermoplastic welding technology. With the latter, the use of rivets is reduced by 75%, which generates average mass savings of 15%, reduces production time and improves the recyclability of the material", explains Didier Kayat, CEO of Daher. With KVE, the group is consolidating its European leadership in thermoplastics with a production of 160,000 parts per year. This material is increasingly used to manufacture fuselage elements because it is light and very strong. Its market is expected to increase from 322 tons produced per year for a value of 402 billion dollars in 2019, to 1,000 tons for 1 billion dollars in 2030. Thermoplastics are very popular with designers of e-VTOL, these automated vertical takeoff and landing aircraft. "There are more than a hundred projects of this type in the world. We are often consulted by manufacturers who evaluate the properties of metallic and thermoplastic materials," says the CEO. Growing in the United States Daher has created a structure in the Netherlands to house KVE and its laboratories. The company "will continue to develop independently" in The Hague within the "thermoplastics cluster". There is no question of curbing the creativity of this family start-up. The goal is also to develop "open source" solutions and to award licenses to interested manufacturers in order to "create the market standard". At the same time, Daher is ready to bring together players in the aerostructures market, but rather in the United States where it wants to strengthen its industrial footprint. It looked at the LMI file, bought by the Belgian Sonaca in early 2017, but it considered the price too high. In Europe, it does not rule anything out but does not show any interest in a merger with Latécoère. "The only interesting activity for us would be the resumption of the manufacture of passenger doors for the Boeing 787 Dreamliner in Mexico. For the rest, a merger would result in social disruption", explains Didier Kayat. Still as part of its strategic plan, Daher has expanded its range of aircraft, launching, alongside the TBM 910, a new turboprop, the TBM 940. The aircraft, which will be exhibited at the Paris Air Show (from June 17 to 23, near Paris), has started its commercial career well with 25 orders received in three months. In the United States, Daher has decided to take over the direct distribution and maintenance of the TBM fleet in the northwest of the country. After becoming a tier 1 partner of Boeing, by boarding the 787 Dreamliner in 2018, Daher has won new contracts across the Atlantic, notably the logistics market for the Airbus plant in Mobile, Alabama, and service for Bombardier in Canada. In 2018, the group, which delivered 50 TBM aircraft, recorded its eighth consecutive year of growth, with a turnover of 1.2 billion euros, up 10% compared to 2017. "Our strategic plan is progressing nominally," concludes Didier Kayat.

## ###ARTICLE\_START### ID:2082

GitHub has always strived to win the hearts and trust of IT developers. But in 2019, the young company, which offers them one of their favorite tools, seems ready to give even more guarantees to seduce them. As if a year after the company was bought by Microsoft in June 2018 for 7.5 billion dollars (6.7 billion euros), it needed to reassure its users. It must be said that the acquisition of this platform, which presents itself as "the home of free software" - a large part of the stored computer codes are accessible to all - by the Redmond giant, long a defender of proprietary software, had raised concerns in the developer community. Some had even migrated to competing solutions. Sponsorship system The appointment of Nat Friedman as head of GitHub quickly reassured its users. Arriving from Microsoft, he acquired, in a previous career, a solid reputation in the world of free software. His first actions at the head of the company have demonstrated his good intentions. Thus, he quickly acceded to one of the main requests of users by offering them the possibility of creating, with certain restrictions, private directories to store their work. A service that is normally paid for. Because this is the economic model of GitHub: the tool is free for all those who leave their codes in public access, thus allowing others to benefit from it or suggest improvements, but those who wish to keep their work secret, typically from companies, must pay. In recent months, Mr. Friedman has worked hard to exchange with users to identify their needs. "I take a few hours every Friday to talk with them," he explains. And this seems to be paying off: since the acquisition by Microsoft, the platform has gained 5 million users (for a total of 36 million today). The announcements made on Thursday, May 23, in Berlin, by GitHub, should further accelerate the movement. The company launched an in-app sponsorship system that allows you to make donations to independent developers, in order to recognize their voluntary contributions to the ecosystem. GitHub has committed to doubling the stake during the first year. The San Francisco startup also announced new features aimed at more easily remedying any security flaws. "We want to make developers' work easier, help them be more productive," Mr. Friedman insisted, for his first participation in a GitHub event. "Not being locked in" Finally, the least significant announcements concerned paid services, while the platform has 2 million subscriber "organizations", twice as many as in 2017. Having come under the Microsoft umbrella, GitHub does not want to give the impression that it now wants to put profit before the community. One of the rare synergies between the two companies was the recent launch of a combined offer of two of their services. "The acquisition makes it easier for us to access Microsoft's customers," the manager admits. But it doesn't go any further, he assures: "We are completely independent." He also wants to emphasize that the platform remains neutral: "We support all clouds [cloud computing], all terminals." There is no question of favoring Microsoft's solutions, because "developers want to have a choice, not to be locked into a solution. That's also what being free is about.

## ###ARTICLE\_START### ID:2083

The 1.2-litre petrol engine that powers best-sellers from Renault, Dacia and Nissan is experiencing serial failures. UFC-Que Choisir has sent a formal notice to manufacturers to repair the anomaly Privacy The GDPR, which came into force a year ago, has shaken up the rules in terms of data protection Safran The engine manufacturer is once again experiencing tensions over its future governance Free software Bought by Microsoft, GitHub displays its independence

## ###ARTICLE\_START### ID:2084

. Loiseau list (LREM, MoDem, Agir, Radical Movement): tax large digital companies at the European level; agree on a European strategy for artificial intelligence (AI), the regulation of illegal content and strengthened cooperation in cybersecurity. . Bardella list (National Rally): against the introduction of a tax on digital giants at the European level; for a strengthening of the GDPR. . Bellamy list (Les Républicains, Les Centristes): for the taxation of non-European digital giants and the establishment of lists derogating from competition rules to create European champions. . Aubry list (LFI, Republican and Socialist Left): strengthen the GDPR by prohibiting the export of data outside the EU and their commercialization; impose the development of free software and ecological computer hardware in European institutions; demand transparency of AI algorithms. . Pirate Party: for the taxation of Gafa, or even their dismantling; to regulate new forms of work in the digital age, cyber threats and AI.

## ###ARTICLE\_START### ID:2085

TECHNOLOGY Tensions between Washington and Beijing have escalated. On Sunday, Alphabet, Google's parent company, announced that it was suspending business relations with China's Huawei, the world's second-largest mobile phone company. This is a direct consequence of an executive order signed by Donald Trump last week, banning American companies from doing business with foreign telecommunications companies deemed "dangerous to national security." A thinly veiled attack on Huawei, a collateral victim of the trade war raging between China and the United States. For months, Donald Trump has accused it of facilitating Beijing's espionage operations through its telecoms equipment. He had already banned Huawei's 5G network equipment from the United States, and encouraged its allies to do the same. This time, it is the Chinese company's consumer activities that are being directly targeted. Google's decision specifically concerns the use of Android, Google's smartphone operating system. It powers 80% of the mobiles sold worldwide, including those from Huawei. In accordance with the decree, Google is stopping all its activities involving a transfer of technology to Huawei, with the exception of those available in "open source". In concrete terms, this means that Huawei will no longer be able to use Google's most popular services, starting with its Google Play app store. Farewell also to Alphabet's other services, such as YouTube, Gmail or Google Maps. On the other hand, Huawei will be able to continue using the "free" version of Android. To continue offering applications on its phones, which is vital for a smartphone to be useful, Huawei has several choices: turn to other app stores, increase the number of pre-loaded applications on its devices... or develop its own store. The brand already has one for China. It remains to be seen whether it can (or will) extend it outside its national borders, by expanding its catalog of services intended for its Western customers. In short, a real headache in perspective. In the meantime, the group specifies that it will continue to "perform security updates and maintain after-sales service for all Huawei and Honor smartphones (the group's second brand, editor's note) that have been sold, including those that are still in stock." It also promises to "continue to build a secure and sustainable ecosystem for its customers." For Huawei, there is urgency. The group is aiming to become the world's number one smartphone manufacturer, a goal that is much more complicated to achieve if it is deprived of Google's services. Consumers may opt for other brands in order to benefit from all the services usually offered on Android smartphones. Google could also suffer the negative consequences of its own decision. Huawei holds 19% of the global smartphone market. In Western countries, its market share is generally between 10% and 20%. That is the number of consumers who will potentially soon no longer have access to its services. And who will no longer make purchases on Google Play, purchases on which the group receives a 30% remuneration. On the other hand, the situation is not changing for him in China. The majority of his services have long been banned in the Middle Kingdom. Chips also affected The decree signed by Donald Trump also had the effect of a small bomb among semiconductor manufacturers. Many Americans, including Qualcomm and Intel, have also announced their intention to stop supplying Huawei with electronic components and software. Of course, the Chinese company develops its own chips for certain uses, but it still depends very largely on its American suppliers. However, the decision only concerns Huawei, the other Chinese smartphone manufacturers should be able to continue to supply from the Americans (they are not equipment suppliers, unlike Huawei). The stock market did not wait to see more clearly before panicking. All the stocks in the sector, Qualcomm, STMicro, Broadcomm... saw their shares plummet on Monday. Huawei is the only major smartphone manufacturer whose sales increased significantly last year. Depriving its suppliers of this outlet is inevitably bad news for the entire industry.

## ###ARTICLE\_START### ID:2086

Already on the catwalks, in luxury boutiques and now in perfumeries: this season, neon is everywhere. At the same time, what could be better than these colors with strong photogenic potential to attract the attention of millennials addicted to social networks - let's remember that promoting a scent on Instagram, invisible therefore, remains a headache for brands... "In the big commercial successes, the bottle serves the story of the product, with a harmonious and feminine design. In the niche, the fragrance prevails over marketing and form, with sober glasses and shades. In the end, everything ends up looking the same, underlines the bottle designer Marc Touati (AIO agency). Bright colors become a way to differentiate yourself: we keep a standard glass, but we finish it with a varnished color spray." Precisely the technique chosen by JUS (1), a young French label eager to capture the spirit of the times and the retina of new consumers. "The flashy universe reflects our digital era, with its likes and emojis flashing everywhere," explains Jean-Baptiste Roux, co-founder of this collection currently distributed exclusively at Printemps de la Beauté. In a recycling logic, called upcycling, we used old molds from the 1950s and 1960s that we lacquered in flashy shades. This design also highlights the originality of our formulas, which would not pass consumer tests." Examples: Gingerlise's ginger-absinthe or Springpop's iodized basil. In a radical approach, the accords are revealed in "open source" on the brand's website, and all the bottles are refillable. 1980s carefree At Les Parfums de Rosine (2), the latest additions to the Les Extravagants range have also been repainted in flashy shades by a street artist (Leo & Pipo). "We took color as the starting point for the scent brief," explains brand director Marie-Hélène Rogeon. The nose Michel Almairac transcribed this neon pink through blackcurrant and a rose, an accord evoking nail polish, with its glossy side." At Mugler (3), it was the new Colognes that were artificially tinted with neon yellow, Stabilo blue, etc. In order to echo the tangy juices, even if the initiative is risky, customers are demanding transparent or barely tinted formulas. "The younger generation tends to want to break the codes. These digital natives grew up with the ecological and financial crises, they constantly fantasize about the carefree 1980s. This audacity and nostalgia also affect design, music... Note the remixed disco funk that they listen to on repeat today," continues Marc Touati. Neon is currently reserved for confidential perfume lines, but I wouldn't be surprised if we see it soon on a major international launch."

## ###ARTICLE\_START### ID:2087

TECHNOLOGY After the fire at Notre-Dame, many people shared their souvenir photos of the cathedral on social media. This gesture could help with the restoration of the monument. Microsoft and Iconem are launching Open Notre-Dame this Friday, a website to collect millions of photos of the building and model it in 3D. "The 3D plans by American Andrew Tallon date back to 2013, but the building has moved a lot," explains Yves Ubelmann, architect and CEO of Iconem. This company has already reconstructed destroyed or threatened monuments in 3D, such as the ancient city of Palmyra in Syria or the site of Pompeii in Italy from images taken by tourists or archives. "Obtaining images from different periods will also allow us to better observe the evolution of the monument and better plan its reconstruction," he adds. To build his platform around Notre-Dame, Yves Ubelmann has partnered with Microsoft, which is providing him with the technical infrastructure to develop a project of this scale. Iconem's algorithms, which make it possible to imagine an object in 3D from millions of 2D images, require significant computing and storage capacities. Some prestigious participants have already pledged their support, such as photographer Yann Arthus-Bertrand - who took aerial images of the monument - and Ubisoft, whose Assassin's Creed Unity video game gives pride of place to Notre-Dame. "Open source" project Soon, anyone will be able to participate in the project by sharing their own image on a dedicated website. "Even a souvenir photo of a detail taken with an iPhone can be extremely useful," explains Yves Ubelmann. The platform is entirely "open source", meaning that the data can be used and modified by anyone. "For Microsoft, heritage data belongs to everyone and it was only natural that we offered our contribution to this project that was close to our hearts," explains Carlo Purassanta, President of Microsoft France. From the recreated plans, researchers will be able to develop cross-sections and compare the evolution before and after the fire, conduct other research... Application developers will be able to imagine virtual reality experiences to keep lovers of the building entertained while the work is being carried out.

## ###ARTICLE\_START### ID:2088

A Mediterranean climate over half of France, intense and long-term droughts, more frequent marine submersion phenomena. By 2050, France will have to absorb an "inevitable climate shock. How to deal with it? With what tools and what means?" This is the subject of a vast report written by senators Ronan Dantec (EELV, Loire-Atlantique) and Jean-Yves Roux (various left, Alpes-de-Haute-Provence) on our country's adaptation to climate change in the middle of the century, published on Thursday, May 16. This work, the most comprehensive ever carried out on the subject, concludes in essence that France is not prepared. In this 150-page document, commissioned and adopted by the Senate's foresight delegation and written following the hearing of 36 experts, the senators put forward around thirty proposals to "initiate a real change in society", such as the implementation of a national plan for adapting agriculture, the development of anti-flood construction standards or the open-source (free access) of climate data. "Adaptation policies still suffer from a persistent lack of recognition and legitimacy, both in public debate and in public policies", regrets Ronan Dantec. In fact, stakeholders still too often consider climate issues through the sole prism of mitigation, i.e. limiting greenhouse gas emissions and protecting and improving carbon sinks, which amounts to tackling only the causes of climate change. Its corollary, adaptation, which deals with the consequences of climate change by limiting its negative impacts, is less taken into account. For example, only 20% of international climate funding is devoted to it. However, the two strategies, "avoiding the unmanageable" and "managing the inevitable", as the report calls them, should go hand in hand. Adaptation policies are an "urgent and major issue. Because, the report recalls, "global warming and its scars are already here, transforming the physical and human geography of France and weighing on our existence with tangible constraints and risks. We are therefore in 2050. According to the "relatively optimistic" scenario adopted in the report, the global climate machine has not completely run away and the geopolitical framework has not fundamentally changed compared to today. If our society has not collapsed, the impacts of climate change have worsened "significantly", even if "not yet critical. In this France at +20C compared to the pre-industrial era, heat waves are more frequent and more intense, snow cover in the mountains continues to decrease and glaciers are retreating. A France "crushed by heat" It is in reality in the second half of the 21st century that the climate situation will "probably be very degraded. At that time, the forecasts are uncertain, because they depend essentially on the choices that will be made today to reduce (or not) greenhouse gas emissions. But this more distant outlook is necessary, assure the authors, for many long-term decisions in terms of public development, construction of infrastructure or replanting of forests. In a scenario of continued emissions at the same rate as currently, France will be "crushed by heat" in 2100, particularly in the South-East. Temperatures rise from +3.4 0C to +3.6 0C in winter and +2.6 0C to +5.3 0C in summer compared to the reference average (1976-2005). Extreme heat waves are increasing, much more severe than those of 2003. Precipitation increases in winter, except in the South-West. The sea level rises by 60 cm to 1 metre compared to the beginning of the 20th century. The period of soil drought lasts six months instead of two months over the period 1961-1990. Around 2060, Mediterranean territories will be subject to an extreme risk of fire 80 to 100 days per year. Despite this future that will continue to darken, the rapporteurs point to "a generally insufficient mobilisation", and even "embryonic for the vast majority of local authorities and economic sectors. And this, despite the adoption, in 2011, of a first "national plan for adaptation to climate change", followed by a second for the period 2018-2022, two non-normative texts. They therefore recommend "sending a strong political signal without delay on the priority nature of adaptation", in particular by entrusting Parliament with the examination of a framework law on this subject, accompanied by a "broad societal debate", as well as the inclusion of climate issues in the school curriculum and professional training. A "leading role" should also be given to the regions and intercommunal structures, which are best placed to define and implement effective territorial policies. They also highlight the need for "transparent and credible quantification of financial needs. The Minister for Ecological and Inclusive Transition, François de Rugy, announced that 3.5 billion euros will be allocated to the second national adaptation plan, while the previous one had only received 17 million euros. The effort therefore seems significant. But this envelope, in addition to the fact that it does not appear explicitly in the plan, comes mainly (3 billion euros) from a reallocation of part of the budgets of the water agencies. "Without strong financial support, local authorities will have difficulty truly committing to ambitious policies," warn the senators. In their eyes, several projects are "crucial. First, "support for the territories most vulnerable to climate change. These are the overseas territories, particularly exposed to the risk of cyclones, coastal areas, nibbled away by erosion and threatened with submersion, as well as mountainous regions, where global warming weakens pastoral activities and tourism associated with winter sports. Then, "the adaptation of buildings and urban planning", by adopting construction and urban planning standards that limit the damage caused by extreme events such as floods, storms or heat waves. Saving and recycling water Another major project is a redesign of water policies, in order to prioritize the saving and recycling of water resources, of which agricultural irrigation currently consumes 43%, while relying on natural solutions to preserve them, such as the "de-artificialization" of soils or the restoration of wetlands. The authors again insist on the essential "transformation of the agricultural sector", on the front line in the face of rising temperatures and water scarcity. They advocate "a shift towards agroecology", which strengthens the capacity of soils to store and return water to plants, but also the search for crop varieties that are more resistant to drought. This sector must prepare for "a recomposition of the map of France's crops. The report will be sent to the Prime Minister, as well as to François de Rugy and his colleague in agriculture, Didier Guillaume. In order, Ronan Dantec hopes, that the government will set in motion a "real culture of adaptation.

## ###ARTICLE\_START### ID:2089

INTERNET She has been dubbed the "Geek of the Assembly" and enjoys making fun of it. In less than two years, MP Paula Forteza has quickly established herself among the tech and digital-minded parliamentarians in the Chamber, where she stands out with her working methods, a type that is new to the institution. Surrounded by professional computer scientists and developers from the world of free software (programs that can be downloaded, duplicated and modified as desired, often for free), Paula Forteza is happy to draw inspiration from their habits and language. Just like developers who "open up" their code by sharing it so that their peers can criticize and improve it, she has made her diary and, above all, her expenses related to her parliamentary allowances "open source" (freely accessible) since she arrived at the Assembly. On her website, we can find details of certain lunches or even shopping at Le Bon Marché up until the end of 2018. "It's work, it takes time to organize this accounting," she explained to the specialized media Next Inpact. "But this is how we are moving forward so that it becomes the norm for MPs, the goal being that citizens know how the money that comes from their taxes has been spent." The openness has been pushed to the MP's own office. Every Friday, she invites anyone who wants to come and see her work and ask her questions to visit her at the National Assembly. The "Open Office" initiative has attracted imitators. At the end of April, Brune Poirson, Secretary of State for the Ecological Transition, tried it to involve citizens in the development of a bill on the circular economy. This regular event also includes the promotion of the Democracy OS platform, an online consultation tool that allows everyone to participate in political life. Using and defending this tool earned Paula Forteza the European Political Innovation Award last fall. Her taste for transparency and the modernization of institutions, particularly through methods inspired by technology circles, does not come from nowhere. Paula Forteza herself comes from the ecosystem whose innovations she has been closely observing for several years. Born in France and raised in Argentina, she began her career after Sciences Po in the public sector by joining the Etalab mission in 2015, attached to the Prime Minister and working to modernize public action. There, she worked on open data and transparency policies in the administration. It is in these areas that she co-founded the company OGP Toolbox, a platform that lists digital tools used around the world to strengthen transparency in public life. The idea of the "Open Office" is listed there and is inspired by the Brazilian Congress and its "Labhacker". This cutting-edge entrepreneurial career makes her a popular figure in digital circles, where many recognize her as "a connoisseur". She also remains very close to niche tech innovation circles, particularly in the "reg tech" and "civic tech" sectors. These two terms refer to start-ups that focus on using technologies to improve regulatory policies or propose innovative solutions to make institutions work better. Paula Forteza also supports certain projects as rapporteur of the National Assembly's "Digital Democracy and New Forms of Citizen Participation in Reforms" working group. More recently, she also stood out for her positions on digital innovation during the great national debate, where she defended the use of digital technology for a more participatory democracy. Opening up the field of quantum technologies In the political field, her expertise has led her to gain momentum in digital regulation. She was chosen to lead the project to transpose into French law the European Regulation on the Protection of Personal Data (GDPR), also known as the Cnil 2 law. A thorny issue, on which the MP was keen to broaden the legislative procedure beyond the traditional dialogue with lobbies and experts, by organizing various "open" meetings. At the beginning of April, the government entrusted her with a parliamentary mission linked to the future of quantum technologies, which are proving crucial in the development of artificial intelligence and the computing of tomorrow. Within her party, La République en Marche, Paula Forteza was also appointed digital delegate to the executive office. "Unlike those who harp on about the Gafa discourse about the need to learn to code, she brings an innovative perspective on the impact of technologies in public life," emphasizes a young walker. Understanding how a mechanism works, diverting it, tinkering with it for technological experiments that improve daily life, that is indeed the approach of a hacker. Our main issue will be that of the reform of practices at the level of deputies, through digital technology

## ###ARTICLE\_START### ID:2090

The Danone brand is 100 years old. The company that now bears this name has chosen to commemorate the event in its own way and in Barcelona, where Isaac Carasso launched his first yogurt in 1919, after being forced to flee the Balkans, taking this dairy specialty with him in his luggage. Even though his son Daniel lived to be over a hundred, he was not there to celebrate this anniversary. But his daughter did accept the invitation to the "family meal" organized by Danone on Tuesday, May 7. Around the table were partners, former employees of the group and of course its honorary president, Franck Riboud, whose father, Antoine Riboud, had merged his BSN group with Gervais-Danone in 1972. He renamed the agri-food company after the iconic brand of fresh dairy products. For the current boss of Danone, Emmanuel Faber, there is no question of feeding on nostalgia. True to his career as a pioneer of new territories, he took the opportunity to unveil a new initiative on Wednesday. Centennial Danone is going to share its heritage. The group has decided to give free access to its historic collection of 1,800 strains of lactic ferments and bifidobacteria, 193 of which are deposited at the Pasteur Institute, the others being in the hands of its research and innovation center in Paris-Saclay. "We have assembled a treasure and, today, we want to share this century of innovations with the rest of the world. Especially since we only use a fraction of it," said Mr. Faber. Beyond yogurts and fermented milks, he imagines researchers ready to exploit lactic ferments and bifidobacteria to regenerate soils, reduce methane emissions from cows or facilitate the administration of medication to patients. A way of affirming that the food revolution, mentioned by the Danone CEO, is a collective affair. Mr. Faber makes no secret of it: he draws inspiration from the world of open source, which has made the technology giants successful, even if he recognizes that this free nature could find its limits in the event of the development of a marketable product. Another concern: health safety. The use of ferments remains a well-supervised exercise. "A bug in food safety is more serious than a computer bug," concludes Mr. Faber.

## ###ARTICLE\_START### ID:2091

PATRONAGE Comic book fans will see this as a tribute to The Horn of the Rhinoceros, one of the Spirou and Fantasio adventures imagined by Franquin. Volunteers from the Loweveld Rhino Trust track rhinoceroses, put them to sleep and insert a small capsule into their horn. In the comic strip, it is microfilm; here, it is a sensor from the French company Sigfox and a project to preserve the endangered species. "This choice ultimately resulted from a series of coincidences," says Christophe Fourtet, co-founder of Sigfox. "Originally, we were approached by a Swiss bank that wanted to launch a rhinoceros protection program. It didn't happen." But the idea stuck. Only 27,000 to 30,000 rhinoceroses still live in the wild in the world. The animal is hunted for its horn, to which Chinese medicine attributes all sorts of virtues. Locating them in the reserves, thanks to the Sigfox sensor, is a way to protect them from poaching and better understand their behavior. Convincing Leonardo DiCaprio "We make sure that the information is used by researchers, and not to track animals for tourists," explains Marion Moreau, director of the Sigfox Foundation. Creating an endowment fund, as we did, is easy. All you need is 15,000 euros. It's after that that it becomes complicated." The fund allows Sigfox to collect money from other donors and to be a mission operator. The start-up is therefore campaigning with other companies or potential patrons. "We are trying to convince Leonardo DiCaprio, who is a great defender of the ecological cause, to take an interest in our foundation," adds Marion Moreau. He would make a perfect ambassador. Before launching the project, she also had to choose a partner. "More than 70 non-governmental organizations (NGOs) have been created in one year around the defense of rhinoceroses," notes Marion Moreau. "They raise millions of dollars but not all of them are credible. Some equip the animals with sensors as big as milk cartons." In its specifications was the need to work with competent partners who are sincere in their approach. The Loweveld Rhino Trust, which depends on the NGO Save the Rhinos, met the criteria. The company and the NGO therefore launched the Now Rhino Speaks project, an allusion to the fact that with these sensors, the animals send information on their movements. Only a few people at Sigfox and Loweveld have access to it. "The difficulty is both on the ground and financial. The project is not profitable, we have to find solutions to make it viable," summarizes Christophe Fourtet. Sigfox also benefited from the support of Eutelsat. The sensors are connected to the Sigfox network, which in Africa is connected to the Internet via satellites operated by the French company Eutelsat. This free satellite link is key to the Now Rhino Speaks system. In the long term, Sigfox hopes that its sensors, worth around fifty euros each, can be produced by other companies and used to protect other species. The device can be further reduced in size. "To make this technology accessible to as many people as possible, everything has been made open source," explains Ludovic Le Moan, co-founder of Sigfox. He hopes that others will take up the cause.

## ###ARTICLE\_START### ID:2092

Once the preserve of video games, augmented reality is gradually making its way into operating rooms. For now, this technology -- which superimposes data captured in real time onto 2D or 3D images -- is only being used experimentally. But Marta Kersten-Oertel, a professor in the Department of Computer Science and Software Engineering at Concordia University, is hopeful that augmented reality will make surgeons' work easier in the coming years, particularly in neurosurgery. Currently, surgical visualization tools used in the operating room allow doctors to orient themselves using a system similar to a GPS, explains Ms. Kersten-Oertel. "Surgeons use a map, which represents the patient's anatomy, obtained by magnetic resonance imaging [MRI] or a computed tomography scan [CT scan], and which allows them to see the cerebral vessels. They can then orient themselves to reach a tumor, an aneurysm or any other abnormality in the brain." But to access this map, surgeons must necessarily look at a monitor where the images are displayed, which means that their gaze must continually alternate between the patient and the screen. "This back and forth is not optimal," stresses Ms. Kersten-Oertel. "By projecting virtual images of the patient onto themselves in real time, we can guide the surgeon so that he can devote himself entirely to the patient without looking away," explains the researcher. Augmented reality also allows much more precise targeting of the areas to be operated on. To achieve the combination of mapping the patient's anatomy with a view of the surgical field, Marta Kersten-Oertel's team suggests using an iPad, which can be sterilized and then used directly in the operating room. "We establish the correspondence between the images on the iPad and the patient's scans using a real-time 3D tracking system, which allows us to determine the relative position between the patient and the tablet at all times." Limiting risks For now, this technology has been tested at the start of the operation to help plan the route to take to get to the area to be operated on. Augmented reality has proven particularly useful at the craniotomy stage, i.e. the sectioning of the skull, says Ms. Kersten-Oertel. "Surgeons need to perform the smallest craniotomy possible while ensuring they have access to everything they need." Étienne Léger, a doctoral student in computer science, is working with Marta Kersten-Oertel to develop this technology. "As soon as you work in the brain, there are a lot of vessels, and you obviously want to do as little damage as possible to healthy tissue," he says. "With augmented reality, the surgeon can walk around the iPad and have a much more intuitive idea of the three-dimensional structure they need to reach. They can then find the best trajectory to follow, understand the structure to reach and determine the size of the opening they will need." To carry out their research, Marta Kersten-Oertel's team is using the open-source software platform Ibis (Intraoperative Brain Imaging System) developed by researchers Simon Drouin and Anka Kochanowska of the Montreal Neurological Institute. "Our goal is really to make surgeons' work easier, so that they have the information they need as easily and intuitively as possible," says Kersten-Oertel. The question of surgeons' confidence in this new technology is therefore crucial. "If a surgeon has to reach a tumor that is deep, he has to be sure that it is exactly in that location." The next step would therefore be to be able to measure the degree of uncertainty. "There may be a small margin of error related to the calibration of the camera, the positioning or even the movements in the brain once it is opened," explains Léger. For all sorts of reasons, we can lose a little precision, so it would be useful for the surgeon to know how certain we are of the location of the place to reach." For the moment, Marta Kersten-Oertel's team has only tested augmented reality for brain operations. "But there could be many other applications," suggests Léger. This content is produced in collaboration with Concordia University.

## ###ARTICLE\_START### ID:2093

Chitandika, Lusaka (Zambia) - Anyone who has forgotten the benefits of electricity is invited to visit Chitandika, in eastern Zambia, in southern Africa. In this desolate and verdant village, lost more than ten hours of bumpy road from the capital, Lusaka, solar panels represent a new hope for development. In this small town of 1,500 inhabitants, a mini-electricity network was inaugurated at the beginning of the year with a few solar panels, coupled with three brand new batteries. They are located at the northern exit of the village and connected to electricity poles that connect a hundred homes, a health center, two schools and a church. The French group Engie, which invited Le Monde to come and observe this installation, is at the origin of this "Power Corner". A sky-blue hut, surrounded by solar panels, stuck in the dusty red earth of Zambia and presented as a major change for the few hundred inhabitants of the surrounding area. Once the connections are made, electricity is accessible through a prepaid system. In the country, only 4% of rural inhabitants are connected to the grid. "Pride, pride, pride, for electricity," sing the students of the Chiziye school, which was recently connected. In this single-story building, three too-small classrooms accommodate more than 150 children and adolescents, who are forced to use the infrastructure in turns. Here, the connection to the mini-electricity grid has made it possible to install about ten computers on which an encyclopedia and free office software have been downloaded. "It is also an open window on the world," notes Clara Villain, one of the project managers. The village's small health centre has also benefited from a connection, which allows medical procedures to be carried out at night. "Here, most women give birth at home, but when there are complications, they come to the centre. Now, there is no need to give birth with a torch at night," explains a visitor. "Mini-grids" are one of the hopes for access to energy in Africa, even if, today, the number of Africans who benefit from them is very relative. According to the International Energy Agency (IEA), these networks connecting a few hundred people could represent between 9% and 30% of the continent's electricity supply in 2030. These projects are developing rapidly in Uganda, Kenya and Nigeria. Several Canadian, British and French companies are competing in inventiveness on this market, in a dozen countries. "In many parts of Africa, where housing is very sparsely populated, extending the national electricity grid makes little sense and requires considerable investment," says Heymi Bahar, a specialist in renewable energy at the IEA. These systems are expensive and are still struggling to be based on a convincing economic model. In Chitandika, the installation cost is $300,000 (around €270,000). An association supporting rural farmers, Musika, with Swedish funding, provided almost a third of the money needed. Without subsidies or NGO support, this type of project is very complex to set up. Rudimentary devices One has to imagine the difficulty of transporting electrical equipment, poles and cables to connect homes that are very far from each other in a rural region, on bumpy roads that are only accessible part of the year. "It's an expensive process," acknowledges Yoven Moorooven, head of Engie's Africa branch. "At this stage, we're not looking for profitability. If we develop a lot of them, we'll be able to lower costs," hopes Mr. Moorooven, who points out that the French group has already developed twelve mini-grids of this type in Tanzania and is supervising several projects in Senegal. In Namibia and Botswana, mining companies are working to install this type of small network for their activities and could thus finance the connection of neighboring villages. Another major tool could contribute to the rapid electrification of sub-Saharan Africa. Solar kits, or "solar home systems," are more rudimentary devices, which rely on a small solar panel, a battery, a few low-energy light bulbs and... a microcredit system. “It’s a very simple solution technically, which is developing at a remarkable speed and which allows people who cannot afford to buy all the equipment at once to have access to energy,” says Mr. Bahar of the IEA. According to the latest available figures, between 500,000 and 1 million Africans have solar kits of this type. Interestingly, 95% of potential beneficiaries of this type of device cannot afford to buy a complete installation directly. In Zambia, the Fenix group, acquired by Engie in 2018 and already present in Uganda, boasts of having already sold 75,000 kits of this type. The logic is simple: users pay a very small amount, between 5 and 20 cents per day, and can benefit from the installation from the first day. “This allows people in traditional homes to get rid of dangerous kerosene lamps and, more importantly, to have adequate lighting at night,” says Lyndsay Handler, CEO of Fenix, at the company’s headquarters in Lusaka. After 24 to 36 months, customers become owners of the equipment and can then add other panels and, therefore, other services: a radio, or even a television, with the same leasing system. According to IEA studies, between 18% and 24% of Africans could be powered by off-grid systems by 2030. “There is no doubt that these systems are very cheap, easy to install and much more efficient than diesel engines,” says Mr. Bahar. At the customer’s home, a small box, the size of a hard drive, collects usage data and sends a detailed report to the parent company via the mobile network. Customers, who almost never have a bank account, pay with their phone and are thus given a credit history, a sort of reliability rating, which is decisive in the event of payment difficulties. Because this is one of the main challenges: "It is very difficult to get people to pay regularly who have almost no income," says Marion Peterson, co-director of SupaMoto Energy in Lusaka, which also offers solar kits and cooking fuel. In rural Zambia, farmers are very dependent on the weather, and their incomes fluctuate. When customers stop paying, the power can be cut off immediately, even though the system is perfectly functional. "If people are too late in paying, we go back to get the equipment," concedes Fenix, which assures us that this kind of situation is "rare. Paying by phone also requires special sales gymnastics. While Africa is often hailed as a global outpost for mobile payments, the reality is more mixed in remote areas. “A lot of people don’t have phones, so you need to have field agents who can both convince people to install the kits and collect the money,” says John Fay, director of Vitalite, another Lusaka-based company. Huge expense This means hiring and training hundreds of people to reach hard-to-reach locations. “This creates opportunities for low-skilled jobs for maintenance or installation,” notes the IEA. Here too, the investment required is significant. Especially since, while all these companies offer similar models, competition also comes from small, poor-quality solar panels, which are much cheaper but have an uncertain lifespan. For Fenix, as for its rivals, the key to success is scaling up and recruiting hundreds of thousands of customers to balance the investment. An approach that involves considerable expenditure, but also raises questions about the future. Will the development of these small-scale systems be an obstacle to the development of larger networks? “Solar kits or mini-grids are a very important first step, but they do not allow us to take other steps to strengthen economic activity,” warns Heymi Bahar of the IEA, for whom this solution nevertheless remains “the most effective and the least expensive. Full frame

## ###ARTICLE\_START### ID:2094

At first glance, the premises look like all the Google premises in the world: the famous logo in primary colours is visible on a wall, computers are placed on brand new desks, a break room houses a Play-Station console, the kitchen area an espresso machine and a microwave... Only a few details betray the first artificial intelligence (AI) laboratory opened in Africa by the digital giant: the impressive lines of code on the screens of the ten researchers who work silently in the open space, a large board filled with mathematical formulas, but also, on the wall, hangings and a collection of kente fans, these Ghanaian fabrics with geometric and multicoloured patterns popular throughout Africa. The meeting rooms have been named "Bojo" and "Labadi", after beaches in this English-speaking country located in French-speaking West Africa. Why open an artificial intelligence centre in Ghana? This question intrigued the journalists invited, Wednesday, April 10, to Accra, the capital of the country, to visit this laboratory announced in June 2018 and opened last February. The country enjoys political stability and a good level of education in science, agrees the director of the laboratory Moustapha Cissé. But there is a deeper reason, believes this rising star of AI, a 34-year-old Senegalese who paces the offices in an elegant and long round-necked shirt but without his beautiful loafers, which he has taken off: "Opening a laboratory here, in Africa, can advance science by bringing a different perspective from that of researchers based in the United States or France." Among Google's seventeen artificial intelligence centers, nine are located in North America, five in Europe, two in Asia and one in Israel. The Accra lab aims to address the lack of "diversity" and "bias" in research, which prevents, for example, facial recognition software from properly identifying black faces because it has not been trained enough. This basic research center aims to address problems in Africa in health, agriculture, or the translation of "the continent's 2,000 languages." But is AI a priority in countries that lack hospitals or electricity connections? "We must not over-technologicalize solutions," recognizes Joe Quinn, one of the researchers, a former professor and AI advisor for the United Nations in Uganda. "But artificial intelligence can be useful. Especially if you are there to talk to those who could apply it." In Uganda, he developed software to sort blood samples infected with malaria. AI could also help spot diseased cassava leaves or cancerous skin lesions using a mobile phone. Quinn also hopes to map buildings in Africa, using satellite imagery from Google Maps. "There is less concern about Google or Facebook here than in Europe and the United States. There is even some enthusiasm among young people, who see technology as a springboard for development," says Kester Aburam Korankye, a tech journalist at the Daily Graphic, Ghana's leading daily. Nii Narku Quaynor, a professor and head of Ghana.com, often described as "one of the fathers of the Internet in Africa," is more cautious: "It will all depend on Google's attitude: will it behave like a multinational company that defends its own interests, or as a partner that supports a local ecosystem?" Striking backgroundsOne of the fears associated with large foreign companies is the "brain drain." LRM MP Cédric Villani, author of a report on AI in France, even spoke of the risk of "cybercolonization" in Europe and Africa. "Opening a local laboratory has an ambiguous effect," he says. "It allows researchers to stay in place but can also attract people who would not have left, and help large American companies attract the best skills. However, I welcome Google's investment as an undeniable positive step forward." "In our case, there is no brain drain, on the contrary!" assures Mr. Cissé. "I myself had to leave ten years ago but I came back," says the researcher who was "forced to expatriate" to study AI in France, before joining the Facebook laboratory in Paris. The backgrounds of the researchers at the Accra lab are striking: many are African but the majority studied abroad, or lived there. Bright and young, the team reflects a globalized and pan-African diaspora. Jörg Doku is the only Ghanaian on the team, while three members, including him, have passed through the "very cold" American state of Minnesota: he arrived there at the age of 5 and was, before returning to Accra, an employee of Facebook's AI lab in New York. Nyalleng Moorosi was born in Lesotho but left for the United States at 16, before returning to South Africa, where she helped the Kruger National Park anticipate poacher attacks. Sarah Hooker, an Irishwoman, was raised in several African countries before working for Google in the United States. Joe Quinn left his native Scotland in 2007 to make himself "useful" in Africa, but he notes that one of the members of the Accra team, Ernest Mwebaze, was trained in Africa: he was his student in Uganda. "It's very hard for us to find expertise here in Ghana," explains Ayorkor Korsah, the director of the computer science department at Ashesi, a private university in Accra. She is therefore delighted to be "in discussion" with Mr. Cissé to bring Google researchers into classes, get advice on teaching, set up research projects, etc. These expectations match those of the directors of MEST, a computer science school and start-up incubator based in Accra. At Google, they say they are open to collaborations. "Today, it is difficult for large digital companies to recruit and retain engineers in Silicon Valley, in the United States, so we might as well try to look elsewhere," comments Gilles Babinet, vice-president of the National Digital Council and an expert on Africa. In fact, Google and Facebook are present throughout the AI ecosystem in Africa. They co-finance 50/50 the AI master's degree that Moustapha Cissé created in 2018 in Rwanda: it will welcome 100 students in September, with the opening of a branch in Ghana. "It is the best master's degree in AI in the world," says Antoine Bordes, from Facebook's AI laboratory in Paris, who is one of the teachers, as are Yann LeCun and Yoshua Bengio, winners of the prestigious Turing Award. Through their foundation, Facebook CEO Mark Zuckerberg and his wife, Priscilla Chan, have also co-funded Andela, a computer science school based in Kenya, Nigeria and Uganda. Facebook and Google have supported "Black in AI", an initiative to "increase the presence of black people" in the sector. And both sponsor the "Deep Learning Indaba", the African summer school dedicated to AI. Co-founder, Ms. Moorosi is not worried about the omnipresence of American giants: "It is in their interest to listen to us: if they help us solve our problems in Africa, we will use their products." Because Africa, where almost half the population is under 18, is a promising market. Google CEO Sundar Pichai and Mark Zuckerberg also visited the continent in 2016, in Nigeria. Today, only 35% of Africa's 1.2 billion people have access to the Internet, compared to 60% of the rest of the world, says Google, which wants to "connect" the continent. "Fiberize Africa," can be read in English on the fluorescent vests of employees digging trenches along the streets of Accra to install cables for CSquared, a 25% subsidiary of Google. Also present in Liberia and Uganda, the operator claims 20% of the fiber market in Ghana. Its competitors are Chinese companies, leaders in local networks and cheap phones. A wish for opennessTo spread its services like YouTube in Africa, Google has created lighter versions that can be used offline, called "Go." The Accra laboratory also wants to "democratize" AI with algorithms that are less data- and network-intensive. Google and Facebook also provide training and awareness-raising to the population, developers and local start-ups. "It's a great thing that Google is boosting research on the continent. But there is still a concern that needs to be dispelled," says Abdoulaye Baniré Diallo, winner of the Next Einstein, an African science prize. In the West, we debate ethical, inclusive research in artificial intelligence, with safeguards on the use of data, regulation by states... But in sub-Saharan Africa, there are few rules." This Guinean living in Canada will open "a decision-making center in the field of data" in Senegal in September. For Nicolas Miailhe, from the think tank The Future Society, Africa could take inspiration from the General Data Protection Regulation (GDPR) adopted in Europe, with "exceptions" for local start-ups. Mr. Quaynor suggests reserving a share of public digital markets for African companies. For its part, Google has vowed to be open: the company shares its AI research as open source ("free access"), as well as the software in its "tensor flow" toolbox. It assures that it has not benefited from any advantages from the Ghanaian government. Asked about the lack of regulation, Moustapha Cissé notes that some African countries are adopting rules, but above all he emphasizes the principle of responsibility, "as a researcher and a company" - Google has adopted an ethical charter on AI. "A good number of the team members are Africans. For all of us, it is a calling to advance research responsibly in Africa," he promises. On this, as on the rest, Google is in any case highly anticipated. FULL FRAME Alexandre Piquard

## ###ARTICLE\_START### ID:2095

The publication on April 18 of Alain Damasio's new novel, Les Furtifs (La Volte), long awaited by aficionados (and beyond), will give rise to an unusual launch party, on Wednesday, April 24, starting at 6 p.m., at the Gaîté-Lyrique, in Paris (Gaite-lyrique.net). On the program, augmented reality, a workshop on "computer alternatives and free software", musical performances and, frankly, the author of La Horde du Contrevent (La Volte, 2004) himself, signing books and on stage.

## ###ARTICLE\_START### ID:2096

The Cégep de Chicoutimi will be offering something new this summer: a week-long robotics day camp. "We are preparing a summer camp for young people aged 12 to 15 during the week of August 5 to 9 here at the Cégep de Chicoutimi," Josée Dallaire, general director of the Centre de géomatique du Québec, one of the project partners, begins by explaining. The workshops will be given by Yanick Ouellet, the head of the Asimov Robotics Club. There are 20 spots available and registrations will be done at www.camp-techno.com. This platform is managed by the Prompt organization, which already organizes camps in Montreal, Quebec City, Sherbrooke, Trois-Rivières and Gatineau. Saguenay is therefore new this year. They will offer support to the Cégep de Chicoutimi to prepare to manage the young people during their week. But Yanick Ouellet is not really worried. "I already meet with young people from the Chicoutimi Seminary twice a week who are between 12 and 15 years old. I have around 14 young people," he explained. The days will be divided in two, while in the morning the young people will be able to program a robot in teams of two. The finished product could look like the small robots that roam the planets of the solar system. They will have a few sensors that can be programmed, as well as their movements. The young people will use an Arduino card as the brain of their robot. "Arduino is an "open source" system. You can do a whole range of things with it. It connects via USB to a computer," explained Mr. Ouellet. In the afternoon, it will be the turn of collaborations with partners Ubisoft, Strateolab, Mapgears and the Scientific Demonstration Centre. These will most likely involve visits to their premises. Video games, augmented reality and positioning should be part of the activities. "On Friday, they will do a demonstration in front of their parents," said Josée Dallaire. The cost will be $200 for the week and the days will run from 8 a.m. to 4:30 p.m. pgirard@lequotidien.com

## ###ARTICLE\_START### ID:2097

Tribune. The interest of an exercise in participatory democracy is to allow citizens to express themselves more freely through sophisticated and reasoned responses, well beyond a simple vote or a yes or no answer to a set of questions. The challenge is to try to go beyond the limits of representative democracy, which struggles to reflect the diversity of a population of 67 million inhabitants. Regarding the "great national debate", the contributions posted on the online platform are public, and anyone can consult them. But they are also so numerous that no one can read them all. Hence the need to rely on automated processing. It is OpinionWay and Qwam (through the former for the processing of free texts) who are tasked by the government with producing a summary of these contributions by classifying them into categories and subcategories with artificial intelligence tools. A similar mission was entrusted to a consortium led by the consulting firm Roland Berger for the analysis of free contributions from citizen notebooks, letters and summaries of public debates (which have not yet been made public). But is there only one way to carry out such an analysis? If several analyses are possible, how can we create the conditions for interpreting the results and judging their fidelity? Providing a faithful synthesis of rich and by nature ambiguous, imprecise and sometimes contradictory textual contributions is a major challenge because we do not know the relevant categories in advance, and we do not have a subset of previously classified contributions. The artificial intelligence algorithm must therefore automatically construct the categories from the raw data and associate the contributions with them. This is called unsupervised learning, as opposed to so-called supervised problems such as face recognition where algorithms learn from image banks annotated with the corresponding identity. To compensate for the lack of supervision, an unsupervised algorithm necessarily relies on assumptions. For example, a naive approach would be to define categories as sets of keywords and would associate a contribution with a category if it contains enough keywords from that category. Many methods and preprocessing are possible, ranging from basic techniques based on dictionaries and word counts to complex and more contextual approaches, based for example on recent advances in deep learning, not to mention mixed methods incorporating human arbitrations. These choices influence the tone of the results: several of them may prove relevant, or even provide a complementary vision. Some approaches may also amplify the already structural differences between the data of the great debate and the opinions of the general population, which are a natural consequence of demographic, social and territorial differences; moreover, they risk overrepresenting activists of various causes. Just as a face recognition algorithm trained on a database containing more male faces than female faces will tend to perform better on male faces, the categorization algorithm may give too much importance to a few very frequent themes by obscuring the variety of themes addressed. The lack of supervision makes it difficult to validate the chosen method. The government has already announced that political lessons will be learned from the restitution of the great debate, announced for this Monday. For the process to be acceptable to the population, the analysis must be as transparent as possible, based on open-source algorithms, open access, and clearly described. In particular, the method used to construct the categories must be transparent. The association between each individual contribution and the categories must also be made public in order to allow a posteriori validation of the synthesis. This transparency is an essential condition for the public to have confidence in the results and for them to be able to be compared with the analyses carried out independently by other actors such as citizens, associations or researchers.

## ###ARTICLE\_START### ID:2098

Which owner ready to rent out their home has not asked themselves this question: should they use an agent for their rental management? According to real estate professionals, only 35% of individuals leave the entire rental process to property managers, at the risk of losing a little on the yield: "Using a professional costs between 7% and 10% of the amount of rent collected, which is enormous if they do their job badly," notes Pierre Hautus, general director of the National Union of Property Owners (UNPI). However, these costs are deductible from rental income. For this sum, the professional takes care of not only the advertisement, but also the choice of tenant, the drafting of the lease, the inventory of fixtures, and issues the various administrative documents intended for the lessor or the occupant of the accommodation. An ideal solution for owners who live far from the property they are renting and have neither the time nor the desire to take on this sometimes time-consuming workload. The management mandate can be issued to a real estate agent or a notary. However, the owner must ensure that the professional is a member of a financial guarantee fund covering their liability in the event of serious incidents. In the case of solo rental management, the income received will necessarily be higher. However, it is better to live near the rental property and have some good accounting and legal knowledge. Housing laws have followed one another, without being alike, in recent years (ELAN law, ALUR law, etc.), sometimes making it difficult to understand what is legal and what is no longer legal in the rental sector. The UNPI regularly offers training to landlords, so that they can update their knowledge. Since the cost of guarantees for unpaid rent is higher for single owners, it is better to bet directly on a tenant whose economic situation is solid or who has excellent guarantors. Finally, to edit your rent receipts or manage your accounting, many free software programs exist on the Internet. All that remains is to free up enough time to manage everything yourself. Owners can rely on digital technology. Platforms and applications specializing in rental management (Homepilot, Flatlooker, etc.) or only on certain specific points such as editing the lease (Bailfacile) or the inventory (WeProov) are legion. Practical solutions... which have a cost. From 3.9% of the rent to almost 8% for platforms that provide individuals with the same tools as real estate agents. "It is mainly young owners who opt for these solutions. Traditional landlords, used to paper, are reluctant. It must be said that these innovations are recent, sometimes complex to get to grips with, and not always very secure from a legal point of view,” deplores Pierre Hautus.

## ###ARTICLE\_START### ID:2099

ECONOMIC POLICY They have therefore revised their ambitions downwards. A year ago, the deputies of the Finance Committee were fighting to obtain the creation of an independent budget evaluation agency, like the American Congress Budget Office. The agency of their dreams should have been endowed with a budget of 4 million euros per year and around forty employees. Alas, Richard Ferrand, the President of the Assembly since September 2018, has hardly supported the initiative of parliamentarians from all sides pushed, on this subject, in particular by the LREM deputy Amélie de Montchalin (Essonne). The former meteoric Minister of Territorial Cohesion at the start of the Macron five-year term has not buried the request, but decided to respond to it differently, in a less expensive way, via the launch of a tax simulation tool. "For the ex-ante evaluation of laws, Richard Ferrand proposed that two administrators from the finance committee be associated with Etalab collaborators (the government services in charge of data, editor's note) for the design of a tax simulation tool available to MPs. It should be ready for the 2020 finance law," Jean-Noël Barrot, MP for Yvelines and Secretary General of the MoDem, confirmed to Le Figarol'économiste. Called "LexImpact", the tool is currently being finalized. Meetings are underway between the administrators, Etalab specialists and the MPs of the committee to find out their needs. The idea is that they can evaluate for themselves the impact of their amendments on public finances, know the redistributive effects, possibly geographical... The "Chorus" software "Access to data remains a question. The tool will be based on Openfisca, a simulator that models the French tax system in open source. It should be powered by anonymized data made available by INSEE," specifies Jean-Noël Barrot. In a letter sent to MPs at the beginning of March, in which he developed his proposals to "renovate parliamentary life", Richard Ferrand also indicated that the Ministry of Public Accounts would make available to the Finance Committee the "Chorus" software which "automatically traces in real time the budgetary accounting, general accounting and cost analysis accounting of the State". "Ultimately, if it works well, any MP wanting to quantify an amendment will be able to do it themselves thanks to the software, rejoices Éric Woerth, LR MP for Oise and president of the Finance Committee. Afterwards we will see the reality, will the Assembly manage to produce the right software? Will the MPs take hold of it? "The parliamentarians should not repeat the experience of the 2019 Finance Bill, where they had commissioned several studies from independent organizations. The Institute of Public Policies (IPP) had notably studied the impact of the budget on households and businesses. "The studies had arrived a little late. They had fueled the debate on purchasing power, but we had not had time to use them for our amendments," justifies Éric Woerth.

## ###ARTICLE\_START### ID:2100

INTERNET Google is closing the door it had left wide open. After allowing many companies to access its users' data so that they could build applications and services, the giant has decided to change the access conditions of its API platform (a software that acts as a bridge between two platforms or applications). Announced last October, this measure requires developers and start-ups to pay an external audit of at least $15,000 to prove to Google that they comply with the new rules for the security of its users' data. Officially, the giant has updated its usage policy to strengthen security against dubious "third-party applications". The measure is important: it was through a third-party application from Cambridge Analytica that Facebook found itself plunged into a scandal, where the data of millions of users was usurped for political manipulation purposes. Consolidating its power The measure launched by Google effectively puts an end to the opaque activities of certain start-ups like Clearbit, which scanned users' emails to collect all the contact details left in signatures and resold them in the form of directories. The company, which had just proudly announced a fundraising of 15 million dollars, no longer has access to Gmail. But other services are being forced to give up Google for reasons that have nothing to do with confidentiality. "We are a start-up with so little cash that we do not have the means to invest in the audit that Google requires, and we have to close our doors," explains one of them. "Google will be able to strengthen its partnerships with companies that have the means, but free software will have fewer opportunities," regrets another. The French GMVault, a free software for saving emails, is among those penalized. The IFTTT application, which has 14 million users, is also being deprived of the access that once allowed its users to automate certain tasks with Gmail. According to IFTTT, the changes requested by Google required a major overhaul of their service that required a lot of resources. These legal and financial barriers to data are also seen by some developers as a way to consolidate Google's power. It is not uncommon for web giants to use the privacy argument to change the rules of the game to their advantage. Facebook had thus ended up cutting off access to its API to its rival, the video application Vine. Google is currently making an impressive strategic shift by refocusing on improving the Gmail interface, to which it has already made substantial changes. Some, such as the one that allows you to automatically add flights to your calendar, also take up ideas from IFTTT... When partners become competitors, an open platform always ends up closing.

## ###ARTICLE\_START### ID:2101

To meet the mobility needs of disabled people, digital tools have multiplied. Developed by start-ups, associations or communities, smartphone applications allow you to know if a place is wheelchair accessible or if the metro elevators are working. Others inform the visually impaired about bus lines and stops. Another technique consists of installing sound beacons that are triggered using a remote control or a smartphone application, in order to help the visually impaired locate the entrance to public buildings, chain stores, banks, etc. The Lyon group Okeenea has installed 25,000 of them in many cities in France and plans to experiment with another technique in the corridors of the Marseille metro by the end of the year, in order to direct disabled people in closed buildings that are inaccessible by GPS. Christian Lainé, a computer trainer at the Fédération des aveugles de France and himself blind, uses these sound beacons every day and introduces them to his students, even though he "still sometimes [gets] hit by a pole before finding the entrance to the post office!" he jokes. He finds the GPS tools in navigation apps to be a great help, but has also experienced their limitations: "The voice sometimes asks you to go east... You then have to move forward to see if you're on the right path." He prefers Lazarillo, an app born in Chile, which makes the smartphone vibrate when the person is going in the right direction. A ticket like a "teddy bear" The president of the Mobile en ville association, Catherine Dupont, believes that the situation has "improved" but that digital technology has not "changed the lives" of people with reduced mobility. While she uses the apps "Parking for Disabled People" and "Where are the Toilets?" ", which lists reserved parking spaces and adapted toilets, she stopped using public transport after several unpleasant experiences in a wheelchair. "It's all well and good to show us the metro stations with elevators," she fumes. "But once we're there, it sometimes doesn't work. In Paris, for example, public transport is unusable." How can we not leave out people who are vulnerable or distant from digital technology, or who don't know how to use all the features of a smartphone? "We are testing an intuitive navigation interface, with a single arrow to guide the user from the beginning to the end of a stressful journey, for example in an airport, before taking a plane," explains Sylvain Denoncin, the president of Okeenea. Launched in 2017 in Rennes during the MétroMix hackathon, a collective event on mobility issues, the FaciTrajet terminal is designed to print a ticket that details the stages of their journey to the user, after they have scanned their subscription card and stated their destination. Published as open source on Wiki-Rennes, the project was tested in 2018. One of its designers, Sophie Vanwaelscappel, compares this printed journey to a "comfort blanket" for users weakened by cognitive disabilities or age. "You can hold on to it like a shopping list, a reassuring element." Paper may not have said its last word.

## ###ARTICLE\_START### ID:2102

Citizen hitchhiking in Orvault, near Nantes, bicycle highways in London, community mapping in Accra or Nairobi... Communities and their residents are innovating to improve their city experience. In London, a bicycle policy for a change of scenery In the British capital, the adjective healthy is in fashion. After restaurants offering "healthy food", in reaction to junk food, the London Transport Authority (Transport for London) adopted the expression for its strategy published in 2017: "Healthy streets for London". Among the ten criteria used to define a liveable city, cycling ranks high. London plans to double the number of bicycle journeys by 2026, i.e. 1.5 million compared to 730,000 journeys per working day in 2016. But the main obstacle to the use of two-wheelers remains safety. To encourage residents of Greater London to convert, Transport for London is developing cycle superhighways, which have been reserved for them since 2010. They allow people to reach the outskirts and the centre without encountering cars. The "Healthy Streets" plan plans to build several kilometres of safe paths for anxious cyclists, which will be added to the 100 kilometres already in place. In addition to these fast lanes, London is rolling out quietways for cyclists who don't like speeding. These are cycle paths located on streets and alleys where traffic is not heavy, and which allow them to follow a marked path. The city's various boroughs can also apply for £30 million (€25 million) in aid to bring their roads into compliance with the use of bicycles. These resources also help to address public health issues. In the introductory note to the programme, Will Norman, delegate for walking and cycling, describes the lack of physical activity as "the greatest threat to our health. In fact, 40% of Londoners are below the recommended 150 minutes of activity per week. Near Nantes, a citizen hitchhiking service In Orvault, a town of 25,000 inhabitants on the outskirts of Nantes, cars display a strange scarlet flower on their windscreens. In six districts of the city, the same image is displayed on metal signs. It is the logo of Cocliquo, a "citizen hitchhiking" service launched in September 2018 by a local association, the Ateliers écolo-citoyens, with the financial support of Nantes Métropole and the municipality of Orvault, and which aims to encourage "making the car the primary form of public transport of tomorrow. The town is cut in two by the Nantes ring road. On one side, rather urban neighborhoods, on the other, an area surrounded by agricultural and natural areas. Between the two, a bus service, a few cyclists who are not discouraged by the difference in altitude, and above all a coming and going of vehicles, often occupied by a single passenger. The principle of Cocliquo is simple: the hitchhiker does not need to brandish a piece of cardboard to display his destination. He stands at a marked stop, near one of the six magnetic signs placed in the city, and positions his metal membership card opposite one of the displayed destinations. "Hitchhiking and carpooling are quite common over long distances, but it is less easy to stick your thumb out at the side of a street in the city," notes Jean-Sébastien Guitton, one of the founders of the system, who is also a biodiversity researcher in a public institution. In the same way, when you are a driver, you do not always dare to let strangers get into your car. With this system, we feel more legitimate and we build trust." In six months, 330 residents have registered on the site, where a charter defines good practices. You must download an identity document to receive your membership card. It remains difficult to assess the number of regular users. Around fifty trips were declared in October, and the organizers are counting on "the long term to change practices. In Lausanne, the pedestrian lobby defends "its" sidewalks In Switzerland, the defense of pedestrians is not taken lightly. The federal government and local authorities know that they are under close surveillance in this area. Since the end of the 1970s, the Swiss Confederation has had a national association, Mobilité piétonne Suisse, which brings together specialists in transport, law, and regional planning. And in many cities, citizens ensure that walkers are respected in their city. Under pressure from this pedestrian lobby, Switzerland was a pioneer in 1996 in setting up meeting zones, these 20 km/h lanes where pedestrians and vehicles coexist. Its latest battleground: the sidewalk, which "is the pedestrian space, and must remain so", proclaims a petition launched in April 2018 by Mobilité piétonne Suisse, which is demanding separate routes for pedestrians and bicycles and clear rules to prohibit the use of bicycles and motorized vehicles on sidewalks. On this same subject, the Zurich Pedestrian Association has scored points. Deeming the installation of "Cycle path and pedestrian path" signs on sidewalks to be illegal, it has obtained from the city a waiver of these signs. "Measures still need to be taken to ensure that bicycles are no longer used on the sidewalks for good", notes Christian Thomas of the Zurich association. "We are in favour of developing sustainable mobility, but not at the expense of safety and the quality of walking," emphasises Jenny Leuba, from Mobilité piétonne Suisse. "The space for bicycle traffic must be taken on the roadway either by removing parking or by reducing speed." In Brest, a cable car to open up a neighbourhood Until 2016, the integration of a cable car in an urban area had never been imagined in France. However, it was imposed in Brest Métropole to open up the new eco-district of Capucins, located in the hypercentre, but isolated by the Penfeld river. "This area, which housed shipbuilding workshops, was like a forbidden city, accessible only from the west," explains Victor Antonio, director of mobility at Brest Métropole. The beginnings were difficult. The Brest air line, the first in an urban environment, has been immobilized several times due to adjustments and a series of incidents (cabin falls, unscheduled stops, unexpected opening of doors, etc.). But since 2018, it has been a real success, with some 800,000 passengers during its first full year of operation, while the metropolis was counting on 675,000 annual users. Seven days a week, the cable car allows you to cross the 460 meters that separate the two banks of the Penfeld river between the old town of Brest, the Capucins and the neighboring district of Recouvrance in three minutes. Costing 19 million euros, the cable link is integrated into the metropolis' public transport network. With a single ticket, sold for 1.60 euros, you can go from one side of the river to the other, then continue by bus or tram. "A deliberate choice," says Yohann Nédélec, vice-president of Brest Métropole in charge of transport and major projects, "because our goal is to encourage walking and public transport, and to avoid bringing cars into this new district as much as possible. In France, other cities could soon follow Brest's example, such as Orléans and Toulouse. In the Ile-de-France region, no fewer than thirteen projects are under consideration. The most advanced is the 4.5 km long Téléval, which will connect Créteil to Villeneuve-Saint-Georges in Val-de-Marne. In Africa, bus lines mapped by users Route planner apps, the new compasses for getting around town, are still often reserved for developed countries. And for good reason. In 60% of cities in the world, there are no precise transport plans. "In sub-Saharan African cities, 90% of urban mobility depends on small-scale transport companies that operate private minibuses," notes Antoine Chèvre, an urban planning engineer in the mobility division of the French Development Agency. "In Accra, the capital of Ghana, there are no fewer than 22,000 "trotros", which belong to as many entrepreneurs." To improve the quality of urban mobility data, the French Development Agency and its partners have been relying on the contribution of local communities for two years. It offers free online tools so that they can geolocate the transport lines they use, and thus jointly develop the missing maps. The approach has been rolled out in three capitals, Accra, Cairo (Egypt) and Nairobi (Kenya). Citizens equipped with smartphones travel along the minibus lines to locate the stops. "The first step is to generate data, an essential infrastructure for improving urban mobility conditions," emphasizes Antoine Chèvre. We wanted to favor a logic of "commons", by making resources available so that residents can take them, enrich them and share them in turn." The data collected is accessible on OpenStreetMap, a community and open cartographic project. The tools are under free software, like Jungle Bus, a participatory application whose software automatically transfers the routes of bus lines onto a map. Designed in Managua (Nicaragua), it allowed 150 volunteers to map all the bus stops in the city.

## ###ARTICLE\_START### ID:2103

At the Cité du design in Saint-Etienne, an exhibition is dedicated to the work of John Maeda, 53, a pioneer of digital graphics, now head of the design team at Automatic, the American software publisher that created WordPress (the most widely distributed provider of free and open source sites in the world). John Maeda is presenting there for the first time in Europe his fifth annual report "Design in Tech" on the major trends in digital arts in 2019, from the use of artificial intelligence to graphics, entitled "The Gateway to Inclusion". Why did you choose Saint-Etienne to present your fifth report? I was invited to do so by Lisa White, the main curator of the Biennale, and I love France. I came here in 2005 at the request of the Fondation Cartier pour l'art contemporain in Paris, which exhibited under the title Nature mes "digital landscapes", paintings showing digital space in the manner of a landscape. The Saint-Etienne Biennale, on the theme "Me You We, create common ground", echoes my concerns about difference and diversity. My 2019 report, entitled "The Gateway to Inclusion", shows that the most cutting-edge design requires embracing human differences. Many digital services today, such as having a pizza delivered or reserving a parking space for your car, are pointless. We need to invent a more ethical, more inclusive world. What has prevented us from doing so until now? The digital world primarily brings together white men who work based on their own concerns. This has been the case since the 1960s and 1970s: IT is a consumer good aimed at boys. In large tech companies today, women are still barely visible, as are people from minorities. As a result, design speaks to a young, able-bodied population, to whom it offers something desirable and not something indispensable. However, I see the emergence of a technology that seeks to be more anchored in everyday life. In your opinion, is a more ethical vision of design asserting itself within the web giants? Yes. Thus Google launched Easy Talk Lite, a free application for the deaf or hard of hearing that transcribes the slightest conversation within their reach, in a noisy café for example; Microsoft designed an Xbox game controller that meets the needs of quadriplegics or amputees. I also mention this font by Japanese designer Kosuke Takahashi, Braille Neue, which combines Braille with the letters of the alphabet, and allows all sighted and visually impaired people to read. I also really like this Lyra application for autistic children who have difficulty expressing themselves orally: they can show images. These advances benefit everyone. For Lyra, I think of my father who did not speak English well: in certain situations, it would have been so useful to him. Most people are afraid of new technologies because they do not know digital technology. When you don't know something well, you can easily be manipulated. By repositioning design in its primary mission, which is to find new solutions, artificial intelligence will appear less worrying, more inclusive.

## ###ARTICLE\_START### ID:2104

Should algorithms be entrusted with the keys to democratic debate? The question is being raised in the political debate as the software of the service providers chosen by the government is currently crunching the millions of words of contributions to the great debate to produce a summary, scheduled for early April. In fact, there will be several summaries. Depending on the formats, the organizers have divided the work between different companies specializing in automatic text processing. The online contributions from the Legranddébat.fr platform, attributed to OpinionWay and the Qwam company, are processed by an algorithm that relies on an existing repository of words and concepts. According to Qwam CEO Christian Langevin, this is a "semantic processing solution associated with artificial intelligence and capable of recognizing the meaning of words in a sentence to classify contributions according to the themes addressed: sustainable development, increasing purchasing power, etc. Citizen notebooks, handwritten letters and summaries of local meetings, for their part, digitized by the National Library of France and its service provider Numen, are processed using another method. The software from the company Cognito identifies the keywords and their context, then creates a lexicon "directly from the texts themselves, as they come, which seems to us to be more respectful of the way in which citizens express themselves," assures its founder, Gilles Proriol. Out of the hundreds of thousands of contributions already analyzed, we have listed some 600 different proposals for the moment, grouped around thirty-eight sub-themes and eight themes. Each of the devices provides for frequent interactions between man and machine. An essential part of the work nevertheless remains automated, which, in a democratic process, raises many questions. "The risks of errors and the difficulties of interpretation are real," note an engineer and a researcher from the multidisciplinary Triangle laboratory, specialized in the analysis of political action and discourse. For automated processing to work, contributors must use the right terms and the right order, which is obviously not always the case. We must take into account typos and spelling errors, of which there are still an incompressible number, even assuming significant data cleaning work, for example "fiancé" instead of "financed". It is also difficult to extract the meaning when the sentence is ironic or the syntax is incorrect. "Working in transparency" For mathematician David Chavalarias, who leads the Politoscope project at the Institute of Complex Systems of Paris Ile-de-France (ISC-PIF), "using technology can be interesting, but it all depends on what you are looking for. If politicians want to understand major trends or find a few good ideas among a crowd of contributions, this consultation can be useful. But it would be a mistake to deduce what the people want, because there are too many methodological biases. The use of automated processing also raises issues of transparency. During a day organized at the Economic, Social and Environmental Council by the think tank Décider ensemble, Monday March 18, Isabelle Falque-Pierrotin, member of the college of guarantors, warned: "We are working with service providers to open the black box and make the restitution indisputable. Citizens must be able to know how it was built. We must understand how service providers work." In an "open data" approach, some of the contributions are already online and the rest should follow. The service providers also propose to publish the links between each contribution and the category in which it was classified. "We want to work in total transparency on what our software does," says Gilles Proriol, from the company Cognito. However, since none of the service providers' tools are under an "open source" license, it is therefore not possible to have access to the details of the algorithm. For David Chavalarias, "not having access to the software code, that is to say to the details of the methodology and the parameters chosen, poses a problem. Will the themes selected be representative? How can we be sure that there are not others that the software has not found? It is often enough to modify the cursors a little for the results to be very different. It is necessary to be able to justify these choices and make public the biases that they introduce, which is not possible without direct access to the code and the parameters used. Parallel analyses The opening of data gives rise to initiatives parallel to the official analysis. At the National Assembly, a hackathon will bring together volunteer developers on collaborative projects on Saturday. Several university research units are also working on the contributions of the different platforms. Within the Triangle laboratory, which explores the exchanges published on the site of the real debate, launched by a group of "yellow vests", the engineers are at the first observations: "We have identified a strong presence of sensitivity on ecology and the climate emergency, or even a strong demand for public service (proximity, massive demands for nationalization or renationalizations...). Identity and reactionary demands exist (Frexit, immigrants, etc.) but are very much in the minority, and the proposals aiming to reinstate the death penalty or to reverse the Taubira law on marriage for all are massively rejected." For the first time, a citizen consultation has also attracted the interest of companies and experts specializing in data analysis and security. A data scientist has thus shown that personal information published on the site of the great debate had not been anonymized. With a simple filter, he found nearly 200 email addresses and about forty telephone numbers of people whose "part of the contributions clearly shows the political leanings of the author."

## ###ARTICLE\_START### ID:2105

In 2016, Thomas Coville broke the record for sailing around the world in a multihull, in 49 days and 3 hours. At 50, this Breton should launch a revolutionary trimaran on Monday, March 18, to go even faster and set other records. On his agenda for the next four years: three new round-the-world trips, fourteen Atlantic crossings. I wouldn't have gotten here if... If the little Thomas, who was very self-conscious at the start, hadn't gotten on a boat one day, around the age of 7 or 8, and hadn't experienced love at first sight. Suddenly, alone on the water, with the wind, nature around me, I realize that, at that moment, in that place, I am neither looked at nor judged. It's like a neurological connection, a chemical process in my head. I suddenly free myself from a burden, from a pressure that I put on myself. I feel free, good, I accept myself. It's a revelation. A unique moment? I relived it later while sailing with my father or cousins. And today, the more I go offshore, the more I find this initial sensation. I am quite troubled by it each time. My body, my first sensor, starts to vibrate. This associates the memory of this moment of liberation, the idea that I am free to act as I want, that the wind and the water are neutral. I feel that. On the water, the alignment between the little boy I was, the one I am today, and the one I would like to be, becomes very concrete. Why were you so self-conscious? Because of my size. I was small for my age. I grew up very late, and I had a real self-consciousness about my body. I still remember the mockery of my gym teacher, who rubbed his hands and said: "Today, Thomas is going to show us how to throw the shot put." » Obviously, the weight did not fall very far. I found myself very slow in my movements as in my reasoning. I had a sensitivity on edge, quick tears, I was easily destabilized in my relationships with others. I was aware of it, but I felt incapable of acting on it. Is that what the encounter with water changed? Yes, it shakes me up, moves me, and allows me to accept myself. However, I was rather reluctant to go into water, because of an unfortunate experience learning to swim with my father. I was apprehensive, and I am still not very comfortable in the water. But on the water, it is very different. I then have a sensation that I associate with sound, with music. Besides, I steer by ear. A boat like the one we have just built is a big violin, or a cello. Don't be surprised if I love Rostropovich. From this liberation by sea to your career as a sailor, the trajectory was not straight... Oh no! My father saw me as a chartered accountant. I studied to please him. But very quickly, I realized that I didn't have the fiber for chartered accountancy, and I reoriented my studies towards IT. I then had a crazy chance: my first job, at Delmas-Vieljeux which had just been bought by Vincent Bolloré, allowed me to go to Australia for six months, for an audit. That was the shock. I surfed every morning, I walked in the bush, and I said to myself: this is the life I want! Problem: the audit was over, my boss announced to me: "We have decided on another mission for you." Hearing this sentence, I realized that since I was born, everyone had decided for me. I am a docile, nice little boy. But now I say stop: from now on, no one will decide for me. And I decide, me, to stay in Australia, and to do so, to conclude a marriage of convenience. A big stupidity... So you got married in Australia? No, I was caught by the patrol, expelled from Australia, and found myself one day in Roissy, without a job. I didn't want to go back to my parents. So I called for help from a friend who later became my wife. She welcomed me here, in Vannes. That's how I came across Loïc Peyron's first project, and that's how I entered the world of sailing and ocean racing. And here you are again on the water! Yes, as a technician, IT specialist, then crew member. I loved it. I blossomed by serving charismatic sailors like Laurent Bourgnon, Marc Pajot, Franck Cammas, Olivier de Kersauzon, even if they were sometimes complicated. On the water, the social context fades away, my relationship with others is simplified. It is a closed room that is anything but Sartrean. Hell is not other people. On a boat, the most important person is no longer you, but the other. Water, nature make things totally clear, true, and necessary. No big debate. All life should be as beautiful as it is at sea! Especially for me, who is quite cowardly, and who flees to sea. What are you fleeing? I flee this complexity of today's world, which destabilizes me, like when I was a little boy. But now, I have accepted this cowardice. In a message sent to your friend, the actor Jacques Gamblin and published in your correspondence, you say that you also fled your father, who "was nothing but demanding and deserving" and loved you "as he had been loved, from afar... He was the eighth of thirteen siblings. It is a context that allows us to understand that he was very demanding and not very demonstrative, not tactile. And then, I was born on May 10, 1968, at a time of cultural upheaval, particularly with regard to the relationship between parents and children. I suffered from it, but I discussed it with my father, and I made peace with him. What was more complicated was agreeing to publish these sentences. Jacques convinced me to do it. You yourself chose to be a father. A father who is fatally absent, even when he is present, you say... Yes, it is paradoxical: I never suffer from loneliness on board, even when I am doing a solo race. But I sometimes feel it when I come back to land, because I can't express, even to my smallest private circle, what I experienced at sea. There are things that I will never be able to explain to them. When you come back, when you have failed, you don't necessarily find the words. For ten years, my daughter and my son had in mind the records their father was aiming for, and saw me arriving with heavy boots, tears in my eyes. My children saw my strengths, but also my weaknesses. A bit like Camus's The First Man. Really, I'm not a hero... Your parents also experienced failure... Yes. My father was a lawyer, my mother a teacher, and they opened a hosiery shop that went bankrupt. They experienced failure. My father was a very strong personality, whom I idolized, but he didn't communicate much in adversity. I tried to explain to my children my failures, and why I returned to them. To educate is to transmit without reproducing. That's what I tried to do. Do you see yourself as a man who fails, who stumbles? I've won races, but I've also failed a lot. It must be said that I always tackle the most difficult, the most inaccessible thing. There are only four of us who have attempted the solo round-the-world sailing race. More people have been to the Moon! The main thing is to participate, or to win? To win, and to win several times! I'm not at all on Coubertin's line. The anguish of the athlete who has won is not to succeed in reproducing his feat, and for people to say: it was a stroke of luck. In 2017, when it took me 4 days and 11 hours to cross the North Atlantic alone, I wanted to do it again as quickly as possible, because I had only one fear: that people would think that this record was only due to favorable weather. Where does this desire to win come from, this sense of competition so contradictory with the self-management dear to your parents? Yes, it is quite contradictory, or complementary, compared to the spirit of May 1968. I believe that we are all looking for a way to say, and first of all to ourselves, that we are unique, singular, different. That is the beauty of humanity. Some express it through art. But not everyone has the genius of Bach or the fabulous voice of Cecilia Bartoli. Athletes do it in their own way. Being a champion is a way of expressing one's singularity. Of course, there are easier ways to do it than going around the world solo in less than 50 days... By braving the elements, you risk death, you sometimes wish for it... It's not a big deal to die. Very quickly, I spoke to my wife and children about it, and I warned them: if I die tomorrow, nature, the wind, the oceans will still be there, the waves will continue to break on the shore. You may be sad for a while, but you will meet other people, your life will not end there. Even if I really want to live, I am aware that we are just passing through. "Mother Nature" only tolerates that we pass Cape Horn. Every time I come back, I tell myself: I have had one more life. Everything I experience is a bonus! Telling yourself that takes an incredible weight off your shoulders. There is also the weight of guilt. Did it weigh heavily on you? I suffered from it during these many years of failure around the world. This feeling of guilt came from afar, from my childhood, from the feeling of being different. But I got rid of it. How? By hitting a cargo ship during the Route du Rhum, in November 2014! While I was one of the favorites, I came back with a completely broken boat. I had a terrible feeling of guilt towards my team and my sponsor, Sodebo. And then, Patricia Brochard, one of the three sisters who hold the helm of this family business, said to me: "We will continue with you, but only if you agree to get help, because technically and physically, there is no problem, but mentally, you have to move up a gear." That is how, under the influence of necessity, I met a New Zealand mental coach, Lynne Burney. She asked me: "What use is your guilt to you?" With her, I took a step forward. It is no longer a question of drawing strength from misfortune, failure, resilience, but from positive elements. Beauty. Friendship. From now on, I seek my energy in the circle of people who inspire me. Men like Jacques Gamblin and the philosopher Michel Serres. Or the musicians of the Annesci Quartet, who have revolutionized my way of listening to music, and my vision of working in a group. How? The Annesci Quartet has dissected the way it works. It is no longer Karajan imposing his law on the 200 musicians in the pit. Here, the violin takes the lead at one moment then, with a glance, transmits it to the viola, and the others put themselves at its service, and then it turns. This is what creates harmony and creativity. The trimaran that we have just built over two years is the fruit of this new vision. I can still hear my father repeating to me: "The solution must come from you, you have to look for it alone, be pugnacious. » But no! Long live collaborative work! If I had created this new boat alone, we would have taken a tiny step forward compared to the previous ones. Here, I recruited several architects, eight engineers. When they don't find the solution, they put it on the Web, in open source, and the answer comes from Shanghai, Moscow, etc. What is the result? A revolutionary trimaran! The cockpit is located in front of the mast, instead of behind. The center of gravity is no longer in its usual place. This boat, the size of three tennis courts, should thus fly between the water and the air, and go faster than the clouds and depressions, faster than the weather. I don't know if it will be better. We'll see that when we get out of this hangar to sail. It will force me to change my way of steering. How? I don't know. I agreed to go into the unknown, chaos perhaps. I chose to throw myself into the water. I am incredibly lucky: the team and my sponsor support me. Now it is up to me to take them as far as possible.

## ###ARTICLE\_START### ID:2106

PARIS - But what was I doing on this web page? Online, users' attention spans are put to the test, between untimely requests and pitfalls. Some developers and designers are trying to provide solutions. On the Internet, there is no doubt that you have already had practical experience with "captology". In 1996, the American BJ Fogg theorized the ability of digital technologies to influence their users. "We can do nothing, whether we like it or not, without being exposed to the technology of persuasion," wrote this Stanford University researcher in 2010. We experience this persuasive technology every day, particularly on major platforms: the Facebook feed that we scroll endlessly or the Auto playing feature on Netflix or YouTube, which automatically switches from one video to another. "This is not a design accident, it was created and implemented with the aim of keeping you on the platform," observes Lenaïc Faure. This digital designer developed, as part of his studies and with the collective "Designers Éthiques", a method to "know if the attentional design implemented in an application is sustainable from an ethical point of view". In the case of YouTube for example, Lenaïc Faure observes that if you follow the flow of suggestions, "there is a kind of dissonance between the initial objective of the user", watching a given video, "and what is put in place to try to keep him on the platform". With the aim of exposing him to partner announcements and better understanding his tastes and habits. Designer Harry Brignull called the phenomenon a dark pattern, which could be translated as "obscure model". "It characterizes the kind of slightly evil design models," he explains to AFP, which aim "to make you do what the designers want you to do." Not always in your interest. He cites another example: with the entry into force of the European regulation on data protection (GDPR), sites must ask for explicit consent from their users before being able to collect their precious personal data. "It's very easy to click on "OK", but how do you opt out or say "no"?" Even this experienced professional is forced to struggle for a good minute before figuring out how to refuse. few giants In this "attention economy", attention is worth its weight in gold. "Economies of scale and network effects have left control of these tools" that capture attention "to a very small number of extremely powerful companies", estimated David SH Rosenthal, also a graduate of Stanford, in April 2018. But these companies are "driven by the need to consume more and more available attention to maximize their profits." Tim Krief, an engineering student, has developed an extension, Minimal.community, to hide "harmful" suggestions on YouTube, Facebook, Amazon and, to a lesser extent, Twitter and Google. Free and open source, the extension should "raise awareness among users on these issues," explains the young man, for whom "we don't give enough importance to this whole attention economy, because it seems invisible to us." Is this enough to fight against the giants of online attention capture? "They will have a small impact," believes Harry Brignull, but "it may be more difficult to have an impact on the decisions of the companies themselves."

## ###ARTICLE\_START### ID:2107

Parliamentary Office REIMBURSING HYDRO'S OVERCHARGES The Journal revealed that Hydro-Québec continues to collect overcharges, which reached $182 million last year. When it was in opposition, the CAQ demanded that Quebecers be reimbursed for this "disguised tax." Now in power, the Legault government will still keep nearly 35% of this amount. François Legault exonerated himself by stating that he never promised during the election campaign to end this practice, which he nevertheless described as "misappropriation" in opposition. EXPENSES FOR GOVERNMENT ANNOUNCEMENTS Barely having come to power, the Legault government announced with great fanfare its economic update, a charm offensive that cost taxpayers nearly $33,000. This practice was strongly denounced by the CAQ in the past. In opposition, the current Minister of Education, Jean-François Roberge, deplored the Couillard government's large-scale press conferences, including a $28,000 event by Sébastien Proulx. "Minister [of Education Sébastien] Proulx and the Liberals are compulsive spenders of public funds, to appear and look good. More than $28,000 for the minister's latest smoke show on the digital strategy, that's completely unacceptable," said Mr. Roberge. NO PARTISAN APPOINTMENTS In opposition, the CAQ vociferated against partisan appointments. "It's so funny, when you change the colour of the government, look at the movements, the movement of the waves, there, it's so funny," mocked Éric Caire. "Partisan appointments have to stop. The Liberal Party must stop putting its people in the lead-up to elections. Quebecers are sick of [these] paybacks,” denounced Simon Jolin-Barrette. Despite everything, the CAQ confirmed in February the appointment of an assistant to Premier François Legault’s office, Catherine Loubier, to the position of Quebec’s general delegate in New York. NO REWARDS FOR COUILLARD’S CLOSE RELATIONS François Legault appointed Philippe Couillard’s former chief of staff Jean-Pascal Bernier as vice-president of the Société d’habitation du Québec. During the election campaign, Mr. Legault denounced this practice, which aims to offer positions to the outgoing premier’s close collaborators. “I will not give gifts to three friends of Philippe Couillard, and appoint them, and give them a job for life,” he said during the campaign. NO PUBLIC INQUIRIES INTO COMPUTING The CAQ called for a public inquiry into the IT mess and to reduce Quebec’s dependence on the private sector. She also promoted open-source software. In December, the Minister Delegate for Digital Transformation, Éric Caire, stated that a public inquiry was not necessary, even though he repeatedly demanded one in opposition. In February, the Legault government announced that it was entrusting the hosting of public data to the private sector. The Bureau of Investigation also revealed that the Minister Delegate Lionel Carmant reversed a Liberal decision to opt for Quebec software that belongs to the government and gave authorization to renew contracts with the private sector. WHERE IS THE $1 BILLION IN DOCTORS' SALARIES? In opposition, François Legault hammered home that the Liberal government had given $1 billion too much to specialist doctors. He also promised to freeze their increases while a new agreement was reached. Mr. Legault maintains that former minister Gaétan Barrette gave $1 billion too much to specialists, but is still waiting for the publication of a study from the Canadian Institute for Health Information that would confirm this. In October, he called for a salary freeze for specialists and said that their increases would be placed in trust. However, this freeze was never implemented. "Before talking about a freeze or anything, I will say it again: we need to understand the agreement," explained Treasury Board President Christian Dubé afterwards.

## ###ARTICLE\_START### ID:2108

Following an email from a reader who deplored the absence of the Linux operating system in the media, I decided this week to remedy this and tell you about this free or open source operating system. It is obvious that I will only be able to scratch the surface of this operating system which is now the engine of many current products. The history lesson To give you a short story, Linux is the basis of an operating system, that is to say a software allowing to carry out different tasks on a computer. In the computer world, there is the popular duality between Microsoft and its Windows, then Apple and its Mac OS system, two universes which have been battling for almost 40 years. But in 1991, a Finn named Linus Torvalds launched a rudimentary operating system based on MINIX which itself is based on Unix, a system dedicated to the most powerful servers of the time. Torvalds initially distributed his creation for free so that more users could contribute to improving it by reporting bugs. Over time, thanks to the contributions of its users, Linux officially became free a few years later and several distributions based on it were created, including Debian and Red Hat. The latter was bought by IBM for $34 billion last October. Why so many distributions? A distribution is a set of software and configurations that make up an operating system based on the Linux kernel. Each distribution has its own particularities, some being focused on certain server tasks, while others are oriented towards more traditional use with a desktop environment similar to Windows or Mac. Personally, I have been using the Ubuntu distribution for about ten years and it is an excellent choice for beginners because of its simplicity, especially since its interface is halfway between Windows and Mac. For beginners who want a rich and easy-to-use desktop environment, Ubuntu is the distribution par excellence. Why choose Linux? It is possible to perform most of the tasks you currently do with your Windows or Macintosh computer on Linux. It is certain that if you use specialized software, it will probably be more difficult, if not almost impossible, to live solely in the free Linux universe. But if you only use your computer to browse the Internet or to store your documents, photographs and other digital archives, a Linux distribution can be an excellent choice since viruses generally stay very far away from this operating system. If your computer is currently running Windows 7, be aware that Microsoft will abandon its support in January 2020. It is therefore strongly recommended to make the jump to Windows 10, but since the latter is not very frugal on hardware resources, your old machine may not be suitable for its use. If you want to keep your old machine because you only use it to browse the web, Linux becomes a good alternative for you because of its low use of hardware resources, which will allow you to extend the life of your computer by a few years. The Linux invasion Among professionals, Linux occupies a place of choice in Internet servers because of its great stability and security. According to a study by W3Techs, 67% of Internet servers are currently with a Unix-based operating system, the majority of which is Linux. In the vast world of servers, virtualization is a must and hypervisors, i.e. servers that host virtual machines, are mostly powered by the Linux platform. A majority of you use Linux daily without knowing it, because the operating system is now found in smart TVs, cars and of course in devices running on Android, which is a sort of Linux distribution. Linus Torvalds’ humble project of freedom and sharing has nevertheless made him a rich man thanks to the Linux Foundation, a nonprofit organization that develops the operating system’s kernel, and to Red Hat, which in 1999 gave him a million dollars’ worth of stock as a thank you. In 1999, Red Hat stock was trading at $42, and in 2018, IBM paid $190 per share. Do the math!

## ###ARTICLE\_START### ID:2109

Quebec Changes Its Mind Again With a Project That Should Have Been Settled Long Ago Indeed, the Minister Delegate for Health, Lionel Carmant, will allow TELUS to keep its generous contracts in Montreal under the DCI, our Investigation Bureau has learned. These contracts were due to end next year, due to the previous government's decision to implement a single national software for which Quebec holds the intellectual property rights. IN REAL TIME A DCI makes a patient's multiple pieces of information, such as their test results and prescription medications, accessible to healthcare personnel in real time. This tool was to be implemented in all public healthcare institutions in 2014. The objective has now been pushed back to 2021 and is estimated at $700 million. Initially, each region could choose its software. For its part, the CHU de Québec has chosen an "in-house" solution: Cristal-Net, developed in partnership with the CHU de Grenoble, in France. A software that cost $10 million to develop. Meanwhile, Montreal opted for an expensive private project costing $132 million, the OACIS software, developed by TELUS following a call for tenders from the MUHC and the CHUM. A special “clause” even allowed it to be installed by mutual agreement in all Montreal health establishments. A SINGLE SOFTWARE? However, the former Minister of Health, Gaétan Barrette, had announced in 2015 that the Cristal-Net IT solution, owned by Quebec, would become mandatory. He wanted a single software to be deployed in the 34 establishments in the territory, in order to “standardize practices within the network” and make information compatible from one hospital to another. The transition, he argued, would be at “zero cost,” due to free licenses and updates. However, it had been decided to honour the contracts with the private sector until 2020. However, the new Minister Delegate, Lionel Carmant, rejected this unique solution. His ministry has just requested an evaluation report on the Cristal-Net solution. At the Sainte-Justine Hospital in Montreal, Mr. Carmant used TELUS' OACIS software. Once he became minister, he decided that in addition to Cristal-Net, other computer systems could "be used" in the network, according to a note from the deputy minister sent to the heads of health institutions, a copy of which our Investigation Bureau obtained. In addition to TELUS, the Quadramed (American) and Purkinje (Montreal) solutions also hold contracts that could be maintained. DEPLOYMENT For the moment, Cristal-Net officials have not had "any indication of ceasing this deployment," said Geneviève Dupuis, head of media relations at the CHU de Québec. She did not want to comment further on the matter. "We are continuing the deployment in several other regions, including Saguenay, Mauricie-Centre-du-Québec, Laurentides-Lanaudière." DCI is a project linked to the Dossier santé Québec (DSQ), an IT mess that will have cost more than $1.6 billion, or nearly $1 billion more than announced. \*\*\*\*\* ADVANTAGES AND DISADVANTAGES OF TELUS, PURKINJE AND QUADRAMED PRIVATE SOFTWARE - Benefit from the millions of dollars invested in certain regions - Staff already trained for this software in certain health establishments - Numerous expenses for technical assistance - Requires paying for licenses and updates - External expertise - Possible incompatibility between the different regional systems - Multiple contracts for external consultants (In June, the CIUSSS du Centre-Sud-de-l'Île-de-Montréal awarded a $2.3 million private contract to OACIS-TELUS for professional support) \*\*\*\*\* CRISTAL-NET STATE SOFTWARE - Is not free software, but an asset of the Ministry of Health - “Good for the autonomy of the public sector”, according to FACIL, for the collective appropriation of free information - Is “freeware”, because it does not require the purchase of a license for updates - Allows the government to control the cost of system development - According to the MSSS, it promotes the standardization of practices within the health network, both clinically and financially and administratively - Also promotes the standardization of clinical data, "for the benefit of stakeholders and all users", according to the ministry - Internal expertise - National transition well underway

## ###ARTICLE\_START### ID:2110

Four hundred million users, more than three billion downloads... In twenty years, the free VLC software has made itself indispensable and invaded computers and smartphones all over the world. Its strengths: it can play almost any video, regardless of format, on any medium and without data collection or hidden advertising. The famous traffic cone, which serves as its icon, was born in the Paris region. Even today, most of the developers responsible for its updates are French. It all started at the Ecole Centrale Paris. "It's a very simple and very French story," says Jean-Baptiste Kempf, one of the pillars of the project and president of the VideoLAN association, which develops and distributes VLC. In 1995, students asked the school management for a better computer network. Officially, to be able to work in better conditions. Unofficially, it was to be able to play Doom, a shooting video game, online. The school management, which saw through their game, kicked the issue into touch and suggested that they find their own funding. Bouygues made a proposal: the French manufacturer was prepared to install a new network, on condition that the students developed a way to broadcast TF1 programs on it and thus no longer needed to install a satellite dish per student. "It was science fiction" The aim was not so much to save money on installing a complete set of satellite dishes, but to develop, at a lower cost, a project that could then serve as a technological showcase for the manufacturer. "It was the first time that video streaming had been used," says Mr. Kempf about this technology, which prefigures Netflix or YouTube. "It was science fiction," he adds. The development stalled, had a few false starts, but, class after class, it occupied the second-year students who ended up laying the foundations of the VideoLAN project in 1999, which aimed to develop video streaming. This includes several facets: broadcasting, reading... It is this last function, called "VideoLAN Client", which will become VLC. All that remains is to find the pictogram. It will be the traffic cone for work. Omnipresent on campus, this object is diverted and used in many student evenings. "When I arrived there were hundreds of them everywhere. But we returned them all to the DDE, I promise!", laughs Mr. Kempf today. It was not until 2001 that the project became "open source", that is to say accessible for free but also freely distributable, usable, modifiable, by everyone. The technology developed by the students then leaves the school to be tinkered with by developers around the world. Today, bits of computer code originally written for VideoLAN flow into the virtual veins of YouTube and Netflix. "Initially, the school hoped to make the technology profitable, but it realized that the project only works with students. In 2001, the management, a little resigned, did not really understand what "open source" was, but found that it was a cool and innovative project, so they accepted it. Some guys spent a year doing nothing but VLC: they didn't go to class, they repeated a year.... Mr. Kempf cites some of these pioneers, Christophe Massiot, Rémi Denis-Courmont, Laurent Aimar, and Samuel Hocevar, one of the pioneers of Wikipedia in France. Mr. Kempf was 20 when he joined the school, in 2003. In the meantime, VideoLAN had expanded. Through updates, VLC had become a formidable Swiss army knife, capable of decrypting any video or audio format. "At the time, VLC was the only player that could play DVDs on a Mac," remembers Mr. Kempf. To achieve this feat, students and external developers dissect each video format on the market to understand how it works and program the bits of code that allow them to be decoded, the "codecs." This is VLC's great strength: it comes with most of the codecs needed to play the most advanced video formats, so that the user does not have to worry about finding the right program, the right update. It is a revolution. It is no coincidence that VLC was born in France. Nothing prevents developers from designing their own tools to play a video format invented by Apple or Microsoft. This is not the case everywhere, and particularly in countries where intellectual property laws are much more favorable to the IT giants. "French policy is much healthier than elsewhere. I don't think it is threatened in the short term, but there are constant attacks," says Mr. Kempf, who remains attentive to the evolution of European legislation on the matter. At the time of the "start-up nation" In 2004, VLC reached its first million downloads. But while the popularity of the software exploded, the motivation of the developers waned. Inevitably, it was more exhilarating to lay the foundations than to correct bugs. Mr. Kempf did the math: "on January 1, 2007, there were only two of us left on the project. The school tightened the screws, there was starting to be more work in progress" and less time for VLC. Mr. Kempf then decided to rebuild the project and launched the VideoLAN association, of which he is still president. "I spent a lot of time recruiting new students, outside of Centrale, asking former students to come back. I also gave a lot of conferences." The initiative gave VLC a boost, which exceeded 100 million downloads in 2009. This second golden age is short-lived. Because, with the turn of the 2010s, the smartphone revolution and especially their applications arrived. "In my time," remembers Mr. Kempf, "the big shots were the guys who did "open source" or video games. From 2012, everyone wanted to make the next successful smartphone game, or launch the new Uber." Developing a useful, practical technology, downloaded a billion times in 2012, but which doesn't make a cent? Unfashionable for the new generation of developers who want to make the next big thing, the one that will make them rich. Or, at the very least, that will allow them to pay their bills. "I understood that we needed full-time employees," explains Mr. Kempf. He then set up VideoLabs, in the 13th arrondissement in Paris, which today has around twenty employees, which adapts software to the needs of companies. For years, VLC encoders have been and continue to integrate video formats that are useful to the general public. But now, companies are asking them and paying them to allow VLC to play their own formats. “We had an industrial camera manufacturer that wanted to be able to use VLC. It’s not something we would have integrated spontaneously,” says Kempf. The company also develops specific versions for customers who want to implement a video player in their products. Some video baby monitors, for example, which allow you to check in on the baby from the next room, use a modified version of VLC. “The goal is to be able to finance VLC, to allow it to remain free,” says Kempf. And it works. In 2017, the company made €1 million in revenue. Enough to allow it to turn down more ethically questionable proposals. “I’ve turned down a lot of money, €20 million contracts,” says Kempf. Companies like the American Ask.com, for example, have knocked on his door, offering to display its very unpopular and very invasive search bar inside VLC. "If Netflix offers us the same thing, why not, there are plenty of users who would be happy. We are not against making money, but we try to do things well. This must not be to the detriment of users. I want to be able to go to bed at night feeling proud of what I did with my day. I think that is the main difference with many people in the start-up nation. In November 2018, Mr. Kempf, as president of the VideoLAN association, was elevated to the rank of knight of the National Order of Merit. Through him, VLC and a certain French technological know-how are recognized. VLC is in its third iteration. The fourth, currently in development, should notably strengthen the software's security. “Malicious people are trying to put viruses in it,” Kempf said in 2017 on the online forum Reddit. In 2017, WikiLeaks revealed that the CIA had used an old version of VLC to infiltrate computers.

## ###ARTICLE\_START### ID:2111

IT The figure is small, but it is very symbolic. In 2018, IBM's revenues increased by 1% to reach $79.6 billion. This is the first time since 2011 that the group has returned to growth, both in terms of revenue and operating profit. Since her arrival as CEO on January 1, 2012, Ginni Rometty had never been able to present positive growth. Under her leadership, the American giant has undertaken a profound transformation of its activities. But until now, this has struggled to translate into results. "Clean quarter" The fruits of the refocusing on growth activities, the "strategic imperatives" defined several years ago by Ginni Rometty (cloud, data analysis, cybersecurity, mobile, etc.) are starting to grow. These activities represented a little more than half of its turnover last year ($39.8 billion). Its cloud branch, which now represents nearly a quarter of its business, is growing 12% year-on-year, still far from the rates posted by industry leaders Amazon and Microsoft. However, in this area, IBM made a strategic acquisition last year - the largest in its history - by buying Red Hat, a company specializing in the development and distribution of open source solutions for businesses, for $34 billion. With this expertise in data centers and technologies used in the cloud industry, IBM is giving itself a competitive advantage to always stay in the race. "This is a very important year of inflection for IBM," summarizes James Kavanaugh, the group's CFO. "IBM's transformation has been slower than expected, but we expect its growth to accelerate thanks to the alignment of the priorities of the IT departments of the companies with investments in its strategic imperatives and the sale of non-core activities," estimates Katy Huberty, an analyst at Morgan Stanley in a note. She describes the last quarter as "IBM's cleanest in years". The group has managed to improve its gross margins across all its activities. Once disappointing, the results of the "Cognitive solutions" division on which Watson depends are also growing. In 2018, IBM sold several non-strategic activities, including software solutions to the Indian HCL for $1.8 billion. IBM, which has long sought to convince investors that it is entering a new era of growth, has clearly scored points: at mid-session on Wednesday, its shares were up around 7% on the New York Stock Exchange. "Democratizing" access to Watson The group must now reassure that this newfound growth will last. But the acquisition of Red Hat, unanimously hailed as a good strategic move, will only reach its full potential if IBM manages to keep the expert teams in place. The sale of Red Hat is expected to be finalized in the second half of 2019. Finally, on artificial intelligence, IBM wants to "democratize" access to Watson to a greater number of companies. However, competition has also sharpened in this segment where IBM has long been ahead. Amazon, Facebook and Google have also invested massively in artificial intelligence to be able to offer solutions to companies.

## ###ARTICLE\_START### ID:2112

San Francisco Correspondence - It's a long ordeal that should end for IBM. On Tuesday, January 22, the American IT group should, according to financial analysts' forecasts, publish the first annual increase in its turnover in seven years. A modest growth, potentially less than 1%, but a real accomplishment all the same for Ginni Rometty, the boss of "Big Blue", the nickname of the American IT giant. If not a relief: since she took office on January 1, 2012, she had never experienced this. Founded in 1911 in Endicott, New York, International Business Machines is a flagship of the American technology sector. From 1967 until the 1980s, the company was even the world's largest stock market capitalization. Its history has been marked by major innovations: punch cards, hard drives, bar codes, personal computers... And also by transformations. "IBM has always known how to reinvent itself," Ms. Rometty likes to point out. But the transformation that has been necessary for the past few years is certainly more brutal than all the previous ones. "We are in an era of rapid change and it is not about to stop," the leader acknowledged during a conference organized in October 2018. Like other big names in the sector, IBM has had to adapt to a new reality. It had to move "from the world of computer clients and servers to that of cloud computing, mobile, artificial intelligence," underlines Frank Gens, an analyst at the firm IDC. Ms. Rometty was born in Chicago in 1957. With degrees in computer science and electrical engineering, she began her career at General Motors in 1979. Two years later, she joined IBM as a systems engineer. She climbed all the ranks there. "I had to learn to get out of my comfort zone," she said in an interview with Bloomberg in 2017. The manager notably participated in the offensive in business services, more profitable activities that would become IBM's primary source of profits a few years later. "Inspiring other women" In 2002, Ms. Rometty campaigned for the acquisition of the consulting division of the British firm PricewaterhouseCoopers. A risky operation between two companies with radically opposed cultures. "She made this acquisition work," Sam Palmisano, her predecessor at the head of IBM, would later say. From 2009, Ms. Rometty supervised the sales and marketing teams. She developed the business in new markets, such as China, Brazil and India. She also launched the group into new segments, such as the cloud, artificial intelligence and data analysis. When she became IBM's CEO, she took over the chairmanship of the board a few months later. Rometty was the first woman to hold the position. "I didn't want to be defined that way, I just wanted to be a good CEO," she recalls. "But then I realized that I was a role model and that I could inspire other women," she continues, regretting that the number of female executives at the head of large companies remains limited. To transform IBM, Rometty defined "strategic imperatives", the growth activities that must take over from the historical businesses that were losing momentum. In addition to the cloud, artificial intelligence and data analysis, they also included cybersecurity, mobile, social networks and blockchain, the technology behind virtual currencies such as bitcoin that allows data to be exchanged in a decentralized manner. These activities now represent nearly half of the turnover. The CEO also brought new blood into the teams by recruiting senior executives from outside. "Historically, IBM has filled these positions almost exclusively internally," notes Gens. Rometty also reduced the workforce between 2013 and 2017, with the number of employees dropping from 434,000 to 366,000, while increasingly relocating activities to India. This was not without controversy. The company was notably targeted by a class action. It was accused of having laid off 20,000 employees in six years because of their age. Rometty also multiplied the disposals of assets deemed non-strategic. In 2014, IBM sold its servers to the Chinese company Lenovo, which had already bought its PC business in 2005. Then part of its electronic chips, even agreeing to pay more than a billion dollars (nearly 900 million euros) to the buyer, the American group GlobalFoundries, to get rid of this loss-making business. At the end of 2018, the company also sold several historical software products to the Indian HCL. At the same time, the IBM boss pursued a vast acquisition policy: around fifty between 2012 and 2016. "We saw the market changing rapidly and we had to adapt more quickly," she explains. In 2013, the company spent $2 billion to acquire SoftLayer, a cloud infrastructure provider on which it relies to overhaul its offering. At the end of October 2018, Big Blue announced the acquisition of Red Hat, a specialist in free software, including Linux, which is largely used in data centers. With this operation, worth a record $34 billion, the company strengthened its range of services in the "hybrid" cloud, which combines the use of its own infrastructure and a so-called public cloud service, provided by Amazon Web Services (AWS), Microsoft or Google. Red Hat's tools allow for better management of data storage and transfer between these two worlds. "We are going to offer the most complete hybrid platform," promises Steve Robinson, appointed in December 2018 as head of synergies between IBM and its new subsidiary, which will officially remain independent. Outpaced by AWS and Microsoft, IBM is optimistic. "The cloud market is going to be redefined," predicts Mr. Robinson. According to the manager, only 20% of IT tasks have migrated to the clouds. "The hybrid cloud will accelerate this transition," he assures. "The hybrid cloud, which currently represents 30% of the market, could become the majority by 2022," confirms Dan Ives, an analyst at the broker Wedbush. So many potential customers for the solutions offered by Red Hat, whether or not they use IBM's infrastructures. Despite major investments, the century-old company remains significantly outpaced by AWS and Microsoft, which are also encroaching on its positions by deploying hybrid solutions in turn. “The acquisition of Red Hat is a game changer,” believes Ms. Rometty. “IBM can potentially become number 3 in the market, but Amazon and Microsoft should continue to dominate,” predicts Mr. Ives. Ms. Rometty’s second big bet is artificial intelligence, an area she oversaw before becoming CEO. In 2011, IBM distinguished itself when its “supercomputer” Watson won “Jeopardy,” one of the most popular TV game shows in the United States. But since then, the commercial results have been disappointing. “Using Watson was expensive and therefore only accessible to large companies,” says Mr. Gens. A symbol of these difficulties, Watson Health, the division specializing in artificial intelligence for health, laid off several dozen people during the summer of 2018. In August, a Wall Street Journal investigation highlighted Watson's unfulfilled promises in cancer detection. "It's natural to expect too much from artificial intelligence," retorts Ruchir Puri, Watson's technical director. Now deployed in the cloud, Watson is accessible to a greater number of people. But the competition is also much fiercer, particularly from Google and Amazon, which have made artificial intelligence one of the pillars of their offers. IBM has its expertise in different industries on its side. "Our rivals don't have the same understanding of the business world," asserts Mr. Puri, who assures that Watson already has "several thousand customers. But if IBM has returned to growth, Ms. Rometty has not yet completely convinced Wall Street. The company's stock has fallen by more than 25% over the last twelve months. And analysts fear a further drop in turnover for 2019, excluding Red Hat. Enough to fuel speculation about her succession. Especially since she has already passed the 60-year threshold, the retirement age for her predecessors.

## ###ARTICLE\_START### ID:2113

IBM has made its biggest acquisition ever by paying a record amount for open-source software maker Red Hat.

## ###ARTICLE\_START### ID:2114

The issue of data sharing, as one of the conditions for the development of artificial intelligence, has become a topic on European and national political agendas, as well as in professional meetings such as the Paris OpenSource Summit, which is taking place this year on 5 and 6 December. In his speech at the Internet Governance Forum on 12 November, the President of the Republic reaffirmed the importance of regulations adapted to the construction of an "Internet of trust". Open data is identified as a major lever for competitiveness, since artificial intelligence relies on considerable quantities of training data. This issue is part of a legal framework launched in 1978 which, in a spirit of transparency, requires public operators or public service delegates to give citizens access to information. In the 2010s, the open data movement promoted, beyond simple access, real strategies for reusing data in order to offer innovative services. A new concept, that of "data of general interest", introduced in 2016 in the Digital Republic law, organizes the opening of certain data held by private operators. The report by LRM MP Cédric Villani on artificial intelligence, submitted in March, promotes the extension of this concept. However, one can wonder about the reasons which, in a market economy, justify encouraging, or even forcing, private operators to share resources which are otherwise claimed to be the driving force of the digital economy. Competition law, through the concept of essential facilities, already requires certain companies to open up to others resources whose access is essential to the exercise of their activity. But the application of this concept is carried out under deliberately restrictive conditions, since it involves forcing the owner of the resource to share it with its competitors. Beyond that, can we envisage the creation of a common data heritage, and if so, under what conditions? The "commons", the third wayThe data economy is indeed full of paradoxes. First, there are currently no property rights on data, and this is rather good news. Data rarely has an economic value in itself; value is created by the aggregation and contextualization of millions of data. Introducing new enclosures on each data would go against the philosophy of sharing promoted elsewhere. Second, data is in no way a limited resource; although "non-rival" (which means that sharing it does not dispossesses its initial owner), it is nevertheless subject to exclusivities such as the intellectual property right specific to databases. The latter remains necessary in order to preserve the incentives to invest in the creation of such databases. Sharing data indiscriminately would therefore ruin the expected gains in competitiveness. Last paradox, if it seems legitimate at first glance to extend, beyond what is already permitted by the Digital Republic law, the sharing of data of general interest, it is still necessary to specify what this term really covers. The purposes usually put forward to justify the "general interest" character: transparency and information of citizens, the conduct of public policies, research and statistical knowledge, economic innovation, etc., remain too imprecise to justify sharing in a truly operational manner. It is therefore difficult to encourage cooperation from companies in the face of the potentially restrictive nature that would guarantee the effectiveness of the measure. A sustainable economic approach, which would also gain the trust of citizens, therefore requires a framework and clear forms of governance for sharing. This is precisely what Elinor Ostrom (1933-2012), winner of the 2009 Nobel Prize in Economics for her work on the economy of the commons, invites us to do: between the exclusive right attached to private property and the public good open to all, the "commons" constitute a third way which, far from being an anarchic form of management, determines by "bundles of rights", explains Ostrom, the precise conditions of use of shared resources. The GDPR, a legal frameworkFor data, a European legal framework already exists. The General Data Protection Regulation (GDPR), implemented on May 25, introduces the rules of a digital economy that respects individual freedoms. Far from being antithetical to the question of sharing, the GDPR proposes a method, since it introduces a right to data portability which, activated by citizens or groups of citizens, allows the sharing of data according to the methods of each person's choice, defining the "bundles of rights" adapted to the various situations. Of course, the GDPR only applies to personal data; while they do not exhaust the scope of the development of the digital economy on their own, they nevertheless constitute a very substantial part of it. Many studies have indeed shown the disconcerting ease with which supposedly anonymized data, therefore called upon to leave the scope of personal data, were in reality only "pseudonymized" and could be subject to re-identification of the person concerned. The protection of personal data cannot be an ancillary subject to sharing, a sort of external constraint that would at best be respected by dragging one's feet, and at worst, an attempt to circumvent. It must be thought of from the outset. A sustainable data sharing ecosystem in the long term is therefore desirable. But the path to get there is strewn with pitfalls... Joëlle Farchy

## ###ARTICLE\_START### ID:2115

We thought it was old-fashioned, outdated, out of touch. On the Web, in smartphones, and even in PCs, everything it undertook seemed doomed to failure. A decade later, here it is again, transformed. After a painful thirties paved with questioning, Microsoft is going through its forties more fulfilled than ever. Its market capitalization rose last week to $845 billion, on a par with Apple. Microsoft is a model of resilience. Under the leadership of Satya Nadella, who took over in 2014, the company has reinvented itself. The group has migrated its activities to the cloud and sells subscriptions to services (Azure, Office, etc.) rather than software licenses. Its great principles of yesterday, on which it was firmly rooted, have been shattered. It develops mobile applications for iPhone and Android and makes extensive use of free software. He also discovered a taste for design, as shown by the Surface tablets. Freed from its demons, Microsoft is today a group of 135,000 people, with an annual turnover of 110 billion dollars, for 35 billion dollars of operating profits, better than in the heyday of Bill Gates. His initial, too often forgotten, deserves more than ever to be among the Gafam. Quest for immortality These five giants do not all have the same experience but share the same trait. They have woven, thanks to technology, a sprawling hold on our daily lives, which makes them unsinkable. The start-ups that allow themselves to tease them are swallowed up without delay. Given up for dead at the end of the 1990s, the other "quadra" Apple has returned to the top, with the consistency that we know. The youngest, barely more than 20 years old, are not left behind. Google, which broke its teeth on social networks, has increased its power tenfold on mobile. Amazon is worrying distributors around the world and has managed to become the technological base of all the start-ups of tomorrow. The youngest, Facebook, born only in 2004, is suffering from repeated scandals that are giving it cold sweats. Thanks to its twin brothers WhatsApp and Instagram, its days are still far from being in danger. How long will this domination last? This club of five is obsessed with resisting bureaucracy, certainties, which have swept away so many of its contemporaries. They do not sell a product, a service, but have become the Web, the smartphone, the PC. Steve Jobs, in the twilight of his life, had made this quest for immortality for Apple his last fight. He embodied it in the new spectacular headquarters in Cupertino, in the form of a ring, a physical and disproportionate imprint on the Californian landscape. Jeff Bezos is also trying to maintain the health of a centenarian. His key? Always remember that you can fail. “Amazon is not too big to fail. I think we’re going to fail,” he said in an interview with CNBC. The $1 trillion in market capitalization lost this fall is a wake-up call.

## ###ARTICLE\_START### ID:2116

They turned off their phones, ignored interview requests. Hugo Caselles-Dupré, Gauthier Vernier and Pierre Fautrel, 25, had not really anticipated the storm they have stirred up. Since the sale of their Portrait of Edmond de Belamy on October 25 at Christie's in New York for $432,500 (€380,500) "the first work produced by artificial intelligence", as the auction house wrote, these three childhood friends, who created Obvious, the small structure that created the painting, on their couch, have discovered the price of success. "We were accused of plagiarism, of imposture, people said we were only interested in money, we took it all in the face", says Pierre Fautrel, when after much hesitation, he finally agreed to meet us. The principle is simple. We feed an artificial intelligence from an image bank. In this case, 15,000 classic portraits from the 15th to the 20th century. We print on canvas, we put a gold frame. The logarithm is called GAN, for Generative Adversarial Networks. Its principle was developed a few years ago by Ian Goodfellow, a student from Montreal now at Google. That is to say two artificial neural networks that we oppose. On one side, the forger. On the other, the expert. Each time the expert puts the forger at fault, the latter improves, moves away from what exists to create a more original work. This is how Obvious's first "collection" was born: eleven portraits of an imaginary family, the Belamys, produced by a brain on printed circuits. Reaction from the art world, willingly murderous: "It's ugly!" » “Look: father figure, academicism... it’s bourgeois art par excellence,” jokes philosopher Manuela de Barros, a specialist in the relationship between arts, science and technology at Paris-VIII. A claimed academicism: “We wanted something simple, that would speak to everyone,” the applicants specify. “A classic portrait. Because everyone has seen one in a history book or a museum.” “Pirates in start-up mode” “It’s complicated for them,” worries Nicolas Laugero, director of Icart, a school of cultural mediation and the art market. A year ago, this collector, who opened a street art museum (at Ecole 42 in Paris), saw the trio arrive, who told him about the project. They are 25 years old, grew up together in Rueil-Malmaison (Hauts-de-Seine), a gently bourgeois suburb. Two business school students and a science PhD student, who firmly believe in their idea: using artificial intelligence to produce a classic work that they have currently put up for sale on eBay. "We thought we were brilliant," they laugh without arousing any interest. The collector falls under their spell, buys the very first work in their series, Le Comte de Belamy ("Edmond's grandfather," he smiles), for 10,000 euros, and takes them under his wing. "Like the urban art proponents before them, barely out of school, these young people are burning the stages," he explains. "They have the same slightly pirate-like desire to fight, to shake up the codes... And they operate in start-up mode; that's new, that's why it's going fast, it creates a kind of hold-up but at the same time, they open doors. That energy, it feels good." What is intelligence? What is at work in the creative process? Machines reflect us back to ourselves. “They ask us good questions. And we’d better ask them quickly,” notes Laurence Bertrand Dorléac, an art historian at Sciences Po. She was co-curator of the “Artists & Robots” exhibition this spring at the Grand Palais in Paris. She tells how one day, while a breakfast was being organized there for the New York Times, the enormous grapple of an excavator, set in motion by the artist Arcangelo Sassolino, went out of order. “This kind of giant, metallic crab started breaking through the low wall. I was afraid that the exhibition would be technophile,” confides the historian. “Counterintuitively, I realized that robots were fragile. I came out of this adventure looking at what was robotic in my home, and not the other way around.” Deleuze said: "What we like in our friends is their share of madness"; what I like in robots is their dysfunctions." Can we imagine art without the artist? This is Edmond de Belamy's first crime to suggest this. "Producing unpredictable stimuli, that was the role of the artist, right?" asks Jean-François Bonnefon, a psychology researcher at the Toulouse School of Economics, invited for a year to the Massachusetts Institute of Technology (MIT), where his work on the moral choices made by autonomous cars was noted: "A "bot" a program or a robot only responds to instructions that have been given to it. But it is a black box. In art, what is funny is when, in the pursuit of the goal that has been given to it, it creates something that escapes us. "We are not far from the exquisite corpses of the surrealists, the dripping of Jackson Pollock or the drawings traced by Henri Michaux under mescaline. Serendipity. The surprise of the accident. Grégory Chatonsky is an artist-researcher at the Ecole Normale Supérieure: "Pareidolia," he explains, "this ability to transform visual noises into a well-organized representation, is what our brain, like the machine, does all the time." It will be argued that art is culture, and culture is what is inherited, transmitted, accumulated... However, the machine is not cumulative, we feed it. "There is nothing simpler for a machine than to learn from another," contradicts the researcher. And if we define the artist as someone who takes charge of everything that has happened and reproblematizes it, that is exactly what artificial intelligences do. » The man studied philosophy with Lyotard, before diverging towards the Beaux-Arts, teaching for ten years in Montreal, to return to France on a research program on artificial imagination at the Ecole Normale. "We only conceive of them in an anthropocentric way, by comparing them to us. Could we not imagine an intelligence that is different?" "Creating our future resurrection" To create, artificial intelligence needs big data, a sufficiently large sum of cultural data to imitate it, to learn it, according to a statistical operation. This is what we call machine learning or deep learning. However, our hypermnesic civilization has collectively created, on the Internet, a library like humanity has never known before. On June 17, 2015, Google made available to the DeepDream research community a program for transforming images using artificial neurons: "That day, we discovered images worthy of a psychedelic hallucination: pizzas with dogs and mollusks...", says Grégory Chatonsky. In the process, Facebook and IBM released the source code for neural network algorithms. The scientific community is massively launching into plastic art. What about emotion? Isn't that what differentiates us from these mathematical aliens? "We are mainly seeing, for the moment, a lot of speculation, intellectual or financial," notes Manuela de Barros. We are dealing with hyperintelligent people, who have a positivist, transhumanist framework. To think, as they seem to say, that everything happens in the brain is to forget our skin, our memory... These are ideological positions. If everything is calculable, then it distorts everything. » Human sciences versus neuroscience. « Emotions are electrical impulses coded in our brain. Whether they are in silicone rather than proteins, I'm not sure that changes anything, says Jean-François Bonnefon. We can also train a machine to provoke emotions in a human: this is what was done with emoticons in DeepMoji. No, the real difference is that we are recursive. We feel things and we can describe them. To infinity. It seems inexhaustible, this taste we have for describing emotions. Love, fear... A "bot" can be trained to do this, but it doesn't interest him more than that. Nothing pushes him to make art: he doesn't need to be entertained by the idea of death, he doesn't need to become famous, to seduce or to create something that will survive him. » Gregory Chatonsky, the artist and researcher in artificial intelligence at the ENS, will present, in spring 2019, at the Palais de Tokyo, Terre deuxième based on satellite images: "A monument to the vanished Earth. All that would remain would be a machine that, with all our Internet data, tries to remember everything we have been. Haunted by our own end, we are perhaps creating our future resurrection. The central question of deep learning is resurrection." Thus, when the young Roman Mazurenko died, hit by a car in Moscow, in 2013, his best friend, Eugenia Kuyda, living in California with her start-up, Luka, decided to use the thousands of messages that the young man sent to his parents and friends to create an artificial intelligence with which it is now possible to communicate. Welcome to the afterlife. Whether it is painting, music or literature, "bots" practice conceptual art. For The Road (Jean Boîte Editions), "the first book written by an artificial intelligence" (the "first time" being the ABC of all marketing of the genre), Ross Goodwin equipped a car with different sensors (geolocation software, clock, cameras on the hood, microphone in the passenger compartment, etc.) from which the machine wrote a long, completely unreadable and repetitive poem, like an LSD trip. "Afterwards, how do we give credit?" asks Jean-François Bonnefon. The notion of author is complicated when you've taken a piece of code here, a database there..." These neural networks are rarely alone on board, as in The Road. They most often serve as goads or tools (a Harry Potter sequel supposedly written by an artificial intelligence was in reality reworked by human brains). However, the question risks becoming central. What happens when two machines obtain similar results? "Bel-Ami"? Unknown to the battalion On Twitter, the young Robbie Barrat, alias Dr Beef, fresh out of high school but already a pioneer of this artistic genre, began to cry plagiarism as soon as he understood what was happening at Christie's, showing some of his previous works on the social network. However, the authors of Portrait of Edmond de Belamy have never hidden their borrowings. Didn't they name their work in homage to the author of GAN, Ian Goodfellow ("good friend")? In April, Robbie Barrat apparently responded positively, they say, to their request ("which we made for form's sake") to use his open-source code for artistic and commercial purposes. Basically, what the community is criticizing them for is having privatized a collective experience by breaking an unspoken ethic: that of making their code freely accessible. "No one starts from a blank page in the world of machine learning. Open source advances research, it's brilliant, Pierre Fautrel wonders. But we don't do research, we market." This is Edmond de Belamy's second crime: what happens if, in "the era of technical reproducibility", to use Walter Benjamin's famous words, we start patenting the visual arts? The Obvious trio has a better command of marketing language than of aesthetics. When Pierre Fautrel is reminded that Bel-Ami is also Maupassant's hero, a social climber who lets himself be carried to the top of the social ladder by playing with his mistresses, his networks, and the games of power and money, the young man smiles behind his beard: "Yes, we saw that later. We're not literary types. "Publicity or stroke of genius?" asks a historian of the Louvre, who, for reasons of confidentiality, prefers to remain anonymous: "They are not in the imposture but in the disruptive. For me, it is the concept that amuses me. A work of art is neither the reflection nor the witness of a society, but its product. In this, it is interesting. And its academicism is also what legitimizes it." In the meantime, the small start-up is invited everywhere, to Miami, London, Helsinki, and is looking for a gallery to represent it. Pierre Fautrel adjusts his baseball cap: "Well, first we're going to buy ourselves a new sofa."

## ###ARTICLE\_START### ID:2117

He has finally broken his silence. Three months almost to the day after his surprise resignation from the government, Nicolas Hulot reappeared in the public debate on Thursday evening. Dressed in his traditional white shirt with a Mao collar, the former Minister for Ecological and Inclusive Transition answered questions on France 2's "L'Émission politique" for more than an hour and a half. While the government is facing the main crisis of its five-year term with the "yellow vest" movement, the environmentalist refused to "enter into the controversy". "What interests me is not what we didn't do yesterday but what we can do together tomorrow", he assured. However, the former number 3 in the government did not fail to criticize certain choices made by the executive. And particularly in terms of taxation. "Let's not oppose ecology and social issues. "It's a false debate," he hammered home, saying he wanted to "combine the problem of making ends meet with the problem of the end of the world." "Ecology is not a consideration for the rich, it is a duty for the rich," he added, arguing for investment spending related to the energy transition to be removed from the Maastricht criteria. "Solidarity is no longer an option today. If I called my ministry "Ecological and Solidarity Transition," it was not simply to have a letter effect on the pediment. The transition can only be solidarity," he continued. The yellow vest crisis was "avoidable" Believing that "solidarity does not work in a world where (...) the tyranny of finance monopolizes most of the goods," the former presenter of Ushuaïa refused to give in to the easy option of designating the abolition of the ISF as the mother of all evils. "We must not backtrack on the carbon trajectory (but) we need social support worthy of the name," he then demanded, judging that the current taxation is "not fair." Convinced that "there is no need to have a yellow vest, nor to be on the far left of the political spectrum" to hold such a speech, he urged the executive to "target and support" the "people who have been put in the trap and in the impasse." "This crisis (of the "yellow vests") was avoidable," he finally slipped, regretting not having been "heard" in time by Emmanuel Macron and Édouard Philippe. "I fought, and especially in the weeks before my departure, so that we completely change the scale of the social support for the energy and ecological transition, with concrete proposals. (...) I was opposed for budgetary reasons, I learned from them," he said. After having confided that he absolutely did not regret having left the government, Nicolas Hulot assured that his resignation did not mean "the end of (his) commitment". He then brushed aside the rumors that he would attribute presidential ambitions to him in 2022, relegating them to the rank of "journalist fantasy" that he would not think about "for a second". The same goes for the European elections next May, where he would not consider being a candidate... Or even supporting any list. "I will be available, but not in the conventional political field", he concluded, promising to "put proposals on the table in "open source"".

## ###ARTICLE\_START### ID:2118

When he has a free moment, Anthony Passeron writes. For about ten years, this history and geography teacher in a vocational high school has taken advantage of the slightest downtime in his day to write down verses. Although he mainly composes for pleasure, he has nevertheless tried to get a novel published. "I was rejected. It must be said that I only knew the big publishing houses, for whom a novel in verse was not publishable." The thirty-something from Nice therefore thought that his text would remain at the bottom of a drawer when he discovered, via social networks, Turfu, a publishing house created and managed by... high school students. "They seemed to be moving and hyper-motivated. And that's precisely what traditional publishing houses didn't appreciate, the "in verse" aspect, which they liked!" he jokes. At the beginning of the year, The Delicate Art of Failing Your Life was the first book published by this strange publishing house, which distributes its publications for free in digital format. A Thursday afternoon in Jaunay-Clan, near Poitiers (Vienne). Every two weeks, around fifteen students, from the second to the final year, meet in a room at the international innovative pilot high school (LP2I) to focus on Turfu editions. The LP2I, a non-sectorized public establishment that places great emphasis on student autonomy, is a UFO in the French educational landscape and the initiative is an integral part of the curriculum: 18 half-days per year, students meet in a complementary training activity (ACF) and develop a collective project, under the guidance of two supervising teachers. "We don't have any additional time allocation, so here the lessons last five minutes less than in other high schools, which frees up time for the ACFs," explains Antoine Coutelle, a history and geography teacher. Two responsible students complete the ACF's supervision. Emmanuel Fayet and Céline Detappe are students in their final year of high school. Co-presidents of Turfu publishing, they lead the reading committee that Thursday, with which the afternoon begins. The aim is to take stock of the manuscripts received - around twenty since Turfu was created -, the communication actions undertaken or the monitoring of the authors, to select the works that will be published (to be published, they must receive a majority of votes plus one vote) and to divide up the roles for each work. While the students are debating a text - "This one convinced me less...", "But should we make a collection of it or publish it like that?", "Maybe the author thought there would be a sequel?", "Well, who agrees to publish it?" - the economics and social sciences teacher responsible for the ACF pops in, glances at the students and disappears immediately: "Come on, I'll leave you to your own devices, I'll come back later." Legitimacy As soon as the reading committee is over, the high school students split into small groups, which rotate so that each one goes through all the roles: an editorial pole, a communication pole and a legal pole. "It took us a while to find our balance," admits Céline Detappe. "On the organization of the group, in particular: we started with poles, we came back and put them back in place... At the beginning, we thought we would publish a manuscript in two weeks!" At the editorial department, Axelle, Raphaël, William, Sarah and Manon reread, annotate, compare their observations before contacting the author to share their comments. Axelle and Sarah are working on a collection of 26 poems. The first: "This one is my favorite, I love poetry. It's not just pretty words to make it look pretty." The second agrees: "Yes, it speaks to us, it's a young author who deals with subjects that interest teenagers." The two high school students, in the science stream, then debate a problem of agreement: "Sometimes it's written "é", sometimes "ée", so I didn't know if the narrator was a man or a woman, we'll have to ask the author if it's a real choice." The two young girls work together even though they don't have the same literary tastes at all. If Sarah has trouble with the classics studied in high school and prefers contemporary authors like Guillaume Musso or Marc Levy, Axelle has devoured George Orwell and Emile Zola. Editorial, communication or legal poles: the students play all the roles. (Photo Claude Pauquet for Libération) Next to them, it is punctuation that gives Raphaël, a great reader, and William, who joined the ACF to "force himself to read more", a hard time. Raphaël: "We realize that we don't really know how to do it in terms of form. We go to the Internet, there are sites specializing in punctuation." William: "For example, here, we weren't sure whether there should be a space before and after the quotation marks." From proofreading to layout, everything is done by the high school students. Manon focuses on a book cover, using free software and royalty-free images gleaned from the Internet. "I like the artistic side," she explains, "the challenge of representing what the author expects, of trying to understand what he wants to convey and advise him, accompany him until publication." If some students have questioned their legitimacy in advising adults, on the authors' side, there is no reluctance. "It went very well, we just reviewed two or three things in my text, for example I wrote "then" too often. Most of the time, their suggestions are relevant, judges Feugeas, car rental man, football coach and author from Poitiers published by Turfu. Sometimes, they are less so when what is written does not correspond to their way of seeing the world. For example, in my book there is a rape scene, they did not understand that the character keeps it to herself. I told them that it was common, that it wasn't because #MeToo happened that everything had changed. But they were very respectful of my work." "Actor" Originally, however, Turfu editions were supposed to be just a fictitious project. In 2016, a French teacher, a documentalist and a teacher of economics and social sciences together set up an interdisciplinary module around the book "as an economic good and cultural product," explains Hélène Paumier, the French teacher. "We discussed correspondence between writers and publishers in French classes, and the economic model of publishing in SES. The project was to set up a fictitious publishing house, but the students then transformed it into a junior association [an association managed by minors, editor's note], then into an association pure and simple. They settled a lot of questions: the name, the logo, they chose to opt for inclusive writing on the site... The line was to promote young authors, not published elsewhere. Turfu then slipped into the ACF system", explains the teacher, visibly impressed. "When we started to put the project into practice, it very quickly took on a scale that we did not expect, remembers Céline Detappe. It was great, but it was a lot of work and a lot of pressure!" "On the legal side in particular, we knew nothing about it. Nor about writing the statutes of an association", adds Emmanuel Fayet. "This project corresponds well to the spirit of the establishment, estimates the principal Pierre-Emmanuel Raffi. We are less on disciplinary knowledge than on skills for university or professional life. There are no teachers here, and you see that they are capable of many things. The teacher is only a resource." Emmanuel Fayet, mischievous: "The idea in this high school is that the student is an actor in his education. We are never obliged to follow the advice of the teachers!" Challenge In the room adjoining the high school library, Corentin, Alexandre, Paul, Arthur and Antoine manage the communication center. The object of their reflection for the day: to establish a schedule of publications on social networks with Monday, a quote, Wednesday, a play on words, Thursday, a literary anecdote, Friday, an extract from a work already published... Paul: "We don't only talk about Turfu. For example, here, we are going to publish an anecdote about Victor Hugo." Among them, few are big readers. Only two plan to write novels themselves one day. What motivates these students, none of whom are in the literary stream, is also learning to manage a project from A to Z. For Paul and Arthur, "we try to work in a group, to respect everyone's word. The state of mind is really pleasant, we are not in adversity". The next challenge for Turfu editions will be to register their publications, in particular to allow them to perhaps be referenced on sites with greater visibility - they claim around fifty connections to their site per day, 200 on publication days. They should also develop audio books, broadcast on the high school radio, which allow both to make their works known and to make them accessible to the visually impaired. Next year, some of them will leave the high school to pursue higher education. Céline Detappe is not worried: "Corentin and Alex have taken over really well." But she will keep an eye on the association, like Emmanuel Fayet, who is not worried about the workload alongside university: "Anyway," he laughs, "sleep has become obsolete!"

## ###ARTICLE\_START### ID:2119

Thirty-four billion dollars (30 billion euros), for a company whose core business is to produce software that can be downloaded for free and without advertising. By announcing on October 28 that it had bought Red Hat, the free software giant that publishes RHEL, one of the most popular distributions of the Linux operating system, IBM made the largest acquisition in its history. Red Hat, created in 1993, has built a very efficient empire; its turnover has increased every quarter for fifteen years. Its business model is simple: free and open source software that anyone can download and modify, for which the company offers paid services for training, development, support, etc. Over time, the model has always remained resolutely centered around free software. This is not the first time that a free software giant has been bought for a large sum. In June, Microsoft spent $7.5 billion to acquire the GitHub project hosting and management service, which allows developers to share and store the code they create. "It's a way of betting on the future," says Pierre-Yves Gosset of the Framasoft association, which promotes the use of free software. "The primary reason for these acquisitions is to buy out competitors. But it's also in free software companies and projects that you'll find good developers and high-performance code." Beyond strategic considerations, the acquisition of Red Hat "shows the viability of the free software economic model," says Lionel Maurel, a lawyer and board member of the association La Quadrature du Net. "Everyone has repeated this phrase: "Free software has already won, but no one knows it." The model is already dominant in servers; IBM will be able to use this acquisition to develop dematerialized cloud computing solutions, a very competitive field." Because if Linux remains a very small minority on individual computers, far behind Microsoft's Windows and Apple's Mac OS, the free operating system is the leader in servers that run the major Web services. From Amazon to Facebook to Google, whose modified version of the Linux kernel is at the heart of Android, all the Web giants use Linux for their gigantic infrastructures. For very large groups, Linux is therefore a major strategic issue. Gone are the days when Microsoft CEO Steve Ballmer described Linux as a "cancer." The company founded by Bill Gates has opened some of its patents to facilitate the development of free software, and has joined the sponsors of the Linux Foundation, which oversees the evolution of the software, alongside Google, Intel and Samsung. Major software, networking and hardware companies also invest heavily in the development of the software itself, offering their engineers' time to improve Linux or develop new features. Rivals working togetherThis is the case, for example, at Facebook, which is among the thirty largest contributors to the Linux code; the software runs the company's servers. Engineers have a great deal of freedom internally to propose improvements to the software, explains Chris Down, a Facebook engineer based in London, who works in particular on optimizations allowing Linux to consume less energy. "At Facebook, there is a great deal of trust in engineers: they are the ones who are faced with the problems and who are best placed to solve them," he says. In addition to a fixed team of "a few dozen people", all engineers with the necessary skills are encouraged to participate in projects to improve Linux. On a daily basis, computer scientists from the social network work hand in hand with those from Red Hat, or with those from Google... "It's a very beneficial approach, judges Mr. Down. If we kept these improvements to ourselves, the world would move forward without us. Improving the Linux kernel benefits the community, but it also brings us a lot of things." The situation is similar on the board of directors of the Linux Foundation, where members are mostly elected by the sponsors who give the most money; the annual donation to be a "platinum" member is $500,000. IBM and Intel, Samsung and Huawei, Facebook and Google: the eternal rivals collaborate on the allocation of budgets and the governance of the powerful foundation. Which also makes people grind their teeth. Linux has historically been driven by developers driven by ideals of equality... and a very strong distrust of large IT companies. Some of the developers heavily invested in the project therefore view with suspicion the increasingly large role of web giants in the founding and development of Linux. What Mr. Gosset describes, speaking of the acquisition of Red Hat, as a "worrying movement of concentration that aims to have an oligopoly of companies governing digital. With a $1,000 billion market capitalization (for Amazon or Apple), these large companies are able to invest in any company and define our ways of consuming. To what extent do they hold digital?" "Paying members contribute by providing resources to the foundation, but this does not bring them anything technically, responds Mike Dolan, vice president of strategic programs at the Linux Foundation. Anyone can contribute to the code worldwide; it is the people who do the development who make all the decisions. All our governance rules are written and accessible online. We have more than 30,000 developers who contribute each month: if our governance model was bad, it would be instantly obvious. "The fact remains that the foundation's ultra-rapid growth has somewhat disrupted certain old practices. Including at the highest level: on September 18, Linus Torvalds, the original creator of Linux, who has control over the entire technical side of the project, announced that he was temporarily leaving his position, to "better learn to understand the emotions of others and respond to them appropriately." Known for his sometimes very violent comments against other developers on Linux-related discussion lists, Mr. Torvalds returned to his post on October 22; in the meantime, a new code of conduct for contributors has been adopted by the Linux Foundation. Behind the success of Red Hat and the phenomenal growth of the Linux project, there are two visions of the Internet and software that are clashing." From a symbolic point of view, the acquisition of Red Hat by one of the world's largest companies is a recognition of the reliability and quality of free software, believes Christian Pierre Momon, of the April association, which promotes free software. But from an ethical point of view, it is catastrophic: IBM, like many other large groups, has understood the advantages of the "open source" development model, but has given no sign of its desire to make free software. "Open source or free software, both terms designate software whose code is freely consultable, modifiable and redistributable, but the term "free software" emphasizes a philosophy giving power to the user. "The open source movement is a development methodology; the free software movement, a social movement," summarized the computer scientist and theoretician who founded the movement, Richard Stallman. "Right to contribute "However, what large groups are praising is this mode of collaborative development in digital technology, but also in other sectors, ranging from energy to automobiles. "Over the last five years, we have seen industries that have existed for more than a century convert to this model, explains Arpit Joshipura, at the Linux Foundation. It's much more efficient than the old practice of creating standards: you can deploy innovations very quickly, and that's crucial for the success of a product." "For a publisher, open source has huge advantages," says Momon. "We share all the costs: when I give one of my engineers a day's work, I get 150 back. It's pragmatic and efficient." But efficiency can also partly obscure the philosophy of free software. "This acquisition is a victory for the open source movement, but it could also be the defeat of the historic free software movement," worries Sébastien Broca, sociologist and author of Utopie du logiciellibre (Le Passager clandestin, 2013). In the principles formulated by Richard Stallman, it is less the efficiency of software that matters than maintaining users' freedoms. "Within the free community, recent acquisitions have sparked debate and even real unease." Are there not risks that the "free commons" will become the "capital commons"? " asks Lionel Maurel, drawing a parallel between donations from Internet giants and "the era of industrial paternalism as it was common at the end of the 19th century, when major capitalists launched "good works" to compensate through philanthropy for the damage caused by an unbridled market economy." Mr. Maurel defends the idea of a new social contribution that would be paid by the platforms and would remunerate a "right to contribute", on the model of the "right to training" in companies. In France, such a right does not yet exist, but since May, agents of the interministerial directorate of information and communication systems of the State (Dinsic) have the possibility of participating in external free projects, with the agreement of their hierarchy. Other legal solutions are beginning to emerge, new types of license, for example, to impose compliance with certain principles on large platforms, without giving up the freedom given to all users. "In the social and solidarity economy sector, stakeholders are worried about seeing their tools plundered by for-profit companies," notes Michel Bauwens, from the P2P foundation, who believes that we can both "maintain the idea of sharing knowledge and demand reciprocity in the event of commercial exploitation of common goods." Claire Legros and Damien Leloup

## ###ARTICLE\_START### ID:2120

April 2014: a wave of panic seizes hundreds of thousands of developers worldwide. A security flaw, called "Heartbleed", has just been made public; it affects OpenSSL, an encryption software that ensures a secure connection. The flaw is severe and OpenSSL is used by millions of sites and services: banks, online messaging, etc. In the following days, while developers are hastily correcting the problem, the director of the OpenSSL foundation, which supports the development of this crucial software component, publishes a long mea culpa in which he explains that, due to lack of resources, the project was only supported by... a single full-time developer. And there are many free projects developed by volunteer or quasi-volunteer teams on which millions of sites and services rely. "The tool I actively maintained is used by tens of thousands of people every day," notes Bastien Guerry, who maintains Org-mode, an important module of the free text editor GNU Emacs. "When I was very active, I spent three hours a day on it, sending 5,000 emails a year. Sometimes you come across users from large companies who have very specific requirements and others who can formulate them in an unpleasant way. Psychologically, it is difficult to provide a professional quality service or to ignore the human factor when you are completely voluntary." Crowdfunding methodsSome projects apply a model similar to that of the free software giant Red Hat, by offering paid services. But economic success is not always there: this was the case, for example, with the OpenSSL foundation, which has since benefited from a boost from the Linux Foundation. Other developers are turning to crowdfunding methods, with varying degrees of success. Creators of several major JavaScript code libraries (frameworks), software building blocks widely used by websites and web services, are using Patreon, a site designed to support artists. Evan You, the creator of Vue.js, thus receives more than $16,000 each month (14,000 euros), paid by 233 supporters. "A test that worked well," he explains to Le Monde, and which now offers him "total independence allowing him to choose where to focus his energy." Recently, a free alternative to Patreon, Liberapay, has also emerged. The question of the economic model, far from being taboo, is at the heart of the discussions of free software communities. "For Richard Stallman, a computer scientist and founding theorist of the movement, it has never been a problem for a company to make money with free software, recalls sociologist Sébastien Broca. It is not contrary to the philosophy of free software. But these economic questions did not arise ten or fifteen years ago, because free software was not so important for large companies." The foundation model, which offers many advantages, "is not the solution for all projects," believes Mr. Guerry. "The Mozilla Foundation, which publishes the Firefox browser, was once financially dependent on Google, and this created uncertainties about its future." The question arises with all the more urgency since the world of IT has engaged in a major reflection on questions of diversity, notes Mr. Guerry. The more or less forced volunteering of certain projects would also contribute, according to him, to reinforcing the fact that men, in particular, are overwhelmingly in this sector. C. LE. and Da. L.

## ###ARTICLE\_START### ID:2121

For a year, Arthur Hay, general secretary of the Syndicat des couriers à vélo de la Gironde, crisscrossed the streets of Bordeaux with the apple green backpack of the British home meal delivery platform Deliveroo. "I worked from 11 a.m. to midnight, the only way to earn a living when you depend on a foodtech platform." Since January, he has been doing his shopping, still by bike, but within the association of Coursiers bordelais that he founded with three colleagues and that he plans to transform in a few months into a SCOP, a company where each employee will also be a partner. "In one year, we managed to employ four people part-time. Our income has increased and I have changed my quality of life, I have found a social life again," he assures. They are called La Traboulotte in Lyon, Molenbike in Brussels or La Pajara in Madrid. Like the Coursiers bordelais, these young cooperatives aim to develop bicycle deliveries while ensuring protection and labor rights for couriers. Since March, they have also had another thing in common: their delivery people have connected the CoopCycle platform app to their handlebars, developed in open source software as a "digital common good" belonging "to all those who contribute to it or use it: developers, couriers, restaurateurs, etc." The idea of an alternative to foodtech platforms germinated at Place de la République in Paris during the Nuit Debout movement in the spring of 2016. "We rubbed shoulders with bike delivery people and we saw the incredible violence of this ultra-liberalized market where players have to lower prices as much as possible to kill everyone else," says Aurélien Alphon-layre, one of the co-founders of CoopCycle. "We said to ourselves that we could try something else." Launched in March, the platform has a particularity: the collective has designed its own license, a legal assembly that authorizes study, modification, copying and redistribution to all, but prohibits commercial use by companies that are not cooperatives, and therefore those that employ self-employed entrepreneurs. The approach divides within the free software community: long-standing activists see it as a renunciation of one of the pillars of the movement, the freedom to be able to use the software without any discrimination. The collective justifies its decision. "Designing software as a common good is not an end in itself, but a means of guaranteeing real freedom for delivery people over their working conditions," says Kévin Poperl of CoopCycle. C. Le. and Da. L.

## ###ARTICLE\_START### ID:2122

The company is called Red Hat, red hat in French, because one of its creators never parted with his red cap. For this amusing anecdote, and for many other things, Red Hat is a unique company in the new technology industry. Founded in 1993 in Raleigh, North Carolina (United States), its annual turnover is close to 3 billion dollars. At the heart of its economic model is software that is, originally, completely free. Red Hat specializes in the distribution of open source software. Also called "free software", the latter is freely accessible and can be modified by any developer. This means that, unlike more traditional players, Red Hat does not sell computer programs. It offers a series of services, for a subscription, that accompany the solutions it distributes: installation, maintenance, security, data hosting, insurance offers, etc. In its early days, Red Hat was known for its distribution of a version of Linux, an operating system that rivals Windows on computers and, especially, on servers. This program is particularly popular in data centers and infrastructure tools. However, in the early 2000s, this was a booming IT sector. The cloud industry, dematerialized computing for professionals, was then in its infancy. Having gone public in 1999, Red Hat survived the bursting of the Internet bubble and, thanks to its particular expertise, gradually went from being a company known to insiders to a software giant, on a par with Microsoft or IBM. Today, Red Hat's success is that, more generally, of free software in the professional world. Initially reserved for IT enthusiasts, open source solutions are now of interest to larger companies. In the 1990s, they were mainly a way to replace proprietary solutions for free. They have therefore long been demonized by the traditional software industry. In a now famous interview given in 2001 to the Chicago Sun Times, Steve Ballmer, then CEO of Microsoft, even called Linux a "cancer that attacks intellectual property". Change of status Seventeen years later, the tone has changed. Red Hat now collaborates with the biggest software players. One of its oldest partners is IBM, which has integrated its solutions into some of its servers. Apart from this leader, there are many "free" companies; they represent more than 10% of the French software and IT services market, according to the professional union Syntec Numérique. This turnaround can be explained in different ways. Open source solutions are widely used in data centers. It is difficult for software players to ignore them while they are investing massively in the cloud and its technologies. Free software advocates also highlight many advantages: greater security (because free software is, by its very nature, constantly monitored and modified by developers around the world), lower cost, etc. The big players in the sector are finally won over by the subscription model of companies in open source, which allows them to generate recurring revenue. They are therefore gradually converting to it. Salesforce recently acquired MuleSoft, which also distributes free software. In June, Microsoft bought GitHub, a collaborative platform for developers, widely used in open source. With the acquisition of Red Hat by IBM, free software has definitively acquired its letters of nobility. L. R

## ###ARTICLE\_START### ID:2123

TECHNOLOGY On one side, a traditional company in the IT industry. On the other, another software giant, but much less known to the general public. On Sunday, IBM announced its acquisition of Red Hat, a company specializing in the development and distribution of open source solutions for businesses. This acquisition amounts to 34 billion dollars (almost 30 billion euros). This makes it one of the largest financial operations ever carried out in the new technology industry, behind the acquisition of EMC by Dell for 67 billion dollars in 2015. It is also the largest acquisition in the history of IBM, an old IT player looking for a new lease of life. Little known outside of insiders, Red Hat is nevertheless a major player in today's IT, valued at more than 20 billion dollars on the New York Stock Exchange. Founded in 1993, the company specializes in the development and distribution of free software. These programs, also called "open source", can be downloaded for free, duplicated and modified as desired. Red Hat offers its customers services (data storage and security, installation, etc.) that are added to this free software, for a monthly subscription. In particular, it distributes its own version of the famous Linux operating system, a competitor to proprietary solutions such as those developed by Microsoft, widely used in data centers. This makes Red Hat a key player in the very lucrative and still growing cloud industry. Red Hat's annual turnover amounts to $2.9 billion, up 21% between 2017 and 2018, for $472 million in profits. If Red Hat interests IBM so much, it is because the expertise of the former could considerably boost the activities of the latter. IBM is an old IT and professional software company that is struggling to modernize. For several years, the company has been betting on artificial intelligence to support its activities. Its Watson platform, in which it has already invested several billion dollars, is nevertheless slow to deliver the expected results. IBM's turnover has been in almost constant decline for more than five years. After a brief recovery in early 2018, its revenues fell again in the third quarter of 2018. Red Hat, for its part, is a growing company in another sector crucial to IBM's future: the cloud. This acquisition allows it in particular to strengthen its offering in the "hybrid cloud". Behind this barbaric expression lies a major challenge for today's companies: managing the storage and transfer of data between their own servers and those of their cloud computing providers. The hybrid cloud allows companies in particular to use several cloud providers. An important factor given that the market is now cluttered with many competing offers. Red Hat will integrate its new owner as an independent entity, within its cloud division. Its CEO, Jim Whitehurst, will remain in office, while gaining the new title of vice president of IBM. "Hybrid cloud" "Our acquisition of Red Hat will change everything in the cloud market, has already promised Ginni Rometty, CEO of IBM. We will become the first hybrid cloud provider." Despite these great ambitions, the road will be long. IBM must face competition from giants already very well established on the cloud market, notably the leader Amazon, followed by Microsoft, Google (Alphabet) and Alibaba. Ginni Rometty is in any case ready to put her hand in her pocket to succeed in her bet. IBM is buying Red Hat for a price of $190 per share, a premium of more than 60% compared to its level before the acquisition. The operation will be financed by cash and debt. IBM also announced that it was abandoning its share buyback plan in 2020 and 2021 to focus on financing this acquisition. At the opening of the New York Stock Exchange, IBM shares were down 2%, while Red Hat shares were up almost 50%.

## ###ARTICLE\_START### ID:2124

Quantum leap for IBM. The world's leading IT group announced on Sunday, October 28, that it had completed the acquisition of Red Hat for $34 billion (€30 billion), making it the largest acquisition in its history. Created in 1993, Red Hat provides a verified version with software improvements of Linux, the operating system from the free software community, as well as a set of services. In its last financial year ending last February, the company achieved a turnover of $2.9 billion. To get its hands on this flagship of American technology, IBM agreed to pay a premium of 63% compared to Red Hat's last stock price. "Offering an open solution" If IBM agrees to loosen the purse strings in this way, it is to get back on track in an IT world transformed by the "cloud", dematerialized computing. In cloud infrastructure, in other words hosting and computing servers, IBM is competing with Amazon Web Services and Microsoft. In software, players such as Salesforce, which specializes in marketing tools, or Workday (finance, management, human resources) have made a name for themselves. With Red Hat, IBM hopes to help companies assemble the different technological building blocks of the cloud. "IBM will become the world's leading hybrid cloud provider, offering companies the only open solution that will unlock its full value for their businesses," IBM CEO Virginia Rometty said in a statement. For seven years now, Virginia Rometty has been trying to get IBM, a 107-year-old lady, back on the growth track, shedding old activities and focusing on artificial intelligence or the cloud. For six years, it has seen its revenues decline, from $106 billion in 2011 to $80 billion this year, according to forecasts by S&P Global Market Intelligence. Since January, IBM has shown a slight improvement and has had three quarters of growth. But despite its efforts, growth has remained weak, around 2% according to the latest figures published, even though the tech market is on the rise.

## ###ARTICLE\_START### ID:2125

WASHINGTON - American group IBM announced Sunday that it would pay a record $34 billion to buy the open source software publisher Red Hat, which is expected to accelerate the computer giant's presence in the very lucrative and booming market of cloud computing. Proof that it sees this as a strategic contribution to the company, IBM had never paid so much for an acquisition. According to the financial channel CNBC, this is the third largest acquisition in the technology sector in the United States. To get its hands on Red Hat - which was created in 1993 before launching a year later its famous version of the open source Linux operating system -, the historic player in global computing will put on the table $190 per share, according to a joint press release released Sunday. This represents a premium of nearly $73 compared to Red Hat's closing price on Friday in New York. To justify this amount, the CEO of the IT group, Ginni Rometty, does not hesitate to affirm that "the acquisition of Red Hat is going to be a game changer. It changes everything in the cloud market." The term refers to dematerialized computing, such as online data storage, and it has become one of the fastest growing segments of the IT markets and the juiciest margins. "IBM is going to become the world's leading hybrid cloud provider," said Ms. Rometty, believing that this is the next growth opportunity for dematerialized computing, allowing for example to connect different types of "clouds" private, public, etc. Closed computing market Today, they often cannot communicate, each one being built on its own or proprietary foundation. According to IBM, 80% of the workload of enterprises is still not transposable to the cloud due to the closed nature of the current cloud computing market. Like Amazon and Microsoft, IBM has made cloud computing a priority in its growth strategy. Following the adage "you don't change a winning formula," IBM has decided to integrate Red Hat as is as a separate unit, which will essentially be able to continue doing what it has done and how it has done it so far. Jim Whitehurst, Red Hat's CEO, will remain in charge with his team and will become a member of IBM's management team, reporting directly to Ginni Rometty. "IBM intends to keep Red Hat's headquarters, its facilities, its brand and its way of doing things," the statement summarizes. Red Hat, based in Raleigh, North Carolina, has operations in 35 countries, employs some 12,000 people and is one of the best-known players in open source software. The company made a net profit of $259 million in the 2018 financial year ending at the end of March for a turnover of $2.9 billion (+21% over one year). beneficial effect on the dividend Even for a giant like IBM - $79 billion in turnover for $5.8 billion in profits in 2017 - the sum offered is enormous. The purchase is made in cash rather than by exchange of shares. IBM indicated that it would pay with its funds but also by borrowing, without however specifying the proportion. The company affirms that this acquisition will accelerate the growth of its turnover, its gross margin and its profitability in the 12 months following the conclusion of the acquisition. It also specifies that this will have a beneficial effect on the dividend. To help cope financially, IBM is abandoning its share buyback plan in 2020 and 2021. The company also wants to specify that it "is committed to maintaining a credit rating corresponding to a high-quality investment." IBM claims to have the financial means to ensure the transaction is signed. It has been approved by the boards of directors of both companies. The acquisition is expected to be completed during the second half of 2019.

## ###ARTICLE\_START### ID:2126

On August 31, the WikiLeaks organization published a disturbing message to its five and a half million Twitter followers: "Arjen Kamphuis, an associate of Julian Assange and author of the book Information Security for Journalists, has disappeared, according to his friends and colleagues. He was last seen (...) on August 20, in Bodo, Norway." Immediately, hundreds of media outlets from all countries reported the raw information. Most did not seek to find out more about Arjen Kamphuis, 47, and presented him, perhaps a little too quickly, as a close collaborator of the whistleblower Julian Assange, or even as the "co-founder", with the latter, of WikiLeaks, the organization responsible for the disclosure, since 2010, of millions of confidential documents stolen from various American administrations. On the Internet, the conspiracy machine is running wild: if someone close to Assange has vanished, he must have been kidnapped by the United States secret services. Others prefer an even more tortuous scenario: Arjen Kamphuis would, in reality, be on a mission on behalf of this same Assange, who would be trying to secretly leave the Ecuadorian embassy in London, where he has been a refugee for six years, and to be exfiltrated to Russia, via Norway... Nearly two months have passed, and Arjen Kamphuis remains untraceable. But we now know a little more about him. An extraordinary character, surrounded by friends who are just as extraordinary, this Dutchman living in Amsterdam is a computer scientist who is an expert in network security. Until August 20, he worked and traveled a lot, balancing two very demanding occupations: he was both the manager of a big data start-up called "PGK" (Pretty Good Knowledge), and an activist for free Internet, engaged in the fight against mass surveillance carried out by States and Internet giants. Passionate about the life of the media, he focused his activism on journalists and made it his mission to convince them to better protect themselves against state or private surveillance by securing their computers and phones and encrypting their connections and files. Arjen Kamphuis thus participates in training sessions on "infosec" (information security) for journalists, particularly in countries where freedom of the press is under attack. On May 1, he had published a photo on his Twitter account of himself typing on a computer in war reporter's gear, with helmet, bulletproof vest and dark glasses. At his feet, a suitcase with two inscriptions: “Device monitored by the NSA” and “I am with WikiLeaks.” He does not specify where he is, but wrote this comment: “When bits meet bullets: information security for journalists operating in high-risk environments. Data leaks can have consequences for people working in war zones. Very proud to help some of the bravest people be a little safer.” Before WikiLeaks, his disappearance was announced on Twitter on August 31 by one of his relatives, Linde van de Leest, 32, who goes by the name Ancilla (“maid” in Latin): “My best friend has disappeared in Bodo, Norway. His friends, colleagues and family are very, very worried. Please share.” His appeal was immediately widely shared on social networks. It must be said that Ancilla is a celebrity: for ten years, she was a photo model for various magazines, including Playboy and confidential titles of the fetish scene. In 2012, she made a radical change of career by becoming an activist for the protection of privacy on the Internet and a columnist in several newspapers. At the same time, she asserted herself as the leader of the small Pirate Party of the Netherlands, engaged in the fight for the freedom of the Internet and the protection of users' privacy. In the 2017 legislative elections, she headed the list of this party, but obtained barely 0.34% of the vote. She then moved away from politics to become a sales executive at StartPage, an alternative search engine. Interviewed by Le Monde, Ancilla presented herself as a close friend of Arjen Kamphuis "We often go on vacation together, and I am the only one who has a copy of his keys" - but is keen to minimize his links with WikiLeaks: "They have been exaggerated by the media. Like many people in the free software and hacker movement, Arjen met Assange before he became famous. He subsequently invited him to events in the Netherlands, visited him in London at the Ecuadorian embassy, and provided occasional services to WikiLeaks for the safety of its journalists, but nothing more." She claims that other mutual friends have all made the same observation. On the other hand, WikiLeaks maintains doubts about the nature of its "association" with Arjen Kamphuis. The British Joseph Farrell, who was for a long time one of Julian Assange's main collaborators and remains close to him, explains with a smile: "We do not provide information on our members and associates, but someone can very well work for WikiLeaks without their entourage knowing. That was the case for me for a long time." Secret destination For Ancilla, this disappearance is an absolute mystery, whose chronology, repeated a thousand times, never ceases to intrigue. In July, when he announced that he was going on holiday alone to Spitsbergen, the island in the far north of Norway, his friends were not surprised, because Arjen Kamphuis was passionate about nature and hiking. Before leaving, he bought a folding kayak (2,000 euros) without telling anyone, which he took with him to Norway, even though he had never practiced this sport. According to Ancilla, he seemed happy: "He had lots of plans for the start of the school year, both professional and personal. Since I am a single mother, he wanted to help me look after my 9-month-old baby whose middle name is Arjen." On 7 August, she sent him a text on Signal, an encrypted messaging service widely used by geeks, to wish him a good holiday. He thanked her in three words. Then, no more news: "On the 9th, I sent him a new message, but it was rejected. An alert appeared: 'This number is not registered.'" As if Signal had been uninstalled from her phone." In the following days, she tried again five times, without success. On the 16th, she was contacted by another friend, Jos Weijers. He too had noticed that Arjen Kamphuis no longer appeared on Signal: "It was incomprehensible," he says. "I couldn't imagine a scenario in which he would have deleted the application." That day, the young woman replied to Jos with a joke: "Maybe he was eaten by a polar bear? RIP." Jos Weijers, a tall and sturdy forty-something living in Arnhem, in the east of the Netherlands, is also an original character. During the day, he works as an IT specialist for an electricity company, where he is responsible for server security. In the evenings and on weekends, he is responsible for Hack42, a hackerspace (hacker club) set up in the middle of the forest, in a former convent that was first converted into an army administrative office and is now disused: "It still belongs to the army," he explains, "we just rent two floors." Hack42, which has around fifty members and receives many visitors, offers various facilities: computer rooms, electronics, ironwork, locksmith and carpentry workshops, a photo studio, 3D printers, laser cutters, etc. "Arjen loved this place," says Jos, "he came eight or ten times a year, even though it is 100 kilometers from his home. Sometimes he stayed for several days." They recently worked together on an ambitious project: "We wanted to buy the old Arnhem prison to transform it into a hackerspace and a residence for alternative and artistic projects. It didn't work, it's a shame, the symbol would have been strong." Arjen Kamphuis' absence was also noted at PGK, the start-up he co-founded, located in a modern and comfortable building in the suburbs of Amsterdam. Although he was due to return from vacation on August 23, he did not reappear, missing several meetings during the week, which surprised his colleagues, because he has a reputation for being reliable. Among his partners at PGK, there are two other extraordinary characters, Americans: Bill Binney, a mathematician, and Kirk Wiebe, a linguist, both former employees of the NSA, the American National Security Agency. Having discovered that the agency was setting up highly intrusive mass surveillance systems targeting the entire world, they decided, in 2001, to resign in protest, then to alert the media and public opinion. The move earned them years of legal and police harassment, but now those worries seem distant. Arjen Kamphuis met Bill Binney at Oxford University in 2014, at a conference organized by whistleblower associations from various countries’ intelligence agencies. At the time, Kamphuis was living in Germany with an English woman, Annie Machon, a former employee of the British intelligence service MI5. In 1997, she resigned and began publicly denouncing several covert MI5 operations, including one she claimed was aimed at assassinating Libyan leader Muammar Gaddafi. After bonding at conferences, Arjen, Bill the mathematician, and Kirk the linguist founded PGK, an “ethical data mining” start-up, with the help of a Dutch businessman and long-time computer scientist friend, Maurice Verheesen. Thanks to a system developed by the two Americans, as an extension of their work at the NSA, PGK offers companies and administrations the opportunity to exploit their customers' personal data, while respecting their privacy and anonymity. Business is booming and, from now on, Bill and Kirk spend one month out of two in the Netherlands. On August 30, the disappearance of Arjen Kamphuis becomes frankly worrying. While he is expected the next day in England for a hackers' meeting, he still has not given any sign of life. His friends then alert the Dutch police, who contact their Norwegian counterpart. For her part, Ancilla conducts her own investigation: "I called the hotels in Spitsbergen," says the young woman. Some did not want to give me information, to protect the privacy of their customers, I can't blame them. Finally, one of them told me that Arjen had made a reservation in July, but that he had cancelled it. » "No satisfactory explanation" When he checked his account on the booking site Booking.com, the police and his friends discovered that he had never been to Spitsbergen, but that between August 10 and 20 he had stayed in two hotels in the Norwegian town of Bodo, a destination he had not told anyone about. Bodo, with a population of 50,000, is a modern industrial port in the north, where tourists rarely spend more than a day or two. Arjen Kamphuis had also bought a plane ticket to return to Amsterdam on August 22, from Trondheim, 700 kilometers south of Bodo. He did not take that plane, and there is no indication that he had set foot in Trondheim. In early September, another of his friends, wishing to remain anonymous, went to Bodo to investigate and distribute posters to alert the residents. It was confirmed that the Dutchman had left his hotel on August 20, with his luggage and his kayak, weighing nearly 15 kilos, stored in a bag. However, no one remembered seeing him anywhere else in the city. At first, the Norwegian police favored the hiking accident theory. On September 11, a fisherman navigating in the Skjerstad fjord, a narrow and deep inlet extending 80 kilometers east of Bodo, found a bag containing the missing man's passport, his bank card and money. The same day, the famous kayak was discovered, lying on the ground, on a bank of the fjord, then his paddle. However, his luggage was nowhere to be found, and no reservation in his name had been made in a hotel or campsite in the area. The local media were surprised, because the waters of the fjord are rough and dangerous: no one here would risk confronting them aboard such a fragile boat. In addition, at that time, the weather was already very bad. The police and the coast guards scoured the fjord and the surrounding mountains, without result. Two Dutch police officers arrived as reinforcements. At the same time, the investigations revealed that, on August 20, the day of his disappearance, Arjen Kamphuis took the train to the town of Rognan, located at the end of the Skjerstad fjord, about 85 kilometers from Bodo. The controller remembered this Dutch passenger whose bulky luggage cluttered the corridor. In addition, his phone had a signal in the region that same day. His friends, who found it hard to believe that it was an accident, opened up another, more mysterious lead. They noted that the kayak was found near the town of Fauske, facing a mountainous peninsula that was, to say the least, unusual, since it housed a Norwegian station for intercepting satellite signals and detecting electronic signatures emitted by planes and ships. This station, which belongs to the Norwegian intelligence services and may work for NATO, is not clandestine - the three white domes containing the interception devices are visible from afar - but discretion is required about the exact nature of its activities. On the same bank of the fjord, in Reitan, between Bodo and Fauske, there is another strategic installation, hidden in an underground gallery: the joint headquarters of the Norwegian armed forces, which includes a cyber defence centre. For Jos Weijers, Arjen Kamphuis's visit to this area is no coincidence: "These sites represent everything he is passionate about. At the very least, he must have stopped and taken a photo of the domes, to illustrate his lectures on electronic surveillance." Ancilla is equally categorical: "His presence in Fauske cannot be a coincidence. That said, I have no satisfactory explanation." » Another troubling clue unearthed by the relatives of the missing man: they obtained photos of the kayak, taken by the police, and showed them to the seller in Amsterdam. However, the latter is formal: the boat was poorly assembled, important parts are missing, it could not sail properly in its current state. Jos Weijers is convinced that it was not assembled by Arjen: "He is skilled with his hands and meticulous, he would never have done such a shoddy job." On September 20, the field search was abandoned but, in the meantime, a new lead has emerged. It is discovered belatedly that on August 30, ten days after the disappearance of the forty-year-old, his phone connected to three relays, between the towns of Vikesa and Ualand, in southern Norway, that is to say 1,600 kilometers from Bodo. The phone was "circulating" at high speed; it was perhaps on a train. Once switched on, the device loaded the SMS and messages waiting. Then, after 20 minutes, a German SIM card was inserted; this model can hold two cards. Then it disappeared again. For Arjen Kamphuis' entourage, this phone lead is the most promising, because they are all geeks, more at ease on computer networks than in wild fjords. Ancilla points out that to receive SMS messages, a phone must be unlocked with the PIN code, a reason to hope that on August 30, his friend was in southern Norway, and not at the bottom of the fjord where the kayak was found. More cautious, Jos Weijers simply regrets that the police refuse to communicate the technical data of the phone, while they could be very useful to seasoned hackers: "Hack42 is known in the field," he assures, "we have good contacts throughout Europe. If we had the number of the German SIM card, or the identification code of the device, we could perhaps locate it. But we are not told anything, we do not even know if he had one or more phones." He too is troubled by the unlocking of the SIM card: "If the owner was a simple thief, how could he have activated it without the secret codes? Arjen's devices are very well protected, that's his job. And if the phone was in the hands of an expert capable of forcing it, why would he have let himself be spotted like a beginner? " The investigation even extended to Denmark, close to the region of Norway where the phone was spotted. Following appeals for witnesses broadcast on television channels, two people came forward, claiming to have seen Arjen Kamphuis in Denmark. The first is a Dutch tourist passing through Ribe, a small town on the west coast of the Danish peninsula. Ancilla studied her testimony: "She says she saw him twice in two days. According to her, he was sitting outside, under a canvas awning, with an iPhone 6 and a solar charger that she described precisely; we found the model." Ancilla immediately placed a search notice on Facebook, in the form of paid advertising targeted at the Ribe region: "The next day, I was contacted by a man living in Esbjerg, 30 kilometers from Ribe. I called him, he is certain that he met Arjen in the company of two men. They were talking in German and Dutch." But it is impossible to assess the reliability of these testimonies: Arjen Kamphuis is blond, Nordic in type and of average height, a common description in this part of the world. "Crazy theory" At this stage, no one can imagine why he would have organized a clandestine trip, on his own initiative or to flee from danger. His colleagues Kirk Wiebe, the former NSA, and Maurice Verheesen, the computer scientist friend, refuse to admit that his disappearance is linked to the activities of PGK: "That would not make any sense, our company works in broad daylight, with very classic commercial clients." On the other hand, his relatives speak less willingly of Arjen Kamphuis' other activity: training courses in computer security for journalists and NGO activists. Referring to the photo posted by Kamphuis himself on Twitter, Maurice Verheesen explains that the latter sometimes carried out "secret missions in dangerous countries", then adds that he cannot talk about it, for fear of putting people in danger. On reflection, he imagines only one scenario: "If he was kidnapped, it can only be by people who would like to know more about the international community of hackers and independent experts in computer security. But this theory is far-fetched." For his part, Jos Weijers believes he knows that Arjen Kamphuis had stayed in Indonesia several times: "The last time was in April, I forget which island. He had been sent there by the Reuters news agency, which wanted to train its local correspondents, to teach them how to evade the electronic surveillance of the authorities. I don't know more, for obvious reasons. These sessions are secret, we are not going to announce them in the media or talk about them on Twitter. » Mr. Weijers traveled with Arjen Kamphuis to Tirana, Albania, in May. Both were invited to a conference on free software and freedom of expression on the Internet, organized by a local association called "Oscal. On the website of this association, it is stated that Kamphuis was due to return to Tirana on October 20 to participate in a "cryptoparty" - a festive event during which hackers explain to the general public how to secure a PC and a telephone, encrypt a message, anonymize Internet browsing, etc. In early October, the Dutch police agreed to meet Ancilla to make a full assessment of the investigation: "Unfortunately, all their leads are dead ends," the young woman believes. We must seriously consider that Arjen will never be found." Despite everything, she refuses to despair: "All scenarios are still possible, because the known facts are contradictory (...), many questions still intrigue us." Dejected and helpless, Arjen Kamphuis' friends and colleagues went on with their lives, hoping for a miracle.

## ###ARTICLE\_START### ID:2127

Unless you're a software developer or a coding enthusiast, the name GitHub is probably unfamiliar to you. However, Microsoft didn't hesitate to pay $7.5 billion (€6.5 billion) in June to get its hands on the company and its software of the same name. GitHub, created ten years ago, is now the preferred tool for 31 million developers worldwide. It allows them to collaborate on projects, share snippets of computer code and exchange ideas. A daily work tool, a social network, but also a showcase intended to expose your work to headhunters on the lookout for the best talent: GitHub is all of these things at once. It is also one of the main haunts of the open source software community, where sharing knowledge is preferred to privatizing it. Or rather, it was... The announcement of its acquisition by Microsoft has revolted many users. How could its leaders have given in to the advances of the software giant, whose former boss Steve Ballmer (2000-2014) likened defenders of free software to "communists" and their activity to a "cancer" for his own business? At the time, some loyalists decided to go see if the grass was greener at competitors like GitLab. It was in this climate that GitHub's annual convention in San Francisco, called Universe, was held on October 16 and 17. The atmosphere was all the more unusual since the finalization of the acquisition, subject to authorization by European regulatory authorities, should be confirmed in the coming days. On stage, Jason Warner, one of the company's most senior executives, who came to present the latest software developments, could not completely avoid the subject. While emphasizing GitHub's "enthusiasm" for the operation, he tried to dispel concerns: "Our singularity and our commitment to developers will not change." Mr. Warneren took the opportunity to recall that, since Satya Nadella's arrival at the head of the Redmond giant in 2014, "Microsoft's support for open source [continued] to impress him. Microsoft is the company that shares the most projects on GitHub. At the beginning of October, the firm made another 60,000 of its patents available to the developer community. "Hackers, hippies and anarchists" A 180-degree turn linked to Microsoft's strategic repositioning, which has given up on making Windows and its Office suite the alpha and omega of its activity, to move towards the cloud (dematerialized computing). Now less focused on the general public, the company is increasingly targeting businesses, which it wants to support in their digital transformation. Microsoft's transformation alone symbolises the victory of the proponents of free software over the supporters of proprietary software. Two camps that were radically opposed around "a false public/private, free/paid dichotomy", explains Julio Avalos, GitHub's director of strategy. For businesses, free software has long been synonymous with a threat to their profits and associated, in the imagination, with a population of "hackers, hippies and anarchists. However, the manager recalls, "open source, at the start, is not an ideological stance: it is a response from engineers to an intellectual property regime that did not correspond to the way they wanted to work. Namely, being able to access all or part of the source code of software designed by others, and reuse or modify it. Faced with the skepticism of the most conservative bosses, Mr. Avalos emphasizes the advantages of free software: "Why should a company spend millions of dollars to solve a problem when another company has already solved it, especially if this problem is not part of its core business?" Gradually, the largest companies have been convinced. And this is all the more readily given that the importance of software is growing in all sectors, developers, both a rare commodity on the market and fervent defenders of open source, have gained increasing power in companies. "Builders of the new world" A situation that GitHub has been able to take advantage of: "It is the developers who have been our best ambassadors in companies. It is from there that we have been able to strengthen our activity with companies." GitHub allows them, for a subscription, to create private directories to host the most delicate parts of their source code, while maintaining contact with the community. It has around 2.1 million client companies, including American Airlines, SAP, IBM and Ford. A figure that has increased by 40% over the past year. This growth is unlikely to slow down, according to Julio Avalos, who is convinced that, in the short term, all companies are called upon to be open source. It is certainly based on this shared conviction that Microsoft decided to acquire GitHub. As Satya Nadella wrote in June: "Developers are the builders of the new digital world and GitHub is their home." However, Microsoft will have to act tactfully when integrating the company, explains Jean Paoli, a former senior manager at the firm. "Microsoft is focusing on professional networks. It wants to better understand their needs and offer them solutions that all go through the cloud" - and therefore, potentially, its Azure platform. But Microsoft cannot use GitHub as a Trojan horse to impose its own products at the expense of other cloud players. "They understood that developers were very knowledgeable and critical users. It will be: 'Let the best tool win!'" Clearly, power has changed sides.

## ###ARTICLE\_START### ID:2128

He says it himself. Octave Klaba now has "more time" since he recruited Michel Paulin, former CEO of SFR, in June to take over the operational management of OVH, his cloud (cloud computing) and website hosting company created 19 years ago. The Polish native will now devote his free time to his company's strategy. But not only that. The man who has long stayed away from the cameras and the spotlight also wants to launch a European counter-offensive against the American and Chinese Internet giants. Like all politicians, he laments the low number of European unicorns, these unlisted companies valued at more than a billion euros. "In 2021, OVH will make a turnover of one billion euros, it will even be more than a unicorn. But I feel a little alone in this case. The problem is that there is no European ecosystem. There are embryos in Paris, Berlin, etc. But everything is fragmented," he says. Keen to remedy the problem, Mr. Klaba wants to create a European club of large promising digital start-ups, in order to share good practices and winning recipes. "This is not a political project, but rather an entrepreneurs' manifesto," he explains from his brand new offices in the 17th arrondissement of Paris. "There is a European path to follow, without copying the Chinese or Silicon Valley." According to Mr. Klaba, the main problem explaining Europe's delay does not lie so much in regulatory or financing issues, even if he decries the tax avoidance strategies implemented by GAFA (the acronym for Google, Apple, Facebook and Amazon), synonymous with distortion of competition. The secret of success would rather lie in talent and organization. "When I meet companies like Spotify, Amaris [consulting company] or Adyen [specializing in online payments], I see that we share the same values, the same way of thinking," says the entrepreneur, steeped in the culture of sharing that comes from "free software. "OVH is organized in a very horizontal way. The decision-making centers are as close as possible to the customer," he explains. Lack of awareness This club would include about ten European digital companies, one per country, each generating between "200 and 300 million euros in turnover per year. Each must then bring in about ten companies worth 50 to 100 million euros, if possible competitors. The idea is to ensure that the big ones help the smaller ones," he explains. His goal is to "create in Europe a hundred start-ups with a turnover of over a billion euros within 10 years," he imagines. The desire of this geek in a T-shirt to evangelize Europe is not without ulterior motives. If OVH is a European success, it will achieve 600 million euros in revenues and a "positive EBITDA [equivalent to gross operating income]" for the financial year starting in September - the company still suffers from a lack of awareness compared to industry giants such as Amazon Web Services. "We had a trust problem. Few people understood what we were doing. We are not listed, we are based in Roubaix... At one point, I said to myself, let's raise money from investment funds. That wasn't enough. Then, I set up a solid executive committee and hired a well-known number two. Here too, it was about creating additional confidence,” he explains. While he was only using debt, Octave Klaba opened his capital to external funds for the first time in 2016, raising 250 million euros from KKR and Towerbook. An operation that valued the company at 1.25 billion euros. Each year, OVH invests 300 million euros in its infrastructure (data centers, servers, etc.). But the manager assures that he would be able to invest much more if the demand was there. “We are only a reflection of the progress of European companies and the State in digital transformation,” he says, pointing out their delay and recalling that in the United States, the government largely calls on external service providers such as Amazon. “I am not asking for subsidies. I am just saying, use us.” "I think politicians understand that a European supplier is needed to lead the digital transformation," he adds. OVH's latest investment plan is for 1.5 billion euros and ends in 2021. To reach a billion euros in revenue in 3 years, Mr. Klaba is banking on the United States, where he has just completed setting up his infrastructure. Then, he plans to invest between 4 and 7 billion euros over the period 2021-2026. He has other lands to conquer such as India, Russia or Brazil. To finance these new needs, he does not rule out going public, even if, at this stage, no scenario is preferred. An arrival on the markets would have the merit of putting the company in the spotlight. The one who, after always living in Roubaix, has just moved to Paris can afford it. With his family, he still owns 80% of OVH's capital.

## ###ARTICLE\_START### ID:2129

Good heavens! What evil genius has combined these two enemies of the lazy, clocks and chimes, in the same device? The alarm clock! », laments the essayist Tom Hodgkinson at the beginning of The Art of Being Idle in a Crazy World (Les Liens qui libèrent, 336 p., €22), a bestseller already read by a million people around the world. Because, for him, “blissful sleep” is sacred. Moreover, he readily admits that until the age of 20 he was “physically incapable of getting up early” and hated going to school. He felt guilty for a long time about being such a lazy person until the day when, as a student, he discovered, amazed, Lazy Thoughts of a Lazy Man, by the British humorist writer Jerome K. Jerome (1859-1927). He understands that he is not alone in dreading getting up at dawn, and in thinking, as he hugs his pillow: "Ah! What a pleasure to turn over and go back to sleep for 'just five minutes'!" "Competent idler" According to Tom Hodgkinson, it is "the absurd life of an anxious and hurried day laborer" offered by our world of acceleration that has made him a "competent idler" and an "anarchist. His literature studies completed, barely propelled into "active life", the "nagging electronic beep" of the alarm clocks comes back to ring him. He must "sacrifice his existence" to what he quickly understands to be "one of the most pernicious myths of our society": the time-stamped salaried job. He joins the tabloid Sunday Mirror, where he discovers "the ignoble world of work", disciplinary and timed. "As a student, I read novels, edited magazines, played in a punk band and got up whenever I wanted. At work, I had to call the "PR" department of the Asda chain of stores to check the prices of canned beans, and other such joys, eight hours a day." "Luckily" made redundant, he decided to stop this "rat race". With his friend, the author Gavin Pretor-Pinney, he launched, in 1993, at the age of 25, the magazine The Idler. In the following years, he founded a consultancy in editorial and advertising creation, got up late, organized his work as he saw fit, imported absinthe, learned the ukulele and continued research on his favorite subjects: idleness, alienation through employment, creative crafts, anarchism. In 2002, he moved with his partner to a small farm in Devon, and entered what he calls his "epicurean phase" of "voluntary simplicity": "children, country life, saving, growing vegetables, raising chickens" - specifying: "a good chicken can make many meals: broth, sandwiches, curries and stews. Frugality comes from the Latin frugalitas, "fruit harvest", which indicates abundance and not scarcity. Accepting "with joy (...) a relative poverty", he notes that "living within certain limits gives a great sense of security. You are freed from the desire to always want more and therefore spared from the spirit of competition. The less you need money, the less you need to work. This way of escaping from money has the great advantage of setting an easy goal to achieve, unlike the goal of earning a lot of it." His goal is to live freely and to write. He soon developed his anarchist ideas, both theoretical and practical, in two books. In addition to The Art of Being Idle in a Crazy World, which was published in the United Kingdom in 2004, he published The Art of Being Free in an Absurd World (2006), the French edition of which (Les Liens qui libèrent, 2017) was prefaced by Pierre Rabhi, a proponent of "happy sobriety." These are two international successes. In these essays, Hodgkinson is part of a British tradition that is both anti-puritan and anti-capitalist and is little known in France. For him, it was between 1500 and 1760 that the "puritan faction" - "serious people, workers, masochists, opponents of Christmas celebrations, solitary pilgrims, parliamentarians, enemies of joy and spontaneity" - imposed the industrial revolution, factory discipline, Protestant rigor and the privatization of land - the "enclosures" - on the "Merry England" described by the historian Ronald Hutton, the joyful medieval England accustomed to "working to live, celebrating Shrove Tuesday, St. George's Day and St. John's Day, having fun and drinking. But this laborious wave has its resisters, whom Hodgkinson invokes with verve. There is GK Chesterton, the Catholic humanist opposed to both progressives and conservatives, who wrote in 1910 in The World as It Is Not Going (L'Age d'Homme, 1994): "The rich have thrown the poor out of the old hostelry, they have sent them back into the street, explaining to them that this was the way to progress. They have literally stuffed them into factories and thrown them into wage slavery..." With other Catholic intellectuals such as Arthur J. Penty and Hilaire Belloc, Hodgkinson recalls, Chesterton defended, in the 1920s, the "joyful principles" of social justice of "distributism", advocating the distribution of the means of production: everyone becomes the owner of a plot of land, their tools, their business, their capital; wage labor gives way to a society of peasants, merchants, and self-employed people, associating themselves in "guilds" or corporations inspired by those created in the Middle Ages "to escape the domination of feudal lords. Creating a "counter-civilization" For Hodgkinson, these ideas of individual autonomy and association opposed to labor capitalism, whether distributist or anarchist, have spread throughout the 20th century. The global rise of the hippie, underground, and ecological movements of the 1960s and 1970s, punctuated by protest and festive pop music, bears witness to this. They have multiplied the experiences of "parallel" activities and "alternative" lives, seeking to create a "counter-civilization", as the American sociologist Theodore Roszak (1933-2011) has shown. Of course, in Britain Hodgkinson is accused by both Liberals and Labour of being a "soft utopian" who wants to return to "pre-industrial times", but he thinks he is heralding a new era. He has found an ally in the American anthropologist David Graeber, professor at the London School of Economics, author of Bullshit Jobs (416 pp., €25), which explains how the proliferation of bureaucratic jobs, of redundant deputy, assistant and managerial positions, has created millions of jobs of little use and no value creation, giving rise to a profound feeling of "sterility" - "a scar that scars our collective existence", and forces us, Graeber believes, to think about how "to put creative work back at the heart of our culture. To invent a new civilisation of work. An international movement like that of the "makers", the manufacturers, seems to prove him right: rich with hundreds of thousands of participants throughout the world, it demonstrates a desire to take charge of new modes of production (3D printing, laser cutting, open source high-tech, solar energy, etc.) with a view to carrying out inventive, useful and environmentally friendly work, a new craft. The rise of urban vegetable gardens, the resistance of local farms (Amap) and local producer-consumer networks, well shown in the film Demain, by Mélanie Laurent and Cyril Dion, go in the same direction. The American sociologist Erik Olin Wright, author of the study Utopies réelles (La Découverte, 2017), suggests that alternative experiences "suggest, in the long term, reaching a level of development from which capitalism is stripped of its dominant function. In the meantime, Tom Hodgkinson, who has returned to London to open a bookshop, offers his guide Business for Bohemians (Penguin, 2016, not translated) to all those disappointed with salaried employment...

## ###ARTICLE\_START### ID:2130

As companies, academics and governments grapple, they are beginning to sketch out concrete solutions to the ethical issues surrounding artificial intelligence (AI). Autonomous weapons: to participate in research or not At the forefront of the ethical concerns raised by AI are “lethal autonomous weapons”: these devices, such as drones, would be able to spot a target and then decide to fire to eliminate it. But their definition remains complex (where does “autonomy” begin?) and it is not clear whether such technologies exist. In June, Google caused a sensation by pledging not to use its AI technologies, such as image recognition, in the service of weapons. But other major “tech” players are more reserved. Partnership on AI, which brings together companies and NGOs, has “no official position on the subject,” explains its executive director, Terah Lyons, admitting to internal debates. "I have no particular problem with the idea that the armies of democratic countries, whose arsenals are designed for defense and the protection of human rights, are using the latest advances in computer science," says Eric Horvitz, director of Microsoft's research center, "in a personal capacity." On the United Nations (UN) side, discussions began in 2013, within the framework of the Convention on Certain Conventional Weapons, but the moratorium on autonomous weapons that some have called for does not seem likely to materialize. Self-driving cars: the "streetcar dilemma" and responsibility The most acute ethical problem posed by autonomous vehicles is the modern version of the "streetcar dilemma": in the event of an emergency, and in the absence of a human driver, how should the vehicle "choose" its victims? Is it better to kill the driver or five pedestrians? A pregnant woman who crosses outside the pedestrian crossing or an old man who is within his rights? No official answer at this stage. A report submitted in 2017 to the German Ministry of Transport suggested that humans should always take priority over animals or material goods. However, it recommends banning any distinction between humans. Some regret that the "tram dilemma" captures too much attention compared to other problems. In the event of an accident, who would be responsible? The driver or the owner of the car, the manufacturer, the equipment supplier, the AI engineer? Some propose the concept of "distributed responsibility", which would involve more actors than conventional vehicles. Discrimination: first avenues for combating bias Why does facial recognition software generally work better on white men? Because it was "trained" using databases that did not contain enough images of women and non-white people. This problem is well known to AI researchers, who work with real data, which is therefore likely to be biased and to reproduce racist, sexist or other prejudices, like human resources software that would classify CVs based on the past decisions of recruiters. Some researchers, such as those at IBM or Google, are therefore trying to develop technologies capable of detecting bias and readjusting algorithms accordingly. Greater attention is now being paid to the nature of the data that feeds the algorithms. The approach is also sociological. Large companies in the sector, mostly made up of white men, are trying to promote more heterogeneous recruitment. At Partnership on AI, we also want to "reduce the distance that often exists between the people who develop the algorithms and the people on whom they will have an impact", explains Ms. Lyons. For example, engineers designing software on health or justice would meet patients and doctors, or prisoners and judges. "Explainability": making black boxes intelligible This is a major black spot of recent AI technologies: their results are good, but engineers are sometimes unable to explain why. The countless microcalculations performed are difficult to dissect. Without knowing what criteria the software used, how can you contest its decision? The problem would be serious if it were a medical diagnosis, the granting of a bank loan, etc. "Explainability" is becoming a field of research in its own right. Google says it has tested a technology capable of proposing a medical diagnosis, while "pointing to the extracts from the patient's files that were used to establish it," explains Jeff Dean, the company's head of AI. In France, one of the first two calls for projects from the recent fund for disruptive innovation is precisely partly devoted to the development of "approaches demonstrating the explainable nature" of autonomous systems. Opensource: between concern for transparency and fear of abuse To demonstrate transparency, companies like Google and Facebook emphasize that a large part of their AI research and software is accessible to all, in open source. "Our ethics are to publish, cooperate and be open to criticism," emphasizes Antoine Bordes, director of Facebook's Paris laboratory. Problem, concedes Jeff Dean: "Once you have "open-sourced" something, you do not control it, it can be used by a company to contribute to the creation of autonomous weapons, for example." The most worried are those who believe in the emergence of a "general artificial intelligence", similar to or superior to that of man. In open source, such technologies could be diverted, they warn. "Open source is clearly a debate," recognizes Terah Lyons, who mentions "a gray area" and an ongoing reflection.

## ###ARTICLE\_START### ID:2131

Is hydrogen the energy of tomorrow? Can cigarette butts be recycled efficiently? Can air quality be measured with an open-source and citizen program? The third edition of the Turfu Festival, which will take place in Caen from October 2 to 7, continues to explore what tomorrow will be like, always with an open and participatory approach. Environment, culture, urban planning, education, food, artificial intelligence, health and disability, the themes are developed around workshops, events and meetings. The organizers are convinced that the future can also become a common good. Turfu Festival, from October 2 to 7, at the Dôme, 3, Esplanade Stéphane-Hessel in Caen, program available on turfu-festival.fr

## ###ARTICLE\_START### ID:2132

"We need to move from a resource region to an 'open source' region." This sentence, launched by Paul-Henri Callens, president of the board of directors of Moulin à Cie, a young cooperative offering a shared workspace in Chicoutimi, sums up well the plea of various stakeholders in the digital field in Saguenay, who want to change mentalities and show that the municipality can establish itself as a dynamic creative environment. The time when young people who wanted to pursue a career in the vast field of digital technologies had to leave the region is now a thing of the past, believes the young man of Dutch origin who studied at UQAC and has lived in Saguenay for 10 years now. Jean Duplain, a member of the Saguenay ville intelligente group, also criticizes the fact that regional development is still often associated with the exploitation of natural resources. "We need to bring in a different kind of vocabulary. [...] If we are a resource region, precisely, the primary resources we have are our young people, our brains. "Can we keep them and attract new ones?" he asked.

## ###ARTICLE\_START### ID:2133

This text is a contribution to the “Declaration on Information and Democracy” that Reporters Without Borders is preparing. On 4 September, Mark Zuckerberg published an op-ed in the Washington Post entitled “Protecting democracy is an arms race. Here’s how Facebook can help us.” Ten days later, it was on his platform that he announced that he was “preparing for elections”: he listed the risks, biases, misappropriations, and logics of influence and manipulation that had already endangered the democratic balance and the organization of elections. And he announced, once again, that he would try to correct all of this. He would not succeed. How did we end up in the early 21st century in a situation where Mark Zuckerberg—and a few other digital platform bosses—have set themselves the recurring goal of “protecting democracy,” mainly through “algorithms” and “artificial intelligence,” and claim that this will be one of their main “missions” within their companies and on a global scale? In 2011, two artificial intelligence theorists addressing the ethical problems that algorithms would raise wrote that “increasingly complex decision-making algorithms are both desirable and inevitable, as long as they remain transparent to inspection, predictable to those they govern, and robust against manipulation” (Nick Bostrom and Eliezer Yudkowsky, “The Ethics of Artificial Intelligence”). Today, “the algorithms” we are talking about are deployed within toxic technical architectures encompassing millions or billions of users. Today, the algorithms we are talking about rely on proprietary and therefore completely opaque datasets. Today, the algorithms we are talking about are explicitly developed to have a level of autonomy (or "learning") that makes their "behavior" and decisions often unpredictable for their creators themselves. These algorithms constantly interact with other algorithms, other datasets and other toxic technical architectures; and they do so on ever larger scales and in ever more constrained environments that further increase the level of risk and uncertainty. This is why, for all of these reasons, it is absolutely impossible to guarantee that they are transparent to inspection, predictable for those they govern and, above all, that they are robust against any manipulation. For the last ten years, the main fight of activists, journalists and defenders of digital freedoms has been to limit the impact of the algorithmic footprint on our private and intimate lives. That fight is over, obsolete and, for the most part, lost. It is another fight that we must wage today, on a completely different front, with a completely different urgency and on a completely different scale. It is the fight to limit the impact of the algorithmic decision-making footprint on our public life, on our common social infrastructures and on our collective destiny. It is urgent and imperative that any form, ambition or project of algorithmic governance, as soon as it affects sovereign sectors (transport, education, health, justice, security) be, obligatorily and by legislative constraint, developed on the model of the GNU GPL licenses of free software to guarantee at least the complete and lasting auditability of the processes at work. It is urgent and imperative that the development of a universal model of portability of all our data (1) be a priority for States, and that it be imposed on all players in the economic world in connection with the conservation or deposit of digital data, regardless of their nature, volume and use. It is urgent and imperative that the companies that today capture the majority of data and digital flows (broadly speaking Gafam, Natu and other Batx) be taxed at the real level of their turnover and that this tax directly finances the aforementioned actions, this redistribution process must imperatively remain outside the control of said companies. Because the opposite process has already begun, the one in which a few omnipotent companies arrogate to themselves the right to defy public authority and the general interest in the levying of taxes, as Amazon and Starbucks recently demonstrated in Seattle. It is urgent and imperative that a regime of informational commons be positively defined in the law and that it can include algorithms and code that can be used in the context of any public action. Finally, it is urgent, imperative and vital that everything that directly affects the democratic process (such as voting, elections, the counting process) be sine die placed out of reach of any form of assistance, guidance or algorithmic replacement (starting with "voting machines"). "Electronic voting" must be considered for what it is: a threat that is rigorously and definitively incompatible with respect for the confidentiality of the vote and therefore of democracy. The issue is whether we will be able in the very short term to build an alternative which, after the digital time of "disintermediation" of the last twenty years, will be that of forms of algorithmic remediation that respect the social body and therefore its most fragile, poorest and most exposed part. Then perhaps, and only then, will the issues of algorithmic governance be able to begin to be considered calmly. Apart from all of these conditions, we will offer future generations a world in which the main problem will not be that Mark Zuckerberg and a few other industry bosses claim to be the protective guardians of our democracies, but that they are actually the only ones still in a position to be so, while themselves having only a very vague and very approximate idea of how to go about it and the chances of achieving it. It is not simply about fake news and free will. It is not simply about freedom of information or freedom of the press. It is not simply about algorithms, platforms, states and nations. It is not simply about human and other "artificial" intelligences. It is about the freedom of peoples. It is about freedom, pure and simple. (1) The "Solid" project led by Tim Berners-Lee could be a first approach. Olivier Ertzscheid is the author of: The Appetite of Giants. Power of Algorithms, Ambitions of Platforms (C & F editions, 2017).

## ###ARTICLE\_START### ID:2134

While we hear more and more about the importance of a paradigm shift to protect the environment and reduce inequalities, but this type of idea is almost absent from the election campaign, we would like to raise awareness here of the commons approach. It is an invitation to think differently. In Quebec and elsewhere, our natural resources are subject to private monopolization, when they should benefit everyone. Our digital data, the oil of the 21st century, is also subject to commercial appropriation mechanisms that exclude the communities concerned from their use and profit. These dispossession mechanisms contribute to the depletion of environmental and social wealth and to uses that go against the collective interest. The Facebook-Cambridge Analytica scandal is one example. Fortunately, other resource management models exist. We think of the green alleys set up by citizens' committees, of urban wastelands and disused buildings claimed by a neighborhood to collectively rethink their uses, as well as of virtual communities that collectively feed gigantic cartographic (OpenStreetMap) or encyclopedic (Wikipedia) databases open to all. We also think of free software, about which the City of Montreal has just adopted an ambitious policy. These initiatives are increasingly recognizable by an old term that is now regaining its relevance: "commons." A response Neither private nor public, the commons offer a response to problems of dispossession and exclusion. They challenge the paradigm of exclusive individual property. Favoring the use of resources over their possession, they develop collective processes (commoning) that a community uses to manage resources over which it claims rights. The commons foster wealth creation through the pooling of intellectual, social, material, and environmental resources. The commons exist in a variety of forms and institutional arrangements, as demonstrated by the work of Nobel Prize-winning economist Elinor Ostrom and other scholars who have studied collective action and the management of the commons. Their research contradicts the long-held belief that collective ownership of resources leads to their overexploitation. This “tragedy of the commons” has informed much of the neoliberal discourse and justified the privatization of land, water, forests, and other commons around the world. These policies are now known to have contributed to increasing inequality, without ensuring more environmentally sound management of these resources. Ostrom’s decades-long work demonstrates that collective action can be an effective way to manage resources equitably and sustainably, while strengthening the social bonds that build resilient and sustainable communities. They highlighted highly effective coordinated and regulated self-management practices. In Quebec, the logic of the commons is already present in many sectors and regions, where it helps solve very real challenges. Consider the social economy, for example. Organizations in this family, which are firmly anchored in the real economy, are born from the entrepreneurial will of people who come together to produce goods and services that contribute to collective enrichment that is not measured only in dollars. They produce social and environmental wealth that generally goes under the radar of decision-makers since it is not fully counted in the GDP. Housing cooperatives, early childhood centres (CPEs), and cultural businesses such as the Beaubien cinema and the SAT are all examples of social economy businesses that serve as a lever for the creation of collective wealth. Environmental management More broadly, we can also think of the many initiatives based on exchange, reciprocity and the gradual establishment of rules of use, such as projects to reappropriate spaces (alleys, vacant lots, public squares, etc.) or other public and even private assets (buildings, vehicles), or initiatives from the vast field of digital commons (software, data). This makes us want to go further, for example in terms of environmental management. Through the Quebec government, we legally own 92% of the territory, 4,500 rivers and half a million lakes. The management of forests and the mining deposits located there are mainly entrusted to private companies, with the environmental and social consequences that we know. Over the decades, 700 contaminated mining sites have been abandoned. The costs associated with this toxic legacy are estimated at $1.2 billion. This is a great example of the privatization of profits and the socialization of costs. We could do better in terms of ecological and equitable management of a common good! The commons approach could give Indigenous peoples the opportunity to better enjoy their territory. These examples, without being exhaustive, suggest fertile ground for the culture of the commons in Quebec. We believe that this approach has the potential to become a unifying narrative for all those who think that it is high time to think about a new, more democratic, more equitable and more ecological mode of development. A model that restores our confidence in our collective future. \* The letter is co-signed by: Béatrice Alain, Chantier de l'économie sociale; René Audet, UQAM; Frédéric Bourrely, RADDAR; Maxim Bragoli, La Pépinière; Danielle Dansereau, Fiducie foncière du mont Pinacle; Coralie Deny, Conseil régional de l'environnement de Montréal; Damien Doute, Orgbook; Patrick Duguay, Outaouais-Laurentides Regional Development Cooperative; Jonathan Durand Folco, Saint-Paul University; Bertrand Fouss, SOLON; Christine Gonthier; Dardan Isufi, Eva coop; Elise Labonté-Lemoyne, Thésez-vous; Mare-Soleil L'Allier, UQAM; Claudine Lalonde; Jonathan Lapalme, Entremise; Sylvain A. Lefebvre, UQAM; Agathe Lehel, Ouishare Québec; Laurent Lévesque, UTILE; Solen Martin-Déry, Caligram; Nancy Neamtan; Roméo Saganash, federal MP Abitibi/Baie-James/Nunavik/Eeyou; Bastin Sibille, Free Carpooling; Mikael St-Pierre, Lande; Gabrielle Van Durme, SOLON; Sophie Van Neste, INRS; Vincent Van Schendel, Innovative Territory in the Social and Solidarity Economy

## ###ARTICLE\_START### ID:2135

For the first time, during provincial elections, political parties are showing their willingness to tackle the growing influence of digital technology on our lives. The Parti Québécois (PQ) is presenting an elaborate platform that stands out with the promise of finally appointing a minister responsible for digital technology, creating a National Digital Council and adopting a policy for the development of free software. The PQ is also dangling the prospect of a "paperless" government, as the Estonian government has done. It may seem utopian, but implementing these projects, if done well, is an opportunity to develop expertise and tools that the private sector and society as a whole can benefit from. It is no coincidence that the parties' platforms are more substantial than they were until now. The arrival of Marwah Rizqy as a candidate within the Liberal team certainly has something to do with the change of direction of the PLQ, which now says it is ready to force all foreign suppliers, including the giant Amazon, to collect the QST for the supply of tangible goods. The entry onto the political scene of Michelle Blanc, for the Parti Québécois, also explains the extent of the PQ platform, the most comprehensive of all the parties. The party that will form the next government, if it is not the PQ, should take inspiration from it. At the Coalition avenir Québec, Mario Asselin may be able to convince his leader to follow suit. The CAQ has so far shown itself to be less interested in this issue than the other parties. For the next government to give this issue the importance it deserves, decisions and policies must be made within the Executive Council. All government departments and agencies are dependent, to one degree or another, on information technology. The directives of a potential minister, or a hypothetical digital secretariat, should dictate the conduct for the entire machine, and for deputy ministers. Will Mr. Legault have this concern if he takes up the position the day after the election? It is permissible to doubt it. Let us hope that his entourage will succeed in making him realize the immense potential of this file. The provincial government has failed to take its responsibilities for too long, due to a lack of interest or competence in this area. The arrival of new candidates who understand the implications of these technologies could perhaps change things. A major battle is brewing in Europe and the United States to counter the growing influence of web giants over our personal data. A lawsuit has just been filed by the creators of the Brave browser against Google, for non-compliance with the new General Data Protection Regulation (GDPR). In the United States, voices are beginning to be raised in favor of breaking up Google and Facebook to establish a non-existent balance in the market. Just yesterday, a CITI analyst estimated that Amazon would be interested in separating its web service (AWS) activities from its retail sales activities, in order to avoid Washington carrying out a threat to regulate its activities. Sooner or later, this battle will take place here. Better to be prepared for it. This is an opportunity that all of society can benefit from passelin@lesoleil.com

## ###ARTICLE\_START### ID:2136

Among the eleven pieces by the choreographer presented in the Paris region this fall, one of them is world-famous. In October 2011, pop star Beyoncé was accused of plagiarizing an excerpt from Rosas danst Rosas (1983) in her video Countdown. Despite the fascinating questions about the protection of choreographic works that a trial would have raised, it never took place. The Rosas company (founded and directed by Anne Teresa De Keersmaeker) preferred to opt for a more inventive and less coercive response by launching Re:Rosas, a sort of "open-source" transmission of the now famous "chair dance" by Rosas danst Rosas. Internet users were therefore invited to send their own versions of the choreography by video, which will be visible at the Centre national de la danse de Pantin, echoing the original piece.

## ###ARTICLE\_START### ID:2137

On 12 September, our MEPs will have to vote on the directive on "copyright in the digital single market", which the Member States have already validated. The framework is set right from the preamble to the text: it is a question of works, authors, heritage. The text aims to clarify the "economic model" that will define the conditions under which "consumers" (the word appears four times in the introduction) will be able to use these works. The world is thus simply divided: on one side, artists and copyright holders, and sometimes related structures and institutions (museums, universities, publishers); on the other, the great mass of anonymous people. There is no porosity between the two: the case of a person listening to concerts on the Internet and publishing his interpretations of a Chopin prelude is not mentioned. The mediators between owners (of rights, licenses) and tenants-users are the States, responsible for enforcing the future law, and the "online service providers" (hosts). Here again, there is no room for altruistic authors-publishers of websites, who publish their analyses, their discoveries, their rock concerts with friends. We remain in a traditional logic where the State and the European Union regulate the operation of industrialists who are supposedly lax in matters of artistic or intellectual property. A volley of complaints But how to apply such a law? Thanks to gigantic algorithms. Article 13 specifies that service providers, in close cooperation with rights holders, will develop content recognition techniques. Actors outside Facebook, Sacem or equivalent will be censored, therefore eliminated from the Web. Ulrich Kaiser, a German music professor, has verified this. He posted some of his own interpretations of Schubert pieces, long since in the public domain, and checked how YouTube's copyright verification software (Content ID) reacted. He quickly received a barrage of complaints claiming that he was violating copyright. And his arguments were systematically rejected. In short, for anyone who is not backed by a copyright agency, there will always be a robot or a digital worker paid per click who will prohibit any publication, on the grounds that he is copying a work, even if he has the right on his side. A beautiful legal inversion where we must prove our innocence, when its presumption is in our Constitution. The second concern is that these algorithms are very expensive (in the order of 50 million euros), and are obviously very protected by... copyright. We are a long way here from the free software created by a handful of volunteers, and which keep the Internet alive. And our European Union, which wants to protect the big digital and cultural industries, does not realize that it is turning into a bourgeois of Calais, for the sole benefit of the United States, since it does not know how to produce these software and associated databases. Fear of giving Thus, from the heights of Brussels, we do not just think about the contemporary with obsolete categories, at the expense of citizens and their creativity. We are wrong. First, a strange fear of giving appears. The gift, this total social phenomenon, which structures our societies via exchange, which nourishes our ideas: these are reinforced and refined through contact with others. Trying to censor them, to systematically verify their authenticity, is to go against education, against personal development: science and creation feed on borrowing, appropriation, diversions. Then, assuming that technology will save or protect culture is a mistake. Technology and culture have always formed an inseparable braid. Our films are made with cameras, which run on electricity, now mounted on computers. We call our bridges (Gard or Tancarville) "works of art". And with computers, we become aware of the technical dimension of writing, which helps us develop reasoning, lay the foundations of a new law, and enjoy a Rimbaud who has made little use of his royalties. The vast majority of computer productions are based on these writing games where copying, pasting, borrowing, diverting, articulate recipes, banal applications and imagination. Shaping the world And finally, the idea that an algorithm can replace human judgment is wrong. An algorithm is written by humans, who inject their subjectivity, their representations of the world, their moral values, as the philosopher Andrew Feenberg shows. It is not neutral. An algorithm is even less so if it belongs to a firm, which will obviously adapt it to its economic interests. This is obvious when it relies on massive databases to produce deep learning. This is the very principle of learning: if we teach computers to model the climate, we cannot entrust them with surgical operations on humans. And the idea that machines can solve moral problems (related to theft, to invention) signals above all a political resignation. The desire to delegate to these machines questions that deserve to be debated by all: democratically. This is the whole question of "digital": this technique has more than ever the power to shape the world. Including politically. With social networks, we feel, not its power, but its effects on our societies. The history of writing reminds us that these effects are slow, varied, particularly dependent on what we want them to be. Less than ever, technology is distant from us. Unless we delegate to a few managers the formatting of our societies through their chimeras. Often, these are reduced to a few beliefs, which border on numerology. It is about projecting all human complexity, its multidimensional variations, onto a straight line, where each of us would be assessable. With a single score between 0 and 20. Digital is political. It is also practiced, it is learned. Like writing. It is debated. It is urgent to teach it to all generations, to all professions; to experiment with its current facets, to invent its future ones. Artists, historians, physicists all use writing. The same is true for "digital". Young and old, Chinese, French and Californians, let's take the time to think about digital, beyond our molds and disciplinary boundaries. Technology belongs to us. It is up to all of us to convince our deputies of it.

## ###ARTICLE\_START### ID:2138

The school textbook publishing houses had cried out, through the voice of their National Publishing Union (SNE), to "Amazonia"! They were thus expressing their anger against the partnership formed, at the beginning of 2016, between the Canopé network of transmedia educational resources (print, Web, mobile, TV) of the Ministry of National Education and Amazon. This agreement consists of promoting the self-publishing, by teachers, of educational content through the Kindle Direct Publishing (KDP) platform of the e-commerce giant. Sacrilege! The French State dares to promote the proprietary format of e-books of the American firm of Jeff Bezos to the detriment of the free software and open source dear to the educational world. The publishing houses feel short-circuited, they who bet on the open digital format ePub (for electronic publication) of the European Digital Reading Lab (EDRLab), co-founded by Editis, Madrigall and Media Participations. Publishers had already expressed concern about the agreement signed at the end of 2015 between Microsoft and the then Minister of National Education, Najat Vallaud-Belkacem. For eighteen months, Amazon provided training, software and cloud services to the former digital plan for education (PNE). This public-private agreement was also challenged in court by EduNathon, a collective of free software for education, but the complaint was dismissed. Ethics Commission seized A "consanguinity" between Gafam (Google, Apple, Facebook, Amazon, Microsoft) and national education is also denounced by some: did not Mathieu Jeandron leave, in May, the head of the digital department for education at the ministry to join Amazon? He became a "technical architect" in the Amazon Web Services cloud computing. The person concerned confirms that the civil service ethics commission has authorised his move to the private sector, but on condition that he does not work for three years in the education market or with his former management. Another example, had not a former technical advisor to the supervising ministry, Marc Couraud, continued his career at Microsoft in the early 2000s, where he became director of innovation?

## ###ARTICLE\_START### ID:2139

Do you remember Quaero? Launched in 2005, this Franco-German European research and innovation program aimed to develop an online content indexing tool for businesses, scientists and the general public. In other words: to compete with Google. The project cost a total of 198 million euros, a large part of which came from French public subsidies. It ended in 2013, leaving behind numerous patents, real innovations benefiting research, businesses (like Exalead)... but no search engine capable of competing with the big American names. Why didn't Europe build its own Google? The American engine now holds 90% of the online search market share worldwide, according to estimates from the statcounter website. Europe is above average with 92%. The situation is different in other countries. In the United States, this share is lower (84%), because Bing (engine developed by Microsoft, 7% market share) and Yahoo! (6%) continue to fight. In Russia, it is the local competitor Yandex that dominates the sector (53%). In China, where the American giant disappeared from the Web in 2010, the sites Baidu (67%) and Shenma (developed by Alibaba, 18%) share the top spot. Worrying giants Since the failure of Quaero, there are still a few European alternatives to the American giant. Qwant, founded in France, aims to be a search engine that is more respectful of privacy and personal data. Framabee supports open-source, Lilo finances social initiatives and the German Ecosa donates part of its profits to a reforestation program. The majority of these projects are in fact "meta-engines", sites that send their users' queries to other search engines and then display the results. They offer a niche offer, to seduce those disappointed with Google, rather than hoping to truly compete with it. The problem goes beyond the search sector alone. Historically, the web industry first prospered in the United States, thanks to the financial support of its government and its army. Today, there are 158 new technology start-ups in the world, not listed on the stock exchange, which are valued at more than a billion dollars. 60% are American. Next come Asian companies (25%), particularly Chinese, then Europe (10%). After a late start, Europe now benefits from a quality digital ecosystem, with some great successes to its credit. But is it already too late? In twenty years, Google has woven its web and made itself indispensable in our online daily lives. The group recruits the best engineers and invests in all online sectors to offer its services there as a priority. Google is now a real ecosystem. Its Android mobile operating system powers 85% of the world's smartphones, and 60% of Internet users use its Google Chrome web browser. Its brand has become synonymous with going online. You don't search for something online, you "google" it. In the absence of a competitor, Europe is defending itself against the ultra-domination of a company so powerful that it is capable of bringing down other companies with a change of algorithm. Comparing the Old Continent to the situation in other countries, where Google is less present, is complicated. Russia and China are autocracies: the Internet there is tightly controlled by the State. Europe has never banned the use of Google. It is therefore fighting on another territory. It seeks to inspire the new technology industry, by pushing its vision of a fairer Internet that respects our privacy, within its borders and beyond. The General Data Protection Regulation (GDPR) is finding imitators even among American politicians, worried about the excesses of their national champions. Even in the United States, the time has come for distrust of web giants. This revolution is European.

## ###ARTICLE\_START### ID:2140

San Francisco Correspondence - In the middle of summer, the figure went almost unnoticed, like a symbol of a company that is now making fewer waves, but which has also left its difficulties far behind it. During its 2017-2018 fiscal year, which ended on June 30, Microsoft exceeded the $100 billion (€86 billion) annual turnover mark. A first in the form of a consecration for Satya Nadella, the CEO, appointed in February 2014 to reinvigorate the aging designer of Windows. At the time, Microsoft was at a crossroads. Of course, the company from Redmond, in the suburbs of Seattle (Washington), was still a formidable profit machine. But its positions were threatened by the rise of smartphones, a revolution that it had completely missed and which it was still chasing. In August 2013, Steve Ballmer, the boss who had taken over from founder Bill Gates in 2000, was thus pushed out by the board of directors. Mr. Nadella was appointed to his post six months later. Some saw this as a choice by default: a month earlier, Alan Mulally, presented as the favorite, had announced that he preferred to stay at the wheel of the car manufacturer Ford (he retired in 2014). Little known to the general public, the new strongman of Microsoft is a pure product of the company, hired in 1992 as a computer engineer. Although he was then heading the division specializing in cloud computing, dematerialized computing, he had no experience at the head of a company. Mr. Nadella was born in 1967 in Hyderabad, the fourth largest city in India. As a teenager, he was as passionate about computers as he was about cricket. At 31, he moved to the United States to continue his studies in Wisconsin. After graduating, he spent two years at the software publisher Sun Microsystems, before joining Microsoft. An event changed his life: the illness of his son, Zain, who was born with cerebral palsy. "I learned empathy," he explains in his book Hit Refresh (2017, not translated). Very quickly, the new boss made his mark. And transformed Microsoft in his image, less flashy than his predecessor, accustomed to exuberant outings and sensational declarations. He is much more discreet, less arrogant too. He wants to adapt to the reality of the market and meet the needs of his customers. He also assures that he "does not rule anything out" to relaunch the company. "Our industry does not respect tradition, only innovation," he notes in a message addressed to employees when he takes office. Strategic break Mr. Nadella first focuses on instilling a new corporate culture. When he arrived, he asked the top executives to read a book written by an American psychologist on nonviolent communication. "My mission is to build a culture that allows 100,000 brilliant minds to design a better future," he assures us in his book. He wants to make the company more agile and less bureaucratic, to enable it to react and innovate more quickly in the face of its more daring Silicon Valley rivals. "The hierarchical order had taken control and was harming spontaneity and creativity," he continues. "Take action," Mr. Nadella responds when an employee complains one day that he cannot print a document from his mobile phone. "Employees are now encouraged to propose new ideas and to think differently," confirms Steve Clayton, who is in charge of communicating about corporate culture. With this in mind, Microsoft has converted to hackathons, these groups of developers who design a product in a few days. In July, more than 20,000 of the group's employees, gathered in some 40 countries, took part. Mr. Nadella also plans to make better use of the Microsoft Research teams, whose work rarely went beyond the basic research stage. Shortly after his arrival, he requested that a technology under development for instant translation be integrated into the Skype communications software. Three months later, he presented this tool during one of his very first public appearances. Mr. Nadella promotes a new state of mind. "We must listen to our customers," he insists. "We must be insatiable in our desire to learn from the outside and transpose these lessons to the inside." The leader wants to move from a culture of "I know everything" to one of "I learn everything." "Employees sometimes thought they knew everything or that they had to know everything. Or that they had to be the smartest person in the room," Mr. Clayton acknowledges. This attitude applies even to the head of the company. “No single leader, no single team, no single CEO can be the hero of Microsoft’s renaissance,” Nadella says. The weekly Friday morning meeting between top executives has become a forum for debate, which can last up to seven hours. It no longer becomes a “test of whether [their] answers are correct,” says Brad Smith, the company’s chief legal officer, interviewed by Fast Company. The Microsoft boss is also trying to foster collaboration between the different divisions. “Teamwork had been replaced by internal politics,” he laments in his book. In 2011, French cartoonist Manu Cornet depicted the company’s hierarchical organization as teams pointing guns at each other. “What upset me most was that our own employees had ended up accepting it,” adds Nadella. He now wants to do away with the “fiefdoms” and “silos” that hinder innovation. Vast restructuring plan This internal competition was also rife in each division, due to an employee ranking policy. This consisted of placing employees in categories whose number of elements was fixed in advance. The best could hope for promotions and bonuses. The worst risked dismissal. "Our evaluation methods now combine individual and collective performance," says Steve Clayton. To promote innovation, the priority is no longer to protect at all costs the Windows operating system and the Office office suite, which represented, for years, the two main sources of turnover and profits. For a long time, the American group did not want to adapt to the evolution of uses. "We have to go where the market is heading," assures Kurt DelBene, vice president in charge of corporate strategy, today. Mr. Nadella has thus precipitated a radical change in the economic model from software licenses to services and applications. The Redmond giant favors Office 365, the online version of its Word, Excel, and PowerPoint software. It is even available free of charge to individuals. In early 2015, Microsoft also announced that Windows 10 would be offered free of charge for one year. Unthinkable under Steve Ballmer. Another major strategic shift: the arrival, at the end of March 2014, just two months after Satya Nadella took office, of Office on Apple iPad tablets. A release that his predecessor had long delayed, awaiting the launch of a Windows version optimized for touch screens. A few months later, Mr. Nadella also launched the largest restructuring plan in the group's history: 18,000 jobs cut, mainly at smartphone manufacturer Nokia, whose acquisition for $7.2 billion had been Mr. Ballmer's last major decision. Microsoft thus gave up competing head-on with Apple and Google in this market, preferring now to launch applications on their platforms. "A symbolic decision" by the new Microsoft, according to Mr. DelBene. Several reorganizations will follow, particularly in the sales teams. Mr. Nadella wants to double down on cloud computing, a fast-growing market. These activities now represent nearly 30% of Microsoft's turnover and profits. A strategy that convinces Wall Street. Since February 2014, the share price has quadrupled. And that is worth one last revolution: Microsoft's cloud is now compatible with Linux, the free software that Mr. Ballmer once called a "cancer."

## ###ARTICLE\_START### ID:2141

"Constellating images". The phrase has the old-fashioned charm of clichés yellowed by time, but the relevance of a tool, in this case a Swiss army knife, to describe an artistic practice and its plastic results that have been widespread since the mid-2010s. The expression was at the heart of a series of exhibitions at the Villa du Parc d'Annemasse in 2014 and 2015. Coordinated by Garance Chabert, director of the art center, and Aurélien Mole. It brought together Clément Rodzielski, Ryan Gander, Haris Epaminonda, Daniel Gustav Cramer and Aurélien Froment. The catalog has just been published. It documents the contribution of this generation of "iconographic artists" contemporary with the "beginnings of sharing and research systems on the Internet", according to the authors. They "renew the use of visual archives and demonstrate an emancipated relationship with images", by tracing constellations of images on the picture rails that catch the eye and the mind like Pierrot Lunaire clings to his star: swinging from one side to the other, dreamy and philosophical. At the time of the exhibitions, four years ago, still in the shadows but not for much longer, other artists, the millennials, on the other side of the Atlantic, were already going beyond this paradigm that owes much to the German art historian of the interwar period Aby Warburg. They hatched new ways of seizing open-source images, and with them appeared another, more catch-all and more equivocal expression, a blow to the iconophile constellations: post-Internet. The book does not ignore this. He traces the thread of this dazzling evolution and takes care to situate it in the long term of art history, from the advent of collage and photomontage after the First World War, through the Pictures Generation, a group of American appropriationists thus labelled after the exhibition directed by Douglas Crimp in 1977 at Artists Space in New York, without forgetting the archival installations of their ancestors (Richter, Boltanski or Feldmann). "Astronomer" artists In contrast to the rigorous and as exhaustive as possible classifications of some (Richter with his Atlas, Hans-Peter Feldmann or Christian Boltanski in his Monuments), to the juxtaposition in series of subjects that are all the same (three times a wrist wearing a wristwatch in Richard Prince, an ironic stuttering of advertising standardization), these "astronomer" artists will prefer to tie vague and unexpected associations between the images, a little loose but fertile, triggered from flexible shifts of meaning, shapes, colors and textures. In these constellations of images, they navigate by sight and by trial and error, without adopting the shortest or most straight route plan. They allow themselves all digressions and jump from one thing to another by relying on all sorts of coincidences, even if it means doing the splits. Théâtre de poche (2007) by Aurélien Froment illustrates this way of taking back control of images at a time when they are becoming dematerialized and the use of search engines is becoming widespread. The film shows a young man taking out printed cards from his costume that he hangs, moves, and swaps on a translucent screen with the dexterity and flexibility of a magician. He places a photograph of a Cycladic sculpture next to an anatomical image, then inserts between the two that of an antique marble hand, on which he superimposes his own. Or a water mill is associated with the Moulin Rouge, then with an electricity generator: it turns, it circulates, all the while beating its wings. This highlights a (craft) method for taking back control of images that their continuous flow has ended up making intangible, if not elusive. With ostentatiously varnished nails, Camille Henrot, in Grosse Fatigue, a film awarded at the Venice Biennale in 2013, exhibits this twirling hand game in front of the windows that open in bursts on the screen, as on the desktop of her computer. "Talking to the eyes" For iconographic artists, it is never a question of sanctifying the support of the image. Few are framed or of good quality. It is the run-of-the-mill prints (of magazines, illustrated books, postcards, etc.) from which they willingly draw. The thicker the grain and the more ordinary, even vulgar, the printing, the more its materiality resurfaces. If the images are hung on the wall, it is with pins. The paper flies, even threatens to tear, as in the magazines cut out by Clément Rodzielski, a series of works that results from a raw incision in the thickness of press publications. The artist cuts one piece of page after another, until he obtains an abstract composition. A stripping away that lays bare a kind of non-figurative unconscious of magazine images. "These artists thus work to transpose, use, redefine, and extract themselves from the continuous flow of images with the plastic, material and often tangible forms specific to contemporary art (paintings, videos, installations, etc.)", summarize Garance Chabert and Aurélien Mole, also pointing out "the educational and dialectical ambition" of these works that aim "to learn to associate images to refine one's gaze ("speak to the eyes", according to Pierre Leguillon's expression)". And this in playful and convivial forms, such as those of the marabout-de-ficelle or the game of Memory where, equipped with small illustrated dominoes made available to him by Aurélien Froment, the spectator himself reshuffles the cards of art history. Learning to look differently, in the very texture of the images, between the lines and the dots of the screen in a way, is what Mark Geffriaud also does, who, in books, reads two pages at a time, the front and back, at the same time, by transparency. His Herbier thus tends on a pierced picture rail, allowing the viewer to go around it, sheets hung in clusters on which, for example, a portrait of the inventor Alexander Bell testing a kite and the drawing of a geometric structure merge. The shifts in meaning are rarely obvious, but not gratuitous either. They are inscribed in filigree. "Thus assuming the subjectivity and relativity of the sets they constitute, their approach is more akin to that of the collector than of the archivist," insist Chabert and Mole. The relevance of the corpus is not necessarily revealed in the exhibition of a multitude of images, but in the intervals of meaning between each of them." Far from the pinched in-crowd However, the post-Internet artists who burst into France at the Museum of Modern Art in Paris three years ago, as part of the exhibition "Co-Workers", under the leadership of the New York collective DIS Magazine, willingly splash around in the flow of online images. This is their reason for being: post-Internet practices, as defined by critic Ingrid Luquet-Gad in her contribution, aim to "take into account the proliferation of images and objects - the content of the Web in general, cultural artifacts created without necessarily being described as art - and to assert an authorial position by reverberating-curating these objects". Above all, they no longer mince their words and appropriate images haphazardly, favouring a "process of drift, time lost on the Internet, represented by the accumulation, the chaining, the accelerated superposition of numerous images", observe the authors of the book (a bit circumspect) in the face of more voracious, more flashy and less polished works. "Artists of the post-Internet nebula produce on and off-line works that point out, or even accentuate, what screens and sharing produce on images: fluidity, virality, interference, etc." There is another reason for this frenetic and unbridled pace cultivated by, for example, Artie Vierkant or Lizzie Fitch and Ryan Trecartin. They do not want to remain in the pinched intimacy of art places, nor in scholarly references. Without snubbing the "white cube" of galleries and their market, where their videos or digital prints are displayed on translucent walls like touch screens, they broadcast their work on social networks in the continuous and dehierarchical thread of Instagram or Facebook. This very savvy generation thus takes advantage of all the tools to measure and identify its audience. With this consequence, underlined in the book, on the scope of the images published. "The ephemeral nature of the temporality of the Internet means that it is connectivity rather than content that counts." No longer a question here of subtly connecting images together, but of verifying, through sharing, that there is indeed a relationship between the different members of a community. From one constellation to another. With this change of direction and era, this question posed by the authors: "Each shared image becoming a cloud of data, is it not to be feared that these constellations will no longer be addressed to our fellow human beings but to machines that will undoubtedly know what to do with this information?"

## ###ARTICLE\_START### ID:2142

They litter the sidewalks of major cities, along railway lines and beaches, and always end up flowing into the oceans. A PLAGUE This plastic pollution is a real plague that threatens flora and fauna and endangers the entire food chain and, potentially, our health. The federal government has committed to tackling it by dedicating a budget of $100 million to it. At least five leaders at the last G7 summit, held in Charlevoix last June, made it a priority issue by adopting the Ocean Plastics Charter. Plastic has a major impact on the economy and devastating on the environment. The Ellen MacArthur Foundation, supported by the World Economic Forum, estimates that, if nothing is done to reduce its production and consumption, "there will be more plastic in the ocean than fish by 2050." It's no wonder that specialists talk about a "seventh continent", so vast is the extent of this pollution in the ocean. The Mediterranean is becoming a "sea of plastic". Solutions exist, but they are not within everyone's reach. One of them is a citizen initiative that caught my attention. It is the Plastic Odyssey project, led by four young French people aged 24 to 32. I spoke in writing with Alexandre Dechelotte, one of its founding members. AN INSPIRING PROJECT This is the story of the awakening of a young officer in the French merchant navy, Simon Bernard, who noticed, during one of his stopovers in Dakar, the extent of the damage caused by plastic waste. With his classmate, Alexandre Dechelotte, and two other engineers, they designed the Plastic Odyssey project, which has the merit of targeting several socially responsible and economically viable objectives. "We want to democratize recycling machines and distribute them in open source to people in developing countries to allow them to locally create small factories for collecting, sorting, recycling and recovering energy from plastic waste in order to resell the raw material or finished objects, create jobs and clean up the environment," explains Alexandre Dechelotte. Brune Poirson, Secretary of State for Ecological Transition, praised this bold project on her Twitter account on June 15: "The @PlasticOdyssey boat runs on fuel created from plastic waste. Happy to be the sponsor of this crazy project, which has become a reality and is led by a visionary team! The #circulareconomy: preventing waste from reaching our oceans." The Plastic Odyssey team has therefore reached an important milestone, that of raising enough funds to inaugurate its demonstrator ship, named Ulysse, the first boat to be powered by energy from plastic waste. In 2020, a 25-metre catamaran will stop on the coasts of the most polluted continents in Africa, Asia and South America to meet with local NGOs with whom a partnership will be established. “The plastic will then be sorted, crushed and recycled during demonstration workshops that aim to inspire local entrepreneurs and artisans and to create micro-projects, create finished objects or construction materials by integrating the know-how and needs of the country visited,” writes Mr. Dechelotte. The team is currently working to complete the financing of the project by appealing to patronage and private donors on a national and international level. This is the kind of project that inspires me.

## ###ARTICLE\_START### ID:2143

Considering the financial strength acquired by Google, the fine that the European Union has just imposed on it, record though it may be, is like a drop in the ocean of dollars. What does 4.3 billion euros represent in the light of a market capitalization that exceeds 700 billion euros and cash flow that is close to 100 billion? If Google had to pay this painful fine tomorrow morning, the possible payment of which, postponed indefinitely, now depends on the assessment of the European Court of Justice, which is being appealed, it would cost it little more than two weeks of turnover or about an eighth of its annual profits. Not bad at all, one might be tempted to think at first glance, especially since at the rate at which regulation is progressing, it often proves to be very out of step with the speed of incessant technological change. The fact remains that beyond this amount alone, Brussels' decision could logically begin to erode the very lucrative economic model set up by the Internet giant and slow down its dizzying growth somewhat. But only under certain conditions. Without waiting for the outcome of the current dispute, the multinational from Mountain View, in California's Silicon Valley, will have to make the "corrections" requested by the competition services of Danish Commissioner Margrethe Vestager by mid-October. At the risk, this time, of being subject to penalty payments that could represent up to 5% of the average daily and global turnover of its parent company, Alphabet. A much more significant threat. Until now, the deal in smartphones was clear: in exchange for the billions of dollars of annual investments that Google spends to develop and maintain its Android operating system, the thousands of smartphone manufacturers around the world who install it for free in their models - more than 24,000 to date - were forced to favor in return privileged access to its main applications such as its Chrome browser, its search tool or its Google Play application store. Thanks to Google, these almost exclusively Asian industrial giants have been able to launch ever cheaper smartphones and win hundreds of millions of customers (1.25 billion mobiles equipped with Android were sold in 2017 according to the market research institute IDC). With the result that 80% of them today tap away with a mobile "powered by Google". Hence the cries of alarm from the search engine, which pretends not to understand why we want to put spokes in the wheels of an ecosystem that, as Al Verney, spokesperson for the group, says, "has created more choices for everyone, not less." In the future, best-selling mobile phones like Samsung, HTC and Huawei will no longer be able to benefit from the subsidies distributed by Google in exchange for the pre-installation of Google Search on their home screens. A simple promotion that, according to the projections of the analyst S&P Global Market Intelligence, should generate up to 60 billion in mobile advertising revenue for Google in 2018. As a reminder, with its partner Facebook, the company reigns in a duopoly on the French advertising market, of which the two giants are, by far, the biggest beneficiaries. Smartphone brands could even go so far as to rebel and make Google pay for this prominent place on their interfaces, even though they were developed using Android code provided for free. Brussels also expects its decision to encourage smartphone manufacturers to develop alternative versions of Android in-house, based on the free or open source part of the code provided by Google. However, this overhaul of the rules that the Commission hopes to force will be of little support if credible alternatives from competitors who have already reached a critical size do not emerge very quickly. And it is clear that there are hardly many of them today who can launch themselves into this titanic battle which, in the eyes of the most pessimistic, seems lost in advance. In other words, if the fine imposed by Brussels theoretically creates the conditions to promote more competition and innovation in a market that is today very locked down, it will not be enough, in the absence of other much more structural hard cash incentives, to change the situation other than marginally. Where we always come back to the question of a Europe capable of promoting in the digital world technological offers that are likely to compete with American gigantism, as it was able to do in the air sector with Airbus. If an economic rebalancing through law is necessary, that is not enough.

## ###ARTICLE\_START### ID:2144

Google filters your thoughts", "Apple knows where your mother is", "Facebook controls what you can read", "Amazon knows what gifts you will get", "Microsoft formats your children": walking recently in Paris, we could pass by these posters, with at the bottom this message "Join the group action against Gafam", the five web giants, signed by La Quadrature du Net. A historic fighter in favor of the rights of Internet users, the association welcomes the surprise rejection by the European deputies, on Thursday July 4, of the draft revision of the European directive on copyright, by 318 votes to 278. "This is a great victory for the defenders of freedoms on the Web: the Parliament did not listen to the lobbyists of the rights holders and the heavyweights of the cultural industry, who do not defend artists", explains Benjamin Sonntag, one of the founders of La Quadrature du Net. The association is also launching a showdown with the digital heavyweights following the entry into force at the end of May of the General Data Protection Regulation (GDPR). Its hope: to have them sentenced to the maximum penalty, i.e. up to 4% of their global turnover, for excessive exploitation of their users' personal data. It says it has brought together over 12,000 individuals in a few weeks around collective complaints against Facebook, Google, Apple, Amazon and LinkedIn, while knowing that the fight is far from won. La Quadrature, which has its roots in pre-existing movements such as the Association of Internet Users or Iris (Imaginons un réseau Internet solidaire), brought together the early Internet activists ten years ago. Most of them came from the IT world, and they initially mobilized around the most sensitive current issues in their eyes: the Olivennes report (2007), a prelude to Hadopi (High Authority for the Dissemination of Works and the Protection of Rights on the Internet), and the "Internet Package" technique which, according to them, gave telecom operators excessive surveillance powers over users. "It was a project that was not supposed to last," remembers Benjamin Sonntag. "We received funding from the Open Society Foundation [of the American billionaire George Soros] which allowed us to employ two people for two years. And then, the issues got too much for us and we said to ourselves that we were not going to give up." Among the founders, each had his own hobby horse: copyright in the era of the Internet, state surveillance, or free software. "Technocritics" Their mode of action: a close legal watch on all texts in preparation likely to infringe on the freedoms of Internet users, a work of alerting public opinion and lobbying - they prefer to talk about an effort of "pedagogy" - with French deputies and European authorities, so that "we do not vote for anything, anyhow", explains Mr. Sonntag. Not audible enough, the members of La Quadrature decided three years ago to change their method: "We started to take contentious action, because in fact, we noted that parliamentary work no longer works. Now, everything that comes out and that we can attack, we attack: whether it is decrees before the Council of State or by asking priority questions of constitutionality. » In 2016, the association won one of its greatest victories when the Constitutional Council censored an article of the 2015 law allowing intelligence services to carry out surveillance of radio communications without any control. This victory illustrates its gradual reorientation. "We have moved from defending digital freedoms to defending freedoms in the digital age. Whereas initially, our enemy was the Minister of Culture and his wicked laws [Hadopi...], now our enemy is Mr. Collomb, Mr. Cazeneuve...", notes Mr. Sonntag, citing the Minister of the Interior and one of his predecessors. La Quadrature was one of the first associations to contest the state of emergency established in France after the attacks of November 13, 2015. A difficult fight against laws deemed liberticidal. "With each exceptional law, the attack on freedoms goes further and further and never goes down. What we are trying to do is that instead of increasing it by two notches, it only increases by one," says Mr. Sonntag. Even if no party finds favor in its eyes, La Quadrature du Net is definitely political, without being partisan: "When we intervene in the way we build the Internet, we intervene in the way we build society." It nevertheless shares with environmental movements concerns about the cost of the digital economy for the planet. Because these early lovers of IT have turned into "technocritics. Between the platforms that plunder your personal data and the constant incentive to renew your equipment, Mr. Sonntag believes that today, "digital has become a jungle. And that threats to freedoms are at least as much the work of States as of the big digital giants. Having been led to exchange with La Quadrature du Net, LRM MP Paula Forteza recognizes its "real expertise on the subjects" and "good educational work". Without sharing their "political vision", she considers it "useful that associations thus uphold clear-cut values". Its positions are clear-cut: the politicians "all lamentable", the National Commission for Information Technology and Liberties (CNIL) "mawkish and useless", tackles Benjamin Bayart, co-president of the association. A tone in line with its communication, always grating. But La Quadrature fully assumes its role of preventing things from going around in circles. Hanging by a thread Even the CNIL, with whom it is not tender, recognizes this virtue: "They bring the law to life and help to carry the voice of citizens", admits Mathias Moulin, its deputy director of the protection of rights. He just recalls, in response to accusations of docility, that the CNIL was one of the most active authorities in the world against Gafam, with two sanctions pronounced against Google (150,000 and 100,000 euros in 2014 and 2016) and one against Facebook (150,000 euros in 2017). "At the time, we had a small hammer, now, with the GDPR, we change gear. The existence of La Quadrature remains suspended by a thread. The association lives mainly on donations from its supporters, around 10,000 donors per year. More than once it has come close to ceasing activity and it remains on borrowed time. This does not prevent it from being ready for combat: it joined forces with around sixty other European associations to file class actions at the end of June against the "general retention of data" by operators in 17 European Union states, including France.

## ###ARTICLE\_START### ID:2145

In the past, getting around "by transport" was difficult but simple. A metro or bus map and unfailing patience were enough. Today, between a dozen means of transport, a slew of apps to help you find your way and multiple virtual payment methods, mobility has become an exercise in agility. "Travelers zap," summarizes Frédéric Baverez, president of the "Objectif transport public" group - organizer of the show - and also head of the transport operator Keolis and the parking manager Effia. They switch from one means of transport to another all day long. This restlessness has forced transporters to expand to everything that rolls: self-service bicycles, carpooling, car sharing... "Of the five largest public transport operators in the world, three are French [Transdev, Keolis, RATP, editor's note]," notes Frédéric Baverez. The shift towards "mobility as a service", the new watchword of the profession, should be within their reach. Will it make life easier for users? The basic virtue of public transport being to be "easy to understand, take and pay for", as Baverez says, a stroll through the aisles of the Transports publics trade show, which has just ended in Paris, allows us to see what awaits us. Futuristic section: the economical shuttle We have been hearing about it for years but finally, we will be able to get into an autonomous vehicle for real. Transdev is presenting the system that it is currently testing in Rouen on its stand. It will be put into service in the second half of 2018 but it has already been tested on real streets, in the middle of traffic and motorists who must be quite surprised by this driverless object. Of course, the shuttle only operates on the ten kilometers of a three-loop circuit, equipped with the necessary sensors. An application allows the customer to call it with their smartphone, the vehicle stops and Simone drives away... We are far from the Tesla toy for Californian millionaires. "The autonomous car is only of interest if it is shared," explains Jean-Jacques Bernard, vice-president in charge of mobility at Rennes Métropole. The Rouen shuttle was designed by the manufacturer Lohr. This 16-seater vehicle, a sort of elongated cube on wheels that "moves in complex urban environments [such as intersections, roundabouts] and goes around obstacles," according to the technical sheet, does not provoke an aesthetic emotion but that is not what is asked of it. Since Orlyval (1991), line 14 of the Paris metro (1998) and the first line of the Rennes metro (2002), users have become accustomed to the absence of a driver. But letting an autonomous vehicle go in the middle of cars is still another stress. Nevertheless, since the public authorities authorized the road testing of "driving delegation cars" on August 3, 2016, we can be sure that other shuttles and systems will be tested. Especially since specialists are unanimous in affirming that the autonomous vehicle, which does not drink and does not tire, is much safer than the human. Mystery section: the ticket The mystery, to tell the truth, lies in this question: where has it gone? The cardboard rectangle that we compost is becoming a rarity. On the Keolis stand, urban transport company, demonstration of open payment. An ordinary contactless bank card, a reader and presto. We already validate in this way on the two tram lines of Dijon and soon on the 180 buses of the agglomeration. Advantage: it works everywhere. Well, everywhere where the networks have chosen this system. French cities are far from the 60% observed in London. Elsewhere, passes and cards reign. And sometimes, they are used for many other things. In Brittany, the Korrigo operates in all the major cities in the region. The president of the "Mobility and Transport" commission for Rennes Métropole, Jean-Jacques Bernard: "It was initially designed for travel with the idea that the 68,000 students of Rennes could use it when they returned home." And little by little, bike rental, car sharing, the university restaurant and library have "entered" into the Korrigo. Faced with this Swiss army knife of ticketing, we end up wondering if we won't one day have a card to do everything. "Probably not," replies Jean-Jacques Bernard, "but we have to make sure that we have only one support for an entire catchment area." In his case, Brittany. "We also have to try to make sure that there is interoperability between the cards." Use the Navigo in the Paris region in Brittany and the Korrigo in the Paris region? Next step, embed all this technology in a phone and abandon the card? "We know that we will never reach 100% smartphone equipment," replies the Breton elected official. The card still has a future ahead of it." Especially if it is combined with a service platform (cinemas, restaurants, culture, etc.), developed with free software and open data. Coveted area: the self-service scooter The principle is exactly the same as that of the bicycle: you detach the scooter from its support and, in an ideal world, you hang it up somewhere else. For the moment, Knot, a Strasbourg start-up, is testing its scooters in a small area in Saint-Denis. A manufacturer based in Strasbourg, the company equips its system with a solar panel station that does not require major installation work. Will this device, which for the moment only allows you to go from point A to point B, succeed in colonizing the country? Eternity ray: the bus Motorized descendant of the stagecoach, the bus hides its revolution under the hood. Between the fight against climate change and the demands of operators, manufacturers are multiplying electric or natural gas city buses (NGV). Alstom, leader in the tramway, was inspired by this machine to launch into the electric bus. Its Aptis looks like a tram, with a large low floor and giant windows. Can we revolutionize the bus? "Users have an imagination very constrained by technology, points out Benjamin Bailly, head of the electric bus platform at Alstom. We could arrange passengers in two rows back to back looking at the landscape. Or have smart windows that provide information on the monuments that we see outside." But the bus is still looking for the trick to get people to move to the back, rarely has Wi-Fi on board and continues to arrange passengers face to face with their knees knocking together. Fantasy section: the bicycle We don't necessarily realize it, but the bicycle is undergoing a complete upheaval. Shared bicycle services, which we use for short distances, are now present everywhere in France. With experience, the frame is becoming more and more resistant to trials. Arcade is one of the manufacturers that equips self-service bicycle operators. Its machines are present in about ten networks and are, it is assured, "maintenance-free and unbreakable". One of their models, electric, does not even have a chain anymore. We have not yet invented the means to prevent criminals from throwing bikes into the river, but hey, it is progressing. The electric bicycle is also progressing in usage. But operators have realized that renting such a machine is not only for lazy people. "Today, we do long-term rentals, for a maximum of two years, and we have found that it is a great way to discover a machine that remains expensive," rejoices Jean-Jacques Bernard, vice-president in charge of mobility at Rennes Métropole. The electric bike "changes behaviors." Parking is also changing. When buildings do not have a place to hang the bike, it slows down vocations. The manufacturer Altinnova therefore suggests to elected officials to install shelters in the streets, huts occupying the equivalent of a parking space. The principle consists of planting these small rectangular or semi-cylindrical boxes containing five bikes, as soon as five residents request them. This "on-demand parking," tested in Grenoble, is "a first in France," they say on the stand. The more citizens pedal, the more we must offer them solutions to store their bikes safely. This may be surprising, but the bicycle garage is a place of unsuspected technological progress. At the Cykleo stand, we discovered a bicycle escalator (have you ever climbed a staircase with your bike in your hand?), a "vélo up", a jack that pulls it for vertical attachment by the front wheel (25 kilos at the end of your arms, does that tempt you?) or even a "double-decker rack" equipped with a rail that pushes the bike to the upper floor with a wave of the hand. Innovation sometimes takes on less spectacular trappings. Founded by an accountant who used to go to her appointments by bicycle, the start-up Cyclamelle has created a line of clothing for urban cycling for women. Black jackets and coats, with gray piping during the day but retroreflective at night. Close-fitting cuts that hide tricks for pedaling. In short, everything you need to get to the office by bicycle without putting on a Jeannie Longo outfit.

## ###ARTICLE\_START### ID:2146

Would life return to normal in Notre-Dame-des-Landes? Closed for six years, the D 281, or "route des chicanes", was officially reopened to traffic on June 14. Ten days earlier, fifteen precarious occupation agreements had been signed at the prefecture of Pays de la Loire, which will allow various operations (livestock farming, market gardening, cereal growing, nursery, beekeeping) to prove themselves. But the residents of the ZAD, formerly the "zone to defend", are hoping for more than just acceptance of their personal projects. They want to create synergies, an ecosystem. And they are not the only ones. Since the government abandoned the airport project in January, many voices, and not the least, have been raised to defend the demands of the ZADists. Because their collective project has forcefully relaunched the question of concrete utopias, and with it the notion of the commons. "In the interactions between "historical" inhabitants, peasants, squatters, neighbors (...) a common territory has been built, beyond property, habits and affiliations," notes a collective of intellectuals, including philosopher Isabelle Stengers and anthropologist at the Collège de France Philippe Descola (Mediapart, April 6). A "collective approach, constructed as a "common", within which individuals find their own energy", support engineer Olivier Frérot of Ponts et Chaussées and geographer Luc Gwiazdzinski (Libération, April 20). "Why not recognize the right of the ZADists to experiment? They could thus promote another approach to property which is that of the "commons", that is to say a system based on an identified collective and bearer of a territory", insists economist Bernard Paranque (Le Monde, May 18). The question of the commons is not only invited in the Nantes bocage. A University of the Common Good was launched in Paris in October 2017, whose first cycle of conferences and citizen debates was a great success. "We believe that this success is linked not only to the quality of the speakers, but also to the fact that we try to articulate analysis and research with field practices and ongoing initiatives on common goods (seeds, water, urban agriculture, free software, housing, etc.)", explains Cristina Bertelli, co-founder of the university. For his film No Man is an Island, released in April, documentary filmmaker Dominique Marchais traveled across Italy, Austria and Switzerland, in search of initiatives for mutual aid and the protection of territories that go against the grain of dominant economic models. And not a month goes by without a new book being published devoted to the economy or governance of common goods. The latter are therefore making a strong comeback in the world of ideas. But what exactly are we talking about? "A common good is a universal good to which everyone has a right, but it is a fragile good, which can disappear if it is misused," explains Gaël Giraud, chief economist at the French Development Agency (AFD). He takes the example of a pond, and a tribe that lives there from fishing: "If someone comes poaching at night and catches all the fish, there will be none left, but you can't put a policeman behind every tree. The consumption of products from the pond is therefore rivalrous (like private goods), but access to them cannot be limited (like public goods)." To put it another way: a common is a shared resource, managed and maintained collectively by a community, with the aim of perpetuating this resource while allowing everyone to use it. These resources can be natural (a forest, a watercourse), material (a shared garden, a habitat, a power plant) or immaterial (knowledge, software). Considering them as common goods (of a city, a country, humanity) essentially implies two things: on the economic level, privileging use value rather than exchange value; on the political level, going beyond the dichotomy between the State and the market. A path now explored by a growing number of cities and regions in the world, because it is considered a promising alternative to the two competing models generally implemented for the management of resources or services: control by the State on the one hand, market mechanisms on the other. In the medieval city of Ghent (Belgium), the ruins of the very ancient Saint-Bavon Abbey have thus become a flourishing cultural site under the impetus of a citizen initiative. Dirk Holemans, head of the municipal council that supported this project, is convinced of the interest of this third way. In an article published in November 2016 in the Green European Journal, he suggests visualizing a triangle in which each of the three points corresponds to an extreme society: a society totally oriented towards the market (bottom right), a society 100% controlled by the State (bottom left) or a society exclusively managed by autonomous citizens (top). "The horizontal "left-right" axis is typical of modern industrial societies, but we must take into account this line that goes to the apex of the triangle and which depicts the current, post-industrial society, which encourages other forms of participation in social life, he believes. Therein lies, right in the middle, the domain of the commons." Renaissance of a concept Other examples? In Germany, citizen cooperatives for renewable energy (REScoops) began in the 1990s, thanks to an adequate legal framework, to transform the energy system on a national scale. In Brussels, collective vegetable gardens are encouraged as part of a long-term political strategy of the Regional Public Service, called "Good Food. In Italy, Bologna was the first city to adopt, in 2014, a regulation of the commons, a principle that has since spread to several dozen municipalities. In Europe as elsewhere in the world, we could multiply the examples of experiences that testify to the rebirth of this concept, invented in a very ancient time, when the notion of property was very different from today. Because the commons have a long history, which is played out in three acts. The last two are recent and theoretical; the first is political, and begins in the Middle Ages. In the rural regions of the West, the "commons" then represented the lands of moors, forests, scrubland, meadows managed in common. The peasants exercised a customary right of use on them, cutting wood, harvesting honey or grazing their animals without having to pay anything in return. This traditional organization began to be undermined at the end of the 16th century in certain regions of England, due to the then booming wool trade. Wealthy landowners began to enclose certain commons to graze their flocks of sheep, leading to a very significant impoverishment of the rural population. This "enclosure movement", ratified in the following centuries by the Enclosure Acts, marked the end of user rights. It subsequently spread to most European countries, gradually transforming subsistence agriculture into capitalist agriculture. The second act takes place in 1968, and is contained entirely in an article published by the American biologist and ecologist Garrett Hardin (1915-2003), in the journal Science, under the title "The Tragedy of the Commons". In this famous text, recently translated into French in its entirety (La Tragédie des communs, PUF, 94 p., €8), Hardin argues that enclosures were a rational solution to the problems of resource depletion and the discharge of effluents into nature. According to him, the commons constitute a "food basket" where everyone, helping themselves freely, would participate in its depletion. Similarly, nature becomes a "cesspit", where everyone can throw their waste into it without limit. The only solution, in his eyes, to prevent this tragedy of the commons: the establishment of property rights preventing free access and free use, whether it is the work of the market (private property) or the State (public property). "For Hardin, the social relations established by privatization do not need to be fair if they are effective: the preservation of nature can accommodate inequalities affecting certain sections of the population," says Michel Renault, a lecturer and researcher at the Faculty of Economics at the University of Rennes-I. In an article published in March 2017 in the journal Projet, he nevertheless believes that there is, implicit in this reading grid, a form of factual manipulation. "Because the history of enclosures is not that: it is indeed the movement of land privatization that has pushed the poorest onto common pastures, leading to their overexploitation. Far from being a solution, privatization would in fact be a cause of these tragedies," he asserts. Hardin's article nevertheless became a reference for economists and environmentalists alike, helping to justify the direct management, either by the market or by states, of natural elements such as water, the sea or the forest. Until the third act came along: the recognition of the work of Elinor Ostrom (1933-2012), winner of the 2009 Nobel Prize in Economics, on the governance of common goods. "Property-dwelling" Unconvinced by the tragedy thesis, this American economist and political scientist revisits the question based on empirical observations (collective management of irrigation networks in Southern California, forests in Nepal, fishing in Indonesia). Contrary to Hardin's predicates, she shows that these common resources can be managed sustainably by local communities. In a major work written in 1990, The Governance of the Commons (de Boeck, 2010), Elinor Ostrom details the principles that must be respected to achieve this. Little criticized to date, her work continues to irrigate the thinking of those, increasingly numerous, who defend the development of an economy of the commons. At the heart of this model is a key notion, that of property. "If capitalism can be defined as the "private appropriation of the means of production", we understand that the alternative to it has spontaneously been defined as the "collective appropriation of the means of production". However, this term "appropriation" carries with it a profound ambiguity", specifies the essayist Benoît Borrits (Au-delà de la Propriété. Pour une économie des communs, La Découverte, 248 p., 19 €). Property, in fact, is exclusive by nature even when it is collective, as in the cooperative regime. It is this concept from Roman law, according to which the owner has complete power over the thing he owns (plena in re potestas), that the economy of the commons proposes to call into question. How? By reinvesting in the collective and sharing. By proposing as a political horizon the primacy of the right of use over that of the owners. By granting, as the lawyer Sarah Vanuxem suggests in her recent work La Propriété de la terre (Wildproject, 150 p., €15), rights to certain places of reception forest, lake or pasture. For this environmental specialist at the University of Nice-Sophia-Antipolis, this would allow us to move away, within our own law, from the modern Western conception of property (the sovereign power of an individual over things), and to bring out the notion of "property-habitation": it is about looking at things as homes, environments, rather than as objects, and therefore to signify with this notion that we can occupy this environment, have a privileged place there without excluding shared use and management with other inhabitants. What governance can be imagined for these commons? What articulation should be established between citizens, public authorities and the private sector? Everything will depend on the good considered, and the urgency to preserve it. For Gaël Giraud, from the AFD, one of the priorities must go to water and the services associated with it, as this resource, vital and rare, is likely to be overexploited. Drawing on the research work carried out by AFD in various countries (Jordan, Democratic Republic of Congo, Bolivia), he recalled in March, on the occasion of the World Water Forum held in Brazil, that user communities have been structured in multiple places to establish common rules for managing and sharing water. "This does not mean that the State or the private sector have no role to play, quite the contrary," he specified. "The State creates the legal framework conducive to the emergence of user communities and must remain the primary guarantor of the right of access for all to drinking water and sanitation. The private sector can contribute on its side, particularly in the development of infrastructure." In short, the commons, whether tangible or intangible, are not the miracle solution to the management of resources or services. They assume complex governance, a collective identified around a resource, a set of rights and obligations, an articulation with the State and market players. But these laboratories of local democracy, strongly tinged with political ecology, open a political perspective. Their culture remains to be built.

## ###ARTICLE\_START### ID:2147

On a quiet street in the Guillotière district of Lyon, on this spring evening, about thirty people are crammed onto the ground floor of the Locaux Motiv' building, which houses various associations. The majority of them are computer scientists, activists in the free software movement, but also sympathizers and curious people: an architect, a French teacher, a documentalist, two friends who are students of physics and biology... They have all responded to the invitation of the Framasoft association, whose mission is to develop and promote free Internet services, i.e. non-commercial, transparent, respectful of privacy, and infinitely copyable and modifiable. On the menu for the evening meeting, called "Framatelier": beer, pizza, chips, as well as a call for projects and a list of tasks to distribute to volunteers. In four years, Framasoft has become famous on the Internet thanks to its "Degooglisons l'Internet" program: rather than lamenting the omnipotence of the American giants (Google, Apple, Facebook, Amazon, Microsoft and others), it decided to take concrete action by creating alternatives to their main services: clones, except that they do not track users or exploit their data. Framasoft, which has eight employees and nearly 700 volunteers, has so far put 34 free and open-source services online, covering the needs of individuals, associations and SMEs: file storage, collaborative work, publishing, forums, calendars, address books, calculations, surveys, maps, drawings, games, etc. Its search engine, Tonton Roger, is a "meta-search engine": it transmits the query simultaneously to several major search engines such as Google or Bing, while covering its tracks so that Google and others do not see the end user. Framasoft has also created French branches of the alternative social networks diaspora\* (Framasphère) and Mastodon (Framapiaf), which are supposed to compete with Facebook and Twitter. In total, Framasoft has an annual budget of nearly 400,000 euros, coming from donations from supporters. Its servers, installed in Germany, host 500,000 users per month. It could continue to grow, but that would be contrary to its philosophy. Its director, Pierre-Yves Gosset, recalls the founding principles of its action: "We are fighting against the hypercentralization of the Internet, we are not going to start building a centralized system. It would be crazy if we became the "Google of free". We want to do the opposite: share our know-how and form a decentralized federation of autonomous associations, providing services similar to ours. We like to compare ourselves to AMAP [associations for the maintenance of peasant agriculture], which favor artisanal quality, local ties and short circuits." To complete its offer, Framasoft is completing the creation of a video sharing platform, PeerTube, which is intended to compete with YouTube. This was set up by Florian, 24, a computer science student from Grenoble, now an employee of Framasoft and attached to his anonymity, like most of the other people who testify here. True to the philosophy of free software, he built PeerTube on a dual decentralized system. First, anyone can download his software to establish a new “instance” on a server – a local site capable of providing all of PeerTube’s services. He can then manage it as he wishes. Some instances connect to all the others and serve as a general catalog for all videos. On the other hand, PeerTube users are directly connected to each other in peer-to-peer mode: when several of them watch the same video simultaneously, the newcomers will automatically connect to another user’s personal computer, which avoids congesting the servers. At the end of May 2018, PeerTube had 112 instances hosting 70,000 videos; a good start. Framasoft has its own instance, Framatube, whose theme is political and activist, but others make different choices: science, arts, reports, entertainment, animation, music, sex, etc. Florian is reasonably optimistic: "I'm giving myself five years to compete with YouTube, to open a breach in the Google system." He already hosts documentaries from the alternative media DataGueule (also present on YouTube) and dreams of integrating institutional producers such as the CNRS. In the meantime, he will add features to PeerTube: subtitles, an English interface, etc. To accomplish its de-Googling mission, Framasoft launched the Chatons network (Collective of alternative, transparent, open, neutral and supportive hosts), which aims to federate local initiatives, thanks in particular to a complete and demanding ethical charter. Long-established associative service providers such as Zaclys (eastern France), Infini (Finistère) or L'Autre Net (Paris) have joined the movement and are advising newcomers to help them get started. In May 2018, the Chatons network had 58 members, around fifteen of whom already provide a wide range of services, and applications continue to flow in. This evening, the "Framatelier" welcomes several Chatons from the Lyon region. Among them, the Felinn project (Local Emancipatory Force for the Independence and Neutrality of the Net), founded by four students. One of them, Victor, a PhD student in computer science and "happy unemployed", announces that from June Felinn will offer a complete cloud service (the equivalent of Google Drive), then an e-mail server: "Membership will be paid, but its price will be free." Operating costs will be low, because the servers are hosted free of charge by the Internet service provider Rezopole. Victor is also in negotiations with a theatre federation: "If they transfer their online services to us, it will bring us a regular income." Other Chatons want to go completely professional. Tim, who lives in Lyon, and his friend Pierre, who has been living in Wiesbaden (Hesse) since he married a German woman, have set up the IndieHosters service. The annual subscription is 25 euros for an individual, but could reach hundreds or thousands of euros for large associations. Pierre is proud to belong to the Chatons network, while acknowledging that it is sometimes complicated: "The members are very independent, each one wants to work in their own way, which makes harmonization almost impossible." That said, compartmentalization also has its advantages: "If a hacker finds a security flaw in one Chaton and manages to hack it, his attack will not work on the others. » In May 2018, IndieHosters had around 5,000 users, which allows Tim to earn a salary, while Pierre continues to work freelance to earn a living. The two friends are self-employed, but will soon form an association: "We hesitated to form a commercial company, but we were afraid of sending the wrong message. People might think that we are start-upers obsessed with profit..." On the other hand, Jean-Yves Michaud, 34, originally from Saint-Etienne (Loire) and living in London where he works for an Internet service provider, decided to combine the ethics of the Chatons with a classic business practice. His company, Nomagic, has just been accepted as the first British Chaton: "I chose to create a commercial company, because in England it's easy, it takes twenty minutes on the Internet." Furthermore, Jean-Yves Michaud wanted to move quickly and decide for himself. "I was a member of a free software association in Saint-Etienne, where we discuss a lot before acting. I didn't want to repeat that experience." If Nomagic is a success, he will devote himself entirely to it and leave his salaried job. Unlike other Kittens, he is not afraid to grow: "My infrastructure was designed to evolve, I hope to reach 15,000 subscribers. If I succeed, I will take stock, it will be time to help the birth of other English Kittens." At the same time, Framasoft launched a new campaign called "Contributopia" at the end of 2017, including on Facebook, in order to reach the general public. For Pierre-Yves Gosset, the new priority is to move beyond the circle of alternative Internet activists, to enlist the entire network of associations in his fight. "These people will not be passive consumers of our services, they will have to get involved in our action. We are also a popular education structure, we want a very broad public to master digital tools." According to him, the recent scandals that have affected Facebook, misuse of data for political purposes, "fake news... are starting to change mentalities. He has noticed an increase in requests for information and even offers of collaboration from administrations, including a prefecture: "With these cases, civil servants are rediscovering important ethical problems, starting with the storage of their data in the United States..." To go further, Framasoft must broaden its range of skills. Pierre-Yves Gosset hopes to collaborate with designers who will help him make his sites more attractive, journalists, environmentalists... The founder of the Chaton lyonnais Hadoly (a decentralized and open associative host in Lyon) is also responsible for a parents' association with 15,000 members: he has undertaken to raise awareness among his members of the problem of the domination of the Internet by American private giants, by emphasizing educational issues. Pierre-Yves Gosset believes that the commercial policy of private companies can backfire on them. "Recently, Google Maps increased its prices for sites using its service. Lots of SMEs, associations and administrations find themselves stuck. This is the ideal time to introduce them to the free OpenStreetMap service." This problem arises in many sectors. Ariane Dupoizat, a literature teacher near Roanne (Loire), came to Framasoft with a very specific request. The American site Padlet, used by millions of teachers around the world to organize lessons and get students to work in a fun way, has just become a paying site. Ariane wonders if Framasoft would agree to make a clone of Padlet, free and open source. Pierre-Yves Gosset explained to her that it is not so simple: he does not have the means to start a new project, and the volunteer coders must be convinced that the project is worth it. According to him, Ariane must gather a group of motivated teachers to show that the demand is real, then establish a list of the Padlet features most used by teachers. They could then develop a simplified version, which would be enhanced later... The teacher is not discouraged: "I will mobilize my network. Even if it takes us two years to get there, for me, it's a win." She has adopted Framasoft's official motto: "The road is long, but the way is clear."

## ###ARTICLE\_START### ID:2148

A mammoth as a logo and "toots" instead of Tweets. Mastodon is the new social network that wants to compete with Twitter and Facebook. With 1.2 million registered users and 134 million messages exchanged, the system created in 2016 is still in its infancy, but it is progressing quickly thanks to the work of thousands of enthusiasts from all continents. At first glance, the software offers services and an interface similar to those of the large American networks, from which it was inspired, and its users behave in a similar way. But behind the scenes, everything is different. Because Mastodon is a horizontal network made up of autonomous servers, without a central point or command post. The message on the home page is clear: "No ads, no private surveillance, ethical design and decentralization! You own your data!" The project was born in the mind of a German computer scientist who is now 25 years old: Eugen Rochko. "I built it alone, using free software and existing protocols." He was then joined by several teams of coders, who modified his system "at least 175 people contributed to improving the system, I became coordinator of a collective project." Born in Russia, the son of a linguist and an economist, Eugen Rochko arrived in Germany at the age of 11. Unsurprisingly, his motivations are those of the majority of free software activists: "I wanted to react against the concentration of social networks within a few private mega-companies. For citizens of all countries, the instantaneous global communication offered by social networks has become very important, in every way. It should be managed collectively, as a democratic public service." The second circle of project participants is made up of the instance creators, who downloaded the young computer scientist's software and set up their local server. According to Eugen Rochko, this federation architecture is in fact quite classic. “It’s a return to the 1990s Internet governance model of the ‘local dictator’: a lone administrator, or a small team, is the sole owner and operator of their site.” As of early June 2018, Mastodon had over 2,000 active instances. Many of these are general and open to all: users are spoiled for choice, and most sign up on a server where their language is spoken. Other instances are private or specialized, but in reality, it doesn’t matter, because communication between instances is automatic. To date, Mastodon has especially attracted Japan, which has the two largest instances on the network: Pawoo.net (375,000 members) and Mstdn.jp (161,000). The original instance set up by Eugen Rochko, Mastodon.social, is third, with 162,000 members. Then came an Austrian, other Japanese, an American... The first French one, Mastodon.xyz, has 15,800 members. It was opened in April 2017 by a 17-year-old Breton high school student, known by his pseudonym TheKinrar. "At the time, it took me an hour. Today, it would be even faster, the system has improved," explains the young man. To do this, he simply had to rent three servers from a commercial provider and put his instance online. "I was one of the first, people arrived very quickly." The rental costs him 60 euros per month, which he covers thanks to donations from users. Today, a computer science student in Rennes, he continues to manage the network, the workload being light. For his part, Eugen Rochko, who earns a salary thanks to donations from supporters, devotes himself full time to his goal: "For Mastodon to become a mainstream network." "American companies are already using this system internally. In France, the Interministerial Directorate for Digital Technology and the State Information and Communication System (Dinsic) has just created its own body, intended for State agents.

## ###ARTICLE\_START### ID:2149

There is a tension between pure engineers who want to do it themselves and possibly sell it, and the supporters of free software, of a libertarian claimMARIE-CHRISTINE BUREAU

## ###ARTICLE\_START### ID:2150

"MAKERS" Isabelle Berrebi-Hoffmann, Marie-Christine Bureau, Michel Lallement, Éd. du Seuil, 343 p., 21 euros. Welcome to the land of keyboard and screen fiddling. These hackers are nice, even if they too blend into the new imaginary of the horizontal, ecological and entirely recycled society that triumphs among a fraction of the youth, while the majority continue to worship Facebook, Instagram and Netflix. Three sociologists from the Cnam, the National Center for Arts and Crafts, look at this new fauna that is evolving far from salaried employment and the liberal professions. The result is an interesting book, even if it is weighed down by a sociological observation protocol that clutters the reading more than it facilitates it. But our three authors nevertheless have the important merit of clearing the way for these pioneers, and of describing a new kind of active population. Because these "laboratories" of resourcefulness, on the fringes of the great avenues of mass capitalism, are emerging in all four corners of the planet. The new DIYers - let's call them DIY bohemians - are the Lépine competition in the era of the 3D printer and miniaturization. Or Mad Max in peacetime, for those who remember this film that tells the story of the survivors of a humanity reduced to the indefinite tinkering of the last objects of the industrial age. Obviously, the English-language names abound. The book has kept the word "makers". It is true that "les faiseurs" does not work in French. Alexandre Jardin, who has made it his vocation to unearth these grassroots initiatives, had launched "les faiseux" with his association Les Zèbres. This rural variant did not convince. In any case, we can clearly see that it is a question of getting out of a world where fine words dominate, a world saturated with electoral or advertising promises. The time of "saying is doing" is over. The time of "doing is saying" is beginning to blossom. We prefer to tattoo ourselves, or transform objects and clothes to adapt them to our taste, or provide concrete proof of change, even discreet and minimal, rather than proclaiming them in grand phrases. This is the credo of these silent people, focused on "tinkering" with machines, creating objects via digital assistance, and of course refusing to have their lives controlled by Gafa. "I didn't want to become a right-click engineer," explains one of the many new tinkerers met by the authors to explain his choice to leave the "corporate" world. The authors give the most powerful example at the beginning of the book: "In 2013, Nicolas lost a hand in a car accident. He set about making himself an articulated prosthesis with the help of Breton tinkerers from a collaborative workshop - a "fablab" in Rennes. This space is teeming with recovered objects, diverted from their uses, and there is also a 3D printer. He decides to use it to make himself phalanges, which he connects with a fishing line [...] He finally makes himself a new hand for 200 euros, while the models of bionic prostheses cost between 20,000 and 60,000 euros, not reimbursed by Social Security. " An invention crowned by MIT in Cambridge in the United States and the magazine Makers. This example highlights the 3D printer, whose jets of plastic material allow you to build a house, without the slightest waste. But others make book pages with bacteria, produce furniture, or vegetable inks. The authors recall that DIY was born in the 1920s, at the time of the invention of Taylorism, "as a resistance to the rationalization of work". In his famous book: Where is human work going, the sociologist Georges Friedmann already saw it, in 1951, as the counterpoint to assembly line work. Because "do it yourself" puts homo faber back at the center of the process of manufacturing an object, from beginning to end. The three authors have traveled a lot, in California, Senegal, Germany. They have visited the "makers" faire (sic), a kind of throne fair of all-out DIY that is increasingly popular. In Italy, it is not Mad Max or Lépine, but Leonardo da Vinci who is held up as the founder of this tradition. Others cast the shadow of Nuit debout over these autonomous workshops that are springing up in the countryside and suburbs - the industrial wastelands of Toulouse, but also the neighborhoods of Montreuil, Nancy, Nantes. But the phenomenon is broader. "There are a few tens of thousands of people in France. But in the world, several hundred thousand," says Marie-Christine Bureau. "China is promoting these new ways of doing things by yourself, which it takes very seriously." This DIY craze took off in the 2000s, in California as well as in Germany and France. It was the miniaturization of digitally controlled machines that gave rise to these famous "fablabs", where engineers, computer scientists, designers, and artisans meet. "We have been interested in these new places of doing things since 2010, and we have seen these practices explode before our eyes," Marie-Christine Bureau explains. In the beginning, it was one of the Internet gurus, Chris Anderson, who opened the dance by announcing that this umpteenth revolution would finally make it possible to combine ecology, local autonomy, and zero waste. Barack Obama also seized on it, encouraging universities to open "fablabs" on their campuses. And it is this same wave that has reached Senegal and other African countries, where the recovery and reuse of used objects has long been a means of economic survival. Of course, the alter-globalization aspect is very strong in the subject of this book. We can sense the call for a counter-society, where labor relations would be free and without constraints. "There is a tension between pure engineers who want to do it themselves and possibly sell, and the supporters of free software, of a libertarian claim," notes Marie-Christine Bureau. But we are not obliged to buy this political folklore to appreciate the phenomenon at its true value. It is obvious that the stakes are high, for example for the development of local communities, in fragile or desertified areas. Because "none of these communities of handymen can survive without institutional support." The link with schools is one of the most interesting avenues. Transforming these “fablabs” into object clinics and poles of resistance to the trashing of the world seems like a common-sense initiative. The refusal of planned obsolescence can bring people together well beyond the alter-globalization movement.

## ###ARTICLE\_START### ID:2151

It's a considerable purchase: after several days of rumors, Microsoft announced on Monday, June 4, the acquisition for 7.5 billion dollars (6.4 billion euros) of the GitHub platform, whose headquarters is in San Francisco. This name, unknown to many Internet users, nevertheless designates one of the most visited sites in the world. In a decade of existence, the latter has become an essential tool for computer developers, whether they are independent or employees of large companies in Silicon Valley, the Californian cradle of high-tech. GitHub allows developers to store and share, publicly or not, the code they create. The platform hosts, it says, more than 80 million projects, whether software, websites, mobile applications, or any other type of computer program. It is also a collaborative space, on which it is possible to contribute to projects made public by proposing modifications. Its success is based in particular on the way it has facilitated this process: so that users do not disturb each other by modifying a program at the same time, they each download the code onto their computer and make the modifications, which are then published on GitHub after validation. The site uses Git for this, a tool developed in 2005 by Linus Torvalds, the famous creator of the Linux operating system. GitHub's talent is to have made this tool easier to use and understandable by the greatest number. The platform claims no less than 27 million users, which represents a good portion of the world's IT developers. GitHub is used by independent developers as well as by large companies such as Google, Apple, Facebook and Amazon, who use it to build their own products. Its ease of use has also won over amateurs, who publish their projects there. Being on GitHub has become essential for developers: their profiles and contributions on the platform are scrutinized more by recruiters than their CVs. GitHub is one of the most popular sites in the world, according to the Alexa ranking. Above all, GitHub has become the largest library of open source code in the world, that is to say, code made public, accessible to all. To the point that the leading magazine Wired, specializing in technology, compared it, in 2015, to the Library of Alexandria: "GitHub is more than a convenient place to store files online. It is the cornerstone of computer development, an essential repository of open source code and an essential knowledge space." A vast ecosystem of tools This centralization also raises concerns: what would happen if GitHub were compromised? In January, the platform was the target of one of the most powerful distributed denial of service (DDoS) attacks ever recorded, an action aimed at saturating a website with requests to make it inaccessible. GitHub resisted fairly well: it suffered disruptions for about ten minutes before returning to normal. Since the code of most projects is downloaded by users, and therefore stored on their computers, the disappearance of GitHub would not automatically mean that of these projects but that of their archives, their developments and the countless discussions surrounding them. While developers can use GitHub for free for their open source projects, they must pay for their private projects, whose code is not made public. Basic subscriptions range from 6 to 18 euros per month per user. GitHub also sells the possibility for companies to use its system on their own servers. On the other hand, the platform does not display advertising. Microsoft’s acquisition of GitHub, which has long been the poster child for proprietary software, might seem counterintuitive. It’s not, because Microsoft has a huge presence on GitHub: One of its open-source projects, the Visual Studio Code code editor, is the site’s largest contributor. And since Satya Nadella took over as Microsoft’s CEO in 2014, the company has shifted its focus to developer tools and open source. When it “open-sourced” its .NET family of tools that same year, Microsoft published it on GitHub rather than on CodePlex, its own open-source code-sharing site that it has since shut down. By buying GitHub, Microsoft is perfecting this developer-friendly strategy and now has a vast ecosystem of developer tools at its disposal. What exactly it plans to do with GitHub remains to be seen. Its acquisition could pave the way for new ties between the platform and other Microsoft services, such as its cloud offering, Azure, which is waging a merciless war against its rival Amazon Web Services.

## ###ARTICLE\_START### ID:2152

After years of fighting the "cancer" of free software, Microsoft has just taken over one of the main open source development platforms. On the offensive in this sector since Satya Nadella took over in 2014, the Windows and Office publisher has just announced the acquisition of GitHub for $7.5 billion (€6.4 billion). With the second largest market capitalization in the world ahead of Google, the giant can afford this highly strategic purchase. In the race between the "Tech" giants (Google, Amazon, IBM, Salesforce, etc.) to establish themselves as the leader in cloud computing, it is about who will offer the most tools and services to attract the maximum number of companies and developers to their platform. "The battle is focused on the idea that whoever attracts the most developers to their ecosystem will win the day," explains Frank Gens, an analyst for the research firm IDC. GitHub will enable Microsoft to consolidate and expand its relationships within this key community.”

## ###ARTICLE\_START### ID:2153

IT This is Microsoft's biggest deal since acquiring the professional social network LinkedIn in 2016. The group led by Satya Nadella is buying the collaborative coding platform GitHub, which is very popular with IT developers around the world, for $7.5 billion (€6.4 billion). The transaction, which should be finalized by the end of the year, is being carried out entirely in Microsoft shares. Little known to the general public but very well known to developers, GitHub brings together 28 million users, who work collaboratively on 85 million projects. Created in 2008, GitHub allows an independent developer or a company to publish software or share source code to submit it to other developers in order to improve it. Along with Facebook, Microsoft is already one of the largest contributors. This deal makes sense for Microsoft. The group is engaged in a battle with Amazon Web Services, the current leader in the cloud market, a segment that is experiencing very strong and rapid growth. The professional cloud business, through various cloud computing services for companies, is now at the heart of Microsoft's business. The Redmond firm needs to find all the ways to connect with developers and their employers, in order to offer them the best possible toolbox. GitHub could thus become an effective funnel towards the Microsoft Azure cloud and other Microsoft products. "We will do our best to give developers the means to design, build, innovate. We also want to accelerate the use of GitHub by enterprise developers and expand our tools and services to new audiences," summarized Satya Nadella. After having built its success on proprietary software (whose source code is not freely accessible) and having severely criticized free software (which can be modified and used for free) during these years, Microsoft has evolved its model and its position on the subject since the arrival of Satya Nadella in 2014. "Microsoft loves Linux" he declared shortly after taking office. Guarantee of independence For its part, GitHub Inc. had been in a delicate situation for some time. Its business model has been based since its creation on free hosting of open source projects and a paid service for private projects and businesses. In 2016, the company had recorded a loss of several tens of millions of dollars, for a turnover of 200 million. Since the departure of co-founder Chris Wanstrath in 2017, GitHub was also looking for a captain. Once the operation is completed, Nat Friedman, vice president of developer services, will take the operational reins. Microsoft management has insisted on the independence that the platform will maintain, a point that raises a lot of concern among current users. "On our commitment to open source, judge us by the actions we have taken in the recent past, our actions today and in the future," Satya Nadella asked the developers on whom the success of this operation depends.

## ###ARTICLE\_START### ID:2154

New York -- Software giant Microsoft Corp. said Monday it will pay $7.5 billion in stock to acquire GitHub, a platform for the programming community. GitHub lets software developers host and review each other's code. The San Francisco startup was founded in 2008 and has grown rapidly since announcing its first outside investment in 2012. It now has 27 million software developers worldwide who use its platform to share code and build businesses. GitHub's service is free for open-source projects, but some developers and businesses pay a monthly fee to access private code repositories and other services.

## ###ARTICLE\_START### ID:2155

1 Lock the browser Don't think you're safe by activating the "incognito" or "private browsing" mode of your web browser. This option simply deletes the history of pages visited and searches or even cookies, but only locally and after the session is over. The software will continue to transmit its information to websites and provide them with the data contained in cookies. The simplest solution is to refuse "third-party cookies" that track our online activities. It is generally enough to go to the preferences of the browser software and look for the option "block third-party cookies" in the advanced settings or those related to privacy. For greater security, you can adopt additional tools, starting with extensions for web browsers. The best known - Ghostery, Privacy Badger, Disconnect or NoScript - prevent websites from being too curious about their visitors and can even block portions of code more questionable than cookies. It is also possible to disable most of Google's advertising trackers by installing a module developed by its teams, to download from tools.google.com/dlpage/gaoptout. 2 Choose secure software The most popular Internet browsers do not sort between legitimate cookies and overly intrusive trackers. You can find out if your browser effectively protects you against tracking by running the test proposed by the Electronic Frontier Foundation on panopticlick.eff.org. Those who prefer not to install the extensions described above can adopt a more secure browser designed to block spyware programs. Like UR, for Windows and MacOS, created by the French start-up AdaptiveBee. Capable of distinguishing between good and bad cookies, it monitors suspicious behavior on visited websites and can be configured according to three levels of confidentiality, depending on whether you want to avoid compatibility problems or protect yourself as much as possible. Interesting alternative: Tor Browser. This free software, which is similar to Firefox, distributes the user's traffic across multiple relays around the world to cover their tracks. The sites visited cannot therefore know your IP address, your location, or the hardware you are using and are unable to track your browsing. While it is mainly used to access the Darknet, it is also effective for browsing the Web safely and anonymously. On mobile (Android and iOS), you can turn to Firefox Focus, which blocks both unwanted ads and tracking files programmed to follow users from site to site. 3 Change search engine To search the Internet serenely and anonymously without feeding the databases of the giants of the sector, you will have to use alternative services. Be careful, however. Among those that claim to guarantee the privacy and security of their users, some actually act as spyware. We will therefore choose recognized and efficient sites such as the French Qwant (also available for iOS and Android). This service encrypts queries so they cannot be intercepted, does not record cookies or history, and does not exploit any personal data. What's more, it provides results without seeking to favor certain sites over others. Other tools allow you to query Google, Bing, Yahoo or others, but anonymously, without recording IP addresses and bypassing tracking programs. This is the case, for example, of the German Fuckoffgoogle (https://search.fuckoffgoogle.net), of the Dutch StartPage (recommended by Edward Snowden), or of the American DuckDuckGo (which, however, depends on American regulations). 4 Connect anonymously By going through a relay called a "proxy", you can prevent websites from being too indiscreet. Among the various free services offered online, we prefer Hidester (https://hidester.com/fr/proxy/), which eliminates a quantity of traces more effectively than its competitors. Once a web address is entered in its search box, the visited site will ignore the visitor's IP address and geographic location, the device and software they use to browse, their connection speed and the social networks they are subscribed to.

## ###ARTICLE\_START### ID:2156

While personal data is the focus of all attention with the entry into force on May 25 of the General Data Protection Regulation (GDPR), the issue of metadata is still little discussed, even though it represents a major challenge. Metadata is "data about data. It provides information on the time and place of creation of the data, its author or its size. Transformed, qualified and sorted, it allows users to be profiled. When used well, it has great added value. In the field of transport, among others, it provides information on the frequency of trips and their destinations. In the health sector, it can indicate the mode and life expectancy of users. An irreplaceable marketing tool, it is also the source of great innovations. For example, the MyShake application can predict earthquakes by pooling information from motion sensors collected on smartphones. The collection and transformation of metadata is therefore absolutely necessary for the proper development of digital companies. However, few companies have grasped the pressing need to retain control over the metadata generated by their customers. The majority of them choose by default to leave access and total control to operating system manufacturers (OS), such as Google with Android. Arming ourselves to emancipate ourselves Today, it seems impossible to reverse the capture by GAFA (Google, Amazon, Facebook and Apple) of our metadata via the applications and operating systems of our smartphones and personal assistants, as these are so essential to us. On the other hand, to preserve the development of our companies, we still have the possibility of defending ourselves with regard to the capture carried out via the operating systems of devices for professional use. But we must act quickly because the American giants Google and Apple are already well established in the professional market. Since 2015, to facilitate day-to-day operations, La Poste has equipped all its postmen with the Facteo terminal, a smartphone running on Android. In 2016, Leroy Merlin and its teams announced that they were using Android terminals to optimize productivity and improve customer service. These tools allow Google, through its operating system, to capture professional metadata (times of use, amount of data exchanged, messages sent, directories, numbers, location, etc.). Reclassified, this information has high added value and can be resold... sometimes to the companies that originated it! In France and Europe, we certainly have every interest in continuing to work with Google and its open-source Android operating system, as it has been tested and improved by various leading companies in the sector. But if companies do not worry about the governance of their metadata, they expose their customers to the risk of this information being used for uncontrolled commercial purposes, which could be purchased by competitors. While the highly anticipated European GDPR addresses the issue of personal data protection, it somewhat neglects that of metadata. For its part, the National Commission for Information Technology and Civil Liberties (CNIL) remains very cautious on the issue and gives little credence to the phenomenon of concentration of our metadata in American hands. Surprisingly, it prohibits the cross-referencing of databases, but not metadata. However, it would be appropriate to take an interest in it. Faced with this major inadequacy in the information battle, the competent European institutions and companies must arm themselves. It seems essential that we agree on a project for the independence of metadata from GAFA. With unified rules and a common tax system, the inhabitants of the Old Continent could create new digital champions on their territory. The objective for companies: to generate investments on the French and European markets and free themselves from the stranglehold of GAFA! China has been able to produce its own web giants, the BATX (Baidu, Alibaba, Tencent, Xiaomi), which play almost on equal terms with GAFA. Thanks to its "home-grown" platforms, China maintains control over all metadata that transits through these solutions. I appeal to all my fellow high-tech and digital business leaders, as well as to European leaders and managers: today is the time to take ownership of the debate. Without collective awareness, we will remain the producers of a system destined to surpass us.

## ###ARTICLE\_START### ID:2157

Software is everywhere. You use it every day to communicate, work and entertain yourself. It is essential for running our businesses, for advanced research, for creating and disseminating knowledge and the arts. Our industries, our society, our culture, even our very lives depend on software, which is now an integral part of humanity's heritage. But this software, the real engine of digital transformation, does not fall from the sky: it is developed by human beings who write it in a form called source code, using programming languages. We, who develop this software, are therefore authors: the source codes of the software we create are covered by the same copyright that protects music, books or films. Therefore, the provisions on copyright concern us first and foremost, and we are very concerned about the proposals contained in the draft European directive reforming copyright currently being examined by the European Parliament and the Council. In particular, Article 13 of this draft directive introduces the obligation, for any platform allowing content to be shared, to set up automatic filters, similar to those that block videos on YouTube that reuse protected content, the stated objective being to prevent the dissemination of works without the authors' authorization, and thus guarantee their remuneration. Following on from the open letter to the Council of 26 April, bringing together 147 European organizations, which we supported, we would like today to alert MEPs and representatives of the Member States to the specific threats that this draft text poses directly to free software and, through it, to the entire software industry. Today, most software is built by reusing pre-existing components, developed and distributed on open collaborative development platforms. Just like Linux, which is at the heart of more than 80% of mobile phones, there are millions of software programs built by authors who have chosen to make them free software, which means that anyone can read, study, modify, have modified and redistribute their source codes, without restriction or special authorization. It is estimated that 80% to 90% of a modern computer application comes from this reuse, and the removal of each of these components can have unpredictable consequences: we saw this when, in 2016, the disappearance of eleven lines of source code broke millions of websites. Imposing automatic filters on these open collaborative development platforms would therefore threaten the current production processes of this software, and would have major impacts on the innovation of our industries and the competitiveness of our economies. Free software, also called open source, is indeed an essential technological base that allows us to develop most of the software that our society needs more quickly. And it is also a dynamic economic sector, which today represents a turnover of 4.5 billion euros in France, with more than 500 companies and 50,000 jobs. While we understand the concern of some players in the cultural industry who feel helpless in the face of the changes brought about by the digital revolution, it should be remembered that copyright concerns software authors as much as players in the cultural industry. This reform must therefore be developed in consultation with all of these players concerned by copyright, and not just those in the cultural industry. We therefore wish to warn of the threats that the current draft directive poses for software players, and therefore for society as a whole: this ranges from the obstacles to the development of new technologies, due to the blocking of access to text and data mining (art. 3), to the serious obstacles to collaborative development and the reuse of software that we have analyzed here in detail (art. 13). A total exclusion of software from the provisions of Article 13 and the lifting of all restrictions on text and data mining (Art. 3) appear necessary to us in order to avoid creating major collateral effects with this reform, designed above all for players in the cultural industry.

## ###ARTICLE\_START### ID:2158

It is a "collective and ephemeral artistic work" that will take shape next Friday evening in the Quartier des spectacles. A big bike ride that will transform into a traveling artistic event topped with a DJ set by KenLo at the Jardins Gamelin. The actors in this performance will be three hundred cyclist citizens equipped with a brilliant -- literally and figuratively -- small object called Agit POV, for "small bicycle object": the size of a deck of cards, it gets stuck in the spokes of a wheel and allows a word to be displayed in light in the wheel while rolling. Agit POV celebrates the meeting between two communities, those of cycling and digital arts, which the inventor of the device, professor at the School of Visual and Media Arts at UQAM Alexandre Castonguay, is delighted about. It all began with that memorable spring of 2012, the professor says. "The inspiration comes from the red square," symbol of the student strike. The simple little piece of felt worn by those who supported the protest, "a design project by students at UQAM, a branding success that was not used to sell stuff, but rather an idea, a vision of things. At the time, there was an urgency to speak out in the public space to face a, let's say, total control of what was happening in the information broadcast. My students told me: I can't even talk to my parents about it anymore because all they see on television is the car set on fire, the excesses..." Like many of his colleagues on the UQAM faculty, Castonguay had decided to act in the face of "the hold-up of the government in power, a stupid and mean opposition, a refusal to dialogue. We asked ourselves in assembly: what do we do if this continues?" We march. We act, by giving students the means to make themselves heard. "It was easy for painters and screen printers, who designed beautiful banners and superb posters. For my part, I wondered how to involve digital arts." An apostle of free software, Alexandre Castonguay, who also says he comes from the "Do it yourself" movement, quite connected to electronic communities, takes up an idea he had already worked with: the concept of retinal persistence, on which is based in particular the effect produced by 24 images scrolling per second in our brain. A concept that is quite simple, all in all, that he realized with the means at hand and the talent of his small team of co-inventors to create the first iteration of the Agit POV. He finds a small (free) software written by a fellow digital artist, which he adapts to his needs; the device's casing is attached to a row of twelve light-emitting diodes (LED lights, in several colors), activated by an electronic chip and powered by a battery, rechargeable thanks to its mini-USB port. A Wi-Fi hotspot is integrated into the Agit POV; when you connect to it using your smartphone, a page appears on the screen to allow you to write the desired word (or phrase, maximum 17 characters, including spaces) and choose the display color. "When you put it in the wheel, which describes a circle -- what I call a micro-revolution -- the cyclist then becomes the bearer of a message, deployed as if on a screen by this thin LED strip." To ensure that the word remains fixed in the wheel no matter how fast you pedal, the Agit POV uses an accelerometer "like those found in smartphones." Like a charm Six years and ten versions later, the Agit POV works like a charm. The first version left the laboratory shortly before the June 2012 truce, just in time for the last demonstrations. The first word Castonguay had him display was LHOOQ, a reference to the work of artist "and agitator" Marcel Duchamp -- it was actually on an automated bicycle wheel that was to be used for an artistic installation in a nod to Duchamp that the device was tested. Although the invention was little used during the Maple Spring, it continued to live on by bringing together different communities, and all over the world: Alexandre Castonguay gave workshops to show how to make them in Europe, Africa and Latin America, which in his eyes constitutes a form of democratization of the use of technologies. "Then, what appeals to me is the corollary between speaking out in the public space in relation to the culture of digital and sharing [software] where I come from. If you add that to the culture of cycling, all of a sudden, that's a lot of people meeting" thanks to the Agit POV "How do you build links between different subcultures, between other communities that are just as interested in social change? That's something I really care about," adds the professor. Riding your Agit POV won't just make you the star of the next Tour la nuit organized by the Go Vélo Montréal festival on June 1st. It will make you one of the artisans of this "poetico-political" event on May 25th; by registering on the Mouvements libres website to acquire your Agit POV, you submit the word that will appear on your mount; the poet and slam poet Queen K will offer a performance inspired by the words chosen by the participants.

## ###ARTICLE\_START### ID:2159

Some of them display the names of fruits, flowers or insects. The "bee", the first complementary local currency (MLC) launched in France, has been spreading since 2010 in Villeneuve-sur-Lot. The "radis" and the "sol violette" have respectively taken root in Ungersheim (Alsace) and in the Toulouse metropolitan area (Haute-Garonne). Born on the fertile ground of the social and solidarity economy (SSE) movements and supported by citizen groups or, more rarely, by communities, around forty local currencies are drawing a new economic map in France on a city scale. The "peach", introduced in Montreuil (Seine-Saint-Denis) four years ago, has been exchanged since May 12 in partner Parisian stores. It initially spread to several suburban towns (Bagnolet, Alfortville, etc.), before establishing itself in the capital. These currencies, which are complementary to the euro, are presented as tools for the reappropriation of the territorial economy by residents. Framed by the law of July 31, 2014, they promote local businesses, short circuits and social ties. The principle is the same everywhere: volunteers exchange euros for an equivalent amount of local notes. They can only spend them in partner stores, which will in turn use the currency at member suppliers. This system encourages favoring local artisans and producers, especially since a discount of 3% to 5% is planned if one wants to convert said currency back into euros. "Role of mobilization" Most of these initiatives also include an environmental objective in their statutes. This is the case of the "eusko", the largest French local currency, launched in the Basque Country in 2013 and which today has three thousand individual users and seven hundred professional partners. The payment method was initially intended to "relocalize the economy and develop the public use of the Basque language. In its 2018-2021 strategic plan, the Euskal Moneta association now focuses on "territorial development accelerating the ecological transition. And offers professional partners to take on "environmental challenges", such as, for example, better sorting waste or reducing their energy consumption. "This change was born from the awareness that States are moving too slowly in the ecological transition, explains Dante Edme-Sanjurjo, its co-president. Currencies have a mobilizing role to play in the territories. By favoring short circuits, they lead to a reduction in greenhouse gas emissions, and they can serve as levers for raising awareness." Most charters exclude, in fact, supermarket chains, which cannot guarantee the local origin of all their products. However, complementary currencies are not reserved for organic stores alone. "It would be reductive and counterproductive," says Etienne Bachelart, one of the administrators of the "stück" in Strasbourg. "The currency is more of a means of educating and encouraging change." In the Alsatian city, the approval to receive payments in stück also requires companies to make an environmental commitment. In practice, no sanctions are provided for, as each professional carries out their own self-assessment. Since joining, a grocery store has changed its refrigerator to consume less energy and another is studying switching to a renewable energy supplier. "Local currencies represent an interesting alternative to taxes and imposed standards," says Valérie Weber-Haddad, economist at the Environment and Energy Management Agency (Ademe) and co-author of a survey published in January 2017. Creation of social ties Some even serve as a "reward" for adopting more ecological behavior. In Strasbourg, residents of the Elithis Danube tower, the city's first positive-energy residential building, inaugurated in February 2018, receive stücks if they manage to spend less energy than expected. Motorists in Ayen (Corrèze) are encouraged to participate in the peer-to-peer carpooling scheme set up by the municipality using a local currency, the "y'aca". The passenger pays his driver in y'aca notes, who then uses them in the city's 22 shops. An innovative scheme that addresses the mobility problems of the area while reducing the footprint of private cars, and also creates social ties among residents. Because these initiatives are often recent and run by volunteers, their environmental impact remains "low and still difficult to measure", note the authors of the Ademe survey, who insist on the need to implement methodologies and evaluation tools. However, they "can be a relevant tool to raise awareness among stakeholders and direct their behaviors according to the environmental objectives that we are pursuing. The report also mentions the limits of a model that relies largely on the dynamism of volunteers. In Brest, Mona Houssais, the sole employee of the Heol association, is well aware of these difficulties. "To ensure the dissemination of the currency, you need a hard core of activists who in turn convert residents." With 1,100 members, including 200 regulars, and 13 partner stores, the "heol" currency is far from covering the city. "We had 400 members after the release of the documentary film Demain, in 2015, but the momentum quickly runs out of steam." For many observers, the support of institutions remains essential. Several communities subsidize the currency of their territory, but the administrative justice system refuses them the right to go further. On May 4, it suspended the agreement between the city of Bayonne and the Eusko, which provided for the possibility for the municipality to settle some of its expenses in local currency. The mayor of the city in the Pyrénées-Atlantiques, Jean-René Etchegaray, is considering a possible appeal to the Council of State. "Communities that wish to do so must be able to actively participate in the local monetary circuit, both by accepting the currency in payment for local public services and to settle part of their own expenses," demand 34 elected officials in a column, including the mayor of Grenoble, a city that already accepts payments in "cairn" for municipal services (libraries or museums). The move to digital is another lever for changing scale. The Basque Country is, here again, a model with its "Euskocart", which allows you to credit an account online and pay for your shopping. The association has developed free software tools so that others can use them and should open an approved training institute in the fall. A collective of local currencies (Montreuil, Lyon, Montauban, Toulouse, Grenoble, Strasbourg and Chambéry) has submitted a digital currency project as part of the call for citizen initiatives launched by Nicolas Hulot to "concretely combat climate change. The results of the consultation will be known in June.

## ###ARTICLE\_START### ID:2160

In the Basque Country, the automobile does not recognize borders. On the roads that connect Bayonne, in France, to San Sebastian, in Spain, traffic is uninterrupted and the absence of a customs post no longer surprises anyone. But the European dream ends with the car engine. For those who want to use public transport, the journey becomes complicated. The problems begin as soon as they consult the Internet, where the portals of the different operators ignore the connections of their close neighbors. Beyond Saint-Jean-de-Luz, the SNCF application no longer knows the train and advises travelers to use the road. On site, the difficulties continue. The vast majority of trains stop at the border, due to the gauge of the tracks which varies according to the operator: 1.40 m on the SNCF side, 1.60 m for the Spanish Renfe, 1 m for Euskotren, the Basque company. As for public coach and bus lines, things are not much better, this time because of the administrative limit. Under these conditions, it is not surprising that 90% of cross-border journeys are made by car, as shown by a study conducted by the Euroregion, a body dedicated to local cooperation, piloted since its creation in 2011 by elected officials from the three border regions: Nouvelle-Aquitaine in France, Euskadi and Navarre on the Spanish side. This observation gave rise to Transfermuga, an original system that is part of a dynamic that is both European and ecological. Launched by the Euroregion and its team of five employees, it aims to develop cross-border relations, while improving the public transport offer to reduce the influence of individual cars. The first battle is being fought on the passenger information front. The Transfermuga.eu web portal displays in four languages (French, Spanish, English and Basque) all the solutions available for crossing the border: plane, bus, train, bike, walking and even boat with the river shuttle that connects Hendaye to the historic city of Hondarribia, on the other side of the Bidasoa River. The site details the travel conditions with a "good deals" section and a page dedicated to consultation to share ideas. In just a few clicks, you can also compare, via a route calculator, the journey times of around ten operators according to the modes of transport, as well as bus fares. The originality of the project lies in its logic of openness and pooling of data, quite exemplary in a sector where tensions are numerous. The main challenge is to get public and private partners from countries with different histories and legal environments to work together. "In our country, in Spain, the regions' skills are stronger than in France. "It's not the same pace, the same budgets, and these differences often slow down projects that are nevertheless necessary for economic development," notes Miguel Angel Crespo, director of regional planning for the province of Guipuzkoa, on the Spanish side. "We played the role of a public platform that provides the impetus, connects everyone and produces the tools, with each partner then choosing how they want to collaborate," emphasizes Julien de Labaca, the engineer specializing in transport at the Euroregion. The creation of a "common" for cross-border transport owes a lot to this enthusiast of free software and open data. Transfermuga's tools are open source, the journeys are displayed on OpenStreetMap, the collaborative mapping software. The partners agree to open their data under the license of their choice if they want to have access to the route calculator. In exchange, they can display the comparator on their site. On the ground, the information has also improved. At Hendaye station, this April morning, a few tourists are sheltering from the pouring rain not far from an electronic sign worthy of a Parisian station. It displays the timetables for French trains, the Basque metro and cross-border buses. Other border areas interested The digital system is extended by physical transformations. For the inhabitants of Hendaye and Irun, two cities that face each other on either side of the border, a new bus line, Hegobus, has been connecting the city centres for a year and a half. Six thousand Spaniards live in Hendaye, where rents are cheaper. For Mathieu Bergé (Génération.s), regional councillor for Nouvelle Aquitaine sitting on the Euroregion, "Europe is not built in the capitals but on the borders. We must be able to propose ecological cross-border public policies. Cooperation also has its limits, and other projects are waiting in the pipeline. Five hundred metres from Hendaye station, beyond the bridge that marks the border, Irun international station offers coach lines to Madrid or Barcelona, but a direct connection with France is struggling to see the light of day. A project to link Bayonne to San Sebastian by coach is under consideration. "The pooling of data is only a first step. The aim is to create transport that does not start from the border but crosses it," explains Miguel Angel Crespo. Partly financed by European funds, Transfermuga, a laboratory for cross-border citizenship, could interest other players in Europe, particularly the border area between Serbia and Croatia or the metropolis of Lille.

## ###ARTICLE\_START### ID:2161

Listing third places in the Hauts-de-France region or bulk product stores labeled by the Zero Waste association in the Ile-de-France region in one click is now possible with Communecter. The platform, first deployed in Reunion, Brittany, Toulouse, the Lille metropolitan area, but also in Madagascar, Germany and Belgium, was created in 2016 by four developers and graphic designers from Reunion. Brought together within the Open Atlas association, they want to "transform the way of living and working in a territory. The tool, designed in free software, works like a Wikipedia of local skills. Its management is collaborative, public data is open. Personal data is not monetized. Wherever they are, local actors (associations, companies, communities or individuals) can register by indicating their fields of activity. A map and a calendar allow you to visualize the proposals. "Ultimately, we want to create a "common" of skills across all territories to drive collaborations," says Jérôme Gontier, one of the volunteers behind the project. More than just a directory, the project aims to become a social network to develop collective action. New modules still under construction will offer citizen participation tools, online general meetings, and a virtual "marketplace" to share needs and resources. Call for crowdfunding In the field of local citizenship, where many solutions have emerged in recent years, Communecter wants to hold a special place, being both a "civic tech" tool for use by communities (with a subscription) and a platform made available (free of charge) to associations, businesses and individuals. "We talk a lot about smart territories today, but the impetus generally comes from institutions. For us, it is the people who live there who will provide solutions," notes Jérôme Gontier. The association, which had launched an appeal for crowdfunding, collected almost half of the 500,000 euros needed to develop the various modules.

## ###ARTICLE\_START### ID:2162

Le Petit Robert and Le Petit Larousse unveiled their 2019 editions in France on Monday. And with them, the batch of words that have just landed in their pages, thus made official. This year, which words from our region are making their mark? There are Quebecisms. And there are Quebecers. In Le Petit Robert nouveau, columnist for Le Devoir Louis Hamelin is now included in the list of proper nouns, as the very sober "Canadian [Quebec] writer", among his literary colleagues Jo Nesbo, Sylvain Tesson and Nobel Prize winner Kazuo Ishiguro, also inducted this year. Anne Dorval also enters Le Robert, as a "Canadian [Quebec] actress". In Le Petit Larousse, director Denis Villeneuve and crime writer Louise Penny are moving in, among the 50 new proper nouns -- out of a total of 28,000. Quebecisms? It took some rowing to find some on Monday, as the two dictionaries did not see fit to circulate the necessary information to their Quebec distributors before the announcement. But now "écocentre" for "sorting center", "circulaire" in the sense of "prospectus", and the expressions "prendre une brosse" and "en prendre pour son rhume" are included. "Attrape-rêve" also makes its debut, as well as the surprising "accorderie: network for exchanging services between residents of the same neighborhood". And we now accept, as the feminine form of "maire", "mairesse". Guess who brought about this change? In the Larousse, "gougounes" and "pets-de-soeur" are among the 150 new words and expressions. More broadly, the new words in the Petit Robert reflect social discussions and the ups and downs of recent news. Many words revolve around themes of feminism and gender issues. The expressions "violence against women", "queer", "trans", "mental load", "paternity leave", "inclusive writing", "intersex", and even "birth name", to be used rather than its ancestor "maiden name", are among those that we have seen widely circulated on this side of the Atlantic. "Frotteur" causes controversy The definition of "frotteur: a person, often a man, who seeks erotic contact in the promiscuity of public transport" has attracted some feminist criticism on Twitter, Le Monde pointed out, by naming as "erotic" what is an aggression for others. The Robert, in the same media, quickly acknowledged that the definition "of this new meaning is too implicit" and promised to review it soon. Political terms come a lot from the United States -- how to escape "alternative facts", the "wall of shame" and the "anti-system"? -- and from France. The eleventh presidential election in France leaves traces in the pages of the Robert, which include "dégagisme: rejection of the political class in place, particularly during an election" and the expression "societal issues". Terrorism also leaves its mark in black ink, and the expression "crazy truck" becomes official, as well as "apology for terrorism". On the new media side, a surprising "ransomware: which demands money in exchange for the restitution of data" slips in among the "rageux", "hacktivism", "e-sport", "chatbot" and "open source". And "autocompletion", this "functionality that suggests words to the user based on the first characters that he has entered", and which sometimes makes you say what you absolutely did not intend to say. Spirit of the times? Environmental issues bring with them "animalism", "ecomaterials", "bioplastic" and the strange "ecolabel: to attribute an ecolabel to a product". Only in France, we would say. True that "globish", this "English with a limited vocabulary and elementary syntax, used as a vehicular language", is also integrated into the Robert. Also now found in Le Robert are "fashionista", as a synonym for "modeux", "taïkonaute", "gentrifier", "grossophobie", "teriyaki" and "superaliment".

## ###ARTICLE\_START### ID:2163

For a few weeks now, Damien has been seeing alarming news in the media: important people are announcing that they are going to leave social networks. All of them are listed, spied on, exposed, geolocated, exploited, manipulated: enough is enough, they swear that they are going to start weaning themselves off Twitter, stop posting pictures of their dog on Instagram, boycott Snapchat, LinkedIn... Some even want to erase their data from Facebook, good luck friends, no one knows how to do it, in reality it is probably impossible. We can make ourselves invisible to other users, but Facebook keeps everything, for eternity, in data centers as big as ocean liners, hidden in the forests of Oregon and the steppes of Lapland. Is this lack of love for social networks becoming a trend? Could it affect the Internet business? Damien is a specialist in the commercial Internet: targeted advertising, viral marketing, native advertising, positive or negative buzz production, coaching YouTubers who want to become professionals... At first glance, there is reason to be concerned: even his friend Clément, a fairly well-known web designer in Paris, is outraged. He wants to discuss it with Damien. Easy, they are permanently connected on Facebook Messenger Audio: "Do you realize, those bastards at Facebook, they sold my data to the English to help Trump get elected! - Have you become American, Clément? - But maybe they do the same in Europe, they influence us to vote for the right... - Ah, you vote now, that's good. Since when? - Yes, I know, you're right, I'm going to have to register on the lists. But hey, Facebook's dirty tricks are serious, right? - Very. So are you going to stop Facebook? - Uh, there, you're catching me a little off guard. » Right now, Clément is working on a campaign to promote fashion videos shot in selfies by high school students: "They show themselves showing off their new pair of Converse, and we pay them, they are the best influencers." Their works are first posted on an independent platform, but the big buzz starts when they arrive on Facebook: "I have to monitor everything, brands demand stats to evaluate their return on investment... - OK, Clément, I understand your dilemma. But for your personal life, you can stop... - My new girlfriend Emilie is on vacation in Courchevel with her old friends. (Everyone knows, she posts crazy photos on Facebook in the middle of the night, she seems to be having a great time.) So, there too, I have to monitor what's going on a bit... - Reassure me, Emilie isn't threatening to quit Facebook? - No, she doesn't follow politics too much. But for my part, if I stop going on Facebook, she won't know what's happening to me and, as you know, out of sight... Even my mother goes on Facebook to check up on me. There's also my ex and our daughter, I didn't dare refuse them as friends and, as a result, they check to see if I'm on vacation when I'm late with my child support. When I think about it, a vacation without Facebook, the dream... - If you stop Facebook, they'll think you're dead. " Damien does a quick check. He realizes that the boycott supporters are often older gentlemen who have always hated the Internet, even if they learned to use it to promote themselves and give their expert opinion on anything. When Facebook and Twitter appeared, they rushed to it, spurred on by the fear of being seen as old-timers if they didn't show themselves there. They have proclaimed themselves complete addicts, and cry scandal if they are disconnected for an hour because they are crossing a dead zone in the Cévennes. But, in truth, for them, all this is a burden. They are looking for an honorable way out. That said, their departure would not upset the major balances: according to the latest news, for France, 33 million Facebook accounts, plus 16 million for Instagram, a subsidiary of Facebook whose data is stored and processed on the same servers, and 13 million for WhatsApp, another subsidiary of Facebook... There is room. It seems that some celebrities, after being "trolled", end up fleeing social networks, but most come back on the sly, otherwise they feel like they cease to exist. Damien has also spotted former defrocked start-upers who are abandoning Facebook: "They are not leaving social networks, they are going to take refuge on confidential and complicated platforms based on free software, to form insider clubs. - Damien making fun of the precursors, that's new... Do they scare you? - In any case, dear recalcitrants, remember that Facebook can track you after you close your account, and even if you never had an account." (All you have to do is be listed in a user's contacts or connect to a Facebook partner merchant site.) Second check, a few days later: the most fervent supporters of the boycott are still on Facebook. In addition to their usual chatter, they spend hours sharing and commenting on articles criticizing social networks. Business as usual. In rural France, the risks of desertion are minimal. Damien has a cousin, Jennifer, who is from Nièvre. For her accounting studies, she is doing an internship in Lyon where she doesn't know anyone. She doesn't need to protect her private life, because she doesn't have one and she counts on social media to have one, and to make it known. Mark Zuckerberg's troubles with the United States Senate won't dissuade her from posting a photo of her new haircut on Instagram, or from doing a search to locate available boys in her neighborhood. The same goes for Jason, Clément's nephew, a boarder at an agricultural high school, cloistered six days a week. He logs on to Facebook from time to time, posts images on Instagram three times a day and hosts a rural rap channel on YouTube, which has fans in eight countries. Social media are his only windows on the world. Damien is categorical: "If your nephew were to be cut off from social media, he would run away. - What if I tell him that his data is being exploited without his knowledge by rotten politicians? - He already suspects it, young people always expect the worst when they deal with old people, and they've taken it on board." When Jennifer and Jason look for work, HR will check their Facebook pages before calling them in for an interview. Damien sends his cousin a pro tip: "If you've posted trashy photos and nonsense, it could count against you, but it doesn't matter. On the other hand, imagine that you don't have a Facebook account, the recruiter would ask himself real questions: has she never heard of the Internet? Is there no electricity at home? Has she just been released from prison? Is she radicalized and living in hiding? He would put you in the category of strong-willed, rebels. Undesirable in the workplace. » Clément, for his part, is a little anxious about this new social obligation of complete traceability: "When the cops investigate a crime, they check the phones that were in the area at the fateful hour, but they will also be interested in people who turned off their phones before the crime and turned them back on afterwards. The simple fact of being offline for a few minutes makes you suspicious, do you like that, Damien? Excuse me for not jumping for joy if I end up in police custody because I wanted to walk around without being disturbed." In fact, you don't have to be suspicious to be called to order in the event of a breach: "The other day, Emilie was off-piste skiing and got lost. When the rescuers found her, they yelled at her because she didn't have a GPS tracker. They told her that next time, they wouldn't bother. In fact, it's true, if you're offline, you're dead." On that side, Damien is not taking any risks. He also notes that popular enthusiasm increases with each innovation, for example Facebook Live, the live video broadcasting service. The other day, over New York, the engine of a passenger plane exploded, the fragments smashed a window and killed a passenger. Immediately, another passenger, Marty Martinez, head of a marketing agency in Dallas, made a courageous decision. He slipped his credit card into the reader screwed to his seat, paid eight dollars to access the plane's Wi-Fi, then he filmed the scene and broadcast the images on Facebook Live. He could have gone to see if the affected passenger needed help, or prayed for everyone's salvation, but since the advent of social networks, reflexes have changed. The next day, responsible citizens posted comments on Facebook to express their outrage at Marty Martinez's voyeurism, but first, they watched his video replay; you have to get informed before judging. The most severe regretted that he wasn't killed in the explosion. Clément feels a little weary: "Unfortunately, the plane didn't crash, the Facebook Live viewers didn't have the chance to see the panicked passengers, torn to pieces, burned alive... That will be for next time." Damien, more serene, tries to imagine the fabulous audience score of a crash sequence seen from inside the plane: "In your opinion, Clément, what kind of ad could we stick before this video? - Don't worry, Facebook's algorithms will decide based on each profile, as always."

## ###ARTICLE\_START### ID:2164

Berlin special correspondent - Berlin, Kreuzberg district. On the quay along the Landwehr canal, the former Umspannwerk electrical station, a vast brick building dominating the district, houses a dozen small businesses, a chic restaurant and a cocktail bar. The building is partly empty, but that will not last: Google, which already has offices in Hamburg, Munich and another Berlin district, has rented a 3,000 m2 wing to set up a "campus", a place dedicated to meetings, events and professional training in the digital sector. Normally, the quay is very quiet, but on this spring evening, the din is deafening. This April 6, like every first Friday of the month, a hundred demonstrators brought all sorts of utensils (drums, pots, trumpets, etc.) to protest, in a festive and noisy way, against the arrival of the American giant. The unauthorized demonstration was announced on the Web, and by posters added to the graffiti and banners hostile to Google adorning the walls, shop windows, windows and inside bars and restaurants. However, on the surface, everything had started well here for Google... At the end of 2016, the American group announced its intention to set up a campus, like those it already has in other capitals (Madrid, London, Warsaw, Tel Aviv, Seoul, etc.). The project will be managed by Google for Entrepreneurs, a non-profit department set up to help start-up creators. Its manager, Rowan Barnett, a Briton living in Berlin, insists on the disinterested aspect of the approach: "For us, a campus represents an expense, not a profit center. The campus will support Berlin start-ups without taking control of them. It will have a maximum of ten employees, our presence will not disrupt the life of the neighborhood. » At most, he acknowledges that by developing the digital economy, Google is promoting its long-term interests. Kreuzberg seemed a natural choice: a multicultural and popular area, popular with artists and intellectuals. While remaining a bastion of the alternative and ecological left, it is already home to many high-tech start-ups. From the outset, the project received the support of the social-democratic mayor, Michael Müller, the majority of local elected officials and Berlin Partner, the public agency responsible for attracting investors, which dreams of making its city the "German Silicon Valley". The arrival of the campus is also good news for start-ups such as Yeay, an amateur video platform focused on promoting fashion items for teenagers, whose offices are 400 meters from Umspannwerk. Its boss, Melanie Mohr, is enthusiastic: "The people at Google explained their project to us, their campus will be useful to us. I also believe that they have understood the spirit of Kreuzberg, they will know how to integrate." Stronghold of free Internet activists Behind its attractive image, Kreuzberg is also a neighborhood in pain, crossed by a series of conflicts. Thus, the first opponents were the tenants' associations, fighting against "gentrification" - buyout of buildings by speculators, rent increases, evictions of modest families, closure of local businesses replaced by high-end stores... The association Bizim Kiez ("our", in Turkish, "neighborhood", in German) was founded in 2015 to prevent the closure of a small grocery store. Since then, it has carried out several similar operations, with varying success. Faced with Google, it allied itself with the GloReiche group, originally created to defend a pastry shop, and Lause Bleibt, a nebula of associations and NGOs. Their slogan: "Google is not a good neighbor!" » Bizim Kiez co-founder Konstantin (the people cited whose last name is not given wished to remain anonymous), 31, a student and employee of a company that helps people with addictions, was chosen as the alliance's spokesperson: "Google did not choose Kreuzberg by chance, they want to capture our creativity and our spirit of innovation to confiscate them for their own benefit. But they underestimated our capacity for organization and resistance. Even if they succeed in settling in, we will make their lives impossible, we will ruin their image." The associations are increasing the number of "anti-Google meetings. From time to time, they rely on anti-eviction groups, specialists in occupations and sit-ins, and on parents of pupils from self-managed nursery schools. Some expatriates who love Kreuzberg are joining the movement. A Texan who recently arrived, who calls herself "Prismaven", is an almost full-time activist alongside them: "We must do everything to ensure that Berlin does not suffer the fate of San Francisco, which has lost its soul because of the new rich of Silicon Valley." The same goes for Cyrille, a Parisian environmentalist who is staying here for a few months. He says he is "impressed" by the "militant network that structures this neighborhood": "It's almost an urban "ZAD", with a unique way of life." In a few years, Berlin has become the stronghold of American and European activists for the free Internet, geeks and hackers more or less close to the NGO WikiLeaks, the whistleblower Edward Snowden and the Chaos Computer Club, the large association of German computer hackers. For them, Google is the absolute enemy: by collecting and then cross-referencing the data of billions of users with its applications, it creates, according to them, a complete surveillance society; it helps the American intelligence services; he censors the content of his YouTube subsidiary; he is preparing a nightmarish future based on algorithmic governance and the fusion of man and machine; and, to top it all off, he is a champion of tax evasion. Thanks to their expertise, libertarian geeks are attacking him on his home turf, the Internet. A., a Frenchman living in Kreuzberg, is trying to give a global dimension to the battle: "I want to encourage residents to look beyond the problem of gentrification and to think about the role of Google in society, to make the link between the local and the global." After years of preaching in the wilderness, libertarian activists believe that a breach is opening up, because the image of the Internet giants is changing in public opinion: they are perceived less as forces of innovation and liberation, and more as "classic" multinationals. With about twenty volunteers recruited in Kreuzberg and on the Internet, A. created a collaborative site with the explicit title, "Fuck off Google", which established itself as the reference media for centralizing information on the campaign. For his part, Claudio, an Italian computer scientist living in Berlin, launched a sniper operation: "I listed the websites of SMEs and businesses close to Umspannwerk, I analyzed them and I made a list of those who use Google software." He will suggest that they replace them with free software, equipped with similar functions: "The idea is to attack Google where it hurts, its business model. » « Surveillance and social control » In addition, the traditional far left is taking advantage of the movement to conduct a general critique of digital companies: extreme precariousness, low wages, repeated internships, infernal pace... An artistic collective called "Take the Exit" is posting humorous posters on the walls of Kreuzberg, encouraging start-up employees to resign in order to find a better life. Alex and Janus, two 26-year-old students, activists of the leftist group Theorie, Organisation, Praxis (TOP), have understood the strategic interest of merging into local struggles: "From now on, they assure us, our priority will be the battle against the new digital capitalism." They are particularly critical of major smart city projects, which aim to remodel cities to make them hyperconnected and hypersecure digital cities: "Smart cities will not create more equality or freedom, only more surveillance and social control. » Note that Google already has a subsidiary called "Sidewalk Labs", which develops ambitious urban planning projects. In Kreuzberg, TOP is trying to be constructive, by proposing a "counter-campus": "In 2017, a cultural center, located very close to Umspannwerk, was evicted and had to close. We are asking that it move into the renovated building in place of Google." Meanwhile, in Umspannwerk, the work ordered by Google is progressing. The site manager explains that the campus will have three levels, including a mezzanine, and that it will be superb, comfortable and ultra-modern. According to him, his teams will have finished by the end of July, for a public opening in September. Unless the neighborhood troublemakers come and spoil the party.

## ###ARTICLE\_START### ID:2165

National Bank has decided to test the possibilities of blockchain technology, which is gaining increasing interest in the financial industry, by conducting a concrete simulation alongside a traditional bond issue. This parallel simulation, which aims to assess the limits and potential advantages of blockchain as well as the impact on the role of the various market players, is being carried out on the back of a US$150 million bond that will mature in a year. The test will allow us to "understand and test the technology" in addition to identifying legal and accounting issues, National Bank President Louis Vachon told Le Devoir on the sidelines of the shareholders' meeting held in Drummondville on Friday. "Over the next 12 months, we're going to see if there are cost, efficiency and speed advantages over traditional technology." In anything related to blockchain, Vachon said, "there's been a lot of discussion and theory, but relatively little practice." U.S. firms The simulation is based on the use of an application designed by the bank JP Morgan on "Quorum," described as an "open-source variant of the Ethereum blockchain." The institutions that invested in the bond issue are Goldman Sachs, Pfizer and California-based Western Asset. Commonly known as blockchain, blockchain is a decentralized, incorruptible ledger of all transactions, of which all participants have a copy. The financial industry sees something very promising in this: the World Economic Forum estimated in 2016 that the chain could become the heart of finance and even "lead to lower fees, better monitoring and preparation against financial bubbles." As for the possible concrete benefits that the blockchain could provide, there are "avenues, but not answers," said Louis Vachon. For example, if the technology "works as we hope," the advantage for a client is that they would no longer have to wait two days for the settlement of the sale of a bond, because "we would be able to settle it in less than 24 hours." National Bank believes that this is the first transaction involving a North American financial institution and one of the first in the world involving the presence of several investors. The simulation is part of National Bank's efforts to explore new technological territories, a strategy that leads it to work on artificial intelligence in particular. In an interview with Le Soleil at the end of March, Mr. Vachon said that the institution spends $750 million annually on technology, $400 million on maintenance and the rest on new projects. Global issues Elsewhere in the world, stock market operators have begun to leverage blockchain to build new securities platforms. The R3 consortium, which works with dozens of major financial institutions, technology companies, associations and regulatory authorities, is exploring ways to integrate blockchain into the business world. The rating agency Moody's recently said that the potential of blockchain would not only speed up transactions and promote transparency, but could also erode the ecosystem of fees and commissions. If this were to happen, Moody's added, Switzerland would be particularly at risk, but so would the banking sectors in Canada, Israel and Italy.

## ###ARTICLE\_START### ID:2166

A succession of half-absurd, half-poetic ideas. The Twitter account "Elon Musk is bored" ("Bored Elon Musk") may be a parody, but it reflects the hyperactivity of the boss of Space X and Tesla, who still seems to have free time left over from the conquest of Mars and the widespread use of electric cars. In recent years, the forty-year-old has launched into solar energy, the development of a hyper-fast levitating train and the drilling of low-cost tunnels. As always with Elon Musk, the same questions arise. Are we dealing with a techno visionary who is also a leading entrepreneur? Or is the man spreading himself too thin on oversold or unrealizable projects? Solar City This photovoltaic solar panel company was created in 2006 by brothers Lyndon and Peter Rive, also cousins of Elon Musk. The latter, for his part, is one of the first investors in Solar City, which over the years has become the leading installer of solar panels in the United States. At the end of 2016, the company was bought by Tesla for $2.6 billion. Criticized for this costly acquisition, Musk defends his strategy aimed at setting up a virtuous ecosystem (production of renewable energy and development of the electric car). Hyperloop The idea seems to come out of science fiction books written over a century ago. In 2013, Elon Musk presented this project of capsules of 20 to 40 passengers propelled into levitation in very low pressure steel tubes, at a speed of 1,200 km/h. Objective of the Hyperloop: to connect Los Angeles to San Francisco (600 kilometers) in thirty minutes. For Musk, it is nothing less than creating a "fifth mode of transport" for journeys of less than 1,500 kilometres, faster than the train, less subject to the vagaries of the weather than the plane. The first plans are open source. Since then, several start-ups have launched their experiments and raised several hundred million euros for projects in North America, Asia and Europe. The road is still long. The fastest prototype only reached a speed of 387 km/h on a 500-metre test track. Boring Company A play on words between boring and to bore, the company was born in 2016 when Elon Musk was stuck in traffic jams in Los Angeles. "It drives me crazy," he tweeted, imagining drilling tunnels under the Californian megalopolis and having vehicles circulate at 200 km/h on an automated platform. This "hobby," which reportedly only takes up "2% to 3%" of his time, is becoming more and more serious. The company is a finalist in a call for tenders to create a high-speed line between Chicago airport and the city center. Basically, Musk has evolved. Initially favoring tunnels open to cars, he now favors public transportation. And to ensure publicity and financing for his new offspring, the entrepreneur recently went so far as to market 20,000 low-power flamethrowers, priced at $500 each. The result: stock sold out in a few days and $10 million raised.

## ###ARTICLE\_START### ID:2167

China would therefore be changing its place in the globalization chain: it is moving upmarket through technological and scientific advances, abandoning the export of low-tech products. Hence the interest in looking at the case of the United States, which, in the second half of the 19th century, moved from an economic relationship of colonial periphery with Europe exporting raw materials and importing manufactured products to a relationship of equals, then of a dominant economy. In 1913, just before the First World War, American exports comprised 50% manufactured products, compared to only 20% in 1890... There is no shortage of explanations: a huge internal market, the influx of European capital, technical and financial inventiveness capable of transforming abundant local resources (oil, coal, ore, wheat, meat) rather than exporting them... But other countries then presented the same characteristics: Brazil, Argentina, Russia. The "manifest destiny" of the United States would therefore be due to sociocultural factors, argued liberal economists: the spirit of enterprise, free competition on the market, scientific rationalism, legal security of property, non-intervention of the State erected as recipes for development for the entire world. The reverse of this beautiful story is the Marxist critique of the same phenomenon: the price to pay is the crushing of the workers' movement, the genocide of the indigenous people, the pillaging of natural resources, the corruption of politics, the reign of greed erected as the flaws of imperialism... Contested patents Stefan Link, a researcher at Dartmouth College (New Hampshire) and a specialist in Fordism, has chosen a historian's approach to understand a place and a moment in this American transformation: he works on the first steps of the Ford company in Detroit (Michigan), at the turn of the 19th and 20th centuries. The firm was born in a territory where hundreds of small mechanical workshops flourished. They manufactured all kinds of agricultural machinery for the huge Wisconsin farms in search of productivity. The patents that Henry Ford filed were contested, not without reason, since they were often taken from European technical journals, which everyone copied at the time: it was the "open source" of the time! But the industrialist knew how to seduce local politicians with his promise to have his automobiles crisscross the streets of Detroit; the judges gave him a monopoly on his processes. The workers he recruited were often from German immigration, which provided abundantly skilled workers and engineers seduced by the technological modernity of the project. They formed a technical community where know-how circulated internally. Taylorization would only come later. The social conflicts, then numerous in the region, allowed them to obtain improved wages and working conditions, sometimes with the support of elected officials when they wanted to preserve the tranquility of their constituencies against social tensions. Municipalities also encourage the establishment of a particular company through taxes or regulations, or on the contrary dissuade their competitors by the same means. Political reading We are far here from the principles of the free market, and even from the definition of "good" institutions promoting development or growth. We are rather dealing with configurations that differ from one locality to another, changing over time and reversible according to the current debates and the issues of all the actors concerned. It is not a question of denying the "general laws" of the economy, but of recombining their effects in the space and time of history, in short of making a truly political reading of them. Because this is how economic powers are born.

## ###ARTICLE\_START### ID:2168

Fifty years after May 68, it is no longer paving stones that are sent to make oneself heard, but volleys of hashtags, beveled on an Azerty keyboard. At the heart of this cyber-activist turmoil, not a week goes by without a new cause, attached to its hashtag, coming to shake up social networks. Recently, in addition to the famous #balancetonporc and the very fashionable #deletefacebook, which calls for leaving Mark Zuckerberg's platform, the hashtag #mosquemetoo appeared. Launched on February 6 by the American-Egyptian writer and feminist activist Mona Eltahawy, it invites Muslim women to denounce the harassing behaviors that they may have suffered during a pilgrimage or within the confines of a place of worship. “I told what happened to me during the hajj [pilgrimage to Mecca] in 1982 when I was 15, in the hope that it would help Muslim women break the silence and taboo surrounding their experience of harassment or assault,” wrote the author of the book Foulards et Hymens (Belfond, 2015) on Twitter. It was to this same Mona Eltahawy that we owe, a few days later, #ibeatmyassaulter, a call not only to denounce but also to outright beat up men who attempt sexual assault. These actions are part of a new form of activism that is grouped, depending on the case, under the name of “hashtivism” or hashtag activism. “It was with the ‘Arab Spring’ that we saw this type of movement appear for the first time. "Before, mobilization took place through SMS chains," recalls CNRS researcher Gérôme Truc, author of Sidérations. Une sociologie des attentats (PUF, 2016). Launched in August 2007 by Chris Messina, a designer and lawyer specializing in free software, the hashtag, composed of the pound sign # (the hash) associated with one or more keywords (the tag), saw its use spread at the end of the 2000s. With this indexing tool, the figure of the hashtivist emerged. "In the pre-Internet era, you had to have access to the media to make your voice heard. Today, everyone has the means to speak out," emphasizes researcher Romain Badouard, author of Désenchantement de l'Internet. Désinformation, rumeur et propagande (FYP Editions, 2017). One of the main strengths of the hashtag is that it can bring out a new issue, which is also true of online petitions. From the moment we reach a certain threshold of messages, journalists will give an echo to these emerging causes." Allowing to materialize in real time affinity logics, this X-ray of the social body can nevertheless prove misleading. "Using a hashtag does not mean that we adhere to it, qualifies Romain Badouard. Most of the people who relayed #jesuiskouachi were against it. In addition, today, there is a massive use of bots to spread certain hashtags, as during the last American election campaign, which distorts the game." An elementary particle of a world innervated by big data, the hashtivist is therefore not a simple activist who would have swapped his compilation of Zebda and his megaphone for a high-speed connection, but a figure with complex expressiveness. "Those who do this do not necessarily think of themselves as activists," specifies sociologist Fred Pailler, who worked on the hashtags #manifpourtous and #mariagepourtous. Wielding an aggregative tool for shaping social repression, the hashtivist participates in the viral emergence of an emotion that, precisely because it is not admitted into the sphere of dominant discourse, is still only a conviction in the making. "It is thanks to Twitter that we have been able to see the global and massive nature of harassment. #metoo and #balancetonporc have shown that, actress or barmaid, we all share the same experience," summarizes Anne-Cécile Mailfert, president of the Fondation des femmes. Whether his awareness of commitment is still in limbo or in the process of maturing, the hashtivist, if he wants to mobilize effectively around him, will first have to find a unifying hashtag. This will generally be structured around a verb expressing a protest, an affiliation, a denial, a call to action: #jesuischarlie, #blacklivesmatter, #balancetonporc, #muslimsarenotterrorists, #occupy-wallstreet... "A hashtag is a slogan: it works when it is short, effective and a bit catch-all. Like #notaffraid after the London attacks, which managed to capture the spirit of the moment," explains sociologist Gérôme Truc. Many famous hashtags have also been conceptualized by communication professionals, such as #jesuischarlie, which we owe to the artistic director of Stylist magazine, Joachim Roncin. "There is no fundamental difference between a militant hashtag and an advertising slogan. Both always express an emotion that invites me to identify with others because I have the same values as them, deciphers Jean-Charles Davin, creative director at TBWA/Corporate. In the same way, Nike, with its slogan "Just do it", had managed to encapsulate, well before hashtags, a value of commitment, of combativeness. "In this concern for dominant advertising efficiency, # rendezvousdemainplacedelabastilleavecmerguezetsloganspourprotestercontrelareformedelasncf will be less effective than the current, and very visible, #jesoutienslagrèvedescheminots, often associated with #jenesuispasunmoutonenmarche. "When we launched the hashtag #wetoo with the filmmaker Michel Hazanavicius, we didn't call on spin doctors," says the essayist Raphaël Glucksmann. I think that in this area there is nothing better than spontaneity. We just wanted to make it clear in a striking way that we were supporting the cause of women. Conversely, it is true that the hashtag, by its format, limits thinking and does not allow for a complex approach." The impact of #wetoo? For the moment, it is rather vague. A common feature of many campaigns, these opaque, even non-existent, repercussions lead some critical observers to say that hashtagism is ultimately just "slacktivism" (a contraction of slack, "soft, relaxed", and activism), a form of lazy militancy with minimal involvement. "This accusation is a basic way to delegitimize these movements," contests sociologist Fred Pailler. Doesn't this "couch Guevarism" serve, after all, to flatter the good conscience of those who practice it at little cost? "It's a relatively unrestrictive form of engagement, with the advantage of reaching low-politicized population groups," analyzes information and communication science researcher Romain Badouard. "But it's also, conversely, a form of push-button democracy, where a click will absolve you from carrying out other types of actions at the same time. It encourages petty indignation, over anything and everything, which levels the causes and risks leading, in the long term, to militant apathy." This volatility of causes that characterizes hashtivism is simply dizzying. Who remembers that in 2015, with #tousaubistrot, the French transformed themselves into happy hour Jean Moulin for a few weeks? Who still remembers the absurd #icebucketchallenge challenge of emptying a bucket of ice over your head to fight amyotrophic lateral sclerosis? Ephemeral and dispersed, hashtivism is also deeply plastic: over the months, the #jesuis proposition has thus come to be attached to a whole bunch of issues, giving for example #jesuisphilou, in support of an Internet user who makes sports GIFs whose account had been closed by Twitter for questions of television rights and has since been reopened. #balancetonporc has also generated many hybridizations, including #balancetonehpad. A mixture of causes with variable geometries, hashtivism therefore appears as an eminently paradoxical movement, marked by the syndrome of "and at the same time": it is incontestably an unprecedented means of democratic revival, "and at the same time" it constitutes a potential source of asphyxiation of militant practices, by evading any concrete conflict and by substituting action with a fantasy of action. Despite the strong mobilization on social networks, the failure of the #bringbackourgirls campaign, which in 2014 aimed to free Nigerian high school girls captured by the Boko Haram sect, is a glaring illustration of this. Opposing hashtags, even when imperative, to a terrorist group is a bit like trying to stop a missile with a butterfly net. To avoid seeing hashtagism reduced to a simple political simulacrum, some have decided to add a pragmatic aspect to it. This is the meaning of the #timesup and #maintenant-onagit operations, the latter hashtag having had the great honor (like "Merci Johnny") of being projected on the Eiffel Tower. "After #balancetonporc, associations that help women in their concrete legal proceedings against attackers have seen a 30% to 40% increase in calls. Some overwhelmed standards have even had to close, confides the president of the Fondation des femmes, Anne-Cécile Mailfert. With #maintenantonagit, we want to capitalize on this wave of emotion, anger, and brilliant awareness, by raising funds for grassroots associations. We want to go further, because Twitter is not a court." While Twitter is indeed not a court, it nevertheless tends to regularly take on the appearance of one. By dividing the population into so many poles of legitimate suffering, hashtagism today leads to a form of balkanization of the social body, a kind of war of all against all that must also be questioned. "Many of these mobilizations are based on collective intimidation consisting of silencing the adversary by the pressure of numbers. These are methods that were those of the extreme right and that are today used by those who claim to be progressive, warns researcher Romain Badouard. Because they place individuals under the threat of unilateral disqualification, these campaigns lead to what is called social cooling, a kind of relational cooling where, in order not to be the object of mass disapproval, we end up no longer saying what we think. " The effect of this social cooling, which is palpable in our country, is felt even more in South Korea, where the #metoo movement has had unexpected consequences: in the country's companies, many men, fearing being accused of harassment, are reducing contact with their female colleagues as much as possible, applying the "Mike Pence rule." This code of conduct is inspired by the very prudish American vice president, who reportedly refuses to dine alone with a woman other than his own. Excluded from business trips, bar trips and karaoke nights, Korean female employees are now experiencing a worrying double punishment, where the denunciation of harassment is echoed by the specter of social phantomization. Without being pessimistic, it is not certain that a new hashtag, even a well-chosen one, will succeed in solving the problem.

## ###ARTICLE\_START### ID:2169

It's hard to ignore: Facebook has been getting a bit of a bad rap lately. Accused of having leaked its members' personal data to the research firm Cambridge Analytica, the social network has been the target of much criticism. Judging that the system was going too far, prominent members of Facebook and even former executives of the company are calling for people to leave the ship, while the hashtag #DeleteFacebook is spreading on social networks. Personalities, such as billionaire Elon Musk, have decided to delete all pages concerning their activities. For his part, investor Jason Calacanis, believing that "Facebook is a destructive force for our society", has offered to inject $100,000 into the project that will offer the best alternative to Facebook. In the meantime, what solutions are available to those looking to leave? Don't expect to find better practices on competing social networks, such as Twitter, Instagram, Snapchat, WhatsApp or LinkedIn. Two of them belong to Facebook. And then, their terms of use are not necessarily more respectful of your personal data. Most analyze your browsing and use your information to "personalize" their services and display targeted ads. Some appropriate all the rights to your publications and others recover the contact details of your contacts. The site "Terms of Service Didn't Read" (tosdr.org) clearly describes the practices of the main community sites on the Internet. In fact, there are services that would allow you to keep control of personal data, to be less targeted by advertising and, sometimes, to discover new options. Their only problem is their lack of notoriety and their small number of users. It is difficult to compete with Facebook's 2 billion members. However, the recent setbacks of their main competitor could create a pull factor and make them more popular. INTERNET Diaspora (1): decentralized freedom Created in 2010 by American students, this voluntary social network presents itself as an "open source" alternative to Facebook. It is based on three principles: decentralization (instead of being stored on a single site, data is distributed across independent servers), freedom (the software code is accessible to all, advertising is banned from the network and members do not need to provide their real identity) and respect for privacy (each member retains control of their data, their publications and who can view them). As on Facebook, it is possible to publish messages, accompanied by photos, videos or other types of files, to share and comment on content, to join a circle of friends, to define a public and private profile, to follow other people and to filter publications using "hashtags". To facilitate the transition, the network offers to create links with a Facebook account. In practice, it will be necessary to familiarize yourself with an original mode of operation. In particular, you have to register for a server (called a "pod") based on your interests, check that it allows you to communicate via instant messaging and invite (or find) friends. Still in development, Diaspora only has about a million active members but has seen good growth in recent months. https://diasporafoundation.org Friendica (2): in a small group Another service from the world of free software, this social network managed by volunteers shares with Diaspora technical resources and the same philosophy of decentralized servers. You will therefore have to choose a group based on your interests... and the language, with German and English being the most widespread. Friendica's interface is somewhat reminiscent of the first Facebook accounts. It also allows you to publish articles and photos, communicate directly with other members and comment on your friends' publications. As a bonus, you can customize the appearance of your personal page, create several profiles, choose those that can be viewed and who can view them. An option also gives access to a Facebook or Twitter account. Here again, you will have to convince friends to join the network, which only has about ten thousand members. https://friendi.ca Ello (3): a space for creativity Launched in 2014, this network presented itself as the only credible alternative to Facebook with its ad-free pages, the promise to respect privacy and not to resell personal data. In practice, it is inspired by the Facebook formula: you can publish texts and photos, follow other users and comment on their messages, consult publications related to your interests. The service filters information from friends and more general subjects, described as "noise". However, its somewhat complex operation and the absence of certain functions, such as instant messaging, have cooled the wave of enthusiasm that accompanied its launch. Today, the network has fewer than 500,000 users per month and has become more oriented towards a community of "creators" from the worlds of fashion, design and photography. https://ello.co

## ###ARTICLE\_START### ID:2170

The ecological utopia is no longer a chimera, its dreams are catching up with us. Clean industries, waste reprocessing, green cities, energy-efficient buildings, agroecology combining crops and livestock, a "circular economy" functioning as an ecosystem, reintegrated into the heart of nature, favoring the valorization of natural energies rather than the extraction of fossil materials: ten years ago, these ideas were considered contrary to growth and employment, threatening corporate profits. In short, impractical. Today, they seem capable of offering a credible alternative to the ruinous destruction of the biosphere by our mode of production, once again denounced on Saturday, March 24, by the 550 experts of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services. This is how, on Friday March 30, the Ministry of Ecological and Inclusive Transition must announce its "Roadmap for the Circular Economy", presenting it as the "new paradigm" capable of dethroning our old "unsustainable" economic logic, and proposing to establish it as a "national objective. We will say: the environmentalist Nicolas Hulot is struggling to make himself heard, like many other ministers concerned about the environment before him, who have all become disillusioned. But, with the future becoming darker, and responsibilities becoming increasingly difficult to bear, times are changing: the environment is becoming the frontier of capitalist logic. We saw this clearly during the Medef summer university in August 2017, when the head of the Suez group, Jean-Louis Chaussade, gave a striking example: "Plastic is an excellent example of the limits of our linear economy model. More than 320 million tons per year today, more than a billion tons in 2050 (...), and it is not biodegradable! As a result, it invades our territories, our oceans... the food chain." "Future generations will not forgive us," he warns, concluding: the solution will come from the circular economy, "the most economical, fairest and most sensible way to produce goods on the planet. Transforming waste into resources The liberal Institut Montaigne, for its part, published a report in November 2016, Circular economy: reconciling growth and the environment, describing it as the new "economic revolution", calling on "all stakeholders concerned - public authorities, businesses and civil society - to collaborate to move from a linear model of society, based on the logic of 'extract, produce, consume, throw away', to a circular model where waste and discharges become resources", and encouraging entrepreneurs to practice "eco-design" with "renewable", "recyclable" and "repairable" materials. Another symbolic mobilization: on October 27, 2017, twenty major liberal economic newspapers, including Les Echos, the Financial Times, Handelsblatt and The Hindu Business Line, joined forces with the Solutions & Co project of Sparknews.com, a French video platform promoting "positive impact initiatives". The aim, through fifty reports, is to describe concrete actions "that accelerate our transition to a circular economy. Several schools of thought are behind the circular economy: the "cradle to cradle" theory, developed by German chemist Michael Braungart and American architect Bill McDonough, which aims to eliminate all waste and build green cities. "Biomimicry", popularized by American researcher Janine Benyus, which takes ecosystems and natural design as models. "Regenerative design", theorized by American landscaper John T. Lyle (1934-1998), which aims to restore sustainable systems in nature. "Industrial ecology", developed by Swiss Suren Erkman. In France, agricultural engineer Isabelle Delannoy wants to go further: she calls for federating into a general theory the experiments of the circular economy, agroecology, permaculture, eco-construction, the naturalization of cities, the defense of common goods with those of the social and solidarity economy, open source and networking. She calls this concept The Symbiotic Economy (Actes Sud, 2017), because it "couples human activities with the growth of ecosystems and social ties" and gives humans back a role as catalyst at the heart of life: "What species can, on an urban square of 100 meters by 100, establish steppe ecosystems on the roofs, wetlands and gardens at its feet, and habitats in between? There is probably only the tree..." And a human being carrying, she says, "a new civilization.

## ###ARTICLE\_START### ID:2171

The concert is limited to a single piece - a cover of Dominique A's Courage des oiseaux - but that's already a lot of effort. To achieve this result, Ibn Al Rabin started from nothing, or not much: printed circuits, electronic components, multi-coloured jack cables and a dozen boxes that once contained children's shoes, Memphis cigars or a Barbapapa puzzle. By means of this tinkering, Ibn Al Rabin can vary the combinations in order to produce synthetic sounds that are more or less planned, but always original. The Swiss musician, who is also a maths teacher and comic book author, is a fan of DIY (for do it yourself, literally "do it yourself"): "I like to invent my own instrument, therefore my own sounds, even if it doesn't work well. I find it poetic." Infinite combinations In reaction to industrial standardisation, DIY enthusiasts are rehabilitating tinkering and the sharing of know-how. Motivated by philosophical, ecological or economic considerations, its supporters create their own everyday objects, from the simplest (a palette transformed into a table) to the most technological (free software). The trend is gaining ground all the more because it can be applied to multiple areas, including artistic creation. Thus, in music, DIY allows you to get around the formatting of production methods and short-circuit commercial logic. An ethic that is not really new - punks were already promoting it forty years ago - but which is making a comeback, from design (the ukulele kit) to distribution (home concerts). The movement is very vigorous among certain players in experimental electronic music, eager to break away from the sounds and effects predefined by synthesizer or software manufacturers. To regain control, they rewind to the origins of these sounds: modular synthesis. The principle? Independent modules (amplifiers, oscillators, filters, effects) that produce sounds by communicating analog signals, via cables whose combinations are infinite. Electronic circuits, jacks, a little elbow grease and everything becomes imaginable, from the simplest to the most complex: some synths fit in the palm while others flash like a dashboard in a cockpit. With sounds that are by nature original, since each instrument is unique. This new interest in DIY is accompanied by the rediscovery of the Gyro Gearloose who, from the end of the 19th century, invented these instruments by combining their knowledge of electrical circuits and their love of harmonic notes. Their names were Thaddeus Cahill (the telharmonium in 1897), Maurice Martenot (the Martenot waves in 1928) or Robert Moog (the Moog modular synthesizer in 1964). "Sound madmen", to borrow the title of Laurent de Wilde's book (Grasset, 2016). The pianist recently gave a lecture in Lausanne at the N/O/D/E, a "scientific-crazy-funny" festival, according to one of its organizers, which had DIY as its theme. After getting excited about the inventors in action ("My book talks 80% about dead people, I'm delighted to meet the new generation of sound madmen here"), Laurent de Wilde analyzed this resurgence of creativity as follows: "Since the democratization of electronics in the 80s, we have witnessed a refinement of instrumental possibilities. But, at the same time, nothing radically new has been invented. The commercial logic of Japanese manufacturers like Roland, Casio or Yamaha has been castrating, in the sense that it has formatted sound to please the greatest number. Finally, in the 2000s, musicians got tired of it. Without getting into a Marxist critique of production tools, we need to make our own sound." At N/O/D/E, in the mad scientist category, we also came across Flo Kaufmann, who designs his instruments, including a vacuum cleaner-synthesizer, presses his vinyls with his recorder, then makes his covers and sells his drone music records himself, a minimalist genre fond of sustained or repeated notes. "Universal tinkering," as he calls his practice: "Running a sequencer and manipulating sound for hours does something to the brain that a traditional instrument doesn't allow." Equally crazy, the group Arc-en-ciel électronique tinkers with a "multicolored synthesis live" on a jumble of fluorescent instruments. Its 36-year-old leader, Skander Mensi, an artificial intelligence researcher, explains: "To avoid standardized sounds, we create synthesizers that are deliberately boring to use, with cryptic instructions. In an era that promotes a refined aesthetic, we claim not to control everything." Like him, many scientists are getting into the game. Behind the Brane Project, there are two researchers (CNRS, Cern) and a composer. Robert Kieffer and the Parseilhan brothers (Gaëtan and Raphaël) have developed an acousmonium of 46 homemade speakers, some made with Ikea salad bowls, connected to 10 to 16-voice amps, also DIY. The whole thing broadcasts synthesized buzzes and chirps that massage the cortex of listeners seated in deckchairs in the middle of the installation. "Manufactured products allow many things, but not always useful and for a lot of money. We define our needs and we realize them ourselves, the trio testifies. In this sense, DIY is political." Open access Whether you have some knowledge of soldering or a scientific CV, modular synthesis is an accessible discipline. But you can still simplify your life - relatively - by acquiring modules marketed on the Internet by independent DIYers, then combining them using the Eurorack standard which guarantees their compatibility. Brands, generally run by their sole founder, also occupy the niche. Thus, Eowave (Jean-Michel Jarre is a client) offers modules and small synthesizers designed by Parisian Marc Sirguy, who is delighted with the current trend: "When I started, synthesizers were only of interest to old gentlemen, and everyone had switched to computers. Today, the younger generation is finally discovering the pleasures - play, interactivity, experimentation, accidents - of analog and DIY." Especially since it's cheaper... at the beginning. Still, expect to pay 2,000 euros for a complete system with quality modules. As we read on a forum: "Give your children a taste for synthesizers, they will no longer have money to buy drugs." Modular synthesis even has its guru. Yves Usson, a bearded sixty-something from Grenoble, never recovered from the shock he felt when he heard the music from the film A Clockwork Orange, performed in 1971 by Wendy Carlos on a Moog synthesizer: "It was unheard of, in the literal sense of the word. But the first Moog cost the price of a house and the Minimoog the price of a car. So I built my own synthesizer in 1979, in a plywood box. Since then, I have been inventing sounds: short, long, bright, dull... It's a cerebral work." In 2012, he designed the MiniBrute synthesizer, a worldwide success sold for 500 euros by Arturia. All as an "amateur" - he is a biology researcher at the CNRS - and by offering his diagrams in open access. Another big shot, Olivier Gillet also posted the plans for his first synth on forums in 2009. "Right away, people wanted the same one. So I distributed it in the form of kits to assemble, for 100 euros each. A year later, I had sold nearly 3,000 and I quit my job." The Parisian is now at the head of Mutable Instruments, whose modules, made in Normandy, are used by Depeche Mode, Radiohead, Coldplay, Trent Reznor and Hans Zimmer. Everyone is very happy to enjoy the new features produced by this great sound machine that is DIY.

## ###ARTICLE\_START### ID:2172

Emmanuel Macron has pulled out all the stops to make France appear as a welcoming land when it comes to artificial intelligence (AI). Six months after commissioning the Villani report, the Head of State was due to announce on Thursday, March 29, at the Collège de France, in the afternoon, a plan dedicated to this technology intended to "irrigate the entire economy. The day before, the President of the Republic hosted around fifteen international figures for dinner at the Elysée Palace. Invited to the Head of State's table were Yann LeCun, head of fundamental research at Facebook, Demis Hassabis, founder of DeepMind and inventor of AlphaGo, the program capable of beating humans at the game of Go, and Noriko Arai, a mathematician who created a robot capable of passing the entrance exam for the University of Tokyo. To enable France to catch up with the United States and China, which are far ahead, Mr. Macron is counting above all on private investment. There is no question of launching into the creation of an "Airbus of artificial intelligence", which would have a whiff of Plan Calcul [a plan for the development of IT launched by de Gaulle in 1966]. The head of state is rather keen to show that the flagships of technology are betting on France, and was waiting for announcements from Samsung, Deepmind, Fujitsu, IBM and Microsoft. Emmanuel Macron, who received the president of Samsung, Young Sohn, on Wednesday evening, therefore announced himself on his Twitter feed the upcoming opening in France by the South Korean of a research and development center dedicated to Europe. This center, Samsung's third after the United States and South Korea, should employ 50 people by the end of the year, and a hundred people eventually. Until then, in France, Samsung already had around fifteen researchers. Clearly, Mr. Macron was more eager than Young Sohn to lift the veil on this project, which constituted the most emblematic private investment for the Elysée. On Wednesday morning, the president of Samsung cancelled at the last minute a meeting with journalists scheduled for Thursday, during which he was to detail his European strategy. At the same time, Samsung announced that there would be no specific announcement. The day after the meeting with the head of state, the Korean slightly changed his position by warning that he would “soon” announce his “investments in artificial intelligence.” DeepMind’s establishment Another emblematic establishment is that of DeepMind. The start-up, now owned by Google, will open a fundamental research center, which will be housed in the search engine’s premises in Paris. This center will have 15 people at the opening, and will grow over time. It will be led by Rémi Munos, one of the figures of research at DeepMind, also research director at the National Institute for Research in Computer Science and Automation (Inria). The latter, who is returning to France, is working in particular on "learning methods allowing a single algorithm to learn to perform several different tasks, a key element of intelligence," says Demis Hassabis in a blog post. The DeepMind teams will collaborate with those of Google, which launched its own fundamental research center in January. Google also announced the creation of a chair at Polytechnique and a partnership with Inria. With their fundamental research centers, DeepMind and Google are following in Facebook's footsteps. The company launched its own AI program almost three years ago, on which 147 people are mobilized worldwide. "In Paris, we quickly grew to 45 people, including 10 to 15 PhD students, 20 researchers and 10 engineers," says Yann LeCun. Even if he did not announce anything specific on Thursday, the social network founded by Mark Zuckerberg will continue its investment in France. The Parisian workforce, which works in particular on understanding natural language, videos and image processing, should reach between 90 and 100 people within two years. "We brought back French researchers and attracted Spanish, German, English and Senegalese," says Mr. LeCun, who recalls that one of the "big problems of artificial intelligence is to move things forward. "At Facebook, all fundamental research is open and published in open source because no one can achieve success alone in their corner. » Finally, the Elysée welcomes Fujitsu's extension of the center of excellence opened in September 2017 in the Polytechnique incubator in Paris-Saclay and which employs 15 people. "This center works on AI applied to image recognition for commerce, by analyzing the flow of people in stores for example. It also develops tools for industry, explains Benjamin Revcolevschi, general manager of Fujitsu France. These developments used until now in France will be extended to Europe. We are going to recruit and increase the premises." On a more minor note, IBM plans to unveil measures around employment, and Microsoft to announce a training plan. For his part, Emmanuel Macron is expected to announce funding, support measures for public research and a relaxation of data exploitation.

## ###ARTICLE\_START### ID:2173

TECHNOLOGY After months of discussions, conferences, media appearances, and a bit of a delay, here it is at last. Cédric Villani, mathematician and LREM MP, submitted his report on Wednesday evening for a national and European strategy on artificial intelligence. This mission was entrusted to him by the Prime Minister. This 233-page document should influence the government's investments in the coming years. From the outset, the mathematician criticizes himself, and also his country. "Like many mathematicians starting their careers in the 90s, I seriously underestimated the impact of artificial intelligence, which ultimately produced few results at that time," he admits. No national triumphalism either. France is not one of the best countries in artificial intelligence, says Cédric Villani. But it has assets to play. "It is not necessarily thanks to a "European Google" that France and Europe will be able to make a place for themselves on the world stage of artificial intelligence, he believes. To do this, they must invent a specific model." Summary of the main measures. Four strategic sectors Cédric Villani's main objective: to avoid "sprinkling logic". The mathematician and his team identify four priority investment sectors for France: health, the environment, transport and defense. The report also recommends the establishment of sectoral platforms to pool databases concerning these different sectors. Researchers, companies and public bodies would have access to them. The State responsible for data collection The report calls for the creation of "data commons", i.e. a common and open resource of information that can be exploited by artificial intelligence. "This will have to involve encouraging economic players to share and pool their data, with the State being able to play the role of a trusted third party here", explains the report. He also emphasizes the importance of the GDPR, the new European regulation on data protection, to guarantee the security, sovereignty and portability of this sometimes sensitive information. Improving research Cédric Villani wants to bring together researchers, engineers and students in interdisciplinary institutes, within public education and research institutions. They are described as "artificial intelligence free zones", with few administrative formalities and salary supplements. The goal: to attract foreign scientists and keep French ones. The report also recommends doubling early-career salaries for researchers in the public sector. Finally, the government is invited to invest in a supercomputer, made available to French research institutes to carry out their work. Anticipating the transformation of work The report recommends the creation of a laboratory dedicated to the analysis and macroeconomic forecasts of the effect of artificial intelligence on the economy and employment. In terms of training, he suggests creating dual curricula, for example by mixing law and artificial intelligence. Ecological artificial intelligence To "green the artificial intelligence value chain", we must first look at the semiconductor industry, which is essential to this sector. Innovation in chip manufacturing could enable considerable energy savings. This optimization of electricity use must also transform the activities of cloud players. Finally, the report recommends using free (open) software. Auditing "black boxes" Cédric Villani wants to combat the phenomenon of "black boxes", "algorithmic systems whose input and output data can be observed, but whose internal workings are poorly understood." He suggests setting up a body of public experts to carry out audits of algorithms and databases, or even test them. They could be called upon as part of an investigation at the request of the Defender of Rights. Ethics and diversity “Researchers, engineers and entrepreneurs who contribute to the design, development and marketing of AI systems are called upon to play a decisive role in the digital society of tomorrow,” writes Cédric Villani. “It is essential that they act responsibly, taking into consideration the socio-economic impacts of their activities.” To do this, the mathematician advocates for the creation of ethics courses in computer science training and engineering schools. The report also regrets the lack of diversity in scientific and technical fields. “One of the major challenges of artificial intelligence is to achieve better representation of our societies,” we read. The report notably envisages a fund dedicated to supporting diversity in artificial intelligence professions.

## ###ARTICLE\_START### ID:2174

When working on a computer or smartphone, we must admit that translation applications and websites make our lives easier when we have to respond to a German correspondent, understand documentation in Japanese, fill out a form in Spanish or write a letter to a Chinese merchant... These services have evolved spectacularly. We still remember the first automatic translators, which simply replaced the words in a sentence with their equivalent in the desired language. A word-for-word translation that often gave comical results, such as "How tall are you?" translated into "Quelque grand es-tu?". Techniques based on statistical approaches have improved the results. They compare the sentence to be translated with a multitude of sentences stored in a register and provide the translation that best matches. The database is generally built from official documents of the UN or the European Parliament, the texts of which are published in several languages. However, this approach, which requires a lot of resources and time, quickly reaches its limits in the case of unusual turns of phrase or if one of the languages is not in the database, in which case the system must go through an intermediary language, which necessarily alters the meaning of the sentence. To solve these problems, the most recent methods rely on artificial intelligence. The principle: an artificial neural network is trained to encode millions of sentences in such a way as to produce a unique numerical sequence for each one. As soon as a user submits a sentence to the translation system, it will then retrieve the corresponding numerical sequence and instantly provide the translation in the desired language. Other tricks complete the processing, including prediction, memorization and deduction processes. "In this way, the neural network approaches the translation problem using a traditional sentence-based approach," explain Google researchers. "It can understand dependencies inherent to languages, for example gender agreements, syntactic structures, etc. » The principle is so promising that it has now been adopted by several computerized translation systems. In addition to Google Translate, it can be found in the Open NMT project, an open-source neural translation tool launched in late 2016 by Systran and Harvard researchers. Mainly used in the education and business sectors, it can be trained to adapt to legal, medical, financial and other vocabulary. For its part, DeepL, created by the European team that launched the Linguee translation service, is designed more for the general public and presents itself as a direct competitor to Google Translate. To evaluate the effectiveness of the two main players involved, we submitted an excerpt of literary text and common sentences in English and Spanish to them, then we reversed the translation direction and asked one to translate the other's response. The result: we can definitely measure the progress made by these tools. Not only is the translation done very quickly, but the result is sometimes impressive. The style is not always very elegant, but the original meaning is clearly grasped. Both Google Translate and DeepL have remarkably restored a passage from The Perfume of the Lady in Black by Gaston Leroux, which they first translated into English and then back into French. With a few minor exceptions (“terrible” or “affreux” instead of “effroyable”, for example), we find almost all of the author’s expressions. As for common phrases, the results are more mixed. Confronted with “He swims across the river”, Google translates it as “Il nage à travers la rivière”, while DeepL more appropriately suggests “Il traversé la rivière à la nage”. The latter also scores points by translating “This is not a good time for us to talk” as “Ce n’est pas le bon moment pour parler” when Google gets confused with “Ce n’est pas un bon moment pour nous de parler”. And DeepL wins again by translating "I am heading to tennis practice" into "Je vais à l'entraînement de tennis", while Google is satisfied with "Je vais à la pratique du tennis". In Spanish, both translators have some difficulty with common phrases. When asked "Son las cuatro menos cinco" ("It's five to four"), Google suggests "It's five to four", while DeepL prefers "It's five to four"... A somewhat thorny phrase from Jorge Luis Borges doesn't separate them either: "Uno no es lo que es por lo que escribe, sino por lo que ha leido", which can be translated as "We are not what we are by what we write, but by what we have read", becomes, with Google, "One is not what he is by what he writes, but by what he has read" and, with DeepL, "One is not what he writes, but what he has read". Finally, DeepL once again shows its superiority in the literary test, correctly rendering the passage by Gaston Leroux after translation into Spanish, while Google struggles with the structure of the sentences and confuses certain words with others, which complicates reading. For now, DeepL is limited to half a dozen languages (French, English, German, Spanish, Italian, Dutch, Polish), while Google offers a good hundred, from Afrikaans to Zulu, including Bengali, Haitian Creole, Hungarian and Tamil. Google Translate can also speak the text in the desired language, which DeepL does not offer. Due to their design, both services will inevitably evolve and should come closer and closer to human translations. The language barrier will soon no longer be an obstacle. For now, DeepL is limited to half a dozen languages, while Google offers a good hundred

## ###ARTICLE\_START### ID:2175

Money, money, money. Not promotions, money. This is what thousands of French women (and who knows, French men?) will once again demand on this International Women's Day. This big gathering, set for March 8 by the UN in 1977, is an opportunity to highlight the many inequalities and violence that women are subjected to, to denounce sexist stereotypes... but above all, to insist on the crux of the matter: wage inequality. Thus, like last year, the Collective "March 8, 3:40 p.m." (which brings together feminist associations such as the National Collective for Women's Rights, Family Planning, Osez le féminisme as well as Solidaires, the CGT and the UNEF) is calling for mobilization throughout the country. Strikes for those who can, rallies and demonstrations (in Paris, Place de la République), wearing symbolic armbands, insurrection on social networks... The watchword is clear: it is high time to get rid of this difference in financial treatment. But why at 3:40 p.m.? "This is the time at which women stop being paid each day, on the basis of a standard day," explains the collective. That is, a day that starts at 9 a.m. and ends at 5 p.m., with an hour's lunch break. To arrive at this observation, the collective bases its findings on the average pay gap, which in France stands at 25.7%, for all working hours combined, and at 9% for equivalent positions, according to the Ministry of Labor. A situation described as "unacceptable" by the minister, Muriel Pénicaud. "It is time for the State to become an engine, a locomotive when it comes to equality," adds Marlène Schiappa, the Secretary of State for Gender Equality. According to the government, the train is already moving: the goal has been set to resolve the problem within three years. Very well. But how? Announcements are expected this Thursday. As a preamble, Matignon organized a consultation on Wednesday with the social partners, to whom were presented avenues of work to promote equality. They will have a month to delve into it. The measures selected could then be integrated into the draft law on reform of professional training, apprenticeships and unemployment insurance, which Muriel Pénicaud will present in mid-April to the Council of Ministers. Patience, patience, then: according to the predictions of the World Economic Forum, and at the frantic pace at which things are going, we will only have to wait two hundred and seventeen years, or the year 2234, to (finally) achieve equality. What can be done in the meantime? Light candles, cross your fingers, strengthen the laws, slap your fingers harder, encourage males to have more babies? Five ways to hope to make progress. What if we started by applying the law? Forums, debates, platforms: women have been demanding equal pay for years. In France, however, laws are there and they are not new. Thus, the rule "equal pay for equal jobs" has been provided for in the labor code for... forty-six years. The prohibition of all discrimination based on sex has been enshrined in law since 1982. In the absence of a revolution in the matter, sanctions have been provided for subsequently. Objective? To hit offenders in the wallet. Thus, a decree published at the end of 2012 imposes financial penalties on companies with more than 50 employees that do not act against inequalities, whether through negotiations with social partners or by developing an action plan. Amount of penalties? Up to 1% of the payroll. Alas, the results are not brilliant: since the creation of this system, only 106 companies have been rapped on the knuckles, while 66% of the companies concerned are said to be breaking the law. "Labor inspection agents are seriously lacking in means and control tools," lamented Cristelle Gillard, women's rights advisor for the Economic, Social and Environmental Council, in Libération in January. Among the avenues that could appear in the Pénicaud bill scheduled for April, is therefore the idea of strengthening financial sanctions. While the current law requires companies that are not in order to present "means" of action, they could well be faced with an obligation to produce results in the future. And for results to be achieved, the idea of providing companies with free software, integrated into payroll systems, which provides a methodology for improving payroll policy, is being considered. In the event of unjustified gender pay gaps noted by the labor inspectorate, the company would have three years to get back in line. Otherwise, it would have to go to the cash register and pay a fine. If these measures are, in the end, included in the future bill, the government is counting on them coming into force in 2019 for companies with more than 250 employees, and the following year for those with between 50 and 249 employees. What if we denounced the cheaters? Faced with this insufficient application of the law, some advocate the strong method: name and shame. That is to say, to give out the names of the companies that are at fault. This is what the EE-LV regional councilor of Ile-de-France Julien Bayou wants in particular. With Osez le féminisme and the collective les Effronté·e·s, they filed an appeal with the Paris administrative court in April 2015 to obtain the list of companies already convicted. "We can and must do more to reduce inequalities," the elected official argued. "Depending on the size and wealth of the companies, financial penalties may not be sufficiently dissuasive," says Fatima Benomar, spokesperson for Les Effronté·e·s. For her, "making such data public could have an impact on the brand image of these companies." So, perhaps, they will be cornered, forced to act. "At present, the companies that have been convicted are really reluctant to comply with the law. It must be said that they first receive formal notices, and a long time passes before they are convicted," says Fatima Benomar. And she concludes: "In a democracy, consumers have the right to know who they are dealing with, it is a question of transparency." The administrative court's response is expected on March 15. The government is simply studying the possibility of encouraging companies to be transparent on their websites. Nothing too restrictive, in short. And we can already bet that the most advanced in terms of equal pay will be quicker to come forward than those who drag their feet. What if we made a big splash like in Iceland? "Afram stelpur!" or "Come on girls!" In 1975, 25,000 Icelandic women (out of a total population of 217,000) massively threw in the towel and demonstrated. A world first. On their placards, they emphasized everything they did for their country, at work or at home. Since then, these pioneers of equality have never let their guard down. A very strict law on equal pay between women and men, announced in March 2017 and voted in June by 80% of parliamentarians, came into force on January 1. Yet another world first: all Icelandic companies with more than 25 employees must now prove, with supporting documents, that for equal work, men and women receive the same pay. This new text reverses the burden of proof. It is no longer up to employees (yes, today the midpoint is required) to prove discrimination based on their gender, but up to companies to demonstrate that, if there is a pay gap, gender plays no part in it. This will require the employee's seniority, training, experience, added value, stress induced by their tasks, etc. to appear. An independent body responsible for verifying the sacrosanct rule of "equal pay for equal work" will issue a certificate of compliance valid for three years to good students. Smaller companies have until December 31, 2021 to comply. All others (companies with more than 250 employees, public administrations, ministries) have until the end of 2018. Otherwise, a fine of up to the equivalent of 400 euros per day will be applied. This way for change! What if we launched a transparency operation like in Germany? How much do my colleagues earn? Is the opposite sex better paid? These questions, which are on the minds of many female employees, German women are now entitled to ask their employer very officially, since the entry into force on January 6 of a law called "EntTranspG". On condition, however, that they work in a company with more than 200 employees, and in which at least six people of the opposite sex occupy the same position. If this is the case, each employee can request the help of their works council, which will anonymously submit an official request to management. Upon receipt, the boss then has three months to communicate the figures. Magic? Hailed abroad, notably by French Secretary of State Marlène Schiappa, for whom it is "a good idea", the measure is not unanimous in the country: what about SMEs? And companies that do not have a CE? Conservatives, for their part, denounced "new bureaucratic burdens" for companies from the very beginning of the text. In a guide to good practices published at the end of November, the French feminist collective Les Glorieuses estimated that "transparency of salaries within companies is an obvious condition for reducing the pay gap between women and men". Balance ton prix? What if men spent more time at home? How can we prevent women from being the first to ease off in their jobs and go part-time to better juggle the 3 hours 26 minutes they spend each day on domestic tasks (cleaning, shopping, childcare, etc.) compared to 2 hours for men according to INSEE, not to mention the burden of the mental load? The question is crucial, when we know that part-time work necessarily means lower pay. According to the Ministry of Labor, part-time work is thus occupied by women in 80% of cases... According to those who are trying to shake up the old coconut tree of inequality, the solution lies in this Swedish proverb: "The emancipation of women through work, the emancipation of men through the family." Very well, but in concrete terms? For years, Jérôme Ballarin, founding president of the Observatory of Parenthood in Business, an association that has been working since 2008 for a better balance between professional and personal life, has been campaigning in particular for paternity leave worthy of the name. At a time when the government is considering extending the famous eleven days of leave to which fathers are entitled (in addition to the three days of "birth leave" automatically granted by the labor code), Jérôme Ballarin, interviewed by the General Inspectorate of Social Affairs (IGAS) which must submit a report on this issue, is campaigning for the three days systematically granted to become five, and the eleven days of paternity leave, fifteen. To better encourage men to embark on the diaper adventure, he also proposes that the famous eleven days be paid more, when currently the maximum ceiling for the daily allowance is 83.58 euros. "Solutions can be found, either by raising the ceiling of the Social Security, or by playing on the family tax credit (1), or even via provident contracts." And then, "we need to communicate more with men about parental education leave. In some companies, such as Areva, employees do not take the famous Wednesday, but a 9/10th which allows them to be present during school holidays. You have to be creative to attract men." Another lever to encourage women not to withdraw: teleworking. "It is not gendered, like part-time work, and allows the man who teleworks to manage homework for example," adds the president of the Observatory of Parenthood. In short, the drivers are there. "It is up to managers", as Jérôme Ballarin calls them, to press on it. A word to the wise... (1) This relatively little-known system allows companies that incur expenses in order to allow their employees to better reconcile their professional and private lives to benefit from a tax credit. In Europe too... Women earned on average 16% less than men in the European Union in 2016, according to figures from the European statistics office Eurostat published Wednesday. The gaps exceed 20% in Estonia (25.3%), the Czech Republic (21.8%), Germany (21.5%), the United Kingdom (21%) and Austria (20.1%). Conversely, salaries are similar in Romania (5.2% gap), Italy (5.3%), and Luxembourg (5.5%). In Belgium, Poland, Slovenia and Croatia, the salary gap is also less than 10%. In France, the pay gap is 15.2%. This figure is lower than the 25.7% put forward by the French Ministry of Labor. How is this possible? Eurostat does not take into account salaries in public administrations in its study. photo Albert Facelly for Libération

## ###ARTICLE\_START### ID:2176

It is a time machine that keeps one eye on the past and the other on the future. Towards the past because that is the very nature of the Venice Time Machine (VTM), a vast project launched in 2012 aimed at reconstructing, from millions of historical documents, a digital Venice that will one day be possible to explore, geographically and temporally, over a period of a thousand years. "A Google Maps and a Facebook of the past" of the Italian city, as Frédéric Kaplan, director of the Digital Humanities Laboratory at the Swiss Federal Institute of Technology in Lausanne (EPFL) and master craftsman of this scientific program in collaboration with the Ca'Foscari University of Venice, likes to call it. But the temporally squinting machine also has its eyes on the future. A future in the colours of Europe, since the project is a candidate to become a new FET Flagship (in French "Future and Emerging Technologies Flagship Initiative"), one of these scientific superprojects funded to the tune of 1 billion euros over ten years by the European Union (EU) and the participating countries. The Human Brain Project (HBP, which aims to simulate the functioning of the brain on a computer) and the Graphene initiative (aimed at developing applications around this new material) have been FET Flagships since 2013. The EU wants to select one or two new projects in 2020. The application was submitted on 20 February, announces Frédéric Kaplan: "The VTM is at a pivotal period. The project will change scale and form a European network." In an article published in particular by the Swiss daily Le Temps in 2016, the specialist called for the construction of the first European Time Machine. "Advances in robotics and artificial intelligence make it possible to envisage a continent-wide infrastructure to digitize, analyze, and reconstruct our ancient heritage," he wrote. Innovative tools The idea of setting up an infrastructure capable of digitizing, mapping, and classifying the billions of European historical documents has attracted attention. Around 150 partners in 32 countries have responded. In fact, there will no longer be a single Venice Time Machine, but also an Amsterdam Time Machine, as well as one in Paris, another in Dresden, Naples, and Budapest. In all, dozens of cities that, like the Italian city, have kilometers of archives waiting to reveal their secrets. But there is no question of seeing Venice as the driving force behind the project. "Venice is only mentioned in the application file as one of the initiatives among others," assures Frédéric Kaplan. With our five years of experience with the VTM, we have shown the feasibility of the program, a bit like the Blue Brain had foreshadowed the more extensive Human Brain Project." The example comes at the right time: in 2014, the HBP was shaken by the revolt of a part of the neuroscientific community who criticized in particular certain abuses of authority in its governance. "The structure of the European Time Machine is fundamentally horizontal, with a great deal of regional autonomy," promises Frédéric Kaplan. What will this time machine consist of, if it becomes a FET Flagship? The stakeholders will develop new technologies to digitize all these paper archives. In the Venetian project, the scientists have designed an autonomous robotic scanner that can turn the pages of a book, and another capable of scanning pages or letters without opening the book or envelope, which is useful when dealing with damaged documents. Once the digitization is done, it is still necessary to understand the content of the writings. This is why software has also been developed to identify, after a learning period, not only handwriting, but also certain abbreviations. Finally, to transmit this heritage to historians and the general public, tools will also see the light of day, like a search engine called Canvas, expected in June. Frédéric Kaplan describes it as "an open source and European Google, a gateway to [...] our thousand-year-old heritage. Then there is science. Many voices were raised to criticize the VTM at its beginnings: little framing, a modest number of publications given the size of the project... Criticisms today swept aside by the manager: in addition to the four to five annual publications on the components of the VTM, many results are to be presented at a conference in Mexico this spring. "We hope that at least a hundred new articles can be published in the next five years based on the data from the Time Machine project," concludes Frédéric Kaplan.

## ###ARTICLE\_START### ID:2177

ECOLOGY "We knew that we would one day pass the PS, but we didn't know that it would be with 4.5% of the vote!" This joke from the ecologists is cruel. It has been circulating since the first round of the partial legislative elections in the Belfort region, on January 28. The PS, which came in behind the ecologist, won 2.6% of the vote. Of course, this is a caricature. Especially for the socialists, who have never scored in this Chevènementist stronghold. For the ecologists, it's another matter. Europe Écologie-Les Verts, their main party, fell to the bottom of the abyss in 2017. Erased behind the PS candidate in the presidential election, it did not elect a single MP in the legislative elections. And while it saved the day in the senatorial elections, EELV is now only a shadow of what it was during the formidable momentum of the 2009 European elections. The Green Party, barely open to joining forces with Europe Écologie, had then gathered 16.3% of the votes, or nearly 3 million voters. The memory of this blessed time is bitter. Between 2010 and 2015, the party went from 260 to 50 regional councillors. While the Federation of Green Ecologist Elected Representatives (Feve) still has 1,700 elected representatives in the territory, only two thirds are EELV card-carrying members. Likewise, among the 10 Green parliamentarians (4 senators and 6 MEPs), very few claim to belong to EELV. In their offices in Montreuil in Seine-Saint-Denis, Julien Bayou, one of the spokespersons, tries to catch his breath. "A year without an election is perfect for healing wounds and for thinking, period," he says, while some are wondering about the need to keep the party alive. To answer this question and many others, EELV is launching an ecology conference on March 16 in Paris. Led by former EELV senator Jean Desessart, and deployed in the regions over the months, they are intended to "build bridges" between a party that has "become ridiculously small" and associative movements that are driving a "broad ecological awareness in society." "Autonomy at all costs is what has been killing us for thirty years." Its national secretary, David Cormand, does not want to anticipate the feedback from these conferences, which are supposed to determine the path forward for the party, but recognizes that "if EELV's political strength must remain as it evolves, the party has no interest in being systematically alone in the upcoming elections." "Autonomy at all costs is what has been killing us for thirty years," complains one of his close friends. Génération.s, Benoît Hamon's movement, to which many environmental activists have turned, is overshadowing EELV, which has seen some key debates preempted by the former socialist. All the more so since well-known figures in political ecology have appeared with Benoît Hamon. The former 2002 presidential candidate, Noël Mamère, but also Cécile Duflot. Discreet since her failure in the environmentalist primary, having converted to the private sector, within Octopuce - a server and outsourcing company specializing in free software - some attribute to her the ambition of regaining a mandate during the next European elections in 2019 or regional elections in 2021. In the Génération.s sphere, she is surrounded by several of her close friends, from Yves Contassot to Danielle Auroi, including Esther Benbassa. "Benoît Hamon was our presidential candidate. It is logical to still find convergences with him. The opposite would be surprising", temporizes Julien Bayou while elected officials, such as Michèle Rivasi, are hostile to dual membership. The latter even castigates the benevolence of the leadership "which wants to make our party narrow to offer it to Génération.s". Finally, if many activists were won over by Jean-Luc Mélenchon during the presidential election due to their rejection of socialism, fewer executives have taken the plunge. Former MP Sergio Coronado is one of them. He continues to participate in the LFI campaign for the exit from nuclear power. And he castigates the leadership of EELV: "The same people who are responsible for the slump are those who claim to be able to participate in the rebuilding." Does that mean leaving EELV? "If I realize that there is no future, I will draw the consequences."

## ###ARTICLE\_START### ID:2178

CEGEP libraries, which were singled out for directing readers to the online sales platform Amazon, have corrected their course. They now direct users to the Canadian subsidiary of the American giant, which collects federal tax on each transaction. But the malaise persists. According to what Le Devoir noted Friday, 25 of the 29 college libraries that use management software with a possible link to Amazon now avoid directing their readers to the American online sales platform; 27 college libraries instead direct their users to Amazon.ca, and two others (cégeps de Rivière-du-Loup and Chicoutimi) avoid making any connection with a commercial enterprise. "Why would we partner with a business, whatever it may be? We said to ourselves from the beginning: it's not true that we're going to get involved in this," says Émile-Olivier Desgens, spokesperson for the cégep de Rivière-du-Loup. This CEGEP's library has disabled the function of its search engine that automatically directed its users to the American giant Amazon. For this CEGEP, there is no way a public library would promote a billion-dollar company that is causing a lot of trouble for the Quebec book industry. This unusual story of links between CEGEP libraries and the giant Amazon was revealed Friday by Le Devoir. More than 60% of CEGEPs (29 out of 48) use a free software called Koha to operate their libraries. However, this software offers free access to a bank of book cover images provided by Amazon -- on the condition that the libraries redirect readers to the Amazon website. Until Friday, readers who searched in the database of these public libraries were redirected to the Amazon.com platform as soon as they clicked on the icon of the book they were looking for. They now end up on the Amazon.ca site -- except for the Shawinigan and Victoriaville CEGEPs, which continued to direct their users to the American online sales platform on Friday. No to commerce Jean-Yves Laporte, a professor in the Department of Literature and French at CEGEP Édouard-Montpetit, is still outraged by this affair. He can't believe that public libraries agreed to direct customers to an American billionaire company to access free book images. "I'm worried about what's coming next because on the Canadian Amazon site, not only is the referencing clearer [than on the American site], but it also gives access to the first pages of the Kindle version of the book, which will be hard to compete with if the cooperative of independent bookstores of Quebec tried to replace Amazon," he says. The professor believes that in the best of all possible worlds, CEGEPs would do as the Bibliothèque et Archives nationales du Québec (BAnQ) did: they wouldn't refer readers to any book sales platform. This is what the Rivière-du-Loup CEGEP, for example, has chosen to do. When you click on the image of a book in the library's search engine, you see... the image of a book, and nothing else.

## ###ARTICLE\_START### ID:2179

American giant Amazon has sneaked into the search engine of 29 CEGEP libraries, which redirect readers to this multinational online commerce company that is exempt from taxes and duties in Canada. According to what Le Devoir has learned, 60% of CEGEP libraries use search software that directs readers to the Amazon site. This commercial link between public libraries and a multi-billion dollar company is creating unease within CEGEPs and in the Quebec book industry, which is suffering from competition from the American giant. "It is not the role of CEGEP libraries to direct customers to Amazon," protests Jean-Yves Laporte, professor in the Department of Literature and French at CEGEP Édouard-Montpetit in Longueuil. Mr. Laporte was shocked to see that the search engine of his CEGEP library redirects readers to the Amazon.com site. The process is simple: when you do a search to find a title, an icon representing the book's cover page appears on the screen. Clicking on the image automatically takes you to the American online sales site Amazon.com (and not Amazon.ca, which pays taxes in Canada). "It is not part of the mission of libraries to act as intermediaries between users and bookstores. If this mission has changed and the CEGEP library sees fit to expand its role, it would be preferable to redirect users to the group of independent bookstores, which is trying as best it can to compete with Amazon and which pays taxes," argues Jean-Yves Laporte. According to information obtained by Le Devoir, the presence of Amazon in the search engine of 29 of the 48 CEGEPs can be explained as follows: these libraries acquired the Koha free software through the Collecto service, a group of users from the education sector. The giant Amazon provides thousands of free book images to libraries that use Koha software, on the condition that they automatically redirect readers to its book sales website, explains Danielle Lavoie, a spokesperson for Collecto. CEGEP libraries can use two other suppliers that offer free book icons -- the giant Google and Open Library Covers -- but almost all libraries opt for Amazon, which is the software's default choice and offers many more images than its competitors. "Koha libraries are free to activate or deactivate the thumbnail display feature," notes Ms. Lavoie. Collecto plans to remind the 29 CEGEP libraries that use its services of this procedure. She also points out that it is possible to redirect users of the software to the Amazon.ca site rather than Amazon.com -- federal and provincial sales taxes would then be collected on each transaction. Bookstores challenged The cooperative of Librairies indépendantes du Québec (LIQ) is aware of the link between CEGEP libraries and the giant Amazon. The group of 100 bookstores says it is working with the designers of the Koha software to find a way to promote Quebec books. "We talked to the designers of the software to find a solution. It is free software developed on a global scale, but the solutions will come locally," says Jean-Benoit Dumais, general manager of Librairies indépendantes. The Montreal firm inLibro is one of 30 companies worldwide that develop the Koha software. Éric Godin, of inLibro, confirms that he is working on a solution to make more room for Quebec bookstores. "I'm also annoyed that clicking on an image redirects users of a library to Amazon," he says. "The problem is that there is no one in Quebec who provides free images of books in open data. We work with independent bookstores so that they provide us with thumbnails," he adds. The fact that the software -- and the image bank -- are free is one of the reasons that motivated CEGEPs to choose Koha software, several sources indicate. It is worth noting that neither the Fédération des cégeps nor Cégep Édouard-Montpetit wanted to comment on the reasons behind the choice of this search engine. The Collecto group speaks on their behalf, they say. A Quebec solution offered One thing is certain: Koha software has a good reputation. It is used in more than 15,000 libraries around the world and is known for its power and stability, according to Éric Godin. Most, if not all, colleges that do not use Koha software for their libraries have chosen a solution offered by the Société de gestion de la Banque de titres de langue française (BTLF), a Quebec non-profit organization. Clients must pay to access the BTLF database (called Memento), explains Clément Laberge, interim director of the organization. For a college with 2,000 students, the cost of the service is about $650 per year, he says. In the cultural sector, people are surprised that CEGEPs have such budgetary constraints that they prefer to use open-source software associated with Amazon rather than invest a few hundred dollars in a Quebec system that has proven itself.

## ###ARTICLE\_START### ID:2180

Watch out, the Internet is going to die! Again?, readers will rightly sigh. Such a prediction has indeed been made and denied a thousand times, whether as a result of increased traffic, security breaches, malicious attacks, restrictive laws... The same will surely be true for the new risk highlighted in this book, a translation of a 2016 report by the American Ford Foundation for the "promotion of international cooperation and human progress. Its interest is not to unnecessarily scare, but to force us to question the very way in which this essential communication infrastructure works. The book thus reveals little-known facets, not only technical but also sociological, of the network of networks. Because the weak link in question is, as is often the case, human. It is embodied by little hands, often invisible or little known, who keep the machine running by writing, correcting, improving, line by line, the programs, languages, and protocols of the Internet. However, as Nadia Eghbal, an employee at Github, a platform for collaborative software development, tells us, these brains are fewer in number than the importance of their work and their work would suggest. Worse, they are sometimes even solitary. As if we discovered that the security of a city or country's electrical network rested on just one person... Nonsense? In 2014, the discovery of a flaw in a communications security software, OpenSSL, created panic in the cyber world. But the "worst" thing was that only one person was responsible for maintaining this critical software used daily by banks, state agencies, and companies! Other examples are cited in the book. Entire sections of essential languages for developing websites such as Python, Ruby, or JavaScript rest on a few minds. The same goes for essential building blocks of computing such as OpenSSH, BASH, NTP... The irony of history is that what made the Internet successful is also what threatens it: free software. These open programs, exchangeable and modifiable at will, have facilitated the development of websites, the management of databases, security... without resorting to costly and liberticidal licenses. They are written and maintained by a community of enthusiasts working for the common good, but who are becoming victims of the stowaway syndrome. Users no longer contribute by giving their time to improve these programs, correct them, explain them... The ecosystem, which Nadia Eghbal compares to a "coral reef", is weakening. To preserve it, she lists different funding avenues, through foundations, companies, donations, institutions... But the first step, according to her, is for everyone to become aware of the fragility of these common works. Her book contributes perfectly to this.

## ###ARTICLE\_START### ID:2181

On March 13, Steven Pinker, a psychology professor at Harvard (Massachusetts), will be invited to speak about his conception of the "very long term" by the Long Now Foundation. It will be at the SF Jazz Center in San Francisco (California), where the foundation regularly organizes conferences. It is also in this city that one of the prototypes of the "Long Now Clock" is exhibited, designed to last 10,000 years. Made of indestructible materials, the real clock, currently being built on the top of a mountain in Texas, on the property of Amazon boss Jeff Bezos - one of the financiers of this crazy project - will be suspended 90 meters high. Operated by mechanical processes, regulated by sunlight, its small hand will advance one notch once a year, the large one every hundred years, and it will chime every millennium. The promoters of the Long Now Foundation, created in 1996, are well-known figures in the experimental and high-tech counterculture. The name of the institution was found by the British musician Brian Eno, one of the pioneers of ambient music and sampling. He explains the basic concept on the Longnow.org website: "We must act in such a way that our present actions are part of the perspective of a very long time." Because, Eno reminds us, "not so long ago we accepted slavery (...), employed children in mines (...), [rejected] the voices of women (...), considered humans as savages", so many certainties that seem unacceptable to us today. However, at that time, some people already refused these behaviors, and were capable of conceiving, "with total faith", a world devoid of these realities. And why? Because they thought about the future of humanity "in the long term", refusing the advantages of the short term: slaves, children, the colonized working for next to nothing, women submissive and pestered... New icon Today, Eno argues, we must accomplish "a similar act of imagination", "dream" for the future as Martin Luther King did yesterday, "think of our great-grandchildren, and their great-grandchildren", "shame ourselves and think with consideration of those who follow us", "extend our empathy for life beyond our own. The giant clock of the long now could become, he assures, a place of pilgrimage and help us change our greedy conceptions of time - this time which is "accelerated" to the point of losing all reference points and all critical spirit by the search for immediate profit, as the German sociologist Hartmut Rosa has masterfully shown elsewhere. Another pioneer of the foundation is called Stewart Brand, a historical figure of the American counterculture, one of the founders of the Merry Pranksters, the first hippies, with Neal Cassady (the hero of On the Road by Jack Kerouac). It was he who, in 1968, launched the bible of the "Do It Yourself" movement, the Whole Earth Catalog and imagined the first personal computer, greatly influencing Steve Jobs, the future creator of Apple. For him, the clock should become a new icon, and "make us think about time as photographs of the Earth taken from space make us think about our environment. It will force us to project ourselves far into the future and to behave with caution in the present. The third creator of the Foundation of the long now, the computer scientist Daniel Hillis, a figure of Silicon Valley (California), developed the first supercomputers. He imagined and then designed the clock when he realized that the year 2000 was the symbolic date of the future for previous generations. Since then, no new year as mobilizing has been announced, as if our future had shortened - as if we no longer had one! Hence his idea of breaking this "mental barrier" by stating: "We will still be here in the year 10,000." To popularize their ideas and "promote long-term responsibility," the foundation has launched other disturbing projects. On the "Long Bets" website, we are invited to make long-term predictions, and to bet on the results. The establishment keeps the collected contributions until the deadline and gives the winning prediction. One of them: "In 2060, the population of the earth will be lower than today." » Another ongoing project is called "Long Server": a team of open source programmers are reformatting all the computerized chronology systems of those who want it by adding a 0 to them to prefigure the passage to the year 10,000. So we are now in 02018. As Stewart Brand says: "This present moment announces the unimaginable future."

## ###ARTICLE\_START### ID:2182

TECHNOLOGY If it was about being where she was not expected, it has succeeded. On Wednesday, Nathalie Kosciusko-Morizet announced that she was joining the French IT company Capgemini, confirming information from Les Échos. The former MP and minister will head the group's American division in charge of cloud infrastructure and cybersecurity for businesses. She is expected to leave her last political mandate, on the Paris Council, this summer. This reconversion is in the air. "Digital is where things are happening today. And politicians like to be where things are changing," explains a former politician, now employed by a new technology company. Like him, many politicians or people working in ministries - chief of staff, press attaché, advisor - are choosing digital to continue their career. Sometimes it is about returning to their first loves. Nathalie Kosciusko-Morizet is an engineer by training, a graduate of the École Polytechnique. Another well-known example is that of Thierry Breton, who was CEO of France Télécom, then Minister of the Economy between 2005 and 2007. He is now CEO of Atos. Remuneration issues The Digital Secretariat offers the most obvious springboard to start-ups and new technology companies. Fleur Pellerin, former Minister Delegate for the Digital Economy, created her own investment fund dedicated to start-ups. It is not yet known whether Axelle Lemaire, her successor, wishes to continue her career. She is expected to take up new duties next week. Several members of her former cabinet already work in new technologies, in start-up incubators, companies in the sector or at the head of their own company. But all paths can lead to digital. In 2015, Grégoire Kopp, then an advisor to the Ministry of Transport, joined the Uber teams. He now works at OVH, a French specialist in online hosting. Henri Pitron, former advisor to former Health Minister Marisol Touraine, is now communications director at Doctolib, a French site that makes it easier to make medical appointments online. As for Cécile Duflot, former minister and national secretary of Europe Ecology-The Greens, she has been working for six months at Octopuce, a French company specializing in hosting and free software. While tempting, the transition to digital is not easy. "You have to be comfortable with international work and working in an open-plan office," says a former member of a ministry who now works in a digital company. "I come to work every day in jeans. Not everyone would like that!" The question of remuneration also arises. Going to a large American web company means risking criticism. But few French companies can afford to pay the salary of a former minister. Above all, the politician will not necessarily make an ideal employee. "A person who has had a purely political and activist career has not necessarily developed managerial skills. On the contrary, to exist in their party and on their territory, they may be used to crushing the competition," believes a person who made the transition from the political world to the digital world. There remain at least two qualities specific to politicians: their address book and their ability to attract media attention.

## ###ARTICLE\_START### ID:2183

Warsaw -- The Polish Fryderyk Chopin Institute (Nifc) is set to digitize and -- using advanced technologies -- provide free and open access to the entire heritage of the great Romantic composer in its collections. By 2020, "Chopin will be the first great composer whose entire score will be available in their digitized version," whether in manuscript or printed form, and in an open format, Maciej Janicki, deputy director of the Warsaw-based institute, which researches, documents and promotes his work worldwide, told reporters on Tuesday. Visitors to the site, whether music lovers, music professionals or specialist researchers, will also find the entire available phonographic archive recorded at all international Fryderyk Chopin competitions and the "Chopin and His Europe" festivals, in downloadable versions. The same applies to books and articles dedicated to the great composer, his manuscripts and autographs, photographs, paintings and other types of archives, a total of almost 40,000 objects from the collection, which is a UNESCO World Heritage Site, according to Mr. Janicki. The digital platform in Polish and English will be based on open source code and equipped with advanced tools and interfaces for searching, analyzing and processing content. Many possibilities The sheet music component will be "the most innovative of the project" co-financed by the European Union, Mr. Janicki stressed. Thanks to software developed in collaboration with the American university Stanford, the visitor will not only be able to carry out a precise search for a score or an extract, download them in very good resolution, but also indulge in all sorts of melodic, rhythmic, harmonic, structural and many other analyses or comparisons of their content, stressed Marcin Konik, the head of the institute's library. "These will not be simple scans or PDF versions," he insisted. Frédéric Chopin, a great romantic musician, who composed mainly works for piano, was born in 1810 in Zelazowa Wola, near Warsaw, to a French father and a Polish mother. After spending the first twenty years of his life in Poland, he left his native country in November 1830, just before a great Polish insurrection against Russia, to go to Vienna and then Paris, where he died at the age of 39, on October 17, 1849.

## ###ARTICLE\_START### ID:2184

Made up of a set of independent modules, each with a unique function (filter, effect, oscillator, sequencer, etc.), connected together by cables, the modular synthesizer developed in the early 1960s has become one of the most sought-after "vintage" electronic instruments in recent years. Thanks to a virtual modular synthesizer called Rack - an open-source software that reproduces the operation of the original machine - it is now possible to slip into the shoes of the pioneers of electronic music. Hours of trial and error, tinkering and sound experimentation in perspective. www.vcvrack.com (free in the basic version).

## ###ARTICLE\_START### ID:2185

Mathieu Potte-Bonneville is a philosopher, director of the "books and knowledge" department at the Institut français, and coordinator of the Nuit des idées. How did you come up with the Nuit des idées? I had previously organized with the Institut français, or helped organize, philosophers' nights abroad, each time with extraordinary success. In Rabat and Casablanca, for example, we had to rush to set up marquees to accommodate the 9,000 people. In Buenos Aires, the anthropologist Marc Augé, it was the Rolling Stones cheered by 20,000 spectators. So I knew the audience would be there. The principle is to create a Fête de la pensée like there is a Fête de la musique: thinking is a celebration. The first edition, in 2016, only took place in France, under the gilded roof of the Quai d'Orsay. From 2017, we launched the invitation to participate in all the French Institutes of the world, with a unique theme that each place could interpret in its own way, all federated by an in progress website, which sometimes allowed to generate connections, for example the idea of a Little Night of Ideas, for children, with the Louise-Michel media library of the 20th arrondissement in duplex with those of Marrakech, Dublin and Dakar. What experiences did you draw inspiration from? First, we noted the fact that the places of public debate have moved from the university to live stages. Then, that there is today an aspiration to break down the barriers between disciplines and knowledge to bring together researchers, creators, writers. Finally, this Night of Ideas is also an opportunity for French and foreign thoughts to meet on an equal footing. For the inauguration of the 2018 Night, we invited the Nigerian writer Chimamanda Ngozi Adichie, who is both an international star and not very well-known in France - finding very famous people who are not well-known is the Holy Grail of the programmer! As soon as we announced this meeting on the Internet, reservations were sold out in twenty-four hours. We are moving away from an overarching conception of intellectual influence: it is not about having French intellectuals speak in front of a foreign audience that is silent, but about building scenes where "we talk to each other." France thus values its culture of public debate, which is recognized everywhere. What could there be to reinvent in France between academic knowledge, public debate, research, the media? The great danger is that the links will be broken with the specialists, who share expertise but no longer feel the need to address the general public. The other danger comes from the opposite side, from the polemicists, successful authors, who increasingly speak out against the university: I, who am not in the inner circle of knowledge, am on the side of the people. Moreover, the methods of producing knowledge have changed profoundly, and this raises very interesting questions. How, for example, do we move from the figure of the great author to the figure of the collective intellectual? How do we respond to the democratic demand in the sharing of knowledge, which is expressed for example by hackathons, these political collectives that work on free software, the contributory Web, co-invention? It is not a question of reviving the old-fashioned debate, we must also renew its forms.

## ###ARTICLE\_START### ID:2186

In the power struggle between Google, Microsoft and IBM to attract the cream of AI start-ups and researchers, anything that helps showcase its technologies in order to grow its "community" faster than that of its competitors is a good idea. And what better way to showcase its expertise in the hottest "tech" sector of the moment than to associate its name with the artificial intelligence program at Station F, on paper the largest start-up incubator in the world, based in Paris? Virtual friend. Called AI Factory, this highly sought-after program to support entrepreneurs developing AI applications has been entrusted to the world leader in software, Microsoft. This is an opportunity for the inventor of Windows, long boycotted because of its rigid and mercantile approach to intellectual property, to play the role of patron at a reasonable cost and to refine its new opening strategy. On the first floor of the huge concrete hall next to the tracks of the Gare d'Austerlitz, seven young French AI startups have been housed since September in the 80-workstation space allocated to Microsoft, which rents them to Xavier Niel, the founder of Free and Station F. From Hugging Face, which developed a virtual friend for American teenagers, to a solution for analyzing legal and judicial risk, including a language automation tool for conversational robots, all these companies have in common that they have already proven themselves. A maturity required by Microsoft, which provides them with its artificial intelligence platform and all of its services, free of charge and without any compensation other than a one-year commitment. "By developing products that rely on our technologies, they contribute to our growth and help us grow our ecosystem in artificial intelligence," explains Christophe Shaw, the head of co-engineering projects at Microsoft who developed the AI Factory. This initiative is not disinterested. It is based on the idea that ultimately, these projects will help the American giant improve its AI tools and services. "Where others are content to make resources available, these targeted partnerships aim to support selected start-ups as closely as possible to their needs," continues Christophe Shaw. Their success will be ours and vice versa, but they remain completely free and can very well use technologies from free software or the competition in parallel." Free union. In the era of open innovation, the multinational is therefore coaxing future AI nuggets into a free union, which does not prevent the software publisher from hoping that they will then remain loyal to it, why not as customers this time. "First of all, we don't remain a start-up forever," concludes Christophe Shaw, "then it allows us to strengthen our French roots, which also involves the joint research laboratory that we opened ten years ago with computer science researchers from Inria [National Institute for Research in Computer Science and Automation, editor's note] who are also associated with this program. France has great potential in artificial intelligence and it is strategic for us not to miss out."

## ###ARTICLE\_START### ID:2187

More than 600 million people worldwide use Adblock Plus and other web extensions to block ads from appearing on websites they visit. This is almost a paradox for a group whose advertising revenues exceeded $70 billion in 2017. On February 15, Google will launch an ad blocker integrated into its Chrome browser. The Mountain View firm is not sawing off the branch it is sitting on. It is adapting. Adblockers, these web extensions supposed to chase advertising from websites and speed up browsing, are enjoying a boom. Their use increased by 30% worldwide in 2016, according to the annual report from the consultancy PageFair, and the trend is likely to continue in 2017. In total, 615 million people use an ad blocker on a computer, smartphone or tablet. Intrusive formats Rather than leaving it to third-party developers, Google has therefore chosen to offer its own service. The Alphabet subsidiary is now part of the Coalition for Better Ads, a global organization campaigning for an end to pop-ups or videos with sound that start automatically. "We believe that Internet users are not against advertising, that they know it is necessary for the sustainability of free media. In fact, they are opposed to certain types of advertising formats, particularly on mobile, which are too intrusive," Carlo d'Asaro Biondo, president of Google Europe, recently explained. "Acceptable" advertising The idea is obviously not to destroy online advertising, but to demand that advertisers provide banners or videos that will no longer scare Internet users away. Other extensions can be more aggressive, with a serious economic impact for the sites concerned. According to a calculation by the start-up AdBack, YouTube loses nearly $2.5 million in advertising revenue per year in Switzerland alone. Worldwide, thirteen sites are said to be recording a loss of more than $100 million. Google Chrome's ad blocker faces dozens of competitors. Among them, Adblock Plus is installed on 100 million devices, making it the most popular ad blocker on the planet. In September, Eyeo, the parent company of Adblock Plus headed by German Till Faida, announced that it had found a system to block ads on Facebook. But the engineers at the Menlo Park giant, whose financial balance depends on advertisers, always end up deceiving those at the Cologne firm. Like Google and Adblock (another popular ad blocker, used by 40 million people), Adblock Plus, aware of the realities of the web ecosystem, has set up a program of "acceptable ads" and a "white list" of advertisers authorized by default on the extension. Privacy Policy "We would like to encourage websites to use honest and discreet advertising. That is why we have established strict guidelines to identify acceptable ads by default. If you still want to block all ads, you can disable this in the settings in a few seconds," warns the extension. In principle, the initiative annoys many users, who turn to uBlock Origin. Also free and open source, the extension has the advantage of not requiring as much computer memory, while, on the same site, the number of ads blocked (indicated in the icon next to the URL bar) by the standard version is roughly the same as with Adblock Plus. But stricter content filters can be easily added at the user's discretion on both extensions. Paid software AdGuard, which presents itself as "the most advanced blocker", also has its fans, but it is paid. Ghostery, which can also block cookies, has adopted a policy of transparency by clearly explaining that the extension can sell the personal data collected. However, if the fed-up Internet users with advertising explain the growing success of blockers, security and privacy protection are their other major motivation.

## ###ARTICLE\_START### ID:2188

2017 made us even more aware, even though we already knew it, that the web makes no distinction between good and evil. The tools that enabled the election of the first black president in the United States then turned against his party to allow Donald Trump to take power and methodically dismantle his predecessor’s legacy. The web has offered innovative solutions to all sorts of problems, but it has created almost as many, if not more, new pitfalls. What allowed victims of sexual assault to make their voices heard through the hashtag #metoo, also allowed neo-Nazi and racist movements to coalesce in Charlottesville. Social networks are struggling to keep up and defuse the bombs that their users are creating with their own platforms. A Twitter user (Yair Rosenberg) created a clever automaton, "Imposter Buster," for a very specific target: Nazi sympathizers who create fake Twitter accounts of Jewish personalities. Unable to get rid of it, the Nazis in question complained to Twitter, which took their side and has just blocked the automaton account. In the hands of opponents of the government's plan for a Quebec firearms registry, the tools aimed at countering abuse on Facebook are becoming means to harass the managers of PolySeSouvient. The wonder of the early years at the miracles that were glimpsed thanks to these new technologies is giving way to a certain disillusionment, a rather brutal return to earth. The rise to power of a leader as dangerous as he is incompetent, in the most powerful country on the planet, is an example of this turnaround, even if the Trump phenomenon is due to many other factors. We dreamed of utopia, and we wake up in a world controlled by a handful of all-powerful companies, who do not want to be accountable to anyone. Four of them: Google, Apple, Facebook and Amazon, collectively collect revenues 50% higher than those of the Canadian government. The central issue is that of the ownership of data - our data - and the power that these companies arrogate to themselves by exploiting it for their own profit. Nothing, however, should condemn us to be captives of the GAFA model. There are other models that have proven themselves, on a vast scale. The majority of the planet's servers, and databases, operate using free software. Wikipedia has become the library of humanity without appropriating the knowledge that it puts at our disposal. The inventor of the Web, Tim Berners Lee, quoted last week in Wired magazine, himself expressed his disillusionment: "For 20 years, we could assume that if we kept the Web open, great things would happen. But we look at what happened this year and suddenly we can no longer believe that if it happens on the Web, it will be good..." His conclusion: it is time to change the course of things. He himself developed, with MIT, a platform (Solid: solid.mit.edu) to allow applications to process user data without having to centralize it in its own servers. Our freedom is based on the decentralization of data, while centralization is gradually eating away at our power and autonomy. It is time to wake up.

## ###ARTICLE\_START### ID:2189

Incandescent light bulbs in 1925, nylon stockings in the 1940s, the debate on planned obsolescence is not new but rebounded in the media and in the courts on Thursday, December 28. The Nanterre prosecutor's office confirmed that it had opened a preliminary investigation a month ago against the printer manufacturer Epson for "planned obsolescence" and "deception. This decision follows a complaint against "X", filed on September 18 by the HOP association (Halte à l'obsolescence programmée), implicating, in addition to the Japanese manufacturer, three other players in the sector: Canon, Brother and HP. The investigation was entrusted to the DGCCRF (General Directorate for Competition, Consumer Affairs and Fraud Control), attached to Bercy. If, according to a judicial source, it is indicated that "this procedure does not imply any presumption of the constitution of the offense", this development is historic. This is indeed the first time, according to several sources, that the courts have taken up a case on the grounds of the offence of planned obsolescence. Included in the Consumer Code since July 2015, it condemns "all techniques by which a marketer aims to deliberately reduce the lifespan of a product in order to increase its replacement rate. In the case of manufacturers of printers and printer cartridges, HOP believes it has demonstrated "unambiguously" that such processes have been used. This sector was not chosen at random. "It speaks to people and we had a lot of feedback from dissatisfied users," explains Laetitia Vasseur, president of the association. For two years, HOP collected consumer testimonies, conducted interviews with specialists and carried out its own tests. At the end of this work, the association believes it has succeeded in developing "a technical and legal demonstration" founding "an emblematic case of planned obsolescence. And if only Epson is the subject of a preliminary investigation, it is, according to Ms. Vasseur, because the bulk of the file presented to the courts concerned this manufacturer: "We did not have the material means to investigate everyone, even if we have the intuition that others act similarly. "A first victory" From a technical point of view, HOP focuses its argument on two components of the printer. First, the ink cartridges, equipped with a chip that counts the number of copies made and the number of print head washes carried out, to deduce the quantity of ink remaining before deactivating them. However, according to the tests carried out by HOP - confirmed by at least one other design office - the cartridge is declared out of service even though it still contains ink (20 to 40% of its capacity). HOP also cites the testimony of users explaining that their printer's scanner was blocked by this supposed ink shortage... even though the scanner does not need ink to work. In support of its demonstration, HOP emphasizes that the use of chip reprogrammers (products available online for just over 10 euros) allows you to continue using a supposedly empty cartridge. The other component in question is the printer's absorber pad, a part whose role is to absorb the ink drops released by the printer. Here again, the printer does not measure the filling of the pad: according to the association, it simply counts the number of times it has been requested before blocking the printer at a specific threshold on the grounds of this failure, even though the pad is not full. The use of free software also makes it possible to bypass this blocking. "We are dealing with a technique [that] aims to deliberately reduce the lifespan of the printer," accuses HOP, knowing that replacing the part costs "more or less the purchase price of a new printer. Faced with these accusations, Epson assures that it is "calm. "We are going to demonstrate that planned obsolescence is not in the nature of the company," reacted Thierry Bagnaschino, marketing director for France. "For us, this is a first victory," explains Ms. Vasseur. In the absence of case law on planned obsolescence, the association's chances of success remain uncertain, especially since, to characterize the offense, it is necessary to provide proof of the company's deliberate intention to have wanted to reduce the lifespan of its products. "We are sure of ourselves," says Emile Meunier, lawyer and co-founder of the association, believing that the desire to force the consumer to renew their products could be deduced by the demonstration of the technical obstacles incorporated into the product. HOP, whose creation in 2015 is closely linked to the establishment of the crime of planned obsolescence, is today the pioneering association to obtain recognition of this practice before the French courts. On Wednesday, December 27, it filed a complaint against Apple, after the American giant admitted to deliberately slowing down its old smartphone models. With a "community" of 20,000 people, including 8,000 members, it claims not to focus on high-tech products, even if these leave a particularly harmful ecological footprint. The association, which claims not to be there simply to sue "bad brands", proposes that warranty periods be extended and that product repairs be made easier. "The fight against planned obsolescence is not limited to high-tech products; it concerns small and large household appliances as well as women's tights," emphasizes Ms. Vasseur. The association's greatest victory would undoubtedly be to obtain the first conviction in France of a company under planned obsolescence. This offense is punishable by a maximum sentence of two years in prison and a fine of 300,000 euros.

## ###ARTICLE\_START### ID:2190

Artificial intelligence techniques have made dazzling progress in five years, becoming essential in all sectors of research, the economy and society. Where are we really? What are the projects and achievements currently underway? From Paris to Zurich, via Silicon Valley, we investigate the world of AI. Experts in digital futurology affirm it: artificial intelligence will turn everything upside down. If we let them, they are even capable of talking about "disruption"... AI can recognize a cat in an image, it will grant mortgage loans; it crushes its opponents at go, it will drive all cars; it can translate from Polish to Mandarin, it will automate so many tasks that today's jobs will no longer exist tomorrow. Artificial intelligence is magical. Not in fact, of course, but in this strange relationship we have with this technology whose prowess we accept without understanding its mechanisms. But what exactly is this artificial intelligence? Researcher Yann LeCun - who is largely responsible for the current upheaval in the discipline through his work in the 1990s on deep learning, and who is now head of FAIR, the fundamental research laboratory at Facebook - defines AI in a very simple way: "Making machines do activities that are generally attributed to animals and humans." But this simplicity cannot counterbalance the extent of the excessive expectations that have accompanied AI since the term was established as a field of research in 1956. "It's an anthropomorphic term and we project things onto it that make no sense," says Raphaël Féraud, a researcher at Orange Labs. "Ideally, we should talk about autonomous or adaptive agents." This "intelligence" is nevertheless omnipresent in the thoughts of those who work on the issue. If they all know that it is only a mirage today and rather speak of learning to describe their work, intelligence, the kind that allows us to understand the world around us, to adapt to changes, to anticipate and predict, is the goal to be achieved. In passing, during a visit to the Facebook offices, Antoine Bordes, head of FAIR Paris, mentions "the great plan of AI". When asked to explain, he laughs: "This "great plan" is simply trying to move towards artificial intelligence, towards machines that reason. But we assume today that it will be composed of many bricks, and for the moment we only have a few elements that we think could work." Others are more direct, like Google DeepMind and its official slogan: "Solving intelligence." This is undoubtedly what makes the subject so complex. The same term, "artificial intelligence", refers to both a discipline that is experiencing dazzling progress, a goal that, without being unrealistic, still seems far away, and a chimera, which thrives in a collective unconscious fed on science fiction. Potential. Artificial intelligence is above all a sector in constant effervescence since 2012 and the impressive victory of a neural network in the annual ImageNet challenge image recognition competition. Until then, different methods competed each year with, for the best, an error rate of 25%. In 2012, the University of Toronto program came out with only 16%. This performance brings back to the forefront a deep learning technique that had begun to prove itself in the 90s before being somewhat forgotten. The computing power of graphics cards (GPUs) coupled with the availability of large labeled databases (an image of a cat on a car playing the piano is accompanied by the labels "cat", "car" and "piano", for example), allows these very greedy programs to finally prove themselves on a large scale. Very quickly, the scientific community understands the immense potential of what has just happened: by being trained on a relevant database, a computer program is able to establish rules itself that will make it possible to interpret other data that were until then very (or too) complex to process. By the following year, there were only neural networks in the running for the ImageNet challenge competition and error rates dropped to a few percent. Learning became essential. "At that time, I saw a lot of teams that weren't doing it start learning," recalls Bertrand Braunschweig, director of the Inria Saclay-Île-de-France research center and coordinator of the Institute's white paper on AI. But, of course, it was the research sector itself that was turned upside down. Firstly, by the thunderous arrival of the major players in the digital economy who saw artificial intelligence as the very future of their technological core. In 2013, Google recruited Geoffrey Hinton for its Brain project, and Facebook asked Yann LeCun to set up the FAIR laboratory. They are two of the most renowned scientists in the field and their discoveries are at the origin of the current maelstrom. In Greek mythology, bronze giants, golden servants and other animated objects commonly rub shoulders with mortals and divinities. Most of them are the works of the fire god Hephaestus who forged, among other things, Talos, a creature responsible for going around Crete three times a day to repel intruders. In the 18th century. Obviously no AI, but a number of automatons, more or less elaborate, including a flute player, a "digesting duck", capable of restoring what it eats and swimming in a very realistic way, a "mechanical Turk", an ingenious hoax supposed to play chess... 1914. Leonardo Torres Quevedo invents the first real chess-playing automaton. It is capable of finishing a game in a king and rook versus king confrontation. And of winning every time. Leonardo Torres Quevedo will be the first to use electromechanical relays in a calculating machine. 1950. To be or not to be... British mathematician and cryptologist Alan Turing, the father of modern computing, writes an article in which he proposes a test to determine whether or not a machine has consciousness. 1956. Mathematician John McCarthy organizes a seminar at Dartmouth College in the United States, during which the term artificial intelligence is invented. A new field of scientific study is born. 1968. Release of 2001: A Space Odyssey. In the middle of the void, Stanley Kubrick stages the duel between man and a rebellious artificial intelligence, HAL 9000. A confrontation with the first self-aware computer in the history of cinema. All the more chilling because the machine has a human voice. 1984. Ernst Dickmanns, from the Bundeswehr University in Munich, and Mercedes-Benz test an automatic van equipped with cameras. The vehicle reaches 100 km/h on a traffic-free road network. The driverless car is now almost operational. Early 1990s. Appearance of the Web, a set of pages mixing texts, links and images on the Internet. Hundreds of billions of data (data) will now be able to circulate and be exchanged without hindrance. 1996. Birth of the first Tamagotchi, a Japanese gadget that allows you to feed and care for a virtual animal. Open research. When we want to try to understand where artificial intelligence is going at the end of 2017, the first reflex is therefore to look in this direction, that of the next stage, that of fundamental research. The first observation is that knowledge sharing is a reality on a global level, whether researchers work in the private or public sector. This was a requirement of Yann LeCun when he joined Facebook: "The only way to do quality research is to do open research. This is something that I established very clearly with Mark Zuckerberg. First, it allows researchers to publish, and therefore the standards are higher, secondly, it is the only way to attract the best. The currency of exchange with researchers is their intellectual impact." And this impact is mainly played out during the major annual conferences on the subject, the two main ones being ICML (International Conference on Machine Learning) at the beginning of the summer and NIPS (Neural Information Processing Systems) at the end of the year. But publishing there is now a feat, the sector having become hypercompetitive. Which sometimes requires shortening research cycles. "We publish everything we produce, but we try to focus on projects between three and six months, so as not to get burned by other teams," explains Antoine Bordes. Which is bound to happen, anyway. At Inria, however, they continue to prefer the long term: "In our strategic and scientific plan, we determine the major areas of digital development and the major challenges that we want to tackle over the next five years," explains Bertrand Braunschweig. What we have in our drawers is what will be used by manufacturers in several years. The time frame for research is different from that of the economy, the market." Which does not prevent the Institute from remaining very competitive on the subject. "What private players do is that they come and work with us," continues Bertrand Braunschweig. They do things on their own, of course, but we work with them. We still have things to say, we have researchers among the best in the world." It is also an Inria researcher, Francis Bach, who chairs the organizing committee for the 2018 edition of the ICML conference. "Solving intelligence" But in reality, where is the fundamental research that will allow machines to reason? So to speak, nowhere. Be careful, we are not saying that it is stalling, but that researchers are still clearing the way in the hope of finding traces of a path that will perhaps lead to the Holy Grail. And no one agrees on the direction in which to look. Demis Hassabis, the boss of Google DeepMind, for example, seems to swear only by reinforcement learning to "solve intelligence". This method, more flexible than supervised learning, is at the heart of AlphaGo, the program that has defeated several Go champions in highly publicized matches. But it is also a resource-intensive method that is currently limited to a certain type of learning. 1996. Worldwide deployment in bank ATMs (in France, it is Crédit Mutuel de Bretagne) of a check reading software based on a convolutional neural network invented by the Frenchman Yann LeCun. The technology will be somewhat forgotten until its resounding reappearance in 2012. Yann LeCun is now the head of FAIR, Facebook's artificial intelligence laboratory. 19 97. Deep Blue, IBM's supercomputer, beats world champion Garry Kasparov at chess. 20 07. Apple markets the iPhone, a computer phone with a touch screen. The beginning of the reign of tablets and smartphones. 2011. Applications using natural language to communicate and advise users multiply. 2012. For the first time, a deep neural network wins the ImageNet challenge, an image recognition competition. With an error rate of 16.4%, it far outdistances the second program (26.2%). This victory, which puts the technology back in the spotlight, is massively adopted by all players in artificial intelligence. 2013. All participants in the ImageNet challenge use deep neural networks. 2014. Astrophysicist Stephen Hawking states in an interview with the BBC that the "development of complete artificial intelligence could cause the end of humanity". Since then, several people (Elon Musk, Bill Gates, etc.) have been maintaining an apocalyptic psychosis around the advent of an all-powerful machine. 2015. Google publishes the first version of TensorFlow, its deep learning machine learning software. Available as free software, it is used massively throughout the world for industrial and research purposes. 2016. AlphaGo beats a Korean master. Twenty years after chess players, go and poker champions are bowing in turn to artificial intelligence programs. 2199. Machines reign supreme over the human species, even if there are still a few bugs in the matrix... "Humans are a contagious disease. You are the plague, we are the antidote." (Cybernetic Agent Smith in The Matrix). Yann LeCun and other renowned researchers, such as Jean Ponce of the Ecole Normale Supérieure in Paris, are more interested in weakly or unsupervised learning. The idea is to allow machines to learn primarily through observation, without first providing them with pre-chewed data. This is far from obvious and real progress in the field is rare. For his part, Geoffrey Hinton is more interested in wiping the slate clean. He wants to start over on new foundations. "I think the way we think about computer vision is wrong," he told Wired magazine. "It works better than all the other current solutions, but that doesn't mean it's right." The reason is the astronomical amount of data needed for learning, which is much faster in humans. He is working on an alternative method, "capsule networks." At the end of October, he published two articles that present promising results. These are just a few examples of all the avenues explored, which go as far as biomimicry and the precise mapping of small pieces of human brains in the hope of dissecting this "biological algorithm" that works so well. While basic research is progressing at its own pace, the same is not true for applied research. The latter is ultimately responsible for optimizing, making concrete, and spreading the possibilities of deep learning in every conceivable field. This is what has allowed the ultimately rather discreet popularization of artificial intelligence, particularly in mobile phones. The mere fact, for example, of having search engines today capable of bringing up images containing boats, birthdays or Christmas trees is a technological achievement. This singular difference between fundamental, theoretical and prospective research, and another that seeks to develop everyday applications is found in the very organization of research within large groups. "It's a question of runway length," describes Emmanuel Mogenet, head of Google's European research center in Zurich. The length that we have given DeepMind is very, very significant, in the order of ten or fifteen years. DeepMind wants to produce real artificial intelligence. And Demis Hassabis often repeats: anything that does not propel them towards this ultimate goal is a distraction. Here, we have a shorter runway, two or three years, with more tangible objectives. This was the case, for example, for the Google Photos search engine or translation." So, inevitably, we ask ourselves the question of the next two or three years, with the impression in mind that a lot has already been done based on existing theory and that technological developments are bound to slow down. Emmanuel Mogenet is convinced of the opposite and talks to us, for example, about horizontal learning, the fact of training a neural network for different tasks that are quite similar when they are currently ultra-specialized. And then, there are other, more dizzying avenues: "We are in the process of applying machine learning to itself. We always have a problem of designing a neural network. Should it be deep? How big should it be? How many neurons? What are the connections? There are recipes that we apply, but there is no science on the subject. We are in the process of training machines to learn how to design neural networks. We are starting to get results, and it will potentially be extraordinary." AIs that create other AIs will also undoubtedly fuel some fantasies... Handle project at the Institute of Intelligent Systems and Robotics in Paris. In search of "bias". But applied research is also present in a transversal manner in all sectors that have a lot of data that is complicated for humans to interpret. At Orange Labs, for example, we want to apply it to marketing campaigns. This is the project that Raphaël Féraud is working on: "It's about optimization by reinforcement. Depending on the context, what we know about the customer, and the action of the advisor, we will establish a reward system based on the final satisfaction." Telecom operators, banks, insurance companies, all kinds of services and why not public services, it goes without saying that the integration of artificial intelligence into all the cogs of society is only just beginning. Hence, no doubt, the impressive media offensive in recent months by players like Google, Facebook or Microsoft who do not hesitate to overplay the transparency of their research units. We must reassure, explain. But above all, we must not try to minimize very real problems. When asked about the subject, Blaise Agüera y Arcas, one of the brains behind Google Brain, first talks about employment: "The tasks for which we build AIs are for the most part entrusted to humans today, and as we automate these tasks, a whole section of human work becomes superfluous. This should be good news for humanity - we wouldn't do it otherwise - but if it is not implemented with a redistribution of profits, it will lead to mass unemployment." But he also wants to address the subject that has taken on an unexpected scale in 2017: "The other problem is the fact of integrating human biases and prejudices into artificial intelligence. AI is above all the learning of human processes, and these processes carry with them categorizations, stereotypes. We now have evidence that all the systems we have trained to perform a human task integrate human biases. Ultimately, it is the ultimate tool for introspection, to bring out our own beliefs. But now that we know it, we cannot delegate our prejudices to algorithms. "The small world of artificial intelligence has had only one word on its lips in recent months: "biases". This is because, after the euphoria of the advent of a revolutionary technology, it was necessary to face the facts: the masses of data used to train neural networks are not neutral. And it is the very heart of development that is being turned upside down. The validity of a computer tool no longer comes from the quality of the software programming, but from the accuracy of the training data. Which leads Fernanda Viégas, a researcher at Google in the PAIR (People+AI Research Initiative) unit, to launch this appeal to her company's engineers: "Debug your data before debugging your models!" The fairness and transparency of autonomous systems are therefore one of the major challenges of the coming years. We must succeed in dealing with bias, either upstream, in the data used, or in the processing process that can become capable of detecting and neutralizing it. "One of the situations where we necessarily want to remove bias from a data set is, for example, in education," explains Fernanda Viégas. When my children are going to learn all the jobs they can do, it would be catastrophic if the system responded according to their gender. Conversely, we can want a system that will reveal bias, to be able to work on it, to change society. To deal with bias, we must have a goal. » While it is difficult to prepare for the upcoming progress of artificial intelligence, we already know that the question of its impact on society will be at the center of concerns for the coming years. The places of reflection are multiplying, with initiatives such as "Partnership on AI" which brings together private actors (Facebook, Google, Amazon, IBM, etc.), NGOs (Amnesty International, Unicef, etc.), associations defending freedoms (EFF, ACLU, etc.) and universities. The declaration of intent is necessarily a bit grandiloquent: "We have designed this partnership so that we can devote more effort and attention to solving humanity's most complex problems, particularly in terms of health and well-being, transportation, education and science..." Without doubting that they will succeed in working in harmony, we can still wonder: wanting to solve "humanity's problems" thanks to technology, is this not also a bias?

## ###ARTICLE\_START### ID:2191

Since 2000, the Cercle des économistes and Le Monde have distinguished, among the many young French economists, the one who seems to have best advanced the concepts, ideas and proposals of economic policy. Throughout these years, we have wondered about the meaning that this Prize could take. We have questioned the added value that this choice could bring to the debate. Had we really allowed these brilliant minds and their work to help public authorities and business leaders get through these difficult times? The answer is undoubtedly yes. Certainly, the list of winners and nominees is impressive in terms of the intellectual quality of these young talents. But that would not be enough, because this is not a simple academic competition. The level of their work illustrates the ongoing effort made within the framework of our discipline to try to resolve the problems that have arisen, over the years, in the face of the shocks and crises that the world is experiencing. The originality of this prize is to highlight the ability of the winners to listen to today's economic reality and to constantly seek solutions to the most urgent problems. Current questions The world we live in is difficult to grasp, medium-term forecasts are the subject of discord or controversy, particularly regarding the post-crisis growth regime or new forms of competition in markets affected by the digital revolution. Yesterday, we questioned the excesses of monetary policies and financial instability, the major reforms to be carried out, particularly in France on those concerning pensions or charges weighing on salaries. This corresponded to the questions of the moment. Our ambition, for this year's prize, is to stick even more closely to the profound questions of our society. Today, we must revitalize the productive fabric and "re-imagine" the production systems disrupted by digital technologies; reconsider competition in multi-sided markets and examine the effects of uberization and technological "clusters" that create new modes of coordination and require other forms of regulation; define training and qualifications adapted to this new world in order to combat all forms of exclusion in the labor market; tackle the inequalities caused by technological revolutions and globalization. And how can we not mention the upheavals that genetic engineering and artificial intelligence will bring to the innovation processes and organizational strategies of companies! These are all the subjects that economics must talk about, these are the themes that worry citizens, these are the uncertainties and difficulties of analysis that economists must overcome. New avenues Economic science must remain in motion, responding to these new challenges. To understand them, it must also renew its approaches and enrich its analyses. The need to open up to other social sciences is therefore stronger than ever. The awarding of the Nobel Prize in Economics has shown the way on several occasions. By rewarding, in 2017, Richard Thaler, after Daniel Kahneman and Vernon L. Smith in 2002, for their integration of advances in cognitive psychology in understanding economic behavior. By crowning, in 2009, Elinor Ostrom, a political scientist, for her work on the modes of governance of commons, these common goods subject to collective appropriation such as fisheries resources in the oceans or free software, and the same year Oliver Williamson, more popular among managers than economists, for his analyses of the modes of internal and external coordination of companies on the markets. Without forgetting, in 1993, Robert Fogel and Douglass North, for their work in quantitative economic history and their analyses of the institutional changes at the source of trend growth. The ambition of the Best Young Economist Award is to contribute to the legitimacy of economic analysis by distinguishing winners for the excellence of their academic production and for their contribution to economic policy and business decisions. But also for their ability to trace new avenues of research, to innovate, of course at the heart of the discipline, but also by proposing inflections in the choice of research objects and in the modes of modeling or theoretical or empirical validation, by spilling over into other social sciences, management sciences, economic sociology, quantitative history, cognitive sciences... Because, as the English economist John Stuart Mill (1806-1873) wrote, "he is a poor economist who is only an economist."

## ###ARTICLE\_START### ID:2192

For decades, the Social and Solidarity Economy (SSE) has been developing alongside the capitalist economy. It employs 2.4 million employees in France, or 12.8% of private employment, and accounts for just over 10% of the wealth created in France in one year. One billion people worldwide are linked to a cooperative. This economy includes cooperative, mutual, social enterprises, associations and foundations whose internal operations and activities are based on a principle of solidarity, social and ecological utility. But it still needs to consolidate and therefore "infuse". This is how the SSE will be able to increase its cooperation, its intra-relations, at the national and transnational level. This process has begun. This is evidenced by the intense rapprochements in recent years between mutual insurance and health insurance companies, or the recent birth of large groups that can bring together mutual insurance companies, health insurance companies and joint institutions. The world of cooperation, particularly agricultural cooperation, is not left behind: the infusion strategy has existed there for a long time. Cooperative banks have gotten involved by sometimes marrying already powerful groups. Activity and employment cooperatives have developed a system that is, by construction, "infusional". Social enterprises have been able to develop by favoring "unifying" strategies for more than twenty years. But infusion cannot have the sole purpose of grouping together. It must serve as a lever to densify a cooperative life, a mutualist existence, an associative realism. Today, it is the start-ups of the ESS that must see the light of day and develop. The same goes for field initiatives that are too often scattered. Action research, dear to the ESS, has been taken for granted too much, at a time when it should irrigate the emergence of new shoots and strengthen the link between economic and social efficiency. The ESS must also "spread": beyond its territories and usual fields of action. It is no longer enough for it to be strong in sectors such as health, banking, insurance, agriculture. Support, backing for hosted or associated start-ups already constitutes one of the possible responses. The ESS must go further. It must get closer to researchers, innovators in new technologies, biotechnologies, free software, free seeds, free patents. This movement is underway. Other actors wish to adopt the principles of the ESS, without always taking the traditional paths to achieve this. We must open the doors to them and support them by creating spaces for meetings and actions. This is one of the ambitions of the International Agora of ESS Projects, created by the International ESS Forum, or the ESS Lab. We need to multiply this type of effort in direct connection with research centers, universities, ESS companies and many other stakeholders. The ESS must dare to go further. A reflection must be initiated around the notions of social and solidarity economy - companies with employee participation (collaborative) or companies with shared results. The evolution of companies with "classic" statuses shows us that many barriers are falling. Modes of cooperation - participation are emerging here and there. At the time when the government announces a law (on co-governance, co-administration) to encourage the creation of companies of this type or the conversion of companies to this new management mode, the ESS must be associated with it. It must be a stakeholder. This is how it will be put in a position to disseminate its experience and its models. (1) www.essfi.coop

## ###ARTICLE\_START### ID:2193

Digital technology to help democracy? This is the promise made by civic tech, "citizen participation technologies". But between the aspirations for more transparency and openness in public decision-making and the reality of practices, there can be a long way to go... A website, a "consultation" or "citizen lobbying" app alone do not change power relations. Behind the "techno-optimistic" speeches, the contrasting world of civic tech is riddled with tensions: between autonomy and institutionalization, logic of opening up code and market logic, not to mention the difficulty of mobilizing beyond geek circles. For Clément Mabi, a researcher at the University of Technology of Compiègne (UTC) and a specialist in citizen uses of digital technology, civic tech players would benefit from learning from past experiences of participatory democracy. What do we mean by the expression "civic tech"? There have been several definitions and typologies, but to summarize, these are technologies that aim to improve the functioning and effectiveness of democracy by renewing the forms of citizen engagement. However, behind this rather generic keyword, the realities are very varied. To understand the issues surrounding civic tech, we must, in my opinion, start not with the tools themselves and their functionalities but with the political projects "embedded" by these technologies, in order to identify what they want to do to democracy, and to re-inscribe them in power games. What are these political projects? To better understand it, I proposed (1) to classify civic tech around two axes. The first axis reflects their desire to transform democracy: at one end, technologies that want to deepen the representative system; on the other, those who want to change the rules of the game. The second is their relationship with institutions: on the one hand, the external view, independence - what Pierre Rosanvallon calls the "counter-democracy" of vigilant citizens; on the other, collaboration with public authorities. Based on these two axes, I define four families. The first is that of "external critics": actors who want to improve representative democracy by monitoring its functioning, such as the association Regards citoyens with its sites Nosdéputés.fr and Nossénateurs.fr which document the activity of parliamentarians. The second is that of "external reformers", who are also in a process of deepening, but in a logic of collaboration with institutions. We will find platforms for dialogue and consultation - such as Fluicity or Make.org -, actors who have an entrepreneurial approach to transforming public action by creating a direct dialogue between elected officials and citizens. This is also the approach that elected officials adhere to the most. The third family plays the game of institutions while seeking to change their functioning: it is the one that, literally, wants to "hack democracy", that is to say, rely on the resources of representative democracy to modify its rules. We can cite the platforms Laprimaire.org "for open and democratic primaries", or Parlement & Citoyens which offers online consultations on legal texts. Finally, there are the "critical reformers", who want to transform the place of the citizen while remaining independent of public authorities, such as the Open Democracy Now initiative, which aims to develop open source consultation and participation tools (2), made available to activist communities. Civic tech tools are increasingly put forward by political leaders as remedies for the crisis of democracy, without there being any feeling of a change in power relations... There is an initial diagnosis: the need to renew the relationship with citizens. There is also an observation: digital technologies facilitate expression. This is bound to appeal to elected officials who want to create a new type of relationship with their constituents, but who, for all that, do not want to lose control over decisions... Some initiatives are also highly valued because the discourse that accompanies them is very "marketed": my tool is the solution to the problems of democracy. However, as we know, it is much more a political question than an equipment one. In fact, some participation tools will be carried out, rather in good faith, by elected officials who are convinced that this is going in the right direction to change things, while the civic tech thus highlighted is often the most harmless... France is anchored in representative democracy, with very resilient institutions that are resistant to change. We saw this clearly with the law for a digital Republic. The government relied on a civic tech - the Parliament & Citizens platform - to launch an online consultation, presented as a major step forward for democracy. The initiative is interesting, particularly because there was political support - Axelle Lemaire fought for this type of approach to take place - but we remain in a logic where politics retains control, with very little delegation. You emphasize that each family of civic tech corresponds to very different technical and economic models. With what political effects? Depending on their objectives, the actors will mobilize different resources. Entrepreneurial logic finds its balance in the responses to calls for tender, the financing of which makes it possible to obtain mature technologies more quickly; however, public authorities will tend to value these "turnkey" participatory tools, which can be adapted to their orders. Other actors, rather from digital counter-cultures, will want to maintain their independence by relying on communities of developers. So we have, on the one hand, "proprietary" technologies, which move quickly, financed in particular by public money, and on the other, "open source" tools, which take time, and are for the moment more fragile, due to the lack of sufficiently structured communities. This is a dangerous imbalance, because the risk, well known in digital culture, is that of the winner takes all. Can we entrust democracy solely to "commercial actors"? Do we know who is affected by this type of approach? Can civic tech go beyond a young, urban and geeky audience? The "Swiss army knife" tool, the one that would allow us to reach all citizens, does not exist: each person, depending on their socio-technical habits, develops their own uses. Overall, civic tech users are young, white and urban. But we can also turn the question around: does it make sense to impose a "universalist discourse" on these tools? We can also see these technologies as tools developed by this population to be more visible in an increasingly fragmented public debate. The challenge is above all to know what conditions to bring together so that communities structure themselves around tools that suit them. Broadening the public depends a lot on the questions asked and therefore on the citizens who will feel concerned: when will there be a public debate led by civic tech on working hours, or on the fight against inequalities? To strengthen civic tech, we should probably move towards much stronger intersectoral logic, think in terms of a coalition of interests, and go beyond the sole democratic question. Some opportunities offered by digital technology are still underused: the strength of numbers, the capacity of these spaces of expression to mobilize contradictory expertise. Can we start to measure the effects of these technologies? It is quite complicated, because initiatives of this type are, for the moment, of a very limited scale. But we find an old tension, which social movements are well aware of: should we transform institutions from the inside, or put pressure from the outside? Civic tech only raises this question anew, and the answer is mixed. The Parliament & Citizens platform allows for a little more discussion of laws, but we have seen how the citizens' amendments to the 2016 biodiversity law were unraveled in the Senate; not to mention that parliamentarians use it a lot as a foil. More independent initiatives, however, have difficulty gaining momentum, while they are more successful in Spain. Once again, it is a political question, and here, the institutional effects are limited. These technologies reflect a stronger desire to get involved and allow issues to "rise"; it is a start, but we are far from having found a way to radically change the place of citizens in the functioning of democracy. There is always an issue of relationship to decision-making. People will not get involved, or will get involved very little, if it doesn't change anything in the end. Basically, the debate around civic tech is just an update of the questions raised by participatory democracy. Whatever the tool, the real issue is the distribution of power. This is why we need to re-inscribe civic tech in power games. One of the lessons of participatory democracy is that if we decouple power from methods, we arrive at a logic where, as someone would say, "The important thing is to participate"... These are questions that the left of social movements is very familiar with. For things to change, we will have to agree to go to the balance of power, to address the issues that cause controversy. This is why questions of independence are important. What relationship should we maintain with public authorities? What types of funding or support should they provide? Can we be both a service provider and a protester? We need to ask ourselves these questions now, before the smartest ones create monopolies. This also involves politicizing digital players. To create technologies that live up to their promises, we need to put an end to the discourse on the neutrality of technologies - and those who support them. The main risk is that we have, on the one hand, promises of democratic transformation, of "empowerment" of citizens, and on the other, a sanitized space for citizen expression that doesn't bother anyone. (1) "Citoyen hackeur. Enjeux politiques des civic tech" on the website la Vie des idées, May 2017. (2) Open source is software whose source code is freely accessible.

## ###ARTICLE\_START### ID:2194

An experimental currency with no central authority or clearly identified creator. An ultra-volatile rate that, until its take-off in 2013, dragged itself below the $20 mark (16.9 euros), with, on average, a bubble bursting each year. A mixture of archaic symbolism of precious metal in the era of digital profusion and technological sophistication. Bitcoin, which in eight years of existence has forged a global storytelling, never ceases to intrigue. Decoding the pioneer and best known of the 2,000 cryptocurrencies listed according to the latest estimates by specialists. Also readBitcoin: crypto-mania How was bitcoin born? Aggregation of the English words bit (unit of binary information) and coin (coin), this libertarian-inspired cryptocurrency was born on January 3, 2009, in the aftermath of the financial crisis. Based on blockchain technology, of which it has become the best ambassador, bitcoin allows peer-to-peer electronic payments (directly from one person to another), via transactions based on cryptography. Escaping the control of any governmental or monetary authority, bitcoin bears the signature of a certain Satoshi Nakamoto, whose identity is unknown and who could in reality be a code name taken by a collective of anonymous developers. Published in open source, bitcoin, whose monetary supply was set at 21 million units upon its creation, quickly acquired an international reputation. And gave birth to a global exchange market, with the creation of an ecosystem of tens of thousands of sites and applications dedicated to it. While the last message signed Nakamoto on the main forum of the bitcoin community dates back to the end of 2010, he is currently in possession of 800,000 bitcoins. In this system, where all transactions have been listed and authenticated since 2009, we know at least one thing: Nakamoto did not spend a single one. How does it work? This is where things get complicated and where some people give up trying to understand. Bitcoin is based on a giant computer register (180 GB) or totally transparent public database called blockchain. Each time a transaction is made between its users - more than 3 million people have cryptocurrency accounts, first and foremost bitcoin (1) - it is then "engraved" in this large open ledger. The blockchain uses encrypted transaction blocks that are added to each other, numbering 496,544 blocks to date and at a rate of one new block every ten minutes. These transactions are verified by those called "miners", mainly companies (originally, they were only individuals). By running ultra-powerful machines called Asic (Application-Specific Integrated Circuit), these "miners" solve a very complex mathematical equation releasing the new block recording the latest pending transactions. This block is sent to the 10,000 nodes of the blockchain network, each of which hosts all the transactions since the beginning of bitcoin. This "proof of work" is what makes the blockchain unforgeable: it would take more computing power than all the miners combined to invalidate a single transaction, or 3 billion billion operations per second! For this work, miners are paid 12.5 bitcoins per block. This remuneration decreases over time: it was 50 bitcoins every ten minutes when it was created and is halved every four years until 2140, when the limit of 21 million bitcoins will be reached. "This calculation is of no interest in itself," explains Manuel Valente, director of operations at Maison du Bitcoin (see pages 4), a well-established Parisian broker that allows you to acquire bitcoins. But it is what guarantees the independence and efficiency of the system and its inviolability." Beyond cryptocurrencies, which have helped establish its reputation for reliability, blockchain can certify all types of data, from diplomas to contracts, from works of art to property titles. Valente: "This technology can potentially allow the electronic notarization of all data at almost no cost." Hence the growing interest of trusted third parties such as banks, insurers or governments. How to buy them? A large number of exchange platforms on the Web allow you to convert euros into bitcoins and vice versa, with fees that vary depending on the service. Trading sites, such as Coinbase or Kraken, allow you to make purchases at market prices with modest commissions. Beyond a certain amount, a copy of the identity card is required. The account is funded by Sepa transfer. Physical exchange offices, such as the Maison du bitcoin, allow you to buy bitcoins with a credit card and charge a more substantial commission. All that remains is to store them. You can either leave your bitcoins on the online platform or use an application on a computer or smartphone. Or buy a hardware wallet the size of a USB key that offers the best security guarantees. The difference between a bank and a safe at home. In all cases, if you lose access to your wallet, the bitcoins are irretrievable. Is it authorized? With the exception of a few rare countries that have completely banned it, such as Morocco this week, yes. The website of the Ministry of the Economy, which presents it as "the first decentralized electronic monetary currency", adds the recommendations of the Bank of France to its information page dedicated to alternative currencies. At the end of 2013, in a report, the latter recalled that "bitcoin is not a legal currency" and that the issuance of virtual currency cannot "to date" be subject to control. It simply suggested ways to better supervise platforms: approval for payment service providers, collaboration with law enforcement in the event of illicit activities, etc. "Unless we resort to a North Korea-type solution by cutting off the Internet, I do not see what could prevent people from buying and selling bitcoins," concludes Manuel Valente. (1) Study by the Cambridge Centre for Alternative Finance.

## ###ARTICLE\_START### ID:2195

IT It's a merciless battle that's being played out in our desktop computers. On one side, well-known names in IT. Microsoft, Oracle, IBM and SAP have been equipping professionals with software and infrastructure for decades. On the other, more discreet references are trying to conquer market share by offering radically different products: free software. Little by little, open source is progressing in companies. Airbus, BNP Paribas, Société Générale and SNCF are among the companies that use free software, i.e. programs that can be downloaded, duplicated and modified as desired. Open source now represents more than 10% of the French software and IT services market, according to the professional union Syntec Numérique. In France, more than 400 companies specialize in supporting professionals to install, use and maintain free software. Their turnover increased by 15% between 2015 and 2016, compared to an increase of 3.4% for the French software market as a whole. "We are not a publisher, but a contributor," summarizes Damien Clochard, director of operations at Dalibo. This French company specializes in PostgreSQL, a free database management software, born at the University of California at Berkeley in 1986. Dalibo does not sell its software, which is available free online. Its expertise, and its economic model, are based on the services it offers its customers: auditing their applications, training employees, hosting and securing data or organizing their migration from proprietary (non-free) software to PostgreSQL. One of its main competitors is Oracle, an American giant of services for businesses. Two thirds of French free software companies specialize in services and a third publish their own open source software. In France, the Ayrault circular has recommended that administrations use free software since 2012. The law for a digital Republic, adopted in 2016, also encourages open source in public bodies. The signal sent is strong, but these provisions have no binding dimension. "Open source is an opportunity for the IT industry in France," assures Damien Clochard. "Rather than giving millions to Silicon Valley companies, it is better to give them to a French company!" The security advantage "Open source has come out of its garage," adds Philippe Montargès, co-president of the National Council for Free Software, which represents companies in the sector. Free solutions are competing with proprietary software." They first developed in infrastructure tools, thanks to the rise of cloud computing in companies. Today, free components are progressing at all levels of the company. The Internet has contributed to this evolution, by creating thriving communities of developers around free software, which are modified and improved every day. "The open source community is global. It is larger than a research and development cell," explains Carine Braun-Heneault, general manager of Red Hat in France, the American giant of free software, world leader in the sector (read below). For its defenders, the openness of free software is above all synonymous with security. A bug or a flaw can be easily corrected, provided that they are spotted by the community. Most free software companies contribute to improving the tools on which their activities are based. Another argument regularly put forward: a company that uses free software can access all of its code at any time. "Proprietary tools are like black boxes. If a publisher goes bankrupt or decides to no longer develop software, its users find themselves prisoners," assures Carine Braun-Heneault. In the crosshairs, the big names in software, such as Oracle, Microsoft or IBM. Despite a highly motivated community of evangelists, open source is still often confined to a few sectors of activity. "It is easy to switch to free software in infrastructures: as long as it works, everyone is convinced. It is more difficult to convince employees to change the IT tools on their computer, regrets Simon Clavier, free and open source strategy advisor for the SNCF. If software is imposed, it always goes badly. It must be adopted." Paradoxically, open source could need the big software companies to establish itself in companies. More and more of them are equipping their portfolio with free tools. Oracle has been distributing a free version of Linux for ten years. Microsoft, whose former CEO called Linux a "cancer that attacks intellectual property", has also been opening up to open source for a few years. It partnered with Red Hat in 2015, initially in the cloud sector. “This partnership proves that open source is an essential part of the enterprise offering,” concludes Carine Braun-Heneault. “It is no longer possible to do without it.” -

## ###ARTICLE\_START### ID:2196

The world leader in open source, Red Hat specializes in the distribution and maintenance of free software for businesses, including the famous Linux operating system. Jim Whitehurst is its CEO. LE FIGARO. - How do you make money from free software? Jim WHITEHURST. - Being profitable by selling free software means focusing on the different ways to create value. This involves installing and maintaining the solutions we develop. Open source gives businesses the ability to make ongoing improvements to the code of their applications and services. It also allows them to identify potential flaws and fix them more quickly. What are the specific features of the French market? France is a market that is ahead in the adoption of open source. There are many different uses of this technology and active communities on the subject in the country. Our customers include Orange, Société Générale, Amadeus and Atos. How will the arrival of the new generation of 5G mobile telephony work in your favor? With the multiplication of the volumes of data in circulation that 5G implies, all the large telecom operators will switch to a set of open source software called OpenStack, which allows the deployment of cloud infrastructures. We are the main suppliers. Three of the four largest operators in the United States already have contracts worth tens of millions of dollars with us.

## ###ARTICLE\_START### ID:2197

10% of the software and IT services market 50,000 jobs + 15% Increase in turnover of French companies in the sector between 2015 and 2016

## ###ARTICLE\_START### ID:2198

I campaigned for free software without convincing many people. That we must keep control over the software, people understand the interest and even the reason, but free software does not interest them because it is not in their intention or capacity to maintain, install, study, modify or distribute software themselves. On the other hand, the freedom to share code for reasons of efficiency interests software and IT service producers. They then got rid of the ethical dimension by creating the open source model on the fringes of the free model. And it worked to the point where this model won the software battle. Remove free or open source code and no more Web, email, social networks like Facebook, Google or Amazon services, or even smartphones. Yes, but there you have it, it is free software stripped of its ethical dimension, which means that from the user's point of view, free or open source software brings nothing. Indeed, IT service providers are completely legally exempt from the ethical constraints associated with free licenses. An aggravating circumstance is that the apparent gratuity of many software services numbs their users to the consequences of their violation of privacy by the appropriation of their data and behavior (meta data), often without their knowledge. When Richard Stallman, in the 1980s, raised awareness of the need to control software to guarantee our freedoms, the ethical dimension was important. He spoke of good and bad software. Since computers were autonomous, the GPL license, which required that the software source code be kept freely accessible, was enough to guarantee our privacy. Today, we can no more do without software than we can do without eating. Software is a bit like organic food. We want to eat organic food because it is good for us, good for the planet, and it allows us to move towards a more humane economy. Software is like organic, it is not only a product, but also a complex ecosystem that concerns each of us, society with all its stakeholders. But then what can we do to ensure that the service provided by the software via a service provider is good for us, society and industry? We must demand ethical behavior from suppliers and for that we must choose them and agree to pay for what we consume within the framework of a charter (similar to an organic label). I illustrate it here with a project that I am trying to launch: PIAFS (Sharing Information With the Healthy Family) meets an unmet need, having a private server to share health data within a family unit for mutual aid purposes (piafs.org/). As we have not yet dared to entrust, with good reason, our health data to our free social networks, and we are not able to maintain such a service ourselves, we must use the services of a supplier who respects us (while waiting for a possible public service). Which leads us to demand a charter based on transparency: On what the software does Since we cannot do it ourselves or rely solely on the supplier, we need the external guarantee provided by free software. In the case of PIAFS, as is often the case, free software exists, we just have to use it. On costs The right cost is not the result of the game of supply and demand, nor of a negotiation game based on secrets, and even less the result of a situation rent or the hidden and derived exploitation of our data: the customer must know what he is paying for, have the guarantee that the contract covers all costs, know the costs of withdrawing the service and estimate the consequences, he must be able to estimate the value of what he is paying To ensure the profitability of the supplier Ethical computing is possible, but it will only be if we demand it. The giants of the Internet are real sovereign states that rely on enormous capital before which even our states lower their flags. The road is long, chaotic and full of surprises, and the path is made by walking (babelio.com/auteur/Antonio-Machado/2992/citations). It is up to us, users and creators of free software, to join hands and extend it to others, it will not be easy, because we will have to put our hands in our pockets and the battle is political. We must demand, inspired by the "bio" movement, an ethical IT label and why not a global forum of the digital ecosystem, the path is traced (for example laquadrature.net/fr/), it is up to us to take it. In the meantime, nothing prevents us from demanding an ethical charter.

## ###ARTICLE\_START### ID:2199

Our creations always end up escaping us. Tim Berners-Lee, considered the main inventor of the Web, certainly knows this adage. For the 28th anniversary of the birth of the network, in March, he signed an op-ed, translated into several languages, in which he delivers his diagnosis of the dangers that threaten what he had, at its beginnings, "imagined as an open platform that would allow anyone, anywhere, to share information, to collaborate across geographical and cultural borders. Openness, collaboration, exchange are in the DNA of the Web. But this DNA has been diluted as this virtual territory has become larger, more populated, more commercial, more dangerous and more influential than ever on our daily lives. In short, since it has become much less virtual. "The battle to keep the Web open is relentless," writes Tim Berners-Lee, adding: "It is up to all of us, now, to build the Web we want. » It thus prompts us to ask ourselves: what version of the Web can we still hope for? In early November, another article circulated widely online, supporting Berners-Lee's diagnosis. Signed by André Staltz, a programmer specializing in free software, it bears a sharp title: "The Web began to die in 2014." To reach this conclusion, Staltz simply looked closely at the evolution of traffic since 2010. "Online activity itself has not decreased. Its growth is steady, whether in number of users or sites," he writes. But this constant development hides "a radical change in the underground power dynamics on the Web. Concentration As is often the case when we look at these "power dynamics," we find those nicknamed the "giants of the Web" and whom Berners-Lee calls its "guardians": Google, Facebook or Amazon are the stars around which everything that exists online has ended up gravitating. André Staltz's study reminds us that if the Web seems less varied today, it is simply because it is increasingly concentrated: "It seems that nothing has changed, but Google and Facebook directly influence 70% of online traffic. (...) Mobile devices are mainly used to access Google and Facebook." This trend towards concentration, fueled by the growth and diversification of these multinationals, will accelerate. To the point that André Staltz comes to this pessimistic conclusion: in the near future, the giants will "bypass" the Web. The latter "will lose its interest" and "its infrastructure will be optimized only for the traffic of Google, Facebook and Amazon. In short, it will become a "network of three networks, a Trinet. In light of certain recent developments, this vision is no longer just dystopian. In the United States, net neutrality, the principle that ensures equal access to all for any site, is being challenged by the Trump administration. In Europe, this principle is protected by a law that leaves room for maneuver to national regulators. This is why we are already seeing the emergence, in Spain and Portugal, of preferential Internet packages to access, for example, only Facebook.

## ###ARTICLE\_START### ID:2200

Joëlle Pineau and Doina Precup are continuing their research in the field of artificial intelligence with one foot at McGill University and the other at the head of a lab belonging to a large company. A glimpse of this dynamic with these researchers hired by Facebook and DeepMind respectively in recent months. Heavyweights of the technology industry announced this fall, almost one after the other, that they were setting up in Montreal and that they were hiring a researcher from McGill University. Facebook first revealed on September 15 that it was opening an artificial intelligence lab in Montreal under the direction of Joëlle Pineau, professor in the Department of Science and Computer Science and co-director of the institution's Reasoning and Learning Lab. A few weeks later, her colleague Doina Precup took over the reins of the new Montreal lab of DeepMind, a company acquired by Google in 2014 and known for its AlphaGo program, which has beaten the best Go professionals in recent years. These two professors keep one foot in the higher education institution and the other in their respective companies. No matter what hat they wear, they continue to conduct fundamental research. "That's why I work here," explains Doina Precup, about what motivated her to join DeepMind. "It's not product-oriented, it's research-oriented." Joëlle Pineau echoes the same sentiment. "When I do my research at Facebook, my goals are to do fundamental research and advance artificial intelligence, not to improve Facebook products," she assures. Ms. Precup had never seen a collaboration of this kind. "What has changed is the model of interaction between universities and private companies," she notes. "Usually, we had contracts and the relationship was more [in an] applied perspective. We developed things in the academic world and applied them in industry. Now, it's more of a co-development model." Open access to results These professors accepted their respective mandates in the private sector because of the companies' acceptance of giving free access to the results of research carried out on their behalf in the field of artificial intelligence. "There is a great deal of openness in terms of allowing researchers in companies to do open research: I publish my results and we freely share the code that is developed on Facebook's infrastructure," says Joëlle Pineau. We can talk about our research. These are special conditions, compared to the research that was previously done in industry, which are super interesting." The situation is the same for Doina Precup at DeepMind. "They are in the open software model," she says, "so they even put the code of some simulators on the Web and everyone can access it." For Joëlle Pineau, revealing these codes is in line with one of her major concerns, namely the importance of transparency in the field of artificial intelligence. "This means that everyone can look at what is being done, can improve it and understand the results," she says. There is a whole question that we ask ourselves in science regarding the possibility of reproducing the results. By sharing the code, we facilitate this process." Before signing with the digital industry giant, Joëlle Pineau had observed the context in which the company ran its three other Facebook AI Research laboratories, namely those in Paris, California, and especially New York. "I knew when I came on board with them that this wasn't a new model, that there wasn't going to be a change after three months, that they weren't going to change their minds and decide it wasn't going to work." Both professors hold on to their positions at McGill for the same reason: their students. While they see higher education institutions as hotbeds of talent, scientists find in industry better access to financial resources, a large number of computers, high-performance computing infrastructure and engineers to support their projects. "You can do prototypes in academia, but to test them on a large scale, there aren't enough resources in academia right now," says Precup. Resources and patience The establishment of Facebook and Google, in addition to the arrival of Thales and investments by Google and Microsoft, has increased enthusiasm for artificial intelligence in Montreal, which has seen its role as a hub in this field confirmed and strengthened. The Quebec metropolis was already considered a major hub for university research on the subject, thanks in particular to the presence of the Institut de valorisation des données (IVADO), which was awarded a grant of over $93 million by the Fonds épineux Canada, and the Institut desalgorithmes d'apprentissage de Montréal (MILA), both associated with the Université de Montréal. With McGill University, the two higher education institutions employ approximately 250 researchers related to this field, according to the figure given by Montréal International. But the city is also seeing the development of an entire ecosystem in this sector with the emergence of young companies and the opening of branches by the big names in the technology industry. Nevertheless, Joëlle Pineau warns that all stakeholders will have to be patient. "All the companies come to set up shop, then they want to recruit researchers, find staff and get started quickly. They come here because we're going to have a goldmine of students. But [the latter] are not all ready to be hired tomorrow morning," she reminds us. It's to the ecosystem's advantage to give students time to complete their studies." The two researchers also note a glaring lack of staff in universities to meet demand. "We need to hire professors quickly to train more and more students, because at the moment the machine learning teams are completely disproportionate," emphasizes Ms. Pineau. Doina Precup makes the same observation: she currently supervises about twenty students, even though she only works part-time at McGill University. According to Joëlle Pineau, universities already seem to be aware of the problem. But the latter acknowledges that it is difficult for higher education institutions to attract researchers. The reason? The industrial sector offers much more "attractive" conditions.

## ###ARTICLE\_START### ID:2201

In the exhibition "Landscapes of France" at the BNF, Eric Tabuchi appears as a lone rider and closes the journey through the multiplicity of views of our country (read opposite), with a slideshow installation of 344 images. Also represented at the Binome gallery in the group exhibition "France augmented" - a hanging of the associated route -, the photographer shows the first results of his ambitious Atlas of natural regions. A keen observer, Eric Tabuchi, formerly a musician in the group Luna Parker, crisscrosses France to record it in a large pictorial dictionary in progress. Is it an honor to close "Landscapes of France"? It's a good ending. At the end of the journey, ending with a slideshow that lasts twenty minutes is ambitious for the visitor! But I like the exhibition to end on something light and desacralized. I would like my images to be useful. In what way? I spot things that are going to disappear. In twenty years, it will be over. For example, slate roofs [flat stone, editor's note] are becoming difficult to find. Sometimes, I spend an entire day finding them. In the Basque Country, I looked for a typical farm and drove around for three days without success. I hope to find a truly authentic one - not a Walt Disney style, rehabilitated in a caricatured way. Finding the last trace of the authentic that will disappear under the pressure of real estate and the pressure of age, that is the basis of my mission. If I succeed, I will have a small collective memory of the vernacular architecture of our country. Because there is a fascinating diversity in France. Is this a colossal project? It should take me six years full time. The idea is to start from the ancestral geography of natural regions determined by climate, geology, customs, rivers, plants... There are between 420 and 500 of them and I would like to explore them with a fixed protocol. They are small and each have a particularity. A sort of "Tabuchi Street View" in series? More like a SimCity, where everyone buys a blank plot of land and builds elements: a hotel, a gas station... I start with the plant and go back to McDonald's. And I break down the landscape into series: restaurants, nightclubs, EDF transformer blocks... The device with mini projectors at the BNF looks like that of a pork butcher or a cheese stand with its van that deploys it to sell on a market. It can be dismantled and repacked in a suitcase, like a small traveling cinema. Is the French landscape beautiful? I don't have categories. I classify. I photograph a very beautiful Romanesque church and a Chinese restaurant with the same care. For me, it's about reconciling people with their environment. Everyone sees it as ugly. My device is neutral and it resembles the one used by the judicial police to find a culprit behind a one-way window. At the Binome gallery, your "figurative paintings" - trompe-l'oeil painted on buildings - are like pop-up windows in the landscape... Yes, as if reality were not enough and had to be augmented. This blatantly reveals the dissatisfaction of reality. To the beautiful, we add a convention of the beautiful - the painting of a classic French garden, for example. It reminds me of the news channels on TV, where an adjoining window tells a story with another image that interferes with the first in a visual overstimulation. If I lived in front of these murals, I would have a strange reaction: are we so ugly that we have to put a mask on ourselves so as not to see us? In the digital age, can we photograph the landscape as before? For a year, and since my visit to the Rencontres d'Arles, I have noticed that almost all photography was in flight. It is in a strategy of widening the image by devices. It seemed obvious to me that I had to reframe the image. Only the image. However, my Atlas of Natural Regions is designed to be consulted on the Internet via a search engine. Thanks to keywords, we can combine the landscape like an exquisite corpse and reconcile ourselves with reality through surrealist poems that we compose ourselves. This project is time-consuming... Cassini father and son mapped France in the 18th century. And they did it on foot with complicated and very heavy instruments. So it is possible! This year, I took 3,500 photos over a hundred and fifty days. I am aiming for 25,000 to 30,000 images. I would have to make 6,000 a year, which is dizzying, that's 20 a day. Today, I tinker. I am better organized but my savings have melted away. I would like to put these 30,000 images on a server, for free download. Is the project based on an open source philosophy? Completely, because I consider that the photographer takes a piece of reality that does not belong to him. I have always found that there is something suspicious in claiming a piece of reality. If I manage to complete this fanciful corpus, there will be a beauty in the absurdity of this challenge.

## ###ARTICLE\_START### ID:2202

Neo-reactionaries and progressives will agree on at least one thing: the beginning of this century is not really to the advantage of the left, which has almost disappeared from the radar while authoritarian right-wing parties have taken power in several countries. The "new reactionaries" have invested the political field by allying themselves with the ultra-liberals, if we are to believe the historian of ideas Daniel Lindenberg. "For years, the offer of new ideas has come from the extreme right. These ideas have taken on the mask of rebellion and non-conformism. There would be a certain courage in denouncing the stifling power of the left. [...] Perhaps we will have to go through extreme political experiences for there to be a reaction to the reactionaries. For the moment, it is a crossing of the desert," he confided to Libération last year, during the republication of his essay Le Rappel à l'ordre. Christophe Aguiton says no different in the preamble to his essay The Left of the 21st Century - Investigation into a Refoundation (La Découverte). After this somber clarification, the question remains: how can individual or community resistance be united into a political movement? Reporting on the failures of traditional left-wing forces, from social democrats to socialists, from labor to communists, the co-founder of Attac focuses on the exercise of power by Syriza in Greece, then the breakthrough of Podemos in Spain. Two political movements inspired by the South American "emerging" movements, whose merit, according to him, is to have broken with the broad conversion of the European left to neoliberal historicism. "The practice of power in Venezuela or Ecuador has indeed seen elected presidents of the Republic play, by relying on their charisma, a central role in the processes of social transformation of their country. Experiments have lent credence to the theories on "left-wing populism" developed by Ernesto Laclau and Chantal Mouffe," assures the author, although he concedes that the very "questionable" personalization of power prevents us from adhering to it unreservedly. On the other hand, the social science researcher adheres to the idea that demands for environmental, social, feminist or even anti-racist emancipation must converge and ally themselves against the elites who seize power. The renewal of the progressive ideal will not take place in the binary opposition between the capitalist market and state interventionism. The alter-globalization activist is lucid: "Conquering the State to nationalize the major sectors of industry and trade and plan the economy, which was at the heart of the programs of the left in the 20th century, no longer makes many people dream." These old recipes from the 20th century should therefore be replaced by self-management systems such as cooperatives and the development of the social and solidarity economy sector. Recalling pre-capitalist societies where natural goods were accessible to farmers to ensure their subsistence, the author subscribes to the idea of "common goods". Whether it is pastures or free software, this form of management would aim to protect the general interest against any kind of appropriation, because "between the sovereignty of the State and the sovereignty of private property, there is room for the commons which are governed by a set of rights and obligations that are based on other logics", he emphasizes. From this point of view, the shift towards direct democracy and an overhaul of institutions is essential according to Christophe Aguiton, who recalls in this regard the proposal of Thomas Jefferson, the third president of the United States, to write a new Constitution every nineteen years. "Thomas Jefferson and his generation had the chance to imagine the political institutions of a new country, the United States of America, and he believed that this chance should be left to each new generation. We have all experienced the enthusiasm that a new major project arouses [...]. An enthusiasm that can be that of an entire people," underlines the author of The Left in the 21st Century.

## ###ARTICLE\_START### ID:2203

Le Journal de Québec This is the opinion of Jean-François Royer, president of the Association des professionnels des entreprises en logiciellibres (APELL). The group is organizing its Salon du logiciellibre in Quebec City for the first time today, under the theme Libre au gouvernement. According to him, the Quebec government now has the opportunity to improve its services to citizens by adopting free software. Mr. Royer gives a very simple example to illustrate the benefits of free software. "If all pharmaceutical companies shared their knowledge, new drugs would be found much more quickly." THE DSQ The government of British Columbia has opened a portal to address the developer community so that it can find solutions to certain problems in the province, explains Mr. Royer. "This is what we could do today with the Dossier santé Québec (DSQ)," he says about the famous software that has multiplied delays and cost overruns. According to him, if doctors, nurses, patients and other stakeholders had expressed their needs, starting on a small scale with a feedback system, the software industry could have delivered the DSQ "much more quickly." While the core of free software is free, its implementation for a particular application and its support are not. Free software developers are therefore also fighting for contracts. "We do not encourage customers to launch into free software and support themselves. It is complex," says Mr. Royer. SAVINGS But free software can save money. "Maybe 30 to 50% in some cases, but the gain will mainly be in terms of service to citizens," argues Mr. Royer. And the reuse of programming codes within other departments is a guarantee of eliminating costs. The speed of implementation, solidity, security and innovation will be the most quickly perceptible gains, he believes. While Mr. Royer would like to see greater openness from the government, he still senses a wind of change and that the industry's message is now being heard more. The modernization of the Department of Justice, "which consumes a lot of paper, will be a great opportunity to show what we can do," concludes the president of the Association of Free Software Professionals. \*Free software is software that is freely permitted to be used and modified. Free software is increasingly integrated into public computer systems around the world. Its opposite, proprietary software, prevents users from transforming it. Only representatives of the owner company have the key to do so.

## ###ARTICLE\_START### ID:2204

Le Journal de Québec This is the opinion of Jean-François Royer, president of the Association des professionnels des entreprises en logiciellibres (APELL). The group is organizing its Salon du logiciellibre in Quebec City for the first time today, under the theme Libre au gouvernement. According to him, the Quebec government has the opportunity to improve its services to citizens by turning its back on free software. THE DSQ The government of British Columbia has opened a portal to address the developer community so that it can find solutions to certain problems in the province, explains Mr. Royer. "This is what we could do today with the Dossier santé Québec (DSQ)," he says about the famous software that has multiplied delays and cost overruns. According to him, if doctors, nurses and patients had expressed their needs, starting on a small scale with a feedback system, the software industry could have given birth to the DSQ "much more quickly." While the core of free software is free, its implementation for a particular application and its support are not. Free software developers are therefore also fighting for contracts. But free software can save money. "Perhaps in the order of 30 to 50% in certain cases, but the gain will mainly be in terms of service to the citizen," argues Mr. Royer. And the reuse of programming codes within other ministries is an assurance of eliminating costs. The speed of implementation, solidity, security and innovation will be the gains that will be most quickly perceptible, he believes.

## ###ARTICLE\_START### ID:2205

The trend is global: in genetics, physics, mathematics and chemistry, a generation of young scientists prefer the adventure of start-ups to life in laboratories or research centers. This is after years of study. An effervescence whose pulse can be taken during the Hello Tomorrow Challenge. This global competition was created in 2014 by the French biologist entrepreneur Xavier Duportet - the start-up he co-founded, Eligo Bioscience, has just raised 20 million dollars. For its fourth edition, which takes place on October 26 and 27 in Paris, 3,000 innovative projects from 102 countries were received. "Scientific entrepreneurship is not new," analyzes Xavier Duportet. In the 1970s, pioneering companies such as Intel or Genentech came directly out of laboratories. But we have entered a new phase. From the miniaturization of processors to the exponential drop in prototyping costs, a multitude of technologies have become mature and allow small companies to offer new products that would have been inconceivable five or ten years ago." A sounding board to help project leaders meet international investors, Hello Tomorrow has enabled the twenty-one winners of previous editions to raise more than $250 million since their prize. After the wave of digital start-ups, will this sector, which has taken the name "deep-tech", become a new El Dorado? "These projects are based on disruptive technologies and are very risky," says Xavier Duportet. "They require a lot more money than in digital to arrive at a Minimal Viable Product [a proof of concept], and the creation of value when it exists must be measured in the medium or long term." Energy, health, artificial intelligence, mobility, etc., Le Monde has selected eight innovations at the prototype stage or on the way to commercialization. Eight adventures that tell what is imagined for our life tomorrow and the questions that this raises. Purifying the air like in a space station Skytree, NetherlandsTo the naked eye, its appearance seems ordinary. But up close, the surface of this plastic looks like a pockmarked landscape: "nano-holes" as far as the eye can see that are filters to trap carbon dioxide (CO2) molecules. The air that passes through this material is, in fact, purified. "It was while working at the European Space Agency that I discovered the existence of this plastic in 2010," recalls physicist Max Beaumont, then a young graduate of the British University of Warwick. The Apollo 13 mission, in the late 1970s, had problems evacuating the CO2 emitted by the astronauts' breathing in the cabin. The agency had to test a hundred materials before finding this filter: a support so porous that each gram has a surface area of several dozen square meters. " Max Beaumont then wondered if such a product could be used on dry land. Tempted by the entrepreneurial adventure, he successfully applied for a grant from the Space Agency to create Skytree. Seven years later, his company employs around ten people and has achieved financial balance. "The path has been strewn with pitfalls," admits the entrepreneur. "It took us no less than two years to adapt the plastic for terrestrial use." After multiple tests, a large-scale application will soon be possible in the automotive sector. "We are working with a European manufacturer to integrate our filter into the ventilation circuit of a vehicle," explains Max Beaumont. Its use should reduce the energy consumption of air conditioning by 40%, as the air needs to be renewed less. » Another application is being studied to filter the air in confined and particularly used spaces such as meeting rooms. Traveling in an autonomous bus Next Future Mobility, Italy Two and a half meters on each side, slightly higher... The first prototype of Next, an inclined parallelepiped rolling without a driver, was produced in July for the emirate of Dubai. This "transport unit", whose large bay windows will allow passengers to take in the landscape in 360 degrees, aims to become the public transport of the 21st century. The futuristic project, which benefited from the acceleration program of the Dubai Future Foundation, is led by the Italian physicist and designer Tommaso Gecchelin. "Like the carriages of a train, this unit will be able to attach to a multitude of others," predicts the designer. Passengers will be able, during a long journey, to be temporarily joined by units offering catering or sleeping services. Travelers going to different destinations will be able to gather in certain units which will separate from the others. » The design and the articulation process of the units have just been patented. And even before the widespread use of autonomous cars, Next is intended for a more short-term application: to be driven by a classic bus driver. "Our concept has been widely publicized and we have been contacted in recent months by cities around the world," explains the designer. "Big cities all have the same problem: their buses are packed during rush hour but empty the rest of the day. Next's modularity provides an answer: cities will offer two or ten transport units on the same line depending on the number of passengers." To continue developing the project, the designer joined forces with entrepreneur Emmanuele Spera to found Next Future Mobility. The start-up based between San José (California) and Padua (Italy) recently closed a crowdfunding campaign in October that exceeded $100,000. Monitoring the environment using satellite images Deepskye, Netherlands Every minute, samples from the Wadden Sea, a UNESCO World Heritage Site, are taken and analyzed in the ports of Eemshaven (Netherlands) and Knock (Germany). A useful but extremely punctual biodiversity check given the 450 kilometers of this coastline bordering the Dutch, German and Danish coasts. How can this monitoring be improved?, wondered the National Water Organization of the Netherlands. "By making satellite images smarter," was the essence of the answer given by Noëlle Fisher and Victor Westerwoudt. These two young scientific entrepreneurs, respectively a specialist in "machine learning" and an image processing engineer, won the SBIR (Small Business Innovation & Research) grant in June 2017, a program that allocates public funds to start-ups. Since then, they have been working on Deepskye, an in-depth and algorithmic reading of images taken from the sky. "Daily water analyses provide massive data [Big data] on specific locations that satellites provide images of," explains Victor Westerwoudt. "We would like certain information such as the color of the water or its turbidity to feed an algorithm that learns by itself to identify polluted areas," continues Noëlle Fisher. The two researchers met at the Netherlands Institute for Applied Research in the Physical Sciences (TNO), where they have already worked on the processing of medical images by artificial intelligence to aid in diagnosis, or surveillance videos to recognize suspicious movements. With their young start-up, they are already considering a multitude of services combining artificial intelligence and the environment. "We will be able to predict, using satellite images, the production of a vine or identify the agronomic potential of a soil," predicts Victor Westerwoudt. Deciding with the help of augmented intelligence Cosmo Tech, FranceThe generalization of autonomous cars will change the city, but in what way? How will traffic evolve? Will there be fewer parking spaces? What about real estate prices? It is to address these new issues, which are of interest to public authorities as well as to players in the construction and transport sectors, that the software company Cosmo Tech was created. "We offer managers an augmented intelligence system to help them make complex decisions," explains co-founder Hugues de Bantel. His alter ego, researcher Michel Morvan, a former professor at ENS-Lyon, was the founder of the Rhone-Alpes Institute for Complex Systems (IXXI) in the 2000s, where he developed a computer model to understand nested mechanisms that are difficult to predict using known rules. Called upon by economic heavyweights such as RTE - the electricity transmission manager -, SNCF, Solvay, Alstom and Sanofi Pasteur, the start-up works "on extremely diverse issues," continues Hugues de Bantel. In the event of a health attack on a water production center in the Paris region, where should emergency centers be located? Faced with the development of carpooling and other alternative means of transport, which railway line should be invested in and which simply should be maintained? In the event of a pandemic, how does a virus spread in an urban network and how can it be countered? "Big data and artificial intelligence solutions, which use data from the past and offer statistical correlations to imagine the future, may find their limits in understanding truly new situations," argues the manager. "Our scenarios are based on causality analyses." Cosmo Tech, which has doubled its turnover in two years, now employs 75 people of ten nationalities in Lyon. Customize your personal assistant Mycroft, United States Big blue LED eyes, the look of a 1980s clock radio... The Mark One intelligent voice assistant stands out from its competitors with a minimalist look (Echo, Home or Tianmao Jingling X1), launched by digital giants Amazon, Google and Alibaba. The difference doesn't stop there. This open-source object, designed by the American start-up Mycroft, is intended to be an alternative offer for any consumer concerned about the use of their personal data by Internet platforms. "To be useful, a personal assistant must know you inside out: it has access to your calendar, your calls, your conversations... Central ethical questions arise, explains founder Joshua Montgomery. Each consumer must ask themselves: will the algorithm's choices always prioritize their interests? At Mycroft, we are committed to ensuring that the development of technology does not come at the expense of privacy. » One thousand five hundred Mark Ones - which obey the voice to search for information on the Internet or launch a film on the living room screen - have been shipped to 56 countries. Nearly 10,000 users have also registered to download the program for free and create their own assistant, on a Rasberry Pi, for example, this nano-computer the size of a large matchbox. Mark One being an open source product, each user can improve the program and then share it with others. A hundred users have already made their discoveries accessible. Since January, the automobile brands Jaguar and Land Rover have become partners of Mycroft and are working on integrating the voice assistant into their vehicles. To resist its powerful competitors, the start-up, which employs 19 people, is seeking to increase its industrial collaborations in order to eventually integrate Mark One into everyday household appliances. Live control of your wheat harvest GrainSense, Finland From a distance, all ears of wheat appear similar. However, in the same field, depending on the plots, the quality of the grains can fluctuate... as can the profit that a farmer can make from them. The "best" grains, rich in protein and sold at a higher price, will be transformed into bread on our tables, the others into animal feed, a much less profitable use. Can a farmer change the course of things? This is the objective of GrainSense, the pocket laboratory designed by Ralf Marbach. This optics specialist, former scientist at VTT (Technical Research Center of Finland), has imagined a portable instrument capable of analyzing, by infrared waves and in a few seconds, the composition of a grain: its protein, oil, carbohydrate content, as well as its moisture content. Instrument in hand, a few weeks before the harvest, "when the ears begin to open, a farmer will be able to identify the low-quality plots and those worth enriching punctually to move up to the higher category", explains Edvard Krogius, CEO of GrainSense. At the very moment of the harvest, the manager continues, "the sorting of grains into homogeneous stocks is facilitated by a live analysis, without having to wait weeks, the classic delay after drying the grains to obtain the results from the laboratories. The machine, tested on around twenty farms, will be officially launched at the Hanover Agricultural Machinery Show in November. If its use becomes widespread, the farmer will be able, assures Edvard Krogius, "to benefit from the big data effect by having access to the anonymized data of all the other equipped farms. Lighting with the help of waves Eco Wave Power, Israel The Eco Wave Power project was born from a banal conversation between strangers during an evening in Tel Aviv. Inna Braveman, a young Ukrainian whose family settled in Israel after the Chernobyl disaster, explains that she is fascinated by waves, this source of clean energy that is still very expensive to produce. She has no idea that her interlocutor, the entrepreneur David Leb, shares the same passion and has already read many publications on the subject. Nine years later, these two self-taught scientists - she has a degree in political science, he is a marketing specialist - marketed, in May 2016, a first tidal energy collector in Gibraltar: 8 blue floats, small hulls one metre wide moored to a quay, activate, by their movement, a piston that compresses a biodegradable oil. The system is completed by an accumulator, a hydraulic motor and an electric generator connected to the electricity network. "Each kilowatt produced costs between 3 and 5 euro cents depending on the size of the waves", specifies Inna Braveman. By the two entrepreneurs' own admission, the hydraulic process used is not revolutionary, but "many competing prototypes are installed on expensive offshore platforms where the equipment does not withstand 20-meter waves well," explains David Leb. Our system is easily fixed to a dock without even having to enter the water and it can operate as soon as the waves are 60 centimeters high. It was through a competition in Ukraine, in which 300 engineers took part, that the two founders recruited, in 2009, the five experts who make up the technical team of the Israeli company of 20 employees. The next installations of Eco Wave Power? Three hundred floats in the port of Manzanillo, on the west coast of Mexico, in the first half of 2018. Before projects already announced in China and Chile. Monitoring your health... in the toilets Symax, JapanSince May 2016, a hundred Tokyo employees have been having an unusual experience. Each time they use the toilets of their international trade company, their urine is analyzed by a sensor placed in the water of the bowl. The employees, who have given their consent for this continuous monitoring, receive the results via a mobile application. This service, called Symax, was created by Maria Tsuruoka, 27, following a family problem. "Years ago, my mother became seriously ill and I discovered, in hindsight, that her condition could have been diagnosed if certain tests had been carried out earlier," explains this graduate in law and international politics from Keio University. Hence the creation of a start-up to offer continuous monitoring to as many people as possible. Still at the prototype stage, Symax's sensor currently analyses the acidity of urine, its volume and its flow rate. But the start-up is already announcing that, for the coming months, it will be possible to monitor seventeen indicators such as glucose, albumin and leukocyte levels, which would make it possible to detect, for example, diabetes, an infection or kidney disease... The start-up hopes one day to collect enough massive data, in particular by equipping public toilets, "to obtain statistics on the scale of a city or a country and correlate them with the occurrence of certain pathologies," explains sales manager Hiroshi Yasukawa. In the meantime, Symax wants to sell its service internationally in the short term to companies "concerned about monitoring the health of their employees". Will all employees agree to submit to such transparency with regard to their employer? Symax's global commercial ambition will have to deal with local legislation on labor and ownership of health data.

## ###ARTICLE\_START### ID:2206

Among the funny expressions that punctuate corporate life, I must admit a particular fondness for the one that invites executives to "get out of their comfort zone." This formula first postulates that somewhere, deep inside each worker, there exists a place so soft, so welcoming that we want to curl up there like in the satin sheets of an eternal lie-in. According to a widespread belief, the perimeter of this famous "comfort zone" tends to expand when we are a little too sure of ourselves, when the prospect of taking risks vanishes behind the anesthetic veil of processes. We then end up no longer making any difference between a strategic meeting and a lounge area, between an office chair and a club armchair. This cozy immobility contaminates our entire relationship with work, constituting a sort of swampy epicenter that risks eventually engulfing the very future of the structure. When the carpet is too thick and the heating is too well regulated, the company becomes a colossus with feet of clay that could be swept away by the simple sneeze of a start-up that has just emerged from nothing. What is the point of setting out to conquer new markets and seek innovative solutions, the employee wonders, if everyday life is already as enchanting as a Dragibus rainbow? "It is sometimes necessary to create insecurity or discomfort to boost productivity, because too much comfort puts you to sleep," writes Béatrice Gérard in her book Oseriez-vous sortir du cadre? If he had had air conditioning in his cave, meal vouchers and a Deliveroo app, it is not certain that prehistoric man would have embarked on the perilous hunt for a mammoth. It is based on this fairly simple observation that some companies are now considering generating synthetic adversity, with the stated aim of waking the employee from his supposed semi-coma. This is the case of Scality, a company specializing in intelligent storage, which had the idea of creating an internal start-up to compete in its own market. Where Scality sells licenses, the other structure offers open source products, a bit like if Apple suddenly decided to distribute free iPhones by creating a sub-brand with a half-bitten pear as a logo. Or as if an employee transformed his wheelchair into a board of nails. It is difficult to know whether this very fashionable form of thorny self-competition is a case of disruptive genius or total idiocy (the two are not incompatible), but one thing is certain: the height of comfort is being able to organize oneself, at will, almost on a whim, one's own discomfort zones.

## ###ARTICLE\_START### ID:2207

A first to open the 14th Akousma immersive digital music festival, which is taking place in Montreal until October 28. This Friday evening at the Eastern Bloc, the creation of Martin Marier's Sponge Quintet No. 1 will be presented. A first with symbolic value for the composer, doctoral student and lecturer at the Faculty of Music of the Université de Montréal, who has spent a decade developing this new musical instrument to which he also devotes his doctoral thesis, just submitted, entitled Musique pour éponge: la composition électroacoustique pour instrument de musique illustré. It can be played sitting or standing, depending on your preference. The sponge is gripped with both hands; two rows of five buttons are hidden under its ends. Inside the sponge are also installed motion sensors (accelerometers) and pressure. Its Wi-Fi antenna, also hidden, keeps it connected to a computer. Very sensitive, it emits sounds at the slightest tap, even the most delicate. Twisted in one direction or the other, it distorts the sound, a bit like the vibrato ("whammy bar") of an electric guitar. "It's a versatile instrument," assures Émilie Payeur, composer and multidisciplinary artist, one of the sponge players -- that's the term! -- of Martin Marier's quintet, with her colleagues Ana Dall'Ara Majek, Preston Beebe and Francis Lecavalier. "With the sponge, it's possible to obtain sounds that you wouldn't have with the guitar, let's say, especially since you can have the sounds you want" thanks to the computer that assigns these sounds to it. "It's infinite." It was during his studies in composition and electroacoustics that Martin Marier began dreaming of this new instrument. "I discovered electroacoustic music at university, all the possibilities of digital, processing, recording, sampling, speaker spatialization, all that fascinated me. But towards the end of my baccalaureate training, I realized that I missed the physical contact with the instrument." "What I was looking to find again," continues the luthier, "is the fun side of instrumental playing and the interaction with other musicians, things that are generally more difficult to find in electronic music - and electroacoustic music in particular. With the sponge, for example, I could join a band and play with its members. Some manage to do it with a laptop, but it's more complicated, especially to follow the playing of the other musicians. Also, with the sponge, we no longer have to look at a screen. We can look at each other, musicians, we can feel our hands, we can also feel the resistance of the deformation of the instrument between our hands. It provides a sensation, a tactile response to the sound, a bit like the tension of a violin string under the finger. "A synthesizer like any other Reduced to its simplest expression, the sponge is a synthesizer like any other. Sounds generated by the circuits and algorithms of a computer. To be more precise, the sponge is the keyboard of the synthesizer. An interface. " The sponge's timbres are a synthesis by frequency modulation, which is common in pop music or electroacoustics, explains Marier. However, the specificity of the sponge is not so much its sounds, but the way in which they evolve over time. How the different textures change "by feeling, twisting, and grinding the spongy material, each small modification of its shape at rest being detected by the sensors and translated into sounds. " The important thing is the relationship between the energy of the gesture and that of the sound, summarizes Marier. If it weren't for that, the audience watching the performance wouldn't understand what I'm doing. Because that's also the goal: to connect with the audience." An idea that seems to contradict the spirit of a festival that takes its name from acousmatic music, that is, music (or sounds) that we listen to without seeing the source -- the dematerialization of the sound source. Marier qualifies this by pointing out that the Akousma festival poster, on the contrary, offers several performances where the visual, material aspect is highlighted. "It goes in all sorts of directions. "Since the construction of the first version of the sponge (he is now at version 4.0), Martin Marier has often offered performances, often improvised, "because I know my instrument and I know where I'm going with it." This premiere of a work composed for four sponges forced him to return to the sources of his work as a composer, "to writing on paper -- well, these are not notes written on traditional staves, there is another way of annotating the score, but I rediscover aspects of the work of composition, such as internal listening, that I had not experienced for years." Finally, Martin Marier, as a good apostle of free software, does not hold a patent on his musical invention. On the contrary, he even offers the plans for his sponge on his website, if by chance you feel like becoming a sponge player. Lucidly, he nevertheless believes that the sponge will not become an "established" instrument, like the piano or the violin, "which drag a baggage cultural, techniques and repertoires developed over many years. In digital music, techniques evolve rapidly. That's the beauty of digital: everyone can create whatever they want, and designing your own instrument is part of the creative process."

## ###ARTICLE\_START### ID:2208

They have made their way between the State and the market, and also into public debate. From the collective management, by local communities, of natural resources threatened by overexploitation to the construction of collaborative digital resources, such as free software (1) or the Wikipedia encyclopedia, "common goods" are at the heart of an increasing number of practical experiments. They are now the subject of a thick Dictionnaire des biens communs (PUF), enriched by nearly 200 contributors. From "Abus de droit" to "Zone à défense", via "Fablab", "Habitat participatif" or "Semence paysanne", the work takes stock of today's "commons" as much as it explores its genealogical threads - the "inappropriables" of Roman law, the English Magna Carta of 1215, the writings of Gracchus Babeuf, Karl Marx or Joseph Proudhon... Professor of law at Paris-I, Judith Rochfeld coordinated the whole with the jurist Marie Cornu and the economist Fabienne Orsi. How did this Dictionary of Common Goods come about? It started from a collective experience: a project by the National Research Agency called "Propice" - for "Intellectual Property, Commons and Exclusivity" - launched in 2010, and involving lawyers, economists, historians, etc. The objective was to study the debates and practices that emerged around the notion of "commons": the questioning of intellectual property, the reaction to certain privatizations such as that of genes, or software. Philosophers and sociologists joined this work. There were also many connections with people involved in commons experiments. We said to ourselves that we had to map all these issues, all these experiences, by bringing together researchers and citizens to show how important this issue has become in the public debate: why do we talk today, for example, about biodiversity as a common heritage. How can we define what a "common" is? Many notions circulate today: common things, common heritage, the commons, the common... But we do not always know what these notions refer to, or how they were constructed. It is to respond to this, among other things, that the dictionary was written. When we speak of the commons, in the plural, there is a dominant lineage: the idea of goods governed in common, which are located between private property and public property. This is the work carried out by the American economist Elinor Ostrom, awarded in 2009 by the equivalent of the Nobel Prize in economics, and her school, known as Bloomington. Originally, this work focused on natural resources - irrigation networks, forests, fisheries, etc. - and led to the observation that these resources, managed by a community of a maximum of a hundred people, were subject to a "bundle of rights" distributed among the members: right of access, right of extraction, right to include or exclude, right to govern the resource, etc. It demonstrated, through concrete examples, that there is a collective governance that allows the sustainability of the good and shared uses. This movement then explored the immaterial resources of knowledge; Wikipedia, for example, fits quite well into this governance model. Obviously, if we consider very large commons such as the climate, biodiversity or water, things become complicated: the community becomes universal and, as we can see, global governance is very difficult... What other aspects does this idea of "common goods" cover today? Outside of the category theorized by Ostrom, there are many articulations with classical property, based on the idea of a collective use or destination. For example, if I have water or a particular species of plant on my land, I can be subject to preservation charges; I can be the owner of a work of art or a historical monument that are part of the common heritage. Many legal structures integrate this idea. The other important aspect is the question of the common, that is to say, of acting in common: it is the decision to govern a resource together that institutes the common. We have talked a lot in recent years about the "return of the commons"... This idea of a "return" is both very beautiful and very misleading. Very beautiful, because it proposes a deep connection with the notion of res communis, the "common things" in Roman law: things naturally open to the use of the community, removed from the ordinary circuit of economic exchanges. It would therefore be a question, following this lineage and while we have transformed everything into property, private or public, of removing certain things from the market circuit or from property. But where it is misleading is that in Roman law, this common, even sacred, character was attached to the thing itself, whereas today it is a question of social destination: we will decide that, for a given type of resource, totally exclusive private property is not the most appropriate. This will be the case for components of the environment - a well, agricultural land, etc. -, for certain cultural goods, or for free software. What does digital technology change in this regard? Unlike natural resources, the question of scarcity does not arise... It is in fact the scarcity of natural resources that made us understand, from the 1960s and even more so in the 1990s in France, that these resources had to be considered as common things, and that they could not be left to the control of private owners alone. In the case of knowledge resources, there was a confrontation between, on the one hand, a very significant privatization movement from the 1980s, particularly in software, and on the other hand, the democratization of access to knowledge, the philosophy of sharing, linked to digital technology. This brought these questions to the forefront: how far do we go in the privatization of knowledge? Can we arrange the protection of a creation? Can we renounce our property, or use it differently? The experiments and theorizations around free software, for example, turn our conception of property upside down: we use it to share the code, and this is what allows a good to emerge and develop uses. This also shows, and this is very important, that there is not only a commonality that is suffered - as when we impose charges on an owner, because his property is part of the environment or heritage - but also a voluntary commonality, which presupposes new legal constructions. In France, the debate on the commons only really emerged late. Unlike Italy, for example... In reaction to the serfdom of medieval society, the French Revolution established private property as a manifestation of individual freedom over goods. France is also a very centralized state, in which the public has absorbed the common. In our tradition, it is very difficult to think of anything other than private property on the one hand, public property on the other... In Italy, this debate has a very strong social importance. In 2007, the Prodi government mandated a commission, headed by the lawyer Stefano Rodotà, to work on a reform of the civil code; Rodotà then proposed to integrate, in addition to private and public goods, a new category: common goods, defined as goods necessary for the exercise of fundamental rights. There are also citizen experiments in Naples, in Bologna; water management was the subject of a national referendum by popular initiative in 2011... The Italian State is weaker and later than ours, the regions are more powerful, and the Constitution recognizes a "social function" for property, which the private owner of a property must take into account. The commons were very present in the debates on the digital law in France, around the recognition of the public domain, free software, "voluntary commons" of knowledge... But there were few concrete effects. The simple fact that this debate took place was very important. The questions were asked - but until then, they were not. There is a lot of discussion today on the protection of the public domain, or on exceptions to copyright for so-called transformative works, for example the practices of reusing parts of existing works. These discussions are not over, but we must not forget where we started... And then there are changes: the 2016 Biodiversity Act, for example, recognizes that an owner can impose obligations on himself for the protection of the environment. This is the culmination of a process: this idea has been discussed for years. In the 2000s, when we were working on this issue, we could feel isolated. But in ten years, there has been a lot of discussion on environmental issues, or on digital technology. In 2015, a court in The Hague ruled admissible the action of nearly 880 people against the Dutch government, which had not respected its climate protection obligations. This court ruled in their favor. This is clearly a sign of a change in mentality. How is this issue approached at the political level? Today, there is a whole cooperative, mutualist movement that is reconnecting with socialist, self-managed ideals through the commons. This obviously does not correspond to the entire political spectrum... There are also various currents within this sphere of the "commons". For some, it is a total alternative: we would make "all commons" to replace current forms of property, state or private. For others, it is a possible zone between private property and public property. It can also be a way of organizing the latter. What is certain is that, unless we want to ignore a whole part of the social movement, politicians cannot ignore either the aspiration for collective protection and governance of the components of the environment, or the movements for sharing in the digital sphere. (1) Software that everyone can freely use, copy, distribute and modify.

## ###ARTICLE\_START### ID:2209

IT Peggy Johnson joined Microsoft thanks to her iPhone. In 2014, she was still employed by Qualcomm, a company specializing in microprocessors. The same year, Satya Nadella took over as CEO of Microsoft, promising to transform this old IT player into a forward-looking company. "I had no plans to leave," recalls the American. But Satya Nadella's arrival had a direct consequence for me: I was able to use Microsoft Office on my iPhone. I thought it was great!" Six months later, Peggy Johnson became Microsoft's vice president in charge of business development. Behind this vague title, a simple mission: to enrich Microsoft's services and place them in as many machines as possible. Peggy Johnson talks with computer and smartphone manufacturers, car manufacturers and Amazon. She is the one who pushed Microsoft to spend 26 billion on LinkedIn, or to sign a partnership with Inria to follow artificial intelligence start-ups in France. Peggy Johnson was Satya Nadella’s first major hire, and the symbol of his new strategy. Microsoft built its empire by equipping computers with its Windows operating system and software. However, this closed space strategy has had its day. The company suffered greatly from the collapse of PC sales, as well as the rise of the smartphone. Despite its acquisition of Nokia’s mobile business in 2013, it never managed to break into this market. The divorce was consummated this summer, when Microsoft announced that it was abandoning its Windows Phone phones. Since this acquisition, the company has cut 34,000 jobs worldwide, in particular to reorganize its mobile activities. Partnership strategy Peggy Johnson also manages the various partnerships between Microsoft and other companies, such as Xiaomi, Amazon and Adobe. On her first day at Microsoft, she was asked to restore relations between Microsoft and Samsung, then in legal dispute over smartphone patents. Thanks to her past at Qualcomm, she knew the Korean company well. “I think some players had a misperception of Microsoft, that they considered that partnering with us was not to their advantage,” she explains today. “We wanted to lay out these relationships. Our goal is to give our users the most seamless experience possible.” Little by little, Microsoft has opened up to other companies. Windows 10, the latest version of the operating system, was given to its users free of charge for a year. It can be used on computers, smartphones or even with connected objects. The Office 365 office suite is now available online, on Android, iOS or Mac. Microsoft has launched several initiatives in favor of open-source software or operating systems. Recently, it announced a partnership with Amazon, to make their voice assistants Alexa and Cortana collaborate. “Honestly, everything has changed for us. Our users, the industry, everything has changed,” insists Peggy Johnson. "We are a platform company, focused on its ecosystem, and on giving the best tools to developers. And we no longer sell software in a box!" Peggy Johnson also had to reestablish the relationships between her company and start-ups, which were at a standstill in the face of Silicon Valley giants always looking for innovation. Acquisition of LinkedIn Microsoft now manages several accelerators around the world, as well as an investment fund. It has already financed around forty young companies. Above all, Peggy Johnson orchestrated the acquisition of the professional social network LinkedIn for 26 billion dollars in 2016. This is the most expensive acquisition ever made by Microsoft, ahead of Skype software and Nokia's mobile activities. "Before we buy a company, we ask ourselves if it will solve a problem for us," summarizes Peggy Johnson. "The association of Microsoft and LinkedIn was logical." Almost a year and a half after this acquisition, Microsoft has not yet integrated LinkedIn into its services. The social network is also not profitable. Its revenue was $2.268 billion in 2017; its expenses slightly exceeded that, at $2.298 billion. Three years after Satya Nadella arrived, Microsoft’s transformation is well underway. The company reported revenue of $96.7 billion in its fiscal 2017. Its data hosting and analytics platform for businesses, Azure, saw its revenue double. Office 365 revenue increased 43% among professionals. “I think our image is changing. At least that’s what the industry and our partners are telling us,” says Peggy Johnson. “I hear we’re cool again!”

## ###ARTICLE\_START### ID:2210

The Quartier de l’innovation (QI) is coming to life. Everywhere in this Montreal area, from Griffintown to Little Burgundy, people are inventing, renovating and rebuilding. The key: a dozen incubators, 500 start-ups, 150,000 students, large companies, laboratories and governments. But there’s more. The QI has the potential to project us decades ahead. Follow the guide. PEOPLE, ABOVE ALL The Quartier de l’innovation is a large playground for creation. And a quadrilateral of spaces scattered between a boulevard (René-Lévesque), a street (McGill), a canal (Lachine) and an avenue (Atwater). “But first and foremost, it’s a living area focused on people,” says its CEO, Damien Silès. A place where people sleep, eat, work and go to shows. A place where R&D and industrial, social, cultural and urban activities collide. WELCOME TO THE FUTURE A large open-air laboratory was launched a year ago. This flagship project was created by Vidéotron, in collaboration with Ericsson, the École de technologie supérieure and the QI. The goal? To test futuristic applications in real conditions, using 5G connections in particular. On the menu: the Internet of Things, artificial intelligence, e-commerce, etc. “Montreal is taking the lead in an initiative never before seen in Canada,” says Pierre Boivin, Chairman of the QI Board. INNOVATION FOR ALL Communautique is another interesting project. It is an open innovation hub. A what? “A democratic place where technologies are put at the service of citizens,” explains Mathieu Laporte, coordinator. A manufacturing laboratory (FabLab) is open to the general public. People come there to produce 3D printed objects. But also for electronics, programming, and cabinetmaking projects. And take advantage of lots (lots) of other services. FOR TECH ENTREPRENEURS Centech is one of the first technology incubators to have emerged in Quebec. "We support talented entrepreneurs in their first phase of development," emphasizes its director, Richard Chénier. Next year, the center will grow again. It will add the former Dow Planetarium, recently renovated, to its surface area. It will house, among other things, the Acceleration program, an ideation room and the Maison du logiciellibre. FROM IDEAS TO BUSINESSES Centech is teeming with entrepreneurs and researchers. Often, both at the same time. Among them, Élise Faure, co-founder and chief strategy officer for eNuvio. With her partners, she wants to speed up processes, for an analysis stage, when it comes time to carry out laboratory tests. Thanks to an innovative microchip system (lab-on-a-chip), it would be possible to achieve this. The results obtained to date by the team are encouraging. THE ART OF ENTREPRENEURSHIP The iconic Le Rodier building (formerly Baron Sports) is also undergoing a major transformation. Inside, it is a real construction site to make it a place dedicated to the world of culture. The building was acquired by Gestion Georges Coulombe and La Piscine. Why this name? “Because we dive into the action!” says David Santelli, Chairman of the Board. This new home will serve as a catalyst for the ecosystem of cultural and creative entrepreneurs. A first of its kind in Quebec. COMMUNICATE, ALL TOGETHER The renovation of the Saint-Joseph church to turn it into the Salon 1861 is a small miracle. We owe this achievement to Natalie Voland. “We bring together stakeholders who want to improve the world,” says the President of Gestion immobilière Quo Vadis. The large hall is used for events: galas, receptions, etc. The basement is home to IH Montréal, linked to the international group Impact Hub. It is a laboratory, an incubator and a community centre for social enterprises. ON A LARGE SCALE Espace Fabrique does things on a grand scale. We are talking here about a large incubator and an industrial cooperative. A place specializing in welding, sheet metal work and basic machining. You can even rent heavy equipment. “It’s a principle similar to a gym,” says Emmanuelle Raynaud, General Manager. Users can subscribe, receive training, have a private coach.” The client list includes, among others, start-ups, SMEs, artisans and artists. INNOVATIONS FOR SALE The NeoShop travelling boutique sells innovative products made by start-ups. This idea was born in France. “The aisles are made up of 90% Quebec products and 10% European,” says the manager, Hugo Paquin. And what can you buy there? Spice pencils “to sharpen,” cricket energy bars, urban electric bikes, etc. The store serves as a springboard for marketing. And it also allows you to test new products. CONCRETE PROJECTS Creation, pollination, diversification: things are happening in the Quartier de l’innovation. “And we’re talking about concrete projects,” says Damien Silès. There would be a lot more to say. Think of Factry, which trains the leaders of tomorrow. Agropur, which is working to create 21st-century dairy products. And all the collaborations between companies, incubators, universities and governments. “This myriad of activities helps keep our talent here,” says the CEO.

## ###ARTICLE\_START### ID:2211

Tom Cochran was one of the architects of the “We The People” platform, through which citizens can “petition” the government to force it to respond on an issue, if it garners enough support. “It was an important project, because the technology made it possible to realize one of the visions of the fathers of the Constitution,” for whom the will of the people should be expressed through the government. The name of the platform comes from the preamble to the United States Constitution. Since its launch in September 2011, more than 500,000 petitions have been submitted and 40 million signatures recorded, he says. It was through this tool that citizens forced the government to end the locking of cell phones, recalls the former head of digital operations. digital community We The People was built with Drupal, an open source solution for publishing and managing content. That formula allowed the White House to make the code for its platform public, for anyone to use. “We wouldn’t have built this tool without Drupal,” said Cochran, who now works for Drupal’s parent company, Acquia. “When we started working on this project, Drupal penetration in government was less than 1 percent. Today, over 40 percent of government websites use it. That’s important because now there’s a huge community of people in government who can use this tool, collaborate, share ideas, share tools.” The Obama administration has even put in place rules that go so far as to require departments to consider open-source solutions when bidding on projects, he said.

## ###ARTICLE\_START### ID:2212

A government can transform itself if it agrees to change its ways of doing things, if it promotes agility, if it breaks the straitjacket of its processes, argued on Thursday Tom Cochran, who was the digital leader at the White House under Barack Obama, and then at the United States Department of State. For the past year, Mr. Cochran has been vice-president and chief digital strategist for the public sector at Acquia, a company that supports the open-source platform (software whose code can be freely shared and transformed) Drupal. He was the guest of VETIQ (Voice of IT Companies) and the Chamber of Commerce and Industry of Quebec. He recounted how digital tools first allowed Obama to raise $1.2 billion in the 2008 and 2012 campaigns, and to mobilize thousands of supporters. "It was the sign of something powerful, which demonstrated that we can use digital and social technologies to transform anything we want." “But when we got to the White House, 80 percent of the technology was outdated, years old. Computers with floppy disks, no wireless or Bluetooth, because it’s dangerous… And one day out of four, the president of the United States couldn’t access his email because of outages.” The challenge was overwhelming, he says. How do you tackle a backlog of this magnitude? Obama’s first move, the day after his inauguration, was to sign his Open Government Memorandum, which focused on three areas: transparency; public participation in policymaking; and more collaboration between government and civil society. “But in an organization as big as a government, the problems are huge, and the solutions are huge. The processes take years, and by the end of the day, the solution is already outdated.” Realizing the potential of digital technology requires the ability to create solutions quickly, test them through pilot projects, and then implement them. "If it doesn't work, you'll have lost six weeks. It's better than spending $100 million to get the same result." small teams But agility also means small teams. "You don't need a crowd of people, you need the right people in the right places. I had imposed a rule: no more than six people in any meeting. And we realized that we could do things more quickly." The Minister of Economy, Science and Innovation, and also Minister responsible for the Digital Strategy, Dominique Anglade, says she wants to learn the lesson. "We all tend to want a perfect solution, but we would do well to do more pilot projects, to test quickly and then deploy. Sometimes we have to think outside our box if we want to transform things."

## ###ARTICLE\_START### ID:2213

New York - correspondent - You don't understand anything about bitcoin and other cryptocurrencies, these virtual currencies that geeks are passionate about. It's annoying, at a time when a new obsession is taking over the entire financial world and the United States: the ICO, for Initial Coin Offering, an acronym that recalls the famous Initial Public Offering (IPO), the American stock market introductions. Explanation: instead of raising funds by listing their shares, the little computer geniuses have found a faster and more efficient way to find financing. They issue their own virtual currency and sell it at auction thanks to an ICO. In this case, there is no need to comply with the rigor and transparency requirements of the American financial markets regulator, the Securities and Exchange Commission (SEC), to fill out prospectuses hundreds of pages long and to pay ruinous lawyers and investment bankers. With a good description and a website, the trick is done. This summer, in San Francisco, the start-up Protocol Labs, which seeks to create a market for allocating free memory space in computers, raised nearly $190 million (161 million euros) in one hour, while another, Dynamic Ledger Solutions, collected $230 million to exploit the Tezos software installed in Switzerland. Overall, the figures are edifying: according to the Wall Street Journal, since the beginning of the year, 170 companies have raised $2.3 billion, twenty times more than in 2016. In the third quarter, ICOs raised funds comparable to those provided by venture capital. On its site, Token Tracker lists the 232 companies awaiting ICOs, most often active in the crypto currency sector. Technically, the currency is created from the free software that allowed the birth of bitcoin, whose principle was standardized and expanded by Ethereum (a player in the sector who invented its currency, ether). As a result, it is possible to create a precise quantity of tokens specific to each company. These are sold at auction and bought more and more expensively, depending on the hope that the investor places in you. In this case, we remain among friends, in the virtual, libertarian and stateless world: the issuing company is generally paid with another virtual currency, the famous bitcoins or their little brothers, ethers. Nevertheless, ICOs allow you to collect very real value. What do these tokens represent? Not easy to say. They are a virtual currency, exchanged by computer and subject to the control of no central bank. Their value rises and falls according to demand, but their counterpart is not clear. Considerable number of frauds The token can sometimes be used in the company - to buy memory space, in the case of Protocol Labs. It is a hybrid product, which is not a share or a security of ownership, even if it can give the right to dividends or voting rights. Two slightly illusory counterparts: in this world of virtuality, it is difficult to see the right to vote being exercised. As for the dividend, we can always hope for it, while it is a question of financing companies that do not generate turnover. From there to accusing these ICOs of being a scam, a system of cavalry and extortion, there is a step easily taken. The emergence of this method of financing is not without risks, as the German company Dao experienced in the spring of 2016. The latter was in the process of carrying out its ICO, selling its tokens for ethers, to create an investment fund; 11,000 investors brought him the equivalent of $150 million, then a bug: hackers exploited a flaw in his software and stole a third of his precious tokens. While JPMorgan CEO Jamie Dimon called these virtual currencies "fraudulent," Goldman Sachs is considering getting into the business. The market is promising: the value of cryptocurrencies has reached $150 billion. The price of bitcoin, created in 2009, has more than quadrupled since the beginning of the year, while ether, which was worth $8 at the end of 2016, is trading at $300 today. While the - former? - tax havens like Gibraltar or the Isle of Man, or Japan and Canada, are trying to bring cryptocurrencies out of the shadows, major states have reacted, starting with China; 65 ICOs raised $400 million from 100,000 investors, but in August, faced with a considerable number of frauds, Beijing banned access to cryptocurrencies, causing the value of bitcoin to fall by a third. These currencies also risked accelerating capital flight and threatening the authority of the State. Beijing was followed by Seoul, while British and Australian regulators sounded the alarm. In the United States, the SEC took up the case. While it did not rule in absolute terms on the nature of ICOs, it considered that they could be a stock market security, and therefore likely to have to comply with all transparency and information obligations. In short, we are moving towards more regulation. It is true that, even in the absence of fraud, the erratic price of these currencies makes bankrupt Wall Street companies, those whose shares are worth a cent, look like prudent investments. Will this be enough? Nothing is less certain, as imagination is overflowing. In Estonia (1.3 million inhabitants), a government agency is thinking about the idea of launching, through an ICO, an "estcoin", a virtual currency open to Estonians and e-residents of the country - this virtual residence was launched to attract investors. This project, on which a 23-year-old Russian-Canadian, Vitalik Buterin, co-founder of Ethereum, is working, would make it possible to finance a sovereign fund and to overcome the criticism made of cryptocurrencies of being exempt from any state control. Nothing is said about the announced conflict between the euro, the country's currency, and this estcoin. The battle between cryptogeeks and state regulators has only just begun.

## ###ARTICLE\_START### ID:2214

Arcbees, a Quebec City technology company, is making an acquisition in Quebec City to make itself better known in Quebec City and the rest of La Belle Province! Weird, isn't it? Generally, a young company takes root in its community before establishing its tentacles abroad. Arcbees, a software development company focused on enterprise data and specializing in artificial intelligence, took the opposite path. Founded in 2010 by Christian Goudreau and Philippe Beaudoin, Arcbees turned heads right from the start with a product that was a hit with users around the world of a technology powered by Google (Google Web Tool Kit). "In no time, we had managed to reach 30% of the members of the user community of this Google tool, mainly in the finance and health sectors," explains Christian Goudreau. It is an open source tool, that is, a product whose rules authorize access to the source code, the redistribution of the software and the possibility of creating derivative projects. In the space of a few months, some twenty employees were hired by Arcbees, whose fundamental mission is still, seven years later, to simplify business practices in organizations using intelligent technologies and experiences. "At one point, users ended up abandoning our product and we found ourselves up against a wall," says Mr. Goudreau, who announced on Monday that Arcbees had acquired Chalifour Solutions Numériques, a Quebec company that designs Web projects and technological business solutions. Faced with its "wall," Arcbees rolled up its sleeves to try to make itself known in its field. Its first "local" client was the Jean-Lesage International Airport in Quebec City. The company has developed software and Web and mobile solutions to exploit the phenomenal amount of data collected by the airport's computer systems. "Our product allows data to be accumulated and redistributed," says Christian Goudreau, adding that based on the expertise developed with the Jean-Lesage International Airport, Arcbees began to tap the sleeves of major airports around the world. Arcbees also collaborates with Kronos Technologies - another "creature" from the Quebec City region - which develops software for the financial sector. Tools that are used by advisors at major Canadian financial institutions in order to offer the best products to their clients based on their profile. The Future of Préhos The acquisition of Chalifour Solutions Numériques is strategic for Arcbees, which increases its number of employees from 15 to 30. “By acquiring a company that has been well established in Quebec City since 1994, we are filling one of our gaps. We are increasing our reputation at home. We are positioning ourselves more clearly in the market for business solutions and artificial intelligence for Quebec companies.” In recent years, Chalifour Solutions Numériques has made a name for itself by developing Préhos, a solution for managing emergency pre-hospital care interventions. Offering features such as geolocation, timing, audio recording and electronically completed forms, Préhos aims to simplify and speed up the processing of information during ambulance transports. Its designers estimate that it is possible to save 15 minutes per intervention. Last year, Dessercom, one of the largest private ambulance companies in Quebec, began installing Préhos in its vehicles in Lévis. “For almost two months, the use of Préhos convinced us of its many benefits,” wrote Dessercom in a press release published in July 2016. The company was responding to the formal notice sent by the Quebec Ministry of Health and Social Services asking it to immediately stop using and installing Préhos in ambulances. The ministry indicated that the application developed by Chalifour Solutions Numériques had not yet gone through all the validation stages. A year later, Préhos has not yet received the blessing of the Ministry of Health and Social Services. “We are still in negotiations,” is all Christian Goudreau would say, specifying that the “multifaceted” digital solution dedicated to making life easier for workers in the pre-hospital sector and improving patient care could find buyers elsewhere. "Quebec is not the only market for Préhos." gleduc@lesoleil.com

## ###ARTICLE\_START### ID:2215

Perhaps there is some regret in Menlo Park, in Silicon Valley, for the time when Facebook's legal department had to deal with cases such as the one in 2011 that pitted it against a French schoolteacher who was deprived of his profile for displaying a female genitalia, that of Gustave Courbet's Origin of the World. The social network then had 800 million active users per month. Today, it has 2 billion - the milestone was reached at the end of June. In the meantime, it has been criticized for being a supplement to the online surveillance exercised by the NSA, for allowing hate speech and jihadist propaganda to flourish, for locking its users in "filter bubbles", and for being a privileged channel for the circulation of false information. On September 6, the web giant announced that more than 400 fake accounts, allegedly originating from a "troll farm" located in St. Petersburg, Russia (see page 4), had spent nearly $100,000 in two years on ads about sensitive topics in the United States. Facebook also recently had to respond to an investigation by the investigative site ProPublica, which revealed that it was possible, when purchasing advertising on the platform, to target anti-Semitic users - a category created by an algorithm based on their profile data (see pages 8-9). This reveals the blind spots of a lucrative business model, which allowed it to accumulate a net profit of $10.2 billion in 2016, an increase of 177% compared to the previous year. National rights The major American platforms seem to have become crazy machines. Since its creation in 2004, Facebook has gone from being a network for geeky students to a portal, almost worldwide, for accessing information. Google, a research project by two Stanford PhD students, has transformed into a commercial empire, aspiring to YouTube, which now claims a billion hours of video watched every day in 88 countries. Twitter, beyond its financial difficulties, has established itself as an essential communication channel for all political and social forces. As a result, pressure from states on these actors has never been so strong. The fight against terrorism has accelerated the trend. On the sidelines of a general assembly at the United Nations, British Prime Minister Theresa May, accompanied by her Italian counterpart Paolo Gentiloni and Emmanuel Macron, called on "the digital industry [to] go further and faster in automating the detection and removal of terrorist content online", but also to "develop technological solutions preventing this content from being published in the first place". In just a few years, the terms of the debate on freedom of expression online and its limits have been radically changed. For a long time, American web players were reluctant to comply with national rights. An emblematic case: the one in 2000, which pitted Yahoo against French anti-racist associations over the online sale of Nazi objects - permitted in the United States, but illegal in France. In 2004, an American appeals court refused to declare inapplicable the judgment that ordered the company to remove these objects from pages accessible to French Internet users. Since then, willingly or unwillingly, the Internet giants have had to adjust their practices. Not without hitches, as evidenced by the conflict that pitted Twitter against the French authorities in 2013 during a wave of anti-Semitic tweets on the social network. Today, the issue is far from being a pure matter of territoriality of law. At stake are the very modalities of regulating online speech. The matter, it is true, has always been complex. "Internet law was created on this debate," recalls Félix Tréguer, a doctoral student at the EHESS and founding member of the association for the defense of freedoms, La Quadrature du Net. On this side of the Atlantic, the European directive on electronic commerce of 2000 and its transposition into French law, the law for confidence in the digital economy (LCEN) of 2004, set the framework that applies to technical intermediaries: the criminal liability of a web host is only incurred when it becomes aware of "manifestly illicit" content, which it is then required to remove. "The LCEN was based on a desire to find a compromise between the massification of public speech and the judicial protection of freedom of expression," continues Félix Tréguer. A fragile compromise, subject to controversy and conflict, and which, with the rise of the so-called "social" Web, has clearly been shattered. Moderation with variable geometry At the heart of the information ecosystem, there have been players who are "neither simply hosts nor quite publishers, and who today have a very powerful media impact," summarizes Benoît Thieulin, member of the National Digital Council (which he chaired from 2013 to 2016). And with the exponential increase in content, the machine is constantly seizing up. On the one hand, anti-discrimination associations denounce a moderation with very variable geometry, where calls for hatred are given less attention than nudity (on Facebook) or content infringing copyright (on YouTube in particular). In 2016, the Union of Jewish Students of France (UEJF), SOS Racisme and SOS Homophobie tested the processing of reports on Facebook, Twitter and YouTube, before taking the three companies to court. "These platforms have a social responsibility," explains Sacha Ghozlan, the president of the UEJF. "What we are asking for is the application of French law." Including within the famous "general conditions of use," in which the association would like to see the prohibition of negationist content. At the same time, problematic cases of censorship have continued to accumulate. Just recently, defenders of the cause of the Rohingya, a Muslim minority in Burma who are victims of ethnic cleansing, denounced the deletion of publications by Facebook and the suspension of accounts, which they believe to be the consequence of mass reporting. And according to human rights activist Hadi al-Khatib, one of the founders of the website The Syrian Archive, YouTube has deleted between 150,000 and 200,000 videos since June documenting the atrocities committed in Syria since the end of 2012. Images that could be used as valuable evidence, while amateur videos are beginning to make their way through international courts. However, in this area, opacity reigns supreme. The complaint by the UEJF, SOS Racisme and SOS Homophobie also aimed, recalls Sacha Ghozlan, to obtain "elements allowing us to judge the effectiveness of the teams responsible for processing reports". "There is always a gray area," he continues. "Who are these people? Where do they work? How are they trained?" It was not until the Guardian revealed its findings in May that we learned the details of the rules that Facebook's moderation team is supposed to apply. Under pressure, Mark Zuckerberg finally revealed that the latter has 4,500 people - it must hire 3,000 more within a year. "This may seem reassuring, but it all depends on the conditions in which these people work," notes the president of the UEJF. This raises, more broadly, the question of to what extent we delegate to a private company the power to regulate freedom of expression." Complex intervention This is the whole problem: that of an underlying trend that sees the regulation of online speech falling less and less under the jurisdiction of the judicial authority - and more and more under the control of private actors and their algorithms. "There is a change in the way in which removals are carried out, with on the one hand an increasing outsourcing of moderation, to countries like Morocco or India, and on the other hand the rise of artificial intelligence to automatically remove content," underlines Félix Tréguer. All in a context of "strong pressure from governments." For Olivier Ertzscheid, teacher-researcher, blogger on Affordance.info and author of l'Appétit des géants (C&F éditions), "we are moving from models of public service delegation to models of public responsibility delegation. We are no longer talking about commercial companies, but about entities that engage in both commerce and politics." "We are in the process of building complex intervention mechanisms," tempers Benoît Thieulin. The platforms are no longer in denial, they realize that they have editorial responsibility. The law cannot intervene in everything, there must be a gradation. But current procedures - reporting, manual moderation, algorithmic moderation - must be aligned with fairness, transparency, and the avenues of appeal that exist in the field of justice." And users of these services, who are often destitute, must be "better equipped." It is with this in mind that the National Digital Council is proposing, in particular, to create a European agency responsible for evaluating the "loyalty" of platforms. Would more transparency and more countervailing powers be enough to solve the equation? Or even... "Nationalize Facebook" "Even with the best will in the world, you can't benevolently pilot a tool, whatever it may be, where there are 2 billion individuals permanently," believes Olivier Ertzscheid. A sign of the times, he notes, we see, even in the columns of the Guardian, calls to "nationalize Facebook, Google and Amazon": "It is logical that a counter-discourse emerges in the face of the thought model of unbridled libertarianism." For him, as for Félix Tréguer, the solution largely involves a movement of decentralization. "The only alternative is to promote other models, to return to more decentralized forms of hosting communications," judges the latter. A truly ambitious digital policy, which asks these questions of decentralization and free software, would allow us to make giant steps. But instead, we are witnessing the legitimization of the economic models of the "Gafa" [Google, Apple, Facebook, Amazon, editor's note] at the heart of innovation ecosystems." The return to local and/or the autonomy of communities as ways out? "It is possible that one day we will experience a wave of redistribution," says Benoît Thieulin. There are many issues at stake in the relocalization of the Net. But we must be careful: it could also be a balkanization." In the vast field of conflicts that the Internet has become, there is no simple solution. But, as Olivier Ertzscheid summarizes, there is an urgent need to "reestablish a political project for the Internet."

## ###ARTICLE\_START### ID:2216

The concept of Open Science is gradually becoming the new paradigm of reference for the dissemination of scientific research results. It is notably pushed by the European Union within the framework of the "Horizon 2020" program and, in April 2016, a solemn appeal was launched from Amsterdam to encourage Member States to take action in this direction. The concept is also increasingly echoed in France: in 2016, the CNRS devoted a White Paper to it entitled "Open science in a digital republic", containing numerous proposals in favor of openness. The definition of Open Science is fluctuating, but it refers to a desire to systematize the free dissemination and free reuse of research results, in particular by taking advantage of the Internet and digital tools. Several dimensions of research activity are concerned, such as the publication of scientific writings (Open Access), the software used (Open Source), research data (Open Data), the evaluation of results (Open Peer Review), educational resources (Open Educational Resources), etc. But there is one aspect that is almost always overlooked in these lists: that of the patents that universities and research institutes are required to file on inventions produced by researchers. While thinking is progressing in all other areas in favor of free dissemination, it is as if a sort of taboo persisted regarding patents. However, the University of Aarhus in Denmark has just launched an initiative that shows that Open Science is not condemned to stop at the door of industrial property. Aptly named "Open Science", this program aims to change the relationships between research laboratories and private companies. Traditionally, companies participate in funding research work in return for sharing the results with universities and filing patents to secure intellectual property rights on the inventions obtained. Aarhus University has decided to change the rules of these partnerships, by providing that neither the university nor the companies involved in the projects will be able to file patents. The aim is to be able to disseminate the results on a platform and to allow their free reuse. Several large companies, including the Danish company Lego, are already collaborating on this program, which also involves other research institutions in the country. One might wonder why companies would agree to contribute to research projects if they cannot secure the acquisition of exclusivity through patents. This ignores the fact that mentalities are gradually changing, as awareness grows about the sometimes harmful nature of the accumulation of intellectual property rights. The "patent wars" that have raged in certain sectors, such as smartphones, are now encouraging industrial players, such as Tesla or Toyota, to give up some of their patents in order to share technologies. It is on this terrain of Open Innovation that new forms of relationships between universities and companies can be established. There remains the financial argument, patents being reputed to participate in the "valorization" of research by generating revenue through royalties paid to institutions. In reality, studies show that only a small proportion of patents resulting from public research generate revenue, while the majority remain unexploited. However, it is not that these inventions are without interest, but the "frictions" linked to obtaining licenses act as a powerful barrier to reuse. Leaving inventions in the public domain by giving up patents is a way of "thawing" these results so that they immediately realize their full potential. If patents are so widely used in the research sector, it is not so much for their economic profitability as because they have been diverted from their original function to become a method of publishing and evaluating research. The initiative of the University of Aarhus nevertheless shows that another operation is possible, provided that suitable infrastructures are put in place in favor of Open Science. History shows that the association between patents and universities is recent. It actually dates back to the 1980s, when the United States authorized its universities to file patents with the Bayh-Dole Act, soon imitated by many countries as the "knowledge economy" was established. For some observers, this hold of intellectual property on research is part of the "second movement of enclosure of the commons" which, after having affected landed property at the end of the 18th century, extended to the productions of the human mind. Patents are actually an instrument of privatization and commodification of knowledge, and public research institutions have become one of the cogs in this phenomenon. But this process is reversible, and it is the goal of Open Science to make knowledge a common good again, provided that we dare to go all the way with the process.

## ###ARTICLE\_START### ID:2217

The popularity of video via the general public Internet is no longer in doubt. But despite the advances, the technologies behind this new form of telecommunications remain behind what is happening in the live video market and high-calibre video for professional uses. However, in this booming specialized market, a Montreal company, Haivision, is increasingly standing out as a supplier of high-performance software and cloud services for live IP video, or live video streaming, in technological jargon. As proof, Haivision exceeds 65 million in sales with a clientele of professional users (medical, military, public institutions and large companies, etc.) that is almost entirely established outside Canada. Also, with sustained growth (more than 25% per year) and good profitability "for several years", says its president and founder Miroslav Wicha, Haivision is preparing a new growth cycle by acquiring complementary technological SMEs. "We have a few targets in mind in the live IP video software sector and with high technical caliber in Europe and Asia, in particular. We are also talking to private equity investors who could participate in these acquisition projects," explains Mr. Wicha during an interview at Haivision's head office and main R&D center in the Saint-Laurent borough of Montreal. Towards 100 million If they come to fruition as planned "in the coming months," Haivision's acquisition projects, combined with its internal growth, could propel its turnover beyond 100 million within two years. "Our sector of live IP video technologies for professional and secure uses is still made up of a large number of specialized SMEs. And some are ripe for integration into larger companies in order to continue to progress," explains Miroslav Wicha. "In this context, Haivision is in an advantageous position due to its intermediate size, technological competitiveness and financial capacity to be a "consolidator" of Canadian origin in this global market, rather than a "consolidated" by a larger company of foreign origin." Moreover, Haivision has experience in a series of technological and commercial growth acquisitions. This goes back to 2009 to 2011, with four acquisitions made in the United States and Germany: Video Furnace in Chicago, CoolSign in Portland (Oregon), KulaByte in Austin (Texas) and MontiVision in Hamburg, Germany. "These acquisitions have been great successes for Haivision, both in terms of their good integration and their contribution to the geographic expansion of our activities," explains Miroslav Wicha. This 56-year-old entrepreneur of Czech origin, in Montreal for almost 20 years, says he is satisfied with the geographic and sectoral diversification of Haivision's business. “It gives us resilience to business cycles across our core target markets,” he says. Haivision’s revenue geography is roughly 70% in North America, with the U.S. being the most dominant region, and 15% in each of the vast markets of Europe and Asia-Pacific. Leading the pack In its latest report on the global live IP video software market, released in June, Indian-American analyst firm MarketsandMarkets predicts that the market will explode in size—from $2.5 billion to $7.5 billion—over the next five years. And among the 12 companies considered to be in a better position, MarketsandMarkets describes Haivision as a “leading provider in the live video streaming market, growing rapidly with strong specialist partner networks.” In Haivision’s business segment, the large enterprise and institutional market and the professional video broadcaster market each account for a third of revenue. The other 40% comes from the military and national security sector, where the highest demands for quality, reliability and security of live IP video prevail. Partnership Haivision's customer base could diversify further after its recent launch of a developer partnership for high-caliber live IP video technologies. Called the SRT Alliance, this partnership aims to establish the software technology developed by Haivision, or "source code" in tech jargon, as the next open-source software standard among application developers and professional users of live IP video. Initiated by Haivision and the American Wowsa, a specialist in cloud computing video, the SRT alliance already brings together around thirty companies in the main economic regions of the world. "Our main challenge now at Haivision," concludes its president Miroslav Wicha, "is to continue developing the best possible products and services to promote the adoption of our SRT standard in the global market for high-calibre live IP video."

## ###ARTICLE\_START### ID:2218

Two teams from the CNRS and the French Institute of Science and Technology for Transport, Planning and Networks (Ifsttar) want to help to better understand and better know the acoustic environment. An Android application, NoiseCapture, allows everyone to record the noise around them, its location (anonymous) and the information of various conditions specifying the measurement (outside, weather, presence of roads, etc.). A freely accessible map aggregates the various data taken by the volunteers. In order to promote the development of the project (Noise-planet.org), which also includes a modeling component, the data and software developed are open source.

## ###ARTICLE\_START### ID:2219

Mountain View (California) - special correspondent - WARNING!, warns a sign in capital letters. Snakes have been seen in the area. "Under this blood-red title, a biology summary distinguishes venomous reptiles from harmless species: "Unlike non-venomous snakes, the body of the rattlesnake is relatively fat, its head is triangular, its pupils resemble those of a cat..." Google's headquarters in Mountain View is infested with warnings. Nailed to the gates of a sports complex, a plaque warns rascals tempted to challenge the web giant on its turf: "Hello "Googlers"! Have you noticed something wrong? Report it to us. » Having become omniscient and omnipotent thanks to its search engine, the success of which has allowed it to prosper in fields as diverse as advertising, mapping, video, health, automobiles, home automation and agri-food, the high-tech titan set up in 2003 in this small municipality in Silicon Valley, 65 km from downtown San Francisco. Former computer science students at Stanford University, Larry Page and Sergey Brin created the company in 1998, in a garage in Menlo Park, a twenty-minute drive from Mountain View. Two decades later, their empire, valued at more than 550 billion dollars, is at the top of the global stock market capitalizations. With the primary ambition of "organizing information on a global scale and making it universally accessible and useful", as the website indicates on its home page. In this case, the organization of these workspaces responds to a somewhat disjointed logic. More than 35,000 "Googlers" visit the Mountain View campus every day, which has expanded in fits and starts as the firm has grown. Its "historic" heart is made up of the former buildings of Silicon Graphics, a computer company that went bankrupt in 2006, to which new buildings are added almost every month, rented or bought from their former occupants. To date, 290,000 m2 of office space is used - a figure that is constantly increasing. Quest for infinity This is also one of the salient features of this rather ungainly patchwork of shapes, colors and materials: just as it never ceases to update its technologies, Google takes care to correct, improve and "augment" its campus. The name of the place, Googleplex, well reflects this quest towards infinity, and beyond. It’s a portmanteau of the company’s name and the number gogolplex—a series of numbers “larger than there are atoms in the visible universe,” according to the online mathematics encyclopedia PlanetMath.org. Take the footbridge over Permanent Creek, a stream lined with bushes and reeds, and a sign highlights the efforts of Google and Acterra, a local NGO, to “improve the habitat of insects and birds, and the aesthetic environment for humans,” by planting thousands of plants along the waterway. Walk between the buildings of the YouTube video platform—owned by Google since 2006—and see tents and a stage set up on the lawn. On this Friday afternoon in late June, a rock band, square-shouldered and casually dressed, is making final adjustments before livening up a drink organized by an employee. Wander around the “main lobby,” the Googleplex’s main thoroughfare: statues of little green men proliferate happily; they are the robotic mascots of the open-source Android operating system, launched by Google in 2007. Parked here and there, a few vehicles show off their colorful bodies; they are Google Cars, those cars equipped with cameras, crisscrossing the planet to flood Google Maps with information. Not far away, about twenty trucks offer various services: food trucks sell their food, hairdressers cut locks, in the shade of palm trees. Wander around the more remote corners of the campus: you will inevitably come across sports facilities. There are soccer fields, tennis courts, and pétanque courts; free access bicycles - the famous Google Bikes, in the company’s red, yellow, green, and blue colors -; and even punching bags. It was an external company, the Mobile Fitness Squad, which also came by truck, that set up the boxing accessories at the foot of the offices: boxers take note, Googlers have a good answer. Changing bodies require evolving furniture. When they are not sculpting their muscles, employees adjust the dimensions of the office equipment, depending on their size or mood. The creators of the HBO series Silicon Valley, which tells the story of the adventures of four Californian computer programmers, admit to having been inspired by the Googleplex to design the offices of Hooli, a fictional web giant. As in Mountain View, elasticity is the order of the day: seated or standing, fixed or mobile workstations, the protagonists of Silicon Valley rarely stay still. This flexibility has an impact on human resources management. During the summer, Google was shaken by the publication in the press of an internal memo in which an engineer explained the underrepresentation of women in the new technology sector by "biological differences". “That’s not a viewpoint that I and the company support, promote or encourage,” diversity chief Danielle Brown responded. The company immediately corrected course, firing the employee and promising to close the gender gap—Google has 69 percent male employees. Diversity issues were already a much lighter theme in Shawn Levy’s comedy The Interns (2013), filmed at the Googleplex. Owen Wilson and Vince Vaughn played two elderly interns hired by Google because of their atypical profiles. Crazy hazing, “Muggle Quidditch” matches—the fantasy sport played by the characters in the Harry Potter saga—and other adventures punctuated the days of the two naive people. The film was a rather clever form of propaganda; It is difficult, however, to imagine a company as tense as Apple lending itself to such an exercise in self-mockery. A certain ductility also seems to be guiding the upcoming expansion of the Googleplex. Since 2015, a tandem of architects, Thomas Heatherwick, 47, and Bjarke Ingels, 42, have been working on new workspaces. These will be the first buildings built specifically for Google in its Mountain View HQ - needless to say, they are being closely scrutinized. Very active in the design sector, Heatherwick notably designed the Olympic "cauldron" for the London Olympics in 2012; the Briton will supervise the interiors of the project. As for Ingels, he is known for the pomp and plasticity of his architecture: the Dane has just installed a ski slope on the roof of a power station in Copenhagen, and is due to design the World Trade Center 2 tower in New York. The name of his agency, BIG - for Bjarke Ingels Group - reflects his conception of his profession. "Herculean projects" "The Google executives called us because our architecture resembles them," Bjarke Ingels confides over the phone. "Their corporate culture is both very analytical and very playful. They are capable of embarking on Herculean projects, like scanning the entire earth, but also of playing with the logo of their search engine, the shape of which can change without warning, depending on current events." During its genesis, the project played a strange yo-yo game. At first, the company did not set a budget for the architects: "The Google executives wanted us to think big," Bjarke Ingels recalls. Then, they were afraid that people might think they were spending their money foolishly, and they restricted our plans a little. » Another setback: in 2016, the land that Google coveted for its extensions was awarded by the municipality of Mountain View to the company LinkedIn, owned by Microsoft, one of its main competitors. The firm fell back on a smaller plot, and the architects had to revise their ambitions downwards. "In any case, Google did not want a perfect building," continues the architect. We proposed a project in their image: a transformable, hybrid, open-source hangar, like a system that could be hacked at any time. It is neither a square nor a dome, but what we call a "squaom", which is the combination of the "square" and the dome. A huge glass canopy, equipped with photovoltaic solar panels, will cover a sort of bazaar, a medina. In this village, there will be not only offices, but also cafeterias, plants, temporary works of art, alleys that will open onto the outside... Everything will be lit by a perfect dose of natural light." Software headquarters, which should be continually updated: architecture according to Google embraces its vision of the world. "It is the strength of the web giants to have integrated, from the beginning, this idea of permanent metamorphosis, believes the writer Alain Damasio. The ideal headquarters should even be entirely modular: furniture rather than real estate. Become a junk space embracing all the possibilities of function, contrary to the neurotic project of Apple, in Cupertino, as closed as the recent technologies of the group." Larry Page and Sergey Brin gave some leads to the architects: "Their favorite building is Building 20 of MIT (Massachusetts Institute of Technology), near Boston, specifies Bjarke Ingels. A temporary wooden structure built during the Second World War... The researchers who were thinking about it did not hesitate to knock down the partitions for the needs of this or that experiment." Hippies and hackers Another source of inspiration for the duo of architects, the Burning Man festival has brought together since 1986 a network of artists, geeks and hippies around ephemeral creations and crazy ceremonies: pyres of human effigies, parade of mutant vehicles... First based in San Francisco, then in the Nevada desert, this great mass links two Californian utopias, the libertarianism of the hippies and the communitarianism of the hackers. It's hard not to read some psychedelic reminiscences in the bright, youthful colors that dot the Googleplex, its clusters of young people lying on the grass, its tents that look like so many high-tech tepees... In Mountain View, the guru of the present day is called Ray Kurzweil. Professor at MIT, engineer, computer scientist, futurologist, the man first built a destiny for himself in the field of electronic music, by developing a revolutionary synthesizer, the Kurzweil K250, in the early 1980s; then by predicting nothing less than the dawn of a new humanity, in a series of "transhumanist" essays. "This book is the story of the destiny of the human-machine civilization, a destiny that we have been led to call 'singularity'", he writes in Humanity 2.0 (2007, M21 editions). “Within thirty to forty years, we will overcome disease and aging,” he prophesied in 2009, in an interview with Computer World magazine. “Nanorobots will patrol our organs and cells that need repair, and will simply repair them. This will lead to a profound extension of our health and longevity.” Ray Kurzweil professes this “brave new world” at Singularity University, a composite campus at the crossroads of a private school, a think tank, and a business incubator. He co-founded it in 2009, in Mountain View, on the site of a NASA research center. Google, whose teams Kurzweil joined in 2012 as director of engineering, is one of the university’s patrons. A singular temple, this one, filled with immense canvas or metal hangars, most of which were built in the 1930s by the Navy. Some are now rented by Google, which is apparently testing flying cars, nanotechnologies and other prototypes there. Patente is the relationship with the "squaom". Bjarke Ingels readily admits it: "Since he discovered these hangars, Larry Page has been talking to me about them night and day!" "We underestimate the intact freshness of the pioneer who inhabits these start-ups, even when transformed into transnationals," adds Alain Damasio. "I believe in the sincerity of these leaders, in the naivety of big children that carries them, and which can be combined with the most extreme capitalist cynicism. Mark Zuckerberg is an absolute emotional immature, but it is from the depths of this immaturity that he has made Facebook a hegemonic social network, which responds to a narcissistic and childish foundation that runs through us all. Ray Kurzweil never knew how to mourn his father, and it is from the depths of this psychological immaturity that his quest for digital immortality can take on such seduction. They make immaturity a magnet for prodigious desires." A promising young filmmaker, Antoine Viviani made the interactive film In Limbo in 2015. In it, he talks to some of these big kids, including Ray Kurzweil. "Google, Apple, Facebook and Amazon share the conviction that information is the basis of the organization of the Universe, and that it is our new oil," analyzes the director. "Together, they shape an enormous intelligent organism, where each dissolves and becomes "augmented", a world of transcendence that promises us ubiquity, omniscience, immortality. Above all, they are building the greatest monument that an era has ever built to its own glory: an immense cemetery of data, of traces, which testifies to our inability to manage finitude, and renews our inconsolable nostalgia. "If we are to believe the latest updates of the "squoam", robots should replace the workers on the construction site. As for the beings who will populate this hangar, who knows exactly what species they will claim to be.

## ###ARTICLE\_START### ID:2220

The information had made little noise. Barely a few articles from journalists alerted by French publishers of digital education. Last May, while France was fascinated by the arrival in power of the Bonaparte of senior executives, the director of digital for National Education, Mathieu Jeandron, authorized the entry into the market of American giants, Google, Apple and their ilk. "What if we stopped with the "evil Google" or the "evil Apple" to concentrate on original digital services", he tweeted elegantly in response to the concerns of entrepreneurs who, for several years, had been developing tools based on free software while scrupulously respecting the requirements of the CNIL in terms of protection of private data. According to him, the Gafam (Google, Apple, Facebook, Amazon and Microsoft) would have brought their general conditions of use into compliance with French law. All is well, French students can enter the radiant paradise of the digital environment with peace of mind. Suddenly, however, worried minds are waking up. If teachers who use "Google apps for education" (Globish reigns supreme in schools), for which the Californian giant promises not to reuse data or define user profiles, start browsing in search of a map on Google Maps, they will then suffer what the average user suffers with their lazy consent: a collection of reusable data for any operation likely to bring in a little money. However, French publishers have understood this well, the principle of Californian capitalism being to crush all forms of competition, they will quickly be suffocated under the gigantic weight of these new entrants... who devote twenty jobs in France to school issues, when French publishers represent two hundred employees. We should probably not have expected from National Education a policy of defense of sovereignty that no administration or politician has wanted to lead for decades. Once again, we will deliver the French market and its millions of future users. And French taxpayers' money will be poured into the coffers of Apple and Google in the various tax havens of the planet. Because digital is expensive. Millions are being poured into it, at the state level, at the regional level and at the departmental level. It doesn't matter, respond the enthusiastic commentators (and eager to show their progressive credentials): nothing is too expensive to guarantee the success of our young people (loud applause from the parents). Yes, from Claude Allègre in his time to François Hollande launching his "major digital plan for schools" in September 2014, the list is long of those who have promised to save the educational institution through the miracle of the tablet. So, let's recall some figures. They come from the latest Pisa report on the issue. A comparison of OECD countries' performance based on their digital usage: 10% of students in Shanghai (1st in the Pisa 2012 ranking) surf the Internet at school (compared to 42% on average in the OECD), 4% of Japanese students (5th in the Pisa 2012 ranking) work in groups on computers (compared to 23% in the OECD), 2% of Japanese students do their homework on a school computer (compared to 21% in the OECD), 2% of Korean students (4th in the Pisa 2012 ranking) post their work on the school website (compared to 12% in the OECD). The countries that achieve the best performance are also those where the time spent each day on the Internet at school is the lowest and where students use computers the least at home for schoolwork (while, paradoxically, Asian countries are those where students have the best mastery of the digital environment). It cannot be stressed enough that the first to not be mistaken are the senior executives of the Silicon Valley giants, who massively enroll their children in schools where screens are banned. Digital technologies are a formidable tool as long as they remain a tool, if possible in the service of a pedagogy based on effort (the "fun" is an artifice that quickly meets its limits, except when ambitions are modest), memorization (the Internet, no more than the possession of a library, does not exempt one from appropriating certain knowledge in order to simply have the idea of going to look for others) and logical progression (gleaning from random encounters, on the Internet as well as during "educational projects", leaves entire sections of knowledge unexplored or obscure). But the sanctification of these technologies has the advantage of leading billions into the pockets of the Internet giants, and preparing our children not to think about the world and master these tools, but to become their slaves by becoming simple consumers. Since the role of public authorities is to implement this common good collectively defined by citizens, it would be beneficial for our decision-makers to read a little more carefully the studies that demonstrate that embracing the new totalitarianism of the Internet giants is not only expensive, but above all completely counterproductive. Except for those who would be happy to only have to govern an army of nice, servile consumers.

## ###ARTICLE\_START### ID:2221

The fashion is for "open" in science. Opensource software ("free software"), open access articles ("free access", as opposed to the subscription model), open data ("open data")... And now open citations, which could be translated as "open references". The reference or citation is a seemingly innocuous notion that nevertheless constitutes a sort of skeleton of scientific knowledge. At the end of a research article, the authors systematically add a long list of previous works that they consider relevant. These bibliographic references allow the reader to see which other researchers are interested in this theme. It is up to historians to study the birth of a theme. It is up to sociologists to analyze the interactions between teams or disciplines. It is up to evaluators to "measure" the quality of a work by the number of citations received, for example. The links that these citations create inspired the founders of Google for their search engine: a site is higher in the ranking of responses to a user query the more often it is "cited", that is to say that web pages point to it. Gigantic index Before Google, in the 1960s, the American linguist Eugene Garfield, who died in February 2017, quickly understood the interest of these references to transform them into a lucrative market. He compiled all these citations, and sold them in the form of a gigantic index to help researchers identify competitors, future collaborators or estimate their influence. He even invented one of the standards of the quality of a scientific journal, the impact factor, which is based on the number of citations received by the articles published by a journal. "From units of knowledge, research articles have become accounting units", regrets Yves Gingras, director of the Observatory of Science and Technology in Montreal. These citations are therefore crucial... but are for the moment in the hands of a few private players. Essentially two, Web of Science, from Garfield's company, owned since 2016 by Clarivate Analytics, and Scopus, created in 2004 by the publisher Reed Elsevier. Hence the launch, in April, of a crazy project aimed at gathering all these references in a new database that is free to access and use. The Initiative for Open Citations (I4OC) was born - in fact resurrecting previous aborted attempts - under the impetus in particular of Wikimedia and the open access publishers PLOS and eLife. It is supported for example by the Bill and Melinda Gates Foundation, Alfred P. Sloane, the companies Microsoft Research, Mozilla... At the beginning of August, the consortium congratulated itself, estimating that more than 45% of the citations were now public, compared to 1% at the start of the project. The acceleration is explained by the support of publishers who "open" their data. "Reaching 100% is ambitious and realistic," believes Dario Taraborelli, director of research at the Wikimedia Foundation, which supports the famous online encyclopedia Wikipedia. However, he does not set a deadline because major publishers such as Elsevier and the American Chemical Society are still missing. Competitors such as Wiley, Springer Nature and SAGE have joined the movement. "We hope for a snowball effect," says Dario Taraborelli, who has many projects in mind, in particular to enrich the enormous Wikidata knowledge base, taken from Wikipedia. "One of the flaws of private databases is that they depend on the business models of companies that decide which journals can or cannot enter. In the ocean of science, they are only basins," says Marin Dacos, director of the Center for Open Electronic Publishing. The future database will therefore a priori be richer than its closed competitors. As with every data release, the initiators hope that new services will emerge for the benefit of researchers. Including on the controversial aspect of evaluation, strongly biased by the dominance of English, non-exhaustiveness, differences in publication practices between disciplines... "With a better database, the evaluation could be better," hopes Dario Taraborelli.

## ###ARTICLE\_START### ID:2222

Who will be the first to put driverless cars on the roads? In this race for speed and resources, mergers between manufacturers, equipment manufacturers and artificial intelligence specialists have been multiplying in recent weeks. The latest one is a key step in this movement. For the first time, a global car manufacturer is joining another manufacturer in a major partnership aimed at developing and sharing hardware and software technologies related to autonomous cars. In this case, the Italian-American group Fiat-Chrysler Automobiles (FCA) joined, on Wednesday, August 16, the alliance created during the summer of 2016 between the German manufacturer BMW, the American computer chip giant Intel and the Israeli company Mobileye. This announcement punctuates an incredible summer series of mergers in the field of automatic cars. On August 10, Toyota announced the formation of a consortium with several communications and IT groups, including Japan's NTT Docomo, Sweden's Ericsson and the inevitable Intel, to boost existing IT capabilities for the rise of autonomous cars. A few days earlier, on July 24, German automotive supplier Bosch and its compatriot Mercedes-Benz presented their pilot project for automated valet parking in Stuttgart, allowing the vehicle to park itself without a driver. The operation was the first concrete expression of the cooperation in robot cars announced in April by the two giants of German industry. On July 18, it was Microsoft's turn to join the Apollo "open source" project, dedicated to the development of autonomous cars and led by Chinese Internet giant Baidu. Apollo brings together around fifty companies including Ford, but also German equipment manufacturers Bosch, Continental, and - once again - Intel. If we add to this list the investments, this spring, of the Volkswagen group (VW) in Mobvoi, a Chinese start-up specializing in artificial intelligence created by former Google employees, all with the aim of developing the prototype of VW's super-autonomous car in China, the inventory begins to be impressive. In this abundance, the BMW-Intel-Mobileye platform seems, with the adhesion of Fiat-Chrysler, to stand out. Since its creation in July 2016, this alliance has prospered. Two major equipment manufacturers have joined it: the German Continental and the American Delphi. Above all, Intel has accelerated: purchase for 14 billion euros, in March, of one of the partners, Mobileye, leader in intelligent cameras; deployment at the end of 2017 of a fleet of 100 autonomous vehicles in the United States, Israel and Europe. Technological leverage FCA brings to this robust group a strong research and development capacity: 2.9 billion euros of research expenditure in 2016, which will be added to BMW's 4.3 billion. The Italian-American manufacturer adds the feedback from its collaboration with Waymo (formerly Google Car), a subsidiary of Alphabet, Google's parent company, to which FCA supplies Chryslers for its fleet of autonomous vehicles. But, obviously, Fiat-Chrysler will first benefit from the technological and financial leverage of such a grouping, described as "vital" by Sergio Marchionne, CEO of FCA. "By joining this cooperation, we will benefit directly from synergies and economies of scale," emphasizes Mr. Marchionne. "This will allow us to finance research with considerable costs," summarizes an FCA executive. To move forward, the platform can also count on BMW's firepower in terms of investment. The Munich firm spends 2.3 times more on capital and research per car sold than Fiat-Chrysler and intends to continue this effort. For example, BMW is setting up a campus dedicated to autonomous cars in Unterschleissheim, near the Bavarian capital, where some 2,000 engineers will work together in the future. In an automobile industry accustomed to one-off or long-term cooperation, there is no doubt that research needs will accelerate the movement. Of the 294 new industrial partnerships in the sector listed by the consulting firm Alix Partners between January 2016 and June 2017, more than a hundred concern autonomous or connected cars. Will French manufacturers be part of it? Although they have not been among the most enterprising, they have not remained passive. At Renault, they are relying on the synergy capabilities of the alliance with Nissan, now strengthened by the recent integration of Mitsubishi, which made the group the world's leading car manufacturer in 2017. The partnership set up at the end of 2016 with Microsoft to bring the IT giant's data processing and storage capabilities to the Alliance's cars could also form the basis for a rapprochement in automated driving. As for the PSA group, it has signed a partnership with the young but very promising American company nuTonomy, which develops driverless driving software, in order to test autonomous cars in Singapore from September. The start-up will install its software as well as specific sensors and computing platforms in Peugeot 3008s deployed for the occasion.

## ###ARTICLE\_START### ID:2223

Noura Safadi announced on Tuesday, August 1, the death of her husband, Syrian computer developer Bassel Khartabil Safadi, who disappeared in a Damascus prison in October 2015. She did not specify in her Facebook message how the Syrian authorities had finally informed her of his death, while his relatives had not heard from Mr. Khartabil for nearly two years. For part of the Syrian rebellion, the couple had something iconic about them: they had married during the first year of Bassel Khartabil's detention in Adra prison, in 2012. Lawyer and activist Mazen Darwish, who was also imprisoned in Adra at the time, had been their best man. However, Bassel Khartabil, who died at the age of 36, was not a political activist in the strict sense. This technology enthusiast was at ease behind a screen, writing computer code, in connection with a particular community: that of the "free Internet", which brings together defenders of free online access, activists for the free flow of information, ideas and technology. This very small world at the time, in Syria and the Middle East, easily came up against state censorship. Bassel distinguished himself there by his energy, his desire to be enterprising. "Hacker space" in Damascus He had joined the Creative Commons movement in the late 2000s, which adapts licensing models, including royalty-free ones, to national intellectual property rights. He collaborates on Wikipedia and the Firefox browser, among thousands of volunteers, and forges links with foreign developers at conferences in Lebanon and Poland. In Damascus, in 2009, he created a "hacker space", a social animation space dedicated to computing and free software. "People were launching them all over the world at the time," recalls American developer Jon Phillips, who helped him with his project. "We couldn't believe we'd managed to get Mitchell Baker, the former boss of Mozilla [the maker of Firefox], and "Joi" Ito, the future director of the MIT [Massachusetts Institute of Technology, in the United States] to come to the launch party in Damascus." After Bassel Khartabil's arrest, his friend launched a campaign to have him released, which would have a wide echo in international "tech" circles. Bassel Khartabil, the son of a Palestinian intellectual and a Syrian woman, a computer science graduate from the University of Riga in Latvia, had become a target for the security services in 2011 because of his know-how and his connections abroad. “Bassel was one of the first of them that we saw designated as a danger by a state for his skills,” says Danny O’Brien, international director of the Electronic Frontier Foundation (EFF), an online freedom organization. “He was vocal online, he didn’t hide, but he wasn’t a strong political voice. He was, however, a reliable contact who helped us check whether the authorities had blocked a particular site.” Bassel Khartabil was arrested in the Mezze neighborhood of Damascus in March 2012.

## ###ARTICLE\_START### ID:2224

The announcement, published in a few sentences by his wife late Tuesday evening on Facebook, put an end to doubt and all hope. "Words come with difficulty as I prepare to announce the confirmation of the death sentence and execution of my husband, Bassel Khartabil Safadi," wrote Noura Ghazi Safadi. He was executed a few days after being transferred from Adra prison [near Damascus] in October 2015. It is an end that befits a hero like him. It is a loss for Syria, a loss for Palestine, it is a loss for me." The couple had been nicknamed "the spouses of the revolution" in January 2013, at the time of their marriage celebrated while the young computer scientist had been detained for almost a year. With a Syrian mother and a Palestinian father, Bassel Safadi, who died at the age of 34, was arrested in March 2012, in the wake of the repression led by the Bashar al-Assad regime against the peaceful revolt that had started a year earlier. Because he had made his IT skills available to the activists (who had made social networks their preferred means of communication), the intelligence services quickly spotted him, and never let him go. Known worldwide in the "free web" community, Bassel Khartabil Safadi had notably contributed to open source projects such as Firefox and Wikipedia in Syria. In 2010, he launched Aiki Lab (dedicated to collaborative technologies) in Damascus. Global networks had mobilized alongside NGOs to demand his release. The pressure from the international community apparently exasperated the authorities, who decided in 2015 to transfer him to the dreaded Adra prison. In November of that year, informants had warned his wife that her husband had been sentenced to death. She had not heard from him since.

## ###ARTICLE\_START### ID:2225

A large, cluttered and poorly maintained squat housing about twenty people, in the center of Romford, a town in the suburbs of London. Amir Taaki occupies a cramped room on the third floor. Feverish, he dreams of being somewhere else, far away, to launch one of those ambitious and radical projects that are his secret. Amir Taaki, 29, born in the United Kingdom to an English mother and an Iranian father, is a celebrity in the international hacker community. A gifted coder, free software activist, video game developer, he was also a pioneer of bitcoin, the main electronic currency in circulation on the Internet. In 2014, he led the team of volunteer coders who created Dark Wallet, a secure and anonymous bitcoin wallet. Thanks to a complex architecture, Dark Wallet allows bitcoins to be exchanged without leaving any identifiable trace on the blockchain, the global transaction register. To do this, Amir managed to get hackers from different backgrounds to work together, from residents of the "post-capitalist eco-industrial colonies" of Catalonia to Cody Wilson, a Texan who makes real firearms at home with a 3D printer. For hackers and anarchists, Dark Wallet is an instrument of freedom, allowing them to escape the surveillance of banks and states. It is also the ideal tool for defrauding taxes and engaging in all sorts of illicit trafficking - which does not really displease Amir, an anarchist above all. At the end of 2014, while he was finishing the development of Dark Wallet, he heard about Rojava, this territory in northeastern Syria held by the Kurds of the YPG (People's Protection Units) thanks to military aid from the United States. On the Internet, he discovered that, despite the war, this enclave would be administered in an egalitarian and united manner, according to the principles of "democratic confederalism" theorized by the Kurdish leader of Turkey Abdullah Öcalan. Amir was totally won over: "As an anarchist, I felt it was my duty to go there to help these people perpetuate this unique experiment in the world." He contacted Rojava officials on Facebook: "I offered them my services, explaining that I had various skills: IT, maths, design, finance... They ended up inviting me." He then gathered the equipment he thought he would need to help a small town improve its Internet connection - computers, cables, antennas, connectors: "I imagined setting up a local network to establish a system of direct democracy, with online debates and votes." Offensives against ISISIn March 2015, Amir left for Iraqi Kurdistan, heavily laden: "When I arrived, the police saw me arrive with my equipment, which made them very suspicious. I spent my first night in prison." The very next day, he is picked up by officers and taken to Rojava. The journey is long and perilous. When he arrives, nothing goes as planned: "At that time, the military situation in Rojava was critical, they especially needed soldiers. They enlisted me in a combat unit. I had no military training, I learned to use a Kalashnikov on the front." He takes part in three offensives against the Islamic State (IS) organization, supported by the US Air Force. His military career ends at the end of the summer of 2015: "A commander found out who I was and sent me to the rear, to the town of Derika." This time, Amir is enlisted in an "economic committee." He works on installing solar panels, producing fertilizers, recycling waste, and takes the opportunity to learn Kurdish. He is also responsible for chatting online with Western volunteers and doing an initial sorting. In May 2016, Amir decided to return to the United Kingdom to organize the sending of aid to Rojava, and to take a breather. Miscalculation: upon his arrival at London airport, he was arrested and questioned by the police: "They knew a lot of things, they had been watching me for a long time. They knew that I was fighting on the side of the Kurds, but they considered me more or less a leftist terrorist." After a night in detention, he was released on the intervention of a lawyer, but an investigation was opened. His electronic devices and passport were confiscated, and he was placed under house arrest at his mother's house in Broadstairs, in the south-east of the country, with an obligation to report to the police station three times a week: "I was bored to death. After six months, I decided to move to London to stay with friends, and the police did not react." He then decided to travel around England to meet anarchist groups: "I was disappointed, I only saw armchair anarchists, talkative and superficial. For them, it was entertainment, a way to look cool." Then he settled into the Romford squat, where he immersed himself in reading and reflection. Little by little, he decided to set himself a new major mission: to repoliticize the European hacker movement. According to him, this community is going through a bad patch: "Before, hackers were political activists driven by a global vision. They wanted to use networks to change the world, to establish a transparent, egalitarian, participatory society. But today, the movement has faded." For Amir, the decadence is illustrated by hacker spaces, these collective workshops where everyone comes to tinker as they please: "In these places, people are exclusively interested in technology, without a social project, it's just for their personal satisfaction. They have created a cult of the complicated gadget, they make toys, drones... How many vegetarian restaurants and bicycle repair shops will have to be opened before realizing that it's a dead end?" Similarly, bitcoin, which could have become an instrument for subverting the banking system, has fallen into the hands of speculators and businessmen. To revive the militant spirit of hackers, Amir imagines a strategy undoubtedly inspired by his experience in Rojava: he will create a high-end training camp for hackers. "I will welcome motivated young people, I will teach them code and free software. We will also be interested in free hardware, to create open, modular, modifiable computers. In addition, we will study philosophy, contemporary critiques of capitalism, participatory democracy. We will also do physical training." He is convinced that he is in tune with the times: "Not all young people want to lead a comfortable life with, as their only excitement, the idea of going shopping. Some want to be offered a life of effort, for the common good." To house his future team, Amir will need a building, which he will make a place of work and community life. He must therefore find sponsors and a welcoming city somewhere in Europe. New disappointmentIn May 2017, the British justice system gave him back his passport. He immediately left England and went to meet European hackers and anarchists - in the Exarchia district of Athens, among the ZADists in the Susa Valley, near Turin... Once again, it was disappointment: "They are very good at having fun and wearing hippie clothes, but that's it." In July, he decided to return temporarily to the United Kingdom, with a specific goal: to take advantage of his connections in the bitcoin world to raise funds, in order to finance his team of superhackers in residence. He contacts professionals in bitcoin and also in ether, a new electronic currency in full expansion, and asks to register as a speaker in their meet-ups, informal meetings very popular in this environment: "I'm going to go there frankly. I'm going to describe my project to them and ask them for money on the spot, while explaining to them that it's not an investment. It won't bring them anything." But on his arrival at London airport, the bad surprise of last year is repeated. He was arrested by the police because the investigation was ongoing: "This time, they talked to me about Greece, they wanted to know what I had done, who I had met, what I thought about it. The Greek anarchists seemed to interest them. I replied that I was working for the good of my country." He was released after three hours and the police confiscated his computer and phone again: "With the anti-terrorist laws, they can get away with anything. They also forced me to hand over my passwords and encryption keys." Despite this incident, Amir met with London cryptocurrency professionals as planned. Some of them immediately said they were ready to help him, such as the Frenchman Stéphane Tual, a former banker at BNP and Visa, then co-founder of the association administering ether, and head of a company using this cryptocurrency to manage a service for sharing and renting utility objects. According to him, Amir's strategy is more realistic than it seems: "People will listen to him and support him, because he is a star. His reputation is impeccable, both technically and ethically. He could have become rich thanks to bitcoin, he preferred to risk his life for a just cause. I will invite him to my next meet-up, then we will set up an ether financing operation." If the money starts to come in, Amir hopes to launch his new adventure this year - preferably in a city that accepts this kind of initiative. Yves Eudes

## ###ARTICLE\_START### ID:2226

Under the woodwork of the former Jesuit college in Reims (Marne), Théo, 15, begins his presentation in an uncertain tone. "We can't hear anything, speak louder!" encourages François Gaboreau, a professor of economics and social sciences in Corbeil-Essonnes, in the suburbs of Paris. The young man continues, barely audible. Then it's Sonia's turn to take part in the exercise. Responsible for presenting the library decorated with paintings depicting the life of Ignatius of Loyola, the founder of the Jesuits, this high school student from Bagnolet (Seine-Saint-Denis), who intends to one day present the 8 p.m. news on TF1, feels right at home. "Go ahead, make yourselves comfortable!" she orders her classmates, a broad smile crossing her face, before explaining that the "truly extraordinary" location was used for filming Queen Margot. No one really reacts, perhaps because in the 90s, none of them were born. Sonia, 16: "I'm going to bring some pep to the TF1 news." Photo Marguerite Bornhauser for Libération. Théo, Sonia, Soukeïna, Pauline, but also Ayse, Anne-Sophie, Dounia, Amine, Sofiane, Quentin and Amadou: for a week in July, around fifty teenagers from the Créteil, Versailles and Paris academies, who will be studying in the first general or technological year at the start of the school year, attended lectures on the Sciences-Po Reims campus, worked on presentations or improved their methodology. The day begins with a lecture in the lecture hall on a major theme ("the foundations of citizenship", "Europe", "power", "migrations"...), continues with a practical workshop focused on the method ("read", "research", "speak", "analyze"...), and, after lunch, leads to an hour of documentary research and two hours of presentations on site. "School destiny" At the end of the first session, a recitation competition takes place. "It's active pedagogy: each student takes charge as a learner, they do the readings, take notes... The goal is to abolish the limits that they set for themselves when they project themselves into the future", explains the campus director, Nathalie Jacquet. "We have to solidify the foundation to go very high. We bring them to a higher level of autonomy", adds Françoise Boulay, professor of higher chair, past the Sorbonne and the ENA, who participates in the program. With the exception of the lecture course, given by a professor who teaches at Sciences-Po Paris, the workshops are mainly supervised by secondary school teachers from the 14 partner high schools. The exercises are not graded; in fact, the school year has long since ended. It was the "equal opportunities and diversity" department at Sciences-Po that organized this study week, sixteen years after launching, under the leadership of its former director Richard Descoings, the priority education agreements (CEP), which still aim today to recruit high school seniors with a good academic level from priority education zones (ZEP). Already 1,600 students from ZEP have entered the Paris Institute of Political Studies through this route. "The CEPs were intended to combat educational inequalities," explains Hakim Hallouch, who manages the project for Sciences-Po, and himself came from the first CEP class. "But it was already late. In the final year, the "academic destiny" is already decided." Its new program, Premier Campus, has another purpose: it involves supporting high school students selected by their original rectorate for their strong potential for three years, to better propel them towards higher education, even if their grades are not necessarily at the top. With the idea of giving them keys and codes that they do not always have at home: "It is complicated to project yourself when you do not have the social and cultural capital," explains François Gaboreau. At the end of the program, the high school students will not necessarily join Sciences-Po. In the pioneer group, Ayse sees herself as a pharmacist, Sonia as a journalist, Pauline would like to work in communications or the press, Amadou in human resources, and Amine is leaning towards marketing. When presenting the project to the press, the director of the institution on rue Saint-Guillaume, Frédéric Mion, said: "Success at university is a success that is built well in advance. This path is not open equally to all families." Sofiane, in Reims on July 12. Photo Marguerite Bornhauser for Libération. At a time when many in the educational community are calling for stronger links between secondary and higher education in order to smooth the transition, the project is not failing to pique curiosity. Especially since the content of this week, which will be followed this winter by a session focused on modern languages and next summer by another on the theme of identity, was designed in consultation with secondary school teams and a Sciences-Po teaching committee made up of professors and members of the administration. In the campus's modern and comfortable library, Emilie Lucas-Leclin, a French teacher in Savigny-le-Temple (Seine-et-Marne), has students, divided into groups of twelve, work on Cyrano de Bergerac's tirade du nez. "Ideal working conditions, which allow for testing innovative methods" and freeing themselves from the "baccalaureate objective" that defines the school year. "In high school, we want them to succeed, so we give them a lot of resources, but that doesn't encourage autonomy," she observes. Participating in the program is, according to her, "a way of working differently. Since it's experimental, we're constantly making adjustments. And it's interdisciplinary, we talk a lot among ourselves. There are things that I will reuse." François Gaboreau agrees: "It's exciting to see something being built as it goes along." In fact, Sciences-Po's special position in the French educational landscape allows it to experiment - the team intends to make an educational kit available to other institutions, in open source, to create a snowball effect. "The ministries don't have this speed. Sciences-Po is a large institution, but flexible and adaptable," says Nathalie Jacquet. The week in Reims cost 2,000 euros per student. A third is financed by Sciences-Po, another by the National Education system, which notably pays the supervising teachers, and a final one by sponsorship (notably from Axa, which pays 100,000 euros over two years, Société Générale and L'Oréal). The Ile-de-France region also contributed. "We see it as a social investment," explains Tony Cocoual, recruitment manager at L'Oréal. "We make sure that schools reflect the diversity that companies need." Companies are not yet involved with high school students, but that will come: "Particularly to introduce young girls to female leaders," explains Hakim Hallouch. Saying "where there's a will, there's a way" is a mistake, because then we internalize failure. We have to break the social conditioning, open up options." Pauline, in Reims on July 12. Photo Marguerite Bornhauser for Libération. "Breaking a barrier" At the end of the week, the teaching team is unanimous: the students have already evolved a little, structuring their words and their thoughts better. The supervisors, monitors and students who look after the high school students outside of study time, from breakfast to lights out in a Crous building located a twenty-minute walk from the campus, are of the same opinion: "At the beginning, we had young people who were a little distracted and now very involved," says Marius Quesney, senior education advisor at Nanterre and director of the supervisors' group. He is certain: "It is by making the masses progress that we will make the elites progress." Another member of the team, Jocelyn, adds: "For a week, they ask themselves, 'What am I going to do later?'" That already allows you to overcome a barrier." The day before, in the courtyard of the campus bathed in sunlight, next to the ping-pong table, a student was showing off kindly from the height of his 15 years: "I have abilities, but I don't work." A self-censorship that the program intends to lift, little by little. "They have a natural curiosity," boasts Françoise Boulay, renamed "Madame Françoise" by the high school students. "I see us as awakeners of ambition." All the students left with a collection of the 100 most beautiful poems in the French language, to enjoy their vacation before the start of the school year, the real one. Next year, back to Reims. Photos Marguerite Bornhauser

## ###ARTICLE\_START### ID:2227

First, there was Winsun in China, which achieved the feat a few years ago: printing a house in less than 24 hours. Then Apis Cor, which caused a sensation at the beginning of the year by printing a completely round house with a mobile printer in Russia. Soon, in Quebec, we will be able to see the same thing, if Tamara Mackenzie and her team have their way. The president of Imprime notre maison - Print our home has been working on the project for five years. A controller accountant specializing in sustainable development, Tamara Mackenzie first led a research project on the idea of making homes more affordable in Quebec. But it was really during a long convalescence that confined her to bed that she had the time to research the idea of printing houses in more depth. "The technology has been there for a long time," she explains. "But two things were missing: the right software and the right materials." Automation technologies are developed in a world of patents and intellectual property. However, since 2009, one of these technologies has been made available in Open Source, a form of property that allows sharing and development by all. That was all it took for Tamara Mackenzie to start working on the idea of a Quebec machine that would make it possible to print houses at low cost, using recycled materials. In the last few weeks, things seem to be moving forward. Imprime notre maison now has a partner architect, Nicolas Labrie, and a real estate broker on its team. Simon Fitzback, of GF3D Prototypes in Shawinigan, is about to start designing the printer. A few private partnerships have been established for financing and Tamara Mackenzie is preparing to knock on the doors of public financing soon. recycled materials “The machine doesn’t cost very much, it even costs less than a house,” explains the president. For her, it is absolutely necessary for Quebec to innovate in this area of construction. "Quebec builders are leaders in construction on a global scale, and these technologies are advancing everywhere," she argues. In her vision of things, automation is useful and desirable as long as it allows for lower costs for home buyers, and not for companies that only want to increase their profit margins. "Automation must be part of socio-economic integration," she argues. "We also want to use recycled materials, not only for the ecology, but also because they are affordable and local materials," she adds. This is where there is still research and development to be done, namely choosing which materials and how to use them to feed the printer. If all goes well, the non-profit organization should start printing sheds this fall, giving it time to get its hands dirty with smaller ones. "We really want Quebecers to take ownership of this technology," she insists about her social ideal. Imprime notre maison has a policy of diversity in employment and Tamara Mackenzie specifies that all expertise is welcome in the team. Info: www.printourhome.com

## ###ARTICLE\_START### ID:2228

Google continues to inject money into the media sector: the Digital News Initiative (DNI) innovation fund, a structure that the American group created to collaborate with publishers in Europe, announced on Thursday, July 6 that it had allocated an additional 21 million euros to finance 107 projects from 27 countries. Since the beginning of 2016, the DNI has supported 359 projects - some of which were supported by Le Monde - and distributed 73 million euros of the 150 million it has been allocated for three years. This sum is in addition to the 60 million already paid by Google, thanks to another fund dedicated to the French press sector, between 2013 and 2016. Of the last tranche of 21 million euros in support, 1.5 million concerns France, or 11 projects supported. The initiative associating Google and European media continues in parallel with the controversies over the domination of the advertising market by the search specialist and the social network Facebook, or over the role of these platforms in the fight against false information and hate speech, or over the taxation of their profits. It does not prevent elsewhere by the recent emergence of alliances of French publishers (including Le Monde) in order to try to weigh more against these big American players in the field of advertising. The idea of a fund was born in France and symbolized the agreement reached by Google and the publishers who felt wronged, in particular by the search engine Google News. It was then extended to Europe. Thanks to the DNI fund, Google finances different types of projects, from large traditional media or small sites, but also from start-ups. During this third wave of funding, the DNI said it received 988 projects, for 107 funded: 49 are prototypes requiring up to 50,000 euros in funding, 31 are intermediate projects, up to 300,000 euros and 27 are large-scale projects, up to 1 million euros in funding. A conversational robot Among the publishers supported this time in France, we find in particular Le Figaro, Agence France-Presse (project to structure and connect the agency's various content bases, text, photo or video), 20 Minutes and La Dépêche du Midi. This local player presented a conversational robot which, in remote areas or for dependent people, can provide information to its subscribers. In his press release, Ludovic Blecher, director of the DNI's innovation fund, notes that "fact-checking", i.e. the verification of information, attracted 29% more applications than in previous editions, artificial intelligence 23% (the major German publisher Grüner + Jahr has thus created an internal engine to analyze online resources on certain subjects, or even the production of competitors of some of their titles), investigative journalism 20% and "immersive approaches through virtual reality and augmented reality" 20%. In addition, 47% of the selected applications are inter-organizational and cross-border collaborative projects, an approach encouraged by the DNI. Among the latest projects funded, the fund notably highlights the database of statements by political leaders that the Open State Foundation wants to create in the Netherlands. In the interest of "transparency", the Spanish news site Publico wants to offer its readers and other publishers an "open source" application that allows them to follow the behind-the-scenes production and editing of its content, with an indication of its cost. The fund also supports WikiTribune, the "quality" news media launched by Jimmy Wales, the founder of Wikipedia. The latter wants to create a virtual press room where volunteer members of the community born around his encyclopedia could collaborate with journalists. For its part, Deutsche Welle, the German public external audiovisual service, which broadcasts in thirty languages, wants to create a platform of easily usable tools to transcribe, translate, dub or summarize audio and video content.

## ###ARTICLE\_START### ID:2229

MONTREAL - Automotive Grade Linux. That's the name given to a free software suite that manufacturers would like to impose on the industry, in order to compete with the closed and data-hungry software of Apple, BlackBerry and Google. An open-source Camry? Owners of an Android phone or iPhone who wonder why it took so long for some manufacturers to start offering Android Auto and CarPlay software in their new vehicles now have the answer: the nature and quantity of data on the use of these systems required by these tech giants raises several concerns among automakers. A little over a year ago, a report published by the American magazine Motor Trend caused a lot of reaction by indicating that Android Auto collected information as specific as the position of the accelerator, the temperature of the antifreeze fluid and the level of lubricant in the engine. Google has denied the claim, adding that its users are voluntarily choosing to share data about their use of Android Auto with it anyway, and that the goal is only to provide an optimal hands-free experience. Still, the distrust in the auto industry has not disappeared. On the contrary, it has had the opposite effect: manufacturers are looking for a solution that would allow them to use data like that collected by Google more transparently, or to share it with other partners. Automotive Grade Linux (AGL) Two weeks ago, Canadian software developer BlackBerry and its Ottawa subsidiary QNX were making light of Toyota's abandonment of their software platform in favor of an open source solution called Automotive Grade Linux, or AGL. Earlier this spring, spokespeople for the Japanese automaker reiterated their dissatisfaction with the software installed in some models. For BlackBerry, which describes itself as "the leader in automotive infotainment," there is no reason to worry. "We have a diverse portfolio that goes well beyond infotainment," says Marty Beard, the Canadian company's director of operations. "Our solution is certified and will allow manufacturers to move to digital gauges, telematics and driver assistance systems more quickly." No matter: AGL will be marketed for the first time this fall, on the dashboard screen of the 2018 Camry. In addition to Toyota, Honda, Bosch, Jaguar Land Rover, Mazda and Nissan are also participating in the development of this new software. For Linux, the automobile could be more interesting than personal computers, where this system has always had a very marginal market share compared to Windows (Microsoft) and MacOS (Apple). It is not the end user who makes the decision to adopt software for their car's radio. Manufacturers, for their part, like the promise of not having to pay royalties to use this software. John Chen, CEO of BlackBerry, explained in early June that an infotainment system like QNX's could cost between $3 and $5 per car. "Four or five times more, if you count all the modules that can be added to it," he said. A negligible amount for the motorist, but a big difference for manufacturers who sell several million vehicles each year... Android Auto: Audi and Volvo want more Obviously, technology companies have not said their last word. We were able to see the next generation of Android Auto this spring, during the Google IO conference that Alphabet, the parent company of the famous search engine, organizes each year in California. Rather than acting as an extension of the software of a smartphone present in the car, this new interface is completely autonomous, and integrates the controls for the air conditioning, electrical components (like the windows) and others. With an always-on cellular connection, it can display content from connected services like Google Maps or even third-party apps like Spotify. Volvo, like Audi, which recently unveiled a Q8 Sport Concept with the next generation of Android Auto, believes some buyers will be willing to shell out those extra bucks for the latest technology on board. “This next version of Android Auto will allow us to offer hundreds of apps on board, while still maintaining the iconic Volvo look,” says Henrik Green, senior vice president of the Swedish group. The choice for drivers will be simple: How much driving behavior data are they willing to sacrifice for the latest information and entertainment services in their car?

## ###ARTICLE\_START### ID:2230

San Francisco - correspondent - Looking for climate information? The latest temperature readings show it's hottest ever? No point in trying to find information on the official website of the US Environmental Protection Agency (EPA). Since late April, some of that information has vanished. "Page not found," the epa.gov website tells Internet users looking for data on global warming. The agency attributed the change to the need to update the site so that it "reflects the priorities of the EPA under President Trump and Administrator Scott Pruitt." On the site, climate has been replaced by other concerns: brownfields, the scourge of bedbugs... "Back to basics," as a statement of intent from Mr. Pruitt puts it. That is, "back to the fundamentals." Complaint against the government But the climate statistics are not lost. Since June 11, twelve municipalities have taken over. As Chicago did in early May, San Francisco, Boston, Atlanta, Houston, Seattle, Portland and a few others have posted on their official websites the pages that the EPA has kept as a simple digital archive, accompanied by this warning: “This site is no longer updated.” Offered as open source code by the Chicago Department of Innovation, the purged pages might seem banal: the impact of climate risk on local communities; details of the Clean Power Plan, Barack Obama’s law that regulates emissions from power plants and that Donald Trump ordered revised on March 28. The preface explains bluntly that climate change is “established” and that humans are “largely responsible.” But that is not Scott Pruitt’s opinion—which has earned him a complaint for “breach of scientific ethics” filed by the Sierra Club, the oldest environmental protection association, founded in San Francisco in the late 19th century. The initiative by these municipalities is a new sign of the commitment of local communities to the environment, further strengthened by Donald Trump's decision on June 1 to withdraw from the Paris Agreement. On June 13, eleven states, including California, Pennsylvania, Maryland and Illinois, as well as New York City, filed a complaint against the government in a San Francisco court. They accuse it of delaying the application of energy conservation standards for individual air conditioners, restaurant cold rooms and building water heaters. The standards, which had been updated by the Obama administration in December 2016, were to come into force in March. Energy Secretary Rick Perry did not see fit to publish them. The Department of Energy used the same tactic for ceiling fans. The same plaintiffs intervened, with relative success: the department promised to publish the standards... in September. An illustration of the guerrilla warfare that environmental defenders are being led to wage, one circular after another, against the Trump administration.

## ###ARTICLE\_START### ID:2231

The expression "dark Web" is fascinating. This name refers to a part of the digital web that houses content that can be accessed without being identified. It includes illicit activities such as selling drugs, weapons, computer viruses, false identities, etc., as well as sites that allow people to bypass censorship to get information or exchange information. In 2013, documents from Edward Snowden showed that the American intelligence services, while unable to completely spy on this traffic, identified people connecting to "visible" sites that mentioned the various tools for accessing the dark Web. It should not be confused with the "deep Web," which refers to an invisible part of online information that is not indexed by search engines, such as databases, private sites, etc. For the first time, two studies shed light on this obscure part of the Web by analyzing the hyperlinks that connect these different sites together. The result is clear: the dark Web is neither really a Web nor really "dark... In other words, this anonymous network is not distributed fairly, like the World Wide Web, but rather has the properties of a star, with a central core and sites that are linked to it but that do not link much to each other, as measured by a team from the Massachusetts Institute of Technology (MIT) and its branch in Singapore in a study posted online on April 27 on arxiv.org, before being submitted to a scientific journal. A rather easy access As for the dark side, "it is relatively easy to access in fact", notes Franck Ghitalla, teacher at the University of Technology of Compiègne (UTC), who supervised four students in this original exploration, in particular after having noted the ease of these young people with these techniques. They found in fact many links between the visible Web and the dark Web. "The two networks are more intertwined than we thought", adds the researcher. "What's funny is that search engines are also starting to index this dark Web," adds Carlo Ratti, head of the MIT team. His group conducted its exploration between November 2016 and February 2017, and recovered more than 7,000 site addresses, as well as 25,000 links between them. The French worked for four weeks in early 2017 for a harvest of 5,000 addresses with 7,200 links. They also included more than 3,000 sites from the visible Web, connected to the dark Web. This type of exploration is as old as the Web. As early as 1997, computer scientists launched their automatic surfing programs to wander from site to site by following the hyperlinks present and understand the "shape" of the growing network. But for the dark Web, this now classic work is more complicated. Sites quickly disappear or change address, particularly because of illegal activities. "Between the beginning of our exploration and today, most of them have disappeared," notes Franck Ghitalla. And above all, browsing is slower, due to the particular anonymization protocol, called "Tor", invented in 1997. As in a classic transmission, the information packets pass through several nodes, but, at each hop, the previous path is "lost" because it is encrypted. It is only at the exit that the different pieces are decrypted, ensuring the connection. Hence the name Tor, for The Onion Router. This technique thus allows an Internet user, equipped with a particular browser, to visit a site without the latter knowing where the connection comes from. Another characteristic is that it is possible to create sites with particular addresses, ending in ".onion", accessible only by dedicated browsers. This is the dark Web itself, studied by these two groups of researchers. In their nets, they unsurprisingly found a lot of commercial activities, as evidenced by the words collected by the French students: bitcoin (a virtual currency, also partly preserving anonymity), account, transaction, market, delivery... The list of "products" is also eloquent: cannabis, passports, gold, weapons, iPhone, girls, "hacks", bestiality, contract killings... "It sometimes made you feel sick," says Franck Ghitalla. His students also categorized the sites on the visible Web that allowed access to these sites, finding, which is probably more reassuring, many sites defending anonymity, free software, freedom of expression. Nevertheless, a large part remains made up of sorts of directories rather indicating commercial sites, recalling the beginnings of the Web, before the advent of search engines. Particularly fragile network Quantitatively, Carlo Ratti's team estimates that 87% of ".onion" sites do not contain any links at all to the outside. Only 8% of pairs of sites taken at random have a direct link between them, compared to more than 40% between domain names in the visible Web. It takes about 4 links to join two nodes in the network. The "core" of the latter is made up of 297 nodes. Their connectivity is comparable to the average for the entire visible Web. For American researchers, this low density of links makes the dark Web particularly fragile. "We agree with this observation of a siloed network, but we find that paths still exist between all these sites," moderates Franck Ghitalla. The Americans also noted that dark Web sites contain as many links to the visible Web as to other ".onion" sites, that is to say few. "The creators of ".onion" sites are less social than those of the visible Web," they write in conclusion. "The interests of these people are independent of the existence of other sites," adds Carlo Ratti. "Tor is a network that is gradually becoming hierarchical, like the Web at the beginning with its local "silos". However, structures seem to be appearing, such as the seven difficult-to-label aggregates that we have identified," indicates Franck Ghitalla. "But as this dark Web becomes more and more visible, it is quite possible that sites will move to new, ever more hidden networks," he adds. "This research helps us understand society," concludes Carlo Ratti, whose laboratory specializes in the study of real or virtual mobility. Independently, the two groups will therefore continue their cartographic exploration on other "dark" networks such as those linked to the virtual currencies Ethereum or Monero.

## ###ARTICLE\_START### ID:2232

Coders, computer scientists and engineers made in France are exporting themselves; the establishments that train them are also exporting themselves. At the start of the 2018 school year, the 42 school, specializing in programming, will celebrate the first anniversary of its Californian subsidiary; Epitech, which trains computer scientists, will open three locations in Barcelona, Brussels and Berlin; and the INSA group of engineering schools will open its first establishment abroad, in Fez (Morocco), while strengthening its partnership with the Jiao Tong University in Beijing, China. "Training in science, which is the foundation of pedagogy in France, creates an educational dynamic; it allows us to train highly functional minds who have learned to learn, who draw on this culture of science and apply it to most professional challenges," analyzes Alexandre Ponsin, co-founder of TextMaster, an online translation company, from New York. The second French singularity: project-based learning is enjoying growing success. It is at the heart of Epitech's methods. The principle is to focus on concrete achievements, in order to "learn how to learn", summarizes Gauthier Garnier, graduate of the Epita engineering school and general manager of Kaliop, a web agency based in Montreal (Canada). The method, already taken up by 42, the coding school founded in 2013 by Xavier Niel (personal shareholder of Le Monde) with the former management team of Epitech, has also been adopted by Holberton School, a Californian coding school founded by three French computer scientists. Why did École 42 create a campus in Silicon Valley? To this question, Kwame Yamgnane, a co-founder, smiles: "It's a bit like asking why open a seminary in the Vatican. Computer science, the emergence of the Internet, open source and today artificial intelligence have been and still are, for the most part, developed here. To perfect their skills, our students must be exposed to this environment." Apprentice computer scientists must physically immerse themselves in an "ecosystem," confirms Fabrice Bardèche, vice-president of the higher education group Ionis, owner of Epitech and Epita. Schools are setting up in the heart of fertile ground for innovation, where incubators, start-ups, research centers, etc. coexist. Professionals confirm: "Confronting a different environment is beneficial, we capture the strengths of the culture we discover, and we keep our own," says Alexandre Lebrun, X-Télécom, a former Californian "start-upper", now engineering manager at Facebook. "To progress, it is important to get out of your comfort zone. There is no single answer to every problem. Empathy means understanding others and their challenges. It is not just thinking about your small domestic market but about as many users as possible," adds Gauthier Garnier. Eager not to miss the train of mobility or globalization, schools are striving to create a curriculum that includes long periods abroad and to integrate a large proportion of foreign students into their national campuses. "An international experience invites you to get out of your usual framework, to seek innovation," emphasizes Jean-Marie Castelain, international vice-president of the INSA Group, where 24% of French students are expatriates and 28% of students in France are foreigners. Discovering and acquiring new skills are not the only benefits of mobility. "It is also a source of professional opportunities," notes Bruno Lévêque, president of -Prestashop, an online shopping platform. Today's ambitious people are globetrotters... "More and more French IT specialists are coming to seize the opportunities offered by China," notes Géraud de La Tullaye, co-founder of In2Log, based between Hong Kong and Shenzhen for ten years. "From financing to implementation, the possibilities offered by the region are such that, with a diploma in hand, many young people are setting down their suitcases on the shores of the China Sea to give birth to their projects," says the entrepreneur. Improving the level of EnglishHowever, this medal has its downside. "French engineers have a tendency to be indisciplined," euphemizes Fabrice Bardèche. Alexandre Lebrun (Facebook) confirms: "While an American computer scientist tends to execute, French culture is more about thinking about the best way to do things and therefore "challenging" decisions." Risk-taking, a driving force for disruption and a source of innovation, according to the French. "Americans talk about arrogance," qualifies Bruno Lévêque. "The perfect engineer is somewhere in between his two worlds," summarizes Alexandre Lebrun. Another drawback of French training is "the level of English, a big black mark," deplores Bruno Lévêque. Mastering grammar and vocabulary alone is not enough and "the French accent is a disaster," agrees Alexandre Ponsin. "It is a real professional handicap. These men and women are required to take on responsibilities in the company, manage teams, host conference calls and give clear instructions." The internationalization of courses could help correct this flaw. IT specialists trained in French should continue to attract foreign students. This is to meet the growing demand from companies in the information technology sector, which are constantly growing. Ionis thus plans to continue its deployment with the opening of two new Epitechs in 2019. A US campus is being considered. As for the Californian school 42, it has not yet reached its full training capacity. "Our school is free," recalls Kwame Yamgnane. "In the United States, it is a sign of non-quality." But the young establishment is counting on the success of its first class to convince companies to hire its students. "If - the school - 42 produces good computer scientists, they will be recruited," predicts Alexandre Lebrun, confidently. One of the differences between France and the United States is that there, school is less important than know-how." Eric Nunès

## ###ARTICLE\_START### ID:2233

S ince Google Maps and GPS have replaced the city map and Michelin map, nothing is easier than getting from point A to point B. And since we don't always travel by car, more and more applications take into account different means of transport: on foot, by public transport, by bike. Some even include carpooling, VTC or self-service cars and bikes. Free, most available for both iOS and Android, are these apps all equal? To find out, we compared them to three itineraries: one crossing Paris from the 16th arrondissement to the Château de Vincennes, the other connecting the cities of Valence and Saint-Étienne and finally abroad, between two tourist sites in New York, the Museum of Modern Art (MoMA) and the city hall. Conclusion: depending on whether you are a commuter, a city dweller or a frequent traveler, you will not choose the same app. The most comprehensive... if you stay in Europe: Mappy A veteran of route planners, Mappy lets you compare the price and duration of a journey by car, bike, metro, train, tram, taxi and even, if necessary, Autolib' or Vélib'... but not on foot. On some routes, the app even includes carpooling services. With excellent results. As long as you stay in Europe. The Paris test. The app takes into account traffic jams to calculate the journey time by car and suggests an alternative route. Several public transport options are offered, with or without bus, metro or RER. The app shows cyclists the shortest route and the location of the nearest Vélib' stations, specifying the unoccupied spaces on arrival. It also locates the Autolib' stations, providing the number of vehicles available at the start and the free spaces on arrival. It finally allows you to order a G7 taxi (indicating the duration and price of the journey) or an Uber, with the waiting time specified. The regional test. Between Valence and Saint-Étienne, the app suggests three car routes, including one on the motorway, and indicates the toll price. The only alternatives are Uber VTCs and... carpooling: Mappy offers travel with BlaBlaCar at prices starting at 7 euros. But the app here ignores public transport. The New York test. No results: Mappy focuses only on European countries. A good compromise: Google Maps Google's mapping app doesn't just display the surrounding streets and guide the user by car. By acting on the appropriate icons, you can plan a route by public transport, on foot, by bike or with an Uber VTC. But not yet by Autolib' or Vélib' or equivalent. The Parisian test. For drivers and cyclists, the app ingeniously suggests the fastest route, taking into account traffic jams, while allowing the user to choose an alternative route at their fingertips. In public transport, several solutions are proposed, with the one that saves walking being displayed first. We obtain both the duration and the price of each route. The regional test. Maps is the only one to offer, here, a public transport, the FlixBus, which connects Valence to Saint-Étienne in 1 hour 35 minutes. The app also indicates a walking route and a car route that goes via the motorway (without indicating the toll price) and another more direct but less rapid one. Two comparable routes are proposed for cyclists using the national and a departmental road. No VTC seems available. The New York test. Maps tells us that it is faster in New York to use public transport (27 min) or even a bike (30 min) than a car or a VTC (33 min) between the Museum of Modern Art and City Hall, although it reports delays on certain lines. Too bad, no price indication is provided. The ally of city dwellers without a car: Citymapper This app, designed to easily get around several cities in Europe and the world, does not suggest a car journey, favoring public transport, and ignores areas outside major cities. The price and duration of the journey are indicated for each means of transport and you can choose the date and time of the trip. Little extra: the calculation of calories for travel on foot and by bike. The Parisian test. The app offers different public transport solutions (starting at 1.90 euros and between 44 and 48 min), and suggests completing the bike journey with a portion by metro or RER. Well thought out: it offers a map of the Paris metro, bus lines, the RER and the Transilien and provides information on possible disruptions. The regional test. No results, the app is limited to large cities. The New York test. Very comfortable in the American megacity, the app quickly calculates the duration of the journey between MoMA and City Hall (32 min by bike and 1 hour 20 on foot) and recommends several metro and bus lines, specifying the fares. Basic: Apple Maps Like its rival Google Maps, the Apple app (only for iOS) displays icons corresponding to the chosen means of transport: by car, public transport, on foot or by VTC. But there is no provision for journeys by bike, nor for finding a Vélib' or an Autolib'. The Paris test. The app suggests a journey on foot, a main route by car with an alternative solution, and suggests the fastest metro route, indicating its duration... but not its price. An option redirects to the Uber app. The regional test. To reach Saint-Étienne from Valence, the app offers three car routes with or without motorway (without indicating the price of the journey), a journey on foot (19 h 21 all the same) but no public transport or VTC solution. The New York test. Between the MoMA and City Hall, Apple Maps displays a quick car journey (39 min) and two alternative routes. On foot, the journey time is estimated at 1 h 30. The app confirms that it is preferable to travel by bus and subway (around thirty minutes), offering five possible solutions, but still omitting to specify the price. Public transport only: Moovit Original, this app is based on open source mapping and data submitted by its community of users. The route suggestions, only by public transport, are therefore sometimes different from competing solutions. However, you have to dig into the settings to get the best results, especially if you want to change your reference city. The Paris test. Moovit suggests four metro and bus routes to connect our two points and specifies the duration but not the price. The app can display the bikes available for self-service and offer to order a taxi or an Uber. The regional test. The app is able to provide bus or tram routes in cities, and can even indicate by notification the station where to get off, but does not offer any public transport between Valence and Saint-Étienne. The New York test. Three metro routes are suggested for our New York escapade, with the indication of the duration, but not the price. An option allows to switch to the Uber app to order a VTC. Minimum service: Transit This Canadian app covers more than a hundred cities, mainly in America, but also in Europe and Australia. While it focuses mainly on public transport, it also displays the bike-sharing stations in several locations. The Paris test. Between rue Mozart and the Château de Vincennes, the app only finds one mode of transport (by metro, line 9 then line 1), indicates the duration of the journey (48 min) but not its price. The regional test. No results: the app ignores the means of connecting Valence and Saint-Étienne. The New York test. Minimalist, the app offers two metro journeys to go from MoMA to New York City Hall (estimating the duration at less than 30 min), without giving a price, and suggests as an alternative to ordering an Uber car (from $25 to $34).

## ###ARTICLE\_START### ID:2234

The hardest part wasn't attracting the crowd to a remote village in Picardy, still soaked by the previous day's downpours and under the persistent threat of a return storm. On the contrary, the 650 people present this Saturday, May 13 in Autrêches (Oise) seem delighted to get out into the countryside, even if it has to be in the rain... Few of them have a clear idea of what this open day to which they have been invited will look like. On the program distributed at the entrance, we read "construction of a permaculture mound" in the orchard, "drone racing" in the garage or even "connected beehives" in "Snow White's house". Therein lies the challenge of the day: if the swarm of curious people manages to understand the coherence between these strange activities, they will know what is expected of them at "l'Hermitage". L'Hermitage, local experts explain, is a 30-hectare property on the heights of Autrêches - halfway between Compiègne and Soissons - whose history could fill a whole book. A scene of fighting during the First World War, the land is still riddled with shells and streaked with underground galleries used by the Germans. An industrial chicken coop was set up there in the 1940s, then the buildings were bought by former lepers to live there independently. L'Hermitage was also, until recently, the headquarters of an NGO, the International Center for Development and Research. And now? Now, nothing. The old stones of the "large building", its outbuildings, its patch of forest and its few arable lands are for sale. The opportunity has tickled three individuals, each for different and personal reasons. Jean Karinthi, co-founder of SOS Méditerranée, working in the non-profit sector at the City of Paris, grew up there. Hacktivist Gaël Musquet, who devotes his life to putting digital technology at the service of the general interest, was struck by this giant playground where we have the right and the space to fly drones, connect cars, fill vegetable gardens with sensors and install antennas everywhere. Economist and historian Blaise Gonda claims to be "the only one who has no emotional connection with the place", but the result is the same: "When you set foot in the Hermitage, you don't leave." He sees the place as a small-scale laboratory for all the "solutions to the challenges of the 21st century": training in agro-ecology professions, experiments around organic and renewable energies... The three friends, who are counting on the initiatives of their fellow citizens to shake up the world, have so thoroughly pestered their entourage with the "Hermitage project" that the collective now has around fifty people determined to buy the place. Drone construction workshop for eBusiness Information developers, coached by Christophe Divoire from the fablab Le Lorem, in a corporate team building exercise before the open day. (Photo Jean-Robert Dantou) OpenSource and Do it yourself They are all in Autrêches this Saturday to share their convictions and desires with the public, from the most rural to the most geeky. Around the large building, permaculture farmers Hélène Spiga and Nicolas Mazy improvise conferences and demonstrations of this environmentally friendly agriculture. Some 200 meters further, from the large mound of grass that could be cultivated if the Hermitage is taken over, Christophe Divoire makes drones take off and twirl under the amazed gaze of the audience. Lightning-fast accelerations, pirouettes, free falls stopped dead by a quarter-second controlled go-around... The machine was built piece by piece by its pilot, who proudly explains that its "power-to-weight ratio is equal to that of a racing car." Christophe Divoire shares his skills every week in a Parisian fablab, and discovers at the Hermitage an ideal flying field for his toys. A little later in the afternoon, Gaël Musquet parks a hybrid on a path in the Hermitage that Toyota has lent him to talk to the public about connected cars: what sensors are installed in the most innovative vehicles, the risks of hacking and how to protect yourself from them... At the Hermitage, he would like to set up the first French "hackerspace" dedicated to cars, a research lab on connected vehicles like the ones they have in the United States - "I hope that car manufacturers, or even garages of large franchises, will help finance it..." Computer scientist Gérôme Zélateur is at his side and tells car enthusiasts about the specialty he practices in Guadeloupe: hacking automotive computer systems, a "job that doesn't exist yet". Sitting in front of the software that allows him (among other things) to reprogram a car's engine to restrict or boost it, he has traveled from the Antilles especially to support this project at the Hermitage and to support the message: "Computers are going to play an important role in the automobile industry. We have more and more electronic breakdowns or bugs, mechanics are asked to be a bit of computer scientists... Now is the time to understand how things work." Why not make the Hermitage a country house for all the tinkerers from the Paris region and Picardy? With its offices, meeting rooms, workshops and wooden chalets, an hour from Paris, the place is ideally calibrated to welcome groups on a mission... and especially for training. Because there is no point in experimenting if you don't take the opportunity to share your knowledge and make it available to everyone, believes the Hermitage team, driven by the open source and do it yourself spirit. They dream of one day welcoming people who want an express upgrade in aquaponics (where crops are fertilized with fish droppings) or a longer professional retraining course. Discussion on connected cars around Gaël Musquet and Gérôme Zélateur. (Photo Jean-Robert Dantou) "We want to build relationships" The priority is to bring the premises up to standard. It will be expensive, but visitors have already lent a hand at the "crowdfunding" stand set up in front of the large building: a crowdfunding campaign launched last week on Ulule should serve as a springboard for the purchase and renovation of the property. An initial threshold of 35,000 euros (which has just been reached) will allow the buildings to be refreshed and connected. But to fit out the premises, run the kitchen, organize the first seminars and guarantee the opening of the Hermitage for at least one year, the project team is aiming for 100,000 euros. "We don't want visitors to the open day to arrive, think it's cool and leave. We want to build relationships," insists Jean Karinthi. One of the first partnerships links the Hermitage to the University of Technology of Compiègne (UTC), which has been working on its energy transition since March - its fuel-oil heated buildings are just waiting to be used as guinea pigs for solar panels or low-cost wind turbines, for example. Some students "have created a digital model of the buildings to have a 3D representation of the property and produce renovation scenarios", explains engineer Mathieu Karinthi, who coordinates the project. Others are looking to "transform the chalets into eco-lodges" and a final group is comparing renewable energy solutions: solar, geothermal, biogas, biomass. In about ten years, can we make the Hermitage a zero-carbon place? The idea is that "if it works at the Hermitage, it can work elsewhere", the project leaders repeat over and over again. They hope to welcome all kinds of initiatives to Autrêches from individuals, businesses and associations, researchers and even artists in residence, whose cohabitation could create sparks.

## ###ARTICLE\_START### ID:2235

Toulouse - correspondence - Bad vibes on the sets. Radio Saint-Affrique and Radio Larzac, two free and associative radio stations that broadcast around Larzac, in the south of Aveyron, are both in financial difficulty. The first, born in 1981 following the struggles of the 1970s to save agricultural land in the face of the expansion of the military camp, and the second, its "little sister", created in the wake of the large musical and festive gathering "Larzac 2003", are calling for support, donations and political figures. Dependent on subsidies, and especially on the Support Fund for Local Radio Expression (FSER) of the Ministry of Culture, operating without advertising on air, the two radio stations with "own identities", with an annual budget of around 140,000 euros, are struggling to sustain their economic model. For Mathieu Riffaud, president of the association that runs Radio Saint-Affrique, its five employees and its twenty active volunteers, "the gap is 20,000 euros in 2016. "A presenter is leaving us," he explains, "and we have launched a series of actions so that residents and listeners support us." This Breton by origin notes an operation "based on public aid" that must be renewed. The share of the pie "The ministry's support fund represents a third of the budget," he specifies. The problem is that we receive a fixed annual share and another, based on a points system, which is regularly reduced." Points, awarded according to the content of the programs (environment, social, diversity, etc.), which decrease from year to year, because they are allocated to many other free radio stations at the national level. A sort of pie that grows regularly, but with smaller shares. The situation is identical on the side of Radio Larzac. "We received a fair amount of aid at the beginning, especially in 2008, with the official authorization to broadcast from the CSA, including those for installation and equipment," notes Nicolas Wöhrel, one of the four employees, bitterly. "But since then, while the fixed portion remains the same, we have suffered a sharp drop in the amount calculated on these points." For fifteen years, however, Radio Saint-Affrique has been trying to diversify by offering training (hosting, technical, voice) to young people wanting to discover the profession. But, faced with competition from large national radio stations, here again, the results are falling. "From 50 annual participants previously, we went down to 16 in 2016," explains Mr. Riffaud. Broadcasting to a base of around 60,000 people, the radio station organized a support evening with sales of works and concerts, as well as an appeal for donations. "Even though we have collected around 10,000 euros, the radio station is not saved," stresses the president, who will leave his post, "exhausted", at the end of the month. As for Radio Larzac, other options are being considered. "Our model also needs to be reviewed," assures Nicolas Wöhrel. We sold programs, we spoke at festivals, during workshops with schoolchildren, and we also launched into training with our expertise in free software. But now, we are mainly going to move and set up in Millau." This move involves breaking with the historical presence on the plateau, in order to be able to get closer to a denser population, and to form possible partnerships with the town hall to relaunch activities. A statement of failure, however, for "local social media, almost equivalent to a public service, but a quality that has a cost that we can no longer assume," concludes Mr. Wöhrel. Today, on the microphones of both stations, we are calling on foundations, patronage and elected officials.

## ###ARTICLE\_START### ID:2236

“Yeah. Yeah. But does your thing work?” This killer question is one that Marc Boutet, president and co-founder of De Marque, and Rida Benjelloun, CEO of Constellio, are asked without fail every time they sit down with a potential client. “Generally speaking, few people want to be the first users of the initial version of your latest product,” says Rida Benjelloun, who heads a company that develops open-source software solutions to help organizations optimize the management and organization of information and digital documentation. “And if your thing works, who was the first to try it? I want to talk to them. I want to validate what you’re telling me,” insists the potential client. Second killer question. “I then gave him the names and phone numbers of two or three Quebec City officials,” says Marc Boutet, whose company, founded in 1990, is a leader in Canada and Europe in the distribution of digital cultural content. “I’m going to be your first customer.” That was the message that Quebec City sent to innovative local businesses in 2012 when it unveiled its Technology Showcases program. One of the pillars of Mayor Régis Labeaume’s Economic Development Strategy. This program provides funding to businesses. Quebec City’s contribution can reach a maximum of 75% of the total cost of a project put forward by a business, up to $300,000 per project. The funding provided is just the tip of the iceberg for the Technology Showcases program. Indeed, as city councillor Natacha Jean explains, the initiative offers entrepreneurs with a product with strong national and international marketing potential to "test, adjust, refine and improve" their find directly in the field. How? By using municipal activities or infrastructure for a period of two to three years to test the promising product and showcase it to potential customers. "As long as the company has not tested its new product in real situations, it is missing something. Finding customers. Signing sales. It's difficult," says Natacha Jean. Way of the Cross As head of entrepreneurship on the executive committee of the City of Quebec, she has come across entrepreneurs who struggle to cross what is called the "valley of death," this long way of the cross between the emergence of a brilliant idea and making their first sales. "By inviting companies to come and test their new technology, we want to support the commercial development of the most cutting-edge discoveries. Through the credibility of the City of Quebec, we want to give a boost to our most innovative companies," says Ms. Jean, adding that the municipality also benefits "from immersing itself in a culture of innovation and adaptation to new technologies. "It's a way of promoting innovation within our teams who, I must admit, take great pride in participating in the success of local start-ups." It is important to note that the technology showcase program is not a preferred route for its participants to pocket municipal contracts. These contracts are always awarded through calls for tenders. gleduc@lesoleil.com

## ###ARTICLE\_START### ID:2237

According to the LinkedIn barometer for "Le Monde Campus", young graduates in data science are the profiles most sought after by French recruiters on the social network. Serge Abiteboul, researcher at the National Institute for Research in Computer Science and Automation (Inria), and co-author of Terra Data (Editions Le Pommier, 348 p., 13 euros), argued in 2013 for the emergence of a new training sector. How is "data science" different from statistics? Data science is not just statistics. These are often very empirical techniques. This is why, to achieve a minimum understanding of the profession, you also need to have been confronted with real data during your training years. The risk with some current training courses is that they are too theoretical. In computer science, twenty years ago, you had to know how to learn to design large, very specific programs. Today, data scientists write very little code: they often use open source toolboxes. They may not be as good "coders", but they are asked to know how to choose and compose the right software, to understand mathematics and the business environment. It is a job that requires a lot of neurons. In a report in 2014, you wrote that France was threatened by a shortage of "data scientists". Where are we? There is still a huge demand. Massive data analysis technologies using computer clusters were initially limited to web companies like Google and Facebook. Now, all manufacturers want their share of the pie. To do this, they need young graduates trained in computer science with a solid foundation in mathematics. In the United States, the benchmark is a doctorate in computer science or applied mathematics. In France, we are too satisfied with a bac + 5, while we export much better with a doctorate. Should data scientists know the core business in which they work? Some French companies like Critéo choose to have mixed teams. Others try to find people who master these different facets. I don't think that a data scientist who works, for example, on sociological data, needs to be a sociologist. On the other hand, he cannot ignore sociology. He will need to have good personal intuitions and be open to other disciplines. How can we train them to have an ethical approach to data exploitation? The question of the responsibility of algorithms is constantly being raised. Computer scientists are on the front line and must participate in discussions that are eminently political. We must therefore be wary of the "Care Bear" approach which consists in thinking that everything will be resolved with technological progress, and of the catastrophist approach which consists in thinking that new technologies are destroying the world and that, for example, our private data is being plundered. The ideal would be to educate children about computers, in all its dimensions. Interview by Mr. Mi.

## ###ARTICLE\_START### ID:2238

Formidably efficient and ultra-fast, it is the wine lover's favorite application. The time it takes for the latter to pull out his smartphone, scan the label and there you have it, Vivino delivering once again the appreciations and scores given to the vintage in question by those who have already tasted it. "Vivino shows that anonymous tasters also have a palate. We carried out a test on 5,000 samples, and the average of the scores given by users was halfway between those given by the great international critics and those of the American specialist magazine Wine Spectator", defends the Danish computer engineer Heini Zachariassen, founding CEO of the company. The tool also offers a whole series of information on the provenance of the vintages, the terroirs, and allows you to compare a bottle with others displayed in the same aisle of a store. Twenty-three million people - among them as many men as women - have already downloaded this bacchanalian Facebook. The company created in 2010 is winning all the votes. Especially since it has no competition. In France, the second player has less than 1% of its traffic. Vivino is going it alone and is continuing to grow, in the United States, Brazil, Italy and France, as explained by Paul Guillet, recently appointed Country Manager France, who came from the world of free software and wine e-commerce: "We started by creating the largest wine database in the world. It now has 15 million references. Then we developed the social network, that is to say the TripAdvisor section of wine. Last May, we moved on to sales." There is nothing like the successful and repeated experience of the mobile user to lead them to the act of purchasing. The idea: to offer the latter the opportunity to purchase wines in two clicks based on a very specific tasting profile determined following their various visits to the app. "On average, our regulars buy wine on the Web once a quarter. It's not about multiplying offers and offering Côtes-du-Rhône to a Bordeaux fan. We want to hit the mark." "The Shazam of wine" The deal is working well, since the average basket made on Vivino's flash sales amounts to 250 euros, for vintages whose price varies between 7 and 100 euros. Big names from the Médoc are playing the game, such as Château Cos d'Estournel, Château Dauzac and Château Pichon Longueville Baron. Vivino has signed agreements with around fifty producers, some wine merchants, but also with major Bordeaux merchants. "We don't want to revolutionize the world of trading, but rather integrate ourselves into this ecosystem," insists Paul Guillet. While the app is the subject of real enthusiasm among the general public, the company's new ambitions are viewed with a little more perspective by the profession: "Vivino has all the data and all the potential customers. But now, its teams must manage to obtain wines that meet their expectations. It's sort of the Shazam of wine (an app that lets you buy the music that your smartphone has identified, Editor's note), but the wine trade has constraints of provenance and traceability that music ignores," analyzes a good connoisseur of the sector. This type of sale is probably only in its infancy, since the Internet's share of the wine trade in France amounts to 200 million euros, for a market estimated at 20 billion. "Our goal is to democratize the purchase of wine," adds Guillet. "We are also working a lot on the speed of delivery. Because those who continue to deliver three weeks after the order are, in my opinion, outdated. The model we are following is that of Amazon, with a delivery time of 48 hours," insists Guillet. This speed will be another challenge to overcome, since it will largely depend on the efficiency of Vivino's subcontractors. However, this new activity should boost Vivino's turnover. "We are aiming for 100 million euros for 2017," announces Guillet, compared to 55 million in 2016. With around a hundred employees, confirmed profitability and a very voluntary shareholder base, the company is doing very well. And the prospects offered by the boom in the Chinese and North American markets allow it to be confident in the future.

## ###ARTICLE\_START### ID:2239

Because I am convinced that solidarity must be indivisible from the values of our democracy, that we cannot selectively sort them, that it must apply to everyone without discrimination, and that solidarity without borders is a necessary condition for peace in a world overflowing with humiliation and anger. Because I am convinced that nothing can ever justify adhering to the withdrawal into oneself, the discrimination, the stigmatization written into the DNA of the National Front, failing to be in that of its voters. Because this party is today more than ever on the threshold of power, carried by the dramatic yet trivialized consequences of a savage globalization that it exploits without scruple, I will vote against Marine Le Pen. I will vote without hesitation for Emmanuel Macron. Mr. Macron, this vote of reason and responsibility in the second round obliges you more than it obliges us. This is in no way a blank cheque and even less an unconditional support for your project, which in many respects has not taken the measure of the need for solidarity in which the country, Europe and the world find themselves. This project is, at first reading, too often the extension of an economic model that is not the cornerstone of social justice and human dignity. The pursuit of a zero-sum game that exhausts resources, destroys nature and concentrates wealth. A model that seems to prefer free trade to fair trade, growth to prosperity, ecology sprinkled here and there to integral ecology. As if the ecological crisis did not condition all of our economic choices. In recent months, I have chosen to campaign within civil society to bring an integral vision of solidarity and to make it a matrix for political action and the economic choices of tomorrow. Only this requirement will allow us to emerge from the social, economic, ecological and democratic crises that are combining to worsen each other. The lack of solidarity is widening inequalities, dividing the country, and fueling the discourse and program of the National Front. The fault lines are palpable as soon as you leave Paris, and visible on the electoral map. give pledges Today, Emmanuel Macron, you cannot claim to become a responsible president and ignore all those left behind by globalization. No more than you can ignore the 26% of the electorate who chose in the first round the more comprehensive vision of ecology and solidarity defended by Jean-Luc Mélenchon and Benoît Hamon. You want to be the one who will have the duty to represent them on May 7, have the courage to give them pledges today! Commit to renegotiating or failing that, rejecting these new-generation free trade agreements, and in priority the one with Canada (CETA), which are the most accomplished expression of wild and deregulated globalization. You were the only one to defend them among the eleven candidates. These agreements must only be thought out, negotiated, signed, ratified on the sole condition that they serve the general interest and accelerate the ecological and agricultural transition, combat tax evasion and promote human rights; on the sole condition that they embody fair trade. Commit to the rapid implementation of an ambitious European tax on all financial transactions, including derivatives, at the European level. Its implementation has been stalling for years, even though it would allow both better regulation of finance by combating speculative products, and generate revenue to finance the fight against climate change and international solidarity. hear a society Commit to making the European Central Bank a body serving a fair ecological transition throughout Europe by defending a massive investment plan in the construction and transport sectors and in the overhaul of our agricultural model. In this context, the ECB could directly finance public banks in the long term and at zero interest rates. Commit to ensuring that public policies are first and foremost at the service of the population, its protection, its well-being, its quality of life and no longer of the large industrial, energy and agricultural lobbies. These are just examples, there are so many other pledges to give on international solidarity, migration, tax evasion, the fight against exclusion and discrimination, disability, the animal cause, biodiversity, the energy transition, etc. You who wish to embody political renewal, you have a duty to listen to the aspirations and inspirations of a society that is disillusioned but not resigned. To listen to them but also to respond to them, and in particular to this archipelago of the call for solidarity, these millions of discreet practitioners of reconciliation and appeasement who can usefully increase your reality. If you could connect sustainably to this sum of experiences, skills and common sense, we would all have something to gain. If you are ready to sort between what increases inequalities and what reduces them. If you are ready to change scale and have a systemic, coherent and demanding approach, then the hundreds of proposals of the call for solidarity are open source. This is how, on May 7, you may be able to claim to represent more than 20% of the electorate. The ball is in your court.

## ###ARTICLE\_START### ID:2240

Moscow - correspondent - During his first appearance before a judge, Dmitri Bogadov looked around the room with a slightly lost look under his blond hair. At 25, this young mathematics professor at the Moscow Financial and Legal Institute suddenly stepped into the spotlight by becoming the first relay operator of TOR, a global computer network used to anonymize exchanges, placed in pretrial detention in Russia. Accused of serious offenses - "organizing mass riots" and "public call for terrorism" - he faces sentences of seven to fifteen years in prison. On March 29, three days after the demonstrations that brought together tens of thousands of people in many Russian cities at the call of the opponent Alexei Navalny, strange anonymous calls appeared on the Web urging new rallies on April 2. On edge, the security services spotted in this maelstrom, where the provocative and the naive mingle, two particularly aggressive messages, one of which gave an appointment on Red Square with the means to make Molotov cocktails. These two messages, published on the site sysadmin.ru, one of the oldest Russian forums of a rather technical nature, came from a certain Ayrat Bashirov, who disappeared immediately. However, the investigators followed the trail of several IP addresses, one of which led to that of Dmitri Bogadov. Created in 2001 in the United States, TOR (originally an acronym for "The Onion Router") is made up of a certain number of relay servers called "nodes", the list of which is public. It allows users of the network, according to the principle of onion skins, to publish content on this system without having to reveal their location. Since September 2014, Russia has been the second largest user of TOR in the world, behind the United States, but now ahead of Germany. "Totally apolitical" A relay operator and member of this community, developer of the free software Debian, Dmitri Bogadov claims his innocence. His mother describes him as an idealist, vegetarian, chess player, and avid reader who learned Esperanto in three months. "He has no idea what's happening to him," his lawyer, Alexei Teptsov, explained to Le Monde. "He's totally apolitical." The defense managed to prove, using video surveillance cameras, that at the time the two messages were published, the mathematician and his wife, a genetic biologist, were out shopping. But, so far, these videos have not been included in the case file, nor has his wife's testimony. The investigation is focusing on the computers seized from the young man. Arrested on April 5, Dmitri Bogadov was initially released by the courts, under house arrest. That same evening, however, investigators arrested him again, increasing the charge with Article 205-2 of the Russian Criminal Code on public incitement to terrorism on the Internet. His goal, investigators claim, was to destabilize the "mechanisms of power." Another incriminating element according to them: Dmitri Bogadov's passport shows a Schengen visa issued by Italy that could have helped him escape. "My son was supposed to go to a meeting on Esperanto," his mother argued. "This is an absurd situation, the so-called "Ayrat Bashirov" used several IP addresses," emphasized Mr. Teptsov. One comes from Japan, others from several cities in Russia, but only Dmitri Bogadov, it seems, was arrested in Moscow. "For me, it's a fight by the authorities against anonymity that is underway," his lawyer believes. "I think that there is indeed a movement in this direction today. Dmitri would never have thought that this could harm him." Faced with the increasing criticism on the Internet, the Russian authorities are increasingly nervous. Roskomnadzor, the federal agency responsible for communications, technology, information and media, is still in delicate negotiations with Facebook and Twitter to force them to repatriate the personal data of Russian users to the territory. Placed in pre-trial detention until June 8, Dmitri Bogadov is expected to appeal this decision on Tuesday, April 25. In a short press release published on April 13, the TOR network explains that it is closely monitoring the situation of the Russian mathematician, while recalling that it "does not collect data that could be used to identify users of the network.

## ###ARTICLE\_START### ID:2241

Some see it as a new production model capable of shaking up capitalism, others as a response to ecological disruption, and still others as a way out of the crisis in our democracies. The notion of "commons", at the crossroads of political science, law, social sciences and economics, has been growing in popularity in recent years. And the presidential campaign in France is no stranger to the phenomenon - especially on the left. Benoît Hamon advocates constitutionalizing "common goods" such as water, air or biodiversity, to protect them from "any degradation or risk of private capture". Jean-Luc Mélenchon broadens the notion to "universal commons" such as money and health, which the State must protect. But attention is also focused on the digital field. Foundations in favor of free software such as Mozilla and Wikimedia are calling on candidates to defend the "commons of knowledge" and freedom of access to cognitive resources on the Web. They see the development of these "digital commons" as an alternative to the opacity of algorithms and the privatization of data, or even a tool to regain digital sovereignty against the United States. What do we mean by this term "commons"? To understand the origin of the concept, we must go back to the birth of agriculture, when the first forms of community governance were established. At the time, farmers shared land to cut wood or graze their animals, according to rules designed to guarantee both the rights of each individual and the preservation of resources. The development of private property and the rule of "enclosures" at the end of the Middle Ages would considerably reduce these practices. Until the work of the American researcher Elinor Ostrom, at the end of the 20th century, gave new life to the defense of the commons. Preserving essential resources While a majority of economists posit as a principle that only private property can prevent the overexploitation of a natural asset, this political scientist demonstrates that community management, on the contrary, allows essential resources to be preserved sustainably - provided that the collective adopts rules capable of ensuring the distribution of everyone's rights in the enjoyment of the asset. The Nobel Prize in Economics was awarded to her in 2009, as well as to the American economist Oliver Williamson, "for having demonstrated how common goods can be effectively managed by user associations. Faced with the overexploitation of natural resources (forests, subsoil, water), their preservation can benefit, the two economists affirm, from not depending on a single owner - whether public or private - but from distributing ownership between different partners through a "bundle of rights. A "third way" of governance between state management and privatization, which acutely questions the way in which we could manage the digital transformation. "A commons only exists under three conditions: a shared resource, rights and obligations attributed to individuals, and a governance structure that ensures the long-term reproduction of the resource and the community that governs it," summarizes Benjamin Coriat, a researcher at the University of Paris-XIII and member of Economistes Atterrés, who edited the collective work Le Retour des communs (Les Liens qui libèrent, 2015). However, these three conditions are already at work in the digital domain. From sharing knowledge online to the co-construction of digital projects, including city fab labs (workshops that pool equipment and plans for everyday objects to be built), countless digital commons initiatives are already spreading this "pragmatic utopia" - the formula is from Valérie Peugeot, member of the National Commission for Information Technology and Civil Liberties (CNIL), researcher at Orange and president of the Vecam association. A utopia based on "self-organized communities that choose to manage these resources without subjecting them to property rights. While Uber and Airbnb put individuals in competition without giving them access to algorithms, the commons economy is based on the transparency of digital tools for all members of the community. On a global scale, the Wikipedia encyclopedia and the OpenStreetMap cartographic database have demonstrated this model of community governance. The creation of free software and creative commons licenses in the 1990s constitutes its foundation, part of a movement of resistance to the commercialization of digital resources, protected by copyright. Everyone can use them under certain conditions, such as sharing in turn the improvements made, as well as the associated rights and obligations. The question of governance remains. Because what makes the commons strong is also its limit. Driven by voluntary contribution alone, open models remain fragile. To consolidate them, should the State be involved? Private companies? A bit of both? And in what ways? "We need the State to create the resources, particularly legal ones, that are essential to the existence of communities," explains Lionel Maurel. Co-founder of the association SavoirsCom1, this specialist in digital libraries is part of a collective that challenged the presidential candidates on their proposals for policies that favor the commons. In the crosshairs, for example: the contract signed in 2015 between the national education system and the software company Microsoft, whose opponents had denounced the opportunity offered to the American company to format schoolchildren. Among the presidential candidates, Jean-Luc Mélenchon and Benoît Hamon have committed to favoring free software in public services. "It allows our digital sovereignty, constitutes a sustainable and lasting investment, promotes values of cooperation, favors educational approaches, and can facilitate social and digital inclusion," explains Benoît Hamon. But for Gabriel Plassat, an engineer at the French Environment and Energy Management Agency (ADEME), the active role of the State does not exclude the participation of private companies. Bringing together public, private and commons In the United States, IBM, Google and Apple participate in financing open source software, considered as models of commons, in order to benefit from their innovations. In France, the car manufacturer Renault has been working since January on an open source development kit for the Twizy, its small electric car. "If French companies want to move quickly against the American giants, this is one of the best ways to get stakeholders to work together," explains this creator of the Fabrique des Mobilités, a network of "commons" to pool innovations in the field of energy transition and transport. And Gabriel Plassat adds: "This will not prevent them from conquering markets. Google has bet on open source to develop its Android software." But how can public authorities, private stakeholders and commons be brought together? Valérie Peugeot advocates the establishment of "public-private-common partnerships" in order to "restore a balance between the sphere of public intervention, the sphere of markets and citizen communities carrying out bottom-up initiatives for social innovation. An experiment of this type has been conducted since 2014 in the sensitive area of personal data, at the initiative of the Next Generation Internet Foundation (FING). Called Mes infos, it brings together public actors such as Greater Lyon, private companies including the insurance company MAIF and the telecoms operator Orange, a free software player, Cozy Cloud, and individual testers. The objective: to imagine together the services created with the data collected, according to a charter that specifies the rules of conduct. In such a model, each individual can decide for which services they are prepared to authorize the use of their personal information - which is far from being the case today. "In law, our data depends on a privacy protection regime. In practice, the companies that collect them tend to believe that they are the exclusive owners and monetize them," recalls Valérie Peugeot. Will the governance of the commons contribute to helping citizens regain control of their digital lives?

## ###ARTICLE\_START### ID:2242

It started quietly and then, in good viral logic, it took off. In the Twitter feed of the author of these lines - admittedly populated by a significant number of technophiles and "tinkerers" of free software, those that can be freely copied, used and modified - the first references to Mastodon discreetly appeared on March 30. Before skyrocketing in the following days. Mastodon? Not the American metal band, promoting its album Emperor of Sand, but a new social network, or almost. Launched in October 2016 by Eugen Rochko, a 24-year-old German developer who had just left university, Mastodon recently recorded a sudden influx of subscribers: there were some 20,000 three weeks ago, more than 200,000 last Friday, 365,000 at noon on Wednesday. "Mastonauts" - as French users call them, who arrived in force at the beginning of April - many of them looking for an alternative to Twitter, far from the opaque algorithms that sort for them, sponsored tweets and online harassment problems. The enthusiasm of this geek audience deserved to be looked into. First step: choose an "instance" to create an account. Because if Mastodon is, like Twitter, a microblogging network, its infrastructure is radically different. Instead of a centralized service, it is based on a set of servers - instances - equipped with the same free software (Mastodon is first and foremost software), and which can communicate with each other. In other words, it is not a platform, but a confederation. "Pouets" The server created and managed by Eugen Rochko, mastodon.social, was stormed in the first days of April and quickly had to close registrations. We had to look elsewhere, while instances were springing up like mushrooms - some general, others geographical (Belgians, Canadians, etc.) or thematic (Minecraft players, animal rights activists, etc.). In France, associative Internet access providers, such as Tetaneutral in Toulouse or Aquilenet in Aquitaine, quickly set up their own. As did the association for the defense of online freedoms, La Quadrature du Net, or Framasoft, which develops free tools to "de-Google" the Internet. There are also personal or private servers, such as that of the news site Numérama, reserved for its journalists. This Wednesday, there were already more than a thousand instances. Once registration is complete, we discover the web interface. No need to be disoriented if you are a user of TweetDeck, a very popular interface that allows you to manage your Twitter feeds by columns: Mastodon is largely inspired by it. Here, the first column allows you to send not tweets, but toots (or "pouets" in French) and to do searches, by username or keyword. The second contains the feed of the accounts you follow, and the third, the notifications. As for the fourth, it allows you to display the local public feed, namely the "pouets" of your neighbors of instance, and the "federated" public feed, in which also appear the messages sent by the "mastonauts" of other instances to which the users of yours are subscribed. In other words, a window on the entire network, very different from one server to another (and quickly congested on the most populated instances). A structure that can be found on smartphone applications (Amaroq for iOS and Tusky for Android are the most used). As for the use, it is both familiar and exotic. We "pouette" in 500 characters rather than 140 - an incentive, for Eugen Rochko, to show a little more nuance than on Twitter. We can also hide shocking content behind a warning button, and finely choose its visibility: appear or not in public feeds, be readable only by our subscribers, communicate only with a limited number of people (the equivalent of "direct messages"). We can, as on Twitter, hide, block or report users, and retweet messages, or rather "boost" them. Who to talk to? To the general public, to strangers, of course, but also to our contacts who have come to try the experience. To get our hands on them, there are (fortunately) other solutions than looking for needles in the haystack of public feeds: Mastodon Bridge, developed by Rochko, to find our Twitter subscriptions and subscribers, or Mastory, a directory of the network, manufactured by a Frenchman and put online on April 11. Freedom of expression The conversation can then begin. Knowing that, on Mastodon, we still talk a lot about... Mastodon. And for good reason: everything has to be reinvented, and no Silicon Valley bigwig is coming to dictate the rules of the game. What "good practices" should be put in place? At the beginning of last week, we got caught up in a debate on the use of the warning button: should it only be used to hide shocking or violent messages or images, or also content deemed potentially conflicting, at the risk of sanitizing exchanges? As always when a communication tool is subject to brutal growth, it is invested with contradictory injunctions, standards and heterogeneous uses. Aspirations for a "global village", for a "Twitter without Twitter", can clash with the logic of a "safe space" for groups facing discrimination, a concern at the heart of the original project. The disappearance of the famous general conditions of use imposed by the major web platforms only shifts the question of power: towards the administrators, or towards the users themselves? Some bodies display very strict moderation policies, others only ban content that violates the law: community paradigm versus limited liability hosting logic. All conceptions of freedom of expression and communication now rub shoulders and sometimes clash. Self-regulation issues, which are also at the heart of the technical choices of the software itself. How to streamline exchanges while preventing harassment? How to encourage interactions while allowing users to control the content to which they wish to be exposed? Since Mastodon's source code is open, nearly 200 programmers contribute to it, not to mention those who create third-party applications. "What's most pleasing is the abundance of contributions," explains Cédric, a 45-year-old French developer. It's going in all directions, it's fresh, it's beautiful." For the moment, enthusiasm is indeed in order. Blogger Kozlika, who wrote a useful user guide for Mastodon, praises indiscriminately "the space to formulate what you have to say", the absence of "an entity that alone holds the keys to the network", the disappearance of advertising, the little space left for "trolls". Jul, a 44-year-old "suburbanite", feels "freed from the tyranny of omnipresent stats" (the number of favorites or "boosts" of a "toot" is not very visible), which allows, he judges, "to avoid involuntary narcissism". "Freshness", "discovery", "freedom", "absence of barriers" come up in the reactions. Old hands of the Net rediscover the atmosphere of certain forums or chat rooms. "It has the charm of places on the Internet where you arrive first," jokes Fanny, a young woman from Toulouse who "has been running digital communities for twelve or thirteen years." "Too geeky" It remains to be seen what the network could become once this phase of newcomers has passed. Other alternatives to centralized platforms, which had also generated enthusiasm in their early days, have remained more or less confidential, or have fallen back into oblivion. Could the Mastodon experiment eventually catch on with a wide audience? For a mastonaut who officiates under the pseudonym Cthulhu 2017, "the start seems more promising than for Diaspora or any other alternative to "mass" social networks." The interface, rather pleasant and familiar, undoubtedly has a lot to do with it. Researchers, media, journalists have come to see what it's all about. Cultural institutions (the Quai-Branly museum in Paris, the Champs libres in Rennes) have appeared. The population and the conversation are diversifying, and uses are being invented. We have seen microfictions in 500 characters circulating under the hashtag "Mercredi Fiction". For those who want to find their news feeds, activists from the Quadrature du Net have set up accounts that replicate the Twitter feeds of French media (including Libération). However, it is still impossible, at this stage, to bet on a dynamic. Stéphane, a 55-year-old from Aveyron, sees in the experiment "a network of geeks, for geeks, by geeks", which "smacks of free software". In Lyon, Corentin, 19, insists on the idea of "communities around values" that the principle of federation allows. Others regret that there is still "a lack of accessibility or popularization" for beginners, and are worried about seeing curious people flee who "find Mastodon too geeky". In the 90s, the Internet was powerfully invested with an imaginary of secession, of social reinvention, as well as an aspiration to build a global community. Only a very clever person could say today whether Mastodon will be able or willing to manage this duality, whether it will remain in the inner circle or whether it will end up offering a mainstream alternative to centralized platforms. Especially since in the event of massification, questions of scaling and sustainability will inevitably emerge. Legal questions have begun to arise. The arrival, last weekend, of a Japanese community dedicated to illustration led to the appearance, in the federated public feeds of large authorities, of lolicons, representations of very young girls or even little girls in erotic or pornographic positions - drawings that are legal in Japan, but which in several countries, including France, are considered child pornography. It was urgently necessary to find the technical means for administrators to avoid finding themselves hosting copies of this content, and to avoid exposing their users to it, without necessarily "defederating" the Japanese server... Whatever the future of this work in progress, Mastodon is at the very least a rather exciting attempt to propose other modalities, other uses, another way of articulating a "great global conversation" that often turns sour. If the buzz of early April has died down, growth continues. After Japan, it is Spain that, this Thursday, "federated". The excitement of the early days outlines all the possibilities. Drawing Fred Péault

## ###ARTICLE\_START### ID:2243

A team of TELUQ researchers has developed augmented reality glasses that can be made yourself, using cardboard, which cost $17 in materials. Glasses using this technology currently cost between $1,000 and $4,000. Computer science professor Charles Gouin-Vallerand wanted to democratize this emerging technology to benefit a greater number of users. "We are in the philosophy of open source and do-it-yourself," he says. TELUQ is therefore not seeking to commercialize the product, but is offering all of Professor Vallerand's work in open access. To make these glasses called CARTON, you need cardboard, a mirror, transparent plastic, a sponge and rubber bands. Of course, you also need a smartphone that you insert inside and that allows you to access augmented reality with very specific applications. Once the glasses are assembled, the information from the phone is reflected in a window located in front of the eyes. Doctoral student Damien Brun used the Pepper's ghost technique, an optical illusion already used in theatre and magic, to make the glasses work. "We are still improving the device, making it more comfortable and more durable. But we already have something that would allow for a large-scale deployment and testing of the technology on a large group of people," explains Mr. Gouin-Vallerand. The researcher is thinking, among other things, of high schools, which could use the project to build the glasses, but also to better illustrate and explain theory to students, in a science class for example. This new creation is a derivative of Google Cardboard, virtual reality glasses to be used with a smartphone that were developed by the giant Google two years ago. But unlike virtual reality, where the user is completely immersed in an imaginary world, augmented reality allows the user to stay in touch with the world around us, while having virtual information appear in their field of vision. For example, Mr. Brun and Mr. Gouin-Vallerand's team tried CARTON glasses with an application that shows the steps to make an origami-style fold as you actually do it with your hands. Real benefits For Mr. Gouin-Vallerand, the possibilities are enormous in augmented reality. For example, a visit to a museum could be completely different if the information about each work appeared in the right corner of the visitor's field of vision, in the language spoken by the visitor, and adapted to their age if they are a child. And this, without having to point their cell phone at anything. The technology could also be used by aging drivers, who would benefit from real-time assistance with their driving. This new technology, however, raises its share of questions among academics, namely whether its use could have certain perverse sides. "We don't yet know the impacts from a cognitive point of view. For example, will it lead us to make more mistakes in our task, because our field of vision is constantly filled with information?" asks Mr. Gouin-Vallerand. According to him, the democratization of augmented reality and its wider diffusion, thanks to glasses like CARTON, will allow us to better answer these questions in the near future. To access the work and learn how to make these glasses: r-libre.teluq.ca/1029/

## ###ARTICLE\_START### ID:2244

RENNES - 3D printers, a soldering station, electronics kits and Terminator-worthy hands, all combined with a dose of open-source software... The "Humanlab" in France allows those suffering from a disability to learn how to "repair themselves." Amputated in 2002 of his right forearm after a work accident, Nicolas Huchet, 33, is at the origin of this "human laboratory" opened three months ago in Rennes, in the west of France, on the model of fablabs, digital fabrication laboratories open to the public. "Bionico", his nickname, is first famous for his prototype of a cheap "bionic" hand, a prosthesis controlled by muscle sensors that he designed in collaboration with a sculptor. The initiative earned him recognition in 2015 as the best young "social innovator of the year" by MIT (Massachusetts Institute of Technology). After wearing the same prosthesis for 10 years that "didn't evolve", being able to move only his thumb, he started making a "homemade" prosthesis using 3D printing, which was already booming in surgery. In 2012, Nicolas Huchet saw a 3D printer for the first time in Rennes: it was the turning point. "With the fablab, we discussed the possibility of printing a hand. On a 3D printing site, we found a computer-controlled robot hand, then we made sure that I could control it." Then came the "Humanlab", this digital manufacturing workshop dedicated to health, which, in addition to five key projects, including that of a replicable electric wheelchair, aims to enable people with disabilities to "self-repair". Inventing new solutions to make them available to everyone, replicating existing solutions by adapting them... Ultimately, the Humanlab team would like to spread "so that a person in India, in Burkina, can make their own prosthesis thanks to the fablab network"

## ###ARTICLE\_START### ID:2245

“Governing the city differently” Hôtel de Ville, 1, place de la Comédie, Lyon 1er. 10:15 Introduction by Karine Dognin-Sauze, Vice-President of the Métropole de Lyon, and Vincent Giret, Editor-in-Chief at Le Monde. 10:15 Can cities re-enchant democracy? with Cynthia Fleury, philosopher, Thierry Pech, CEO of Terra Nova, Loïc Blondiaux, professor in the political science department of the Sorbonne, Cécile Maisonneuve, President of the Fabrique de la Cité. Moderators: Claire Legros and Francis Pisani. 11:00 Governance: pioneering experiences with Sabine Girard, municipal councilor of Saillans, Sandrine Frih, vice-president of the Métropole de Lyon, Stéphane Vincent, general delegate of the 27th Region, Francesca Bria, head of innovation for the municipality of Barcelona, Michel Sudarskis, secretary general of the International Urban Development Association (INTA), Xavier Lavayssière, founder of Les Bricodeurs. Moderators: Martine Jacot and Francis Pisani. 11:45 Civic Tech: the start-up match Three minutes for each of the following four start-ups to defend their project: - OpenSource Politics, by Virgile Deville. - Civocracy, by Chloé Pahud. - Let's Co, by Jéremy Camus. - Urbee, by Morgan Schleidt. Referees: Marion Moreau (Sigfox), Laurent Auguste (Veolia) and Bruno Marzloff (Chronos). 12:30 Keynote speaker Carlo Ratti, Director of the Massachusetts Institute of Technology (MIT) Senseable City Lab in Boston. Moderators: Martine Jacot and Vincent Giret. 2:30 Awards ceremony In the presence of Gérard Collomb, Mayor of Lyon. 3:15 p.m. Companies: when citizens become essential contacts with Canddie Magdelenat, Sustainable Cities Officer at WWF, Christian Buchel, Deputy CEO of Enedis, Arnaud Julien, Innovation and Digital Director at Keolis, Bertrand Bénichou, Director of Partnerships and Institutional Relations for Cities and Territories at Engie, Philippe Blanquefort, Director of Caisse des Dépôts AuvergneRhône-Alpes. Moderators: Laetitia Van Eeckhout and Vincent Giret. 4:00 p.m. Feedback from the workshop “Places for citizen democracy” Report on the creativity workshop led by students from Centrale-Lyon and the Ecole nationale supérieure d’architecture de Lyon. Moderator: Martine Jacot. 4:30 p.m. Concluding remarks by Francis Jutand, Deputy Director General of the Institut Mines-Télécom.

## ###ARTICLE\_START### ID:2246

WOMEN'S BUSINESSES There were 160 of them at the start of the school year in September 2014. There are a good thousand of them today. A thousand primary and secondary school pupils are regulars at the Magic Makers centres, where, during the holidays or during weekly courses, they learn to program, code and understand the mysteries of digital technology. Claude Terosier, 42, an engineer with a degree from Télécom ParisTech, has opened six centres in two years: five in Paris and its close suburbs and one in Bordeaux. "In three to five years, my goal is to have opened 50 locations," explains Claude Terosier. "It's about showing children that the computer is a tool that can be used to enhance their creativity." On 16 March, she received the Business With Attitude prize awarded by Madame Figaro. The Magic Makers adventure began in 2012, during the 15th anniversary celebration of Claude Terosier's class at Télécom ParisTech. For the occasion, a film retraces the events that have marked IT over the past fifteen years. Flashback, then... In 1997, the school was still called Télécom Paris and Netscape, the first browser, made the Web a new world to explore. France Télécom put an end to its strange mobile phone, the Bi-Bop. It was prehistory: Google had not yet been born. The humanities of the 21st century In 2012, Netscape sank body and soul, Google became a giant that assures that it will be a benevolent Big Brother. We only talk about big data, connected objects, artificial intelligence. "I was struck by how quickly everything happened and how IT is now everywhere in our daily lives," analyzes Claude Terosier. In the anniversary film, several personalities are also questioned about what the digital revolution will be like in the next fifteen years. One of these oracles delivers his message: "If I have one piece of advice to give you, it's to teach your children to program." So this is what studying humanities in the 21st century will mean: learning the language of machines to know what's going on in the digital guts of a smartphone or tablet. Claude Terosier decides to follow the advice for her own children. "I told myself that I would find a bohemian workshop in Paris and I found nothing," she smiles. The idea for Magic Makers begins to germinate. A year later, in 2013, another revolution, this time very French, will accelerate things. In 2013, troublemaker Xavier Niel launched Free Mobile, the shockwave rocked the three other telecom operators - Orange, Bouygues Telecom and SFR, where Claude Terosier had worked since 2008. The company opened a voluntary redundancy plan. Claude Terosier, who had the future Magic Makers in mind, hesitated. After all, she was at the age where if you were tempted to start your own business, you took the plunge. Not without apprehension. "You don't just give up fifteen years of employment like that, but this was now or never." As part of the redundancy plan, SFR could only let employees go if they had a well-crafted project. For Claude Terosier, it was the opportunity to transform her idea into a project and subject it to the reality principle. She also told herself, to reassure herself, that she had two years of unemployment benefits ahead of her. Which gave her time to bounce back if the business didn't live up to its promises. "We forget," she says, "that Pôle emploi is the leading financier of young companies in France." An investment of 100,000 euros Once she decided to launch, she had to move forward on two fronts. She trained in teaching and discovered the tool she would be able to rely on: the free software Scratch, developed by the Massachusetts Institute of Technology (MIT), precisely to introduce children to programming. It was in the Paris Pionnières incubator that she refined her project. The company's statutes were filed in June 2014 and the first Magic Makers center opened its doors in September in Paris, in the 11th arrondissement. It was an investment of 100,000 euros: half for rent and equipment (first salaries, furniture, laptops, etc.), the other half for working capital requirements. Claude Terosier invested his savings. Four individual investors - Corinne Bach, Hala Bavière, Régis Cornélie and Nicolas Vauvillier - completed this initial investment. "I talked about it to everyone I met and that's how I found investors." In 2016, a new fundraising of 600,000 euros brought in two new shareholders, Francis Nappez, co-founder of BlaBlaCar, and the consulting and services group Econocom, which supports the digitalization of companies, and its president, Jean-Louis Bouchard, who was sensitive to Magic Makers' approach. The team has grown to 15 employees and 40 facilitators for the courses. The Business With Attitude award confirms Claude Terosier in her approach. If her company is resonating, it is because other parents, like her, are questioning this digital world in which their children are growing up. While Magic Makers was maturing, local associations such as La Compagnie du code in Toulouse, or companies such as the Tech Kids Academy, established in Paris and Versailles, were emerging with the same approach. Magic Makers, which should achieve 1.2 million euros in turnover for its 2015-2016 financial year, is, for the moment, the only one to see things on a grand scale. But also with caution, without rushing things. "The whole challenge," emphasizes Claude Terosier, "is to grow the company without losing our soul and our know-how." BIO EXPRESS 1974 Born on August 12 in Les Abymes (Guadeloupe). 1997 Graduated from Télécom ParisTech. 2014 Creation of Magic Makers.

## ###ARTICLE\_START### ID:2247

For a week, Libération embarked with the team from the Hackers Against Natural Disasters (Hand) association, which is taking part in the annual tsunami warning exercise in the Antilles. The goal: to imagine concrete tools and provide good practices for dealing with these catastrophic phenomena. Feedback in the form of a logbook. Saturday, the geeks gathered Under the pirate flag that decorates the fablab in the Jarry industrial zone, in the suburbs of Pointe-à-Pitre, two groups of geeks rub shoulders, usually separated by the Atlantic. On one side, Gaël Musquet presents Hand, the new association of which he is president, and the 16 people who came from mainland France with their respective skills: cartographers, developers, videographers, fundraisers, logisticians, tourism professionals... On the other side, the members of the Jarry fablab are gathered around Cédric Coco-Viloin, co-founder of the place, who lists the initiatives planned for the week. The two teams of technophiles will fight with their weapons against a 20-meter wave... fictitious, fortunately. Caribe Wave is an annual tsunami alert exercise organized by UNESCO. "We hackers, geeks, we can be useful to the world," pleads Jean-Baptiste Roger, former president of La Fonderie, the public digital agency of Ile-de-France. Sunday, mapping by bike The hackers hung their association's flag in the bungalows rented in Marie-Galante, in the southeast of Guadeloupe. "NGOs always set up in urban centres," laments Gaël Musquet. "In the event of a disaster, rural communities will be forgotten, and the dependencies of Guadeloupe even more so. Marie-Galante is in a situation of energy and digital insecurity, which complicates the exercise." Barely settled, computer scientist Yohan Boniface and geomatician Vincent de Château-Thierry get on a bike and survey the island to identify schools at high altitude that can serve as shelters. They note the road surface and width, to plan evacuation routes. All this data will enrich the map of Marie-Galante on the free and collaborative mapping project OpenStreetMap. It is a faithful ally in crisis management: in Haiti in 2010 after the earthquake, in the Philippines in 2013 after the typhoon, its emergency "mappers" have provided assistance to the emergency services on site. Back at HQ, the cyclists transmit the data on the schools to the developer Loïc Ortola, who integrates them into the Mon Refuge application. Nobody knows it yet - he developed it here, in a few days. When you open Mon Refuge, alerted of the tsunami by a notification and geolocated by GPS, you come straight to the map of the region. A route is then highlighted to the nearest shelter. For the researcher Frédéric Leone, specialist in evacuation in Guadeloupe, "it's the app we dreamed of". Monday, the role of the tourist The Asian tsunami of 2004 triggered "media hysteria, because a dead tourist is not worth the same as a local farmer..." explains Jean Karinthi, administrative and financial manager of Hand. He had the idea of bringing two tourism professionals into the association to brainstorm on the place of vacationers in risk prevention. If they were better prepared, we would waste less time looking for them, international anxiety would quickly subside and we could tackle the other damage. Guillaume Cromer runs a tourism marketing consultancy. He sent a questionnaire to 250 service providers and hoteliers: is there a system in place to warn customers and employees in the event of a tsunami? Answer: meh. "Some are afraid of panicking tourists. Others deny the risk of a tsunami." "People think that it's up to the government to manage everything," analyzes Yann Legendre, a specialist in fair and responsible tourism. But many are asking for information. It wouldn't take much for them to play the game." Guillaume Cromer and he are brimming with ideas: flyers in hotel rooms, messages to broadcast on planes... With the videographers from Hand, Jordi Gueyrard and Clément Hudelot, they even shot a video to set an example for airlines. Tuesday, "earthquake alert" It's D-Day. A few minutes after the official start of the Caribe Wave exercise, the smartphones at the HQ in Marie-Galante sound an alarm: "Earthquake and tsunami alert." Hand is testing a cell broadcast message, an international standard designed to reach all phones in a given region, in use in many countries... But not in France. And for people who are driving at the time of the earthquake? We warn them on the car radio! The RDS (Radio Data System) service already allows text messages to be displayed for the names of the songs being played. While we're at it, Gaël Musquet sends a message on rental cars. "TSUNAMI ALERT: Get to the heights!" Simple and effective. Meanwhile, Jarry's fablab welcomes evacuated high school students in its bus repainted as a pirate ship. "We film their arrival, we count who is injured, who is lost, we collect their identities and we send them to Marie-Galante to show what a crisis shelter is for," explains Cédric Coco-Viloin. A few hours later, the fablab team is presented with a "Hackers Against Natural Disasters" flag at an evening between geeks from Guadeloupe and mainland France, to seal the alliance. The fablab becomes "the first link in a global Hand chain," a global network of committed technophiles. "If this chain has to start somewhere, we are super proud that it is here," says Jean-Baptiste Roger. Wednesday, success for the probe The day after the fictitious tsunami, the damage in the ports must be assessed. The wave may have brought back sedimentary contributions that raise the floor and threaten the arrival of boats. To make these measurements, Gaël Musquet bought a bait boat on Le Bon Coin to which he grafted an Airmar probe, and the team's "techies" lost a few liters of sweat making it work in the HQ jacuzzi. The emotion is palpable when the remote-controlled Muette starts to sail between the boats. It is made to make turns in the port of Capesterre before removing its micro SD card to check the data. Victory! The lines scroll on the computer: the depth of the port varies between 52 cm and 2.98 m. The "proof of concept" is crowned with success and the hackers imagine improvements, for example by programming a grid of the port to establish a real bathymetry map. Barely out of the water, the Muette is entrusted to the fablab. Thursday, the problem of the cruise ship La Muette is not the only boat that worries Hand. On the terrace of the HQ, an FM antenna picks up messages sent by ships within a 50 nautical mile (92.6 km) radius. The traffic was recorded during the March 21 exercise. "We know where which boat was at what time, and which ones would have been in danger in the event of a tsunami," explains Gaël Musquet. "We can therefore estimate the cost in human and financial losses." This gigantic liner that is parked in the port of Pointe-à-Pitre, for example, carries 2,500 passengers and 1,000 crew members. If it is docked when a tsunami hits, it will end up lying down. And if it is offshore, it would be a shame if the wave deposited it in the city center... Friday, and then? The mission is coming to an end. All the code written and used this week will be published in open source to be reused and improved by anyone who wishes. If they had had a spare day, the hackers would have liked to tinker with the drone they had packed in their suitcases to make it take orthophotography - aerial images taken vertically, without distortion, valuable for assessing damage after a disaster. Perhaps for Caribe Wave 2018... In the meantime, Gaël Musquet will return to the Antilles in May to "fix the antennas and stabilize the maritime and aerial observation sites" in Guadeloupe and Martinique. The day before returning to Paris, entrepreneur Corentin Larose took a felt-tip pen to draw the hull of a boat on the whiteboard. This is V2 of La Muette which is taking shape: "We're going to make a catamaran that moves autonomously, with an open source platform on which you can install any tool." Sonar, underwater camera, relay antenna to pull the telecommunications network from one island to another in the event of a problem... Everything will have to be easily connected to this do-it-yourself boat. PVC, aluminum: "80% of the materials must be found in a DIY store." Guadeloupeans and mainland residents will develop their prototype in parallel, exchanging information via wiki platforms. As for the Hand association, it has just opened its memberships and its online donation space for future missions. Gaël Musquet also wants to recruit as many radio amateurs as possible, who are in danger of disappearing. "Without them, it would be difficult to make crisis 4G or broadcast on the FM band. They are not Gégés who smell of sweat and talk into a CB. We need to make amateur radio sexy." The door is wide open to geeks of all kinds who want to get involved in crisis zones where their know-how will be needed.

## ###ARTICLE\_START### ID:2248

We already knew he was determined to start colonizing Mars by 2040, but he still had more up his sleeve... Elon Musk, CEO of the astronautics company SpaceX and the car manufacturer Tesla, has made another science fiction topos his new outrageous project: connecting the human brain to computers. It was the Wall Street Journal that lifted a corner of the veil, on the night of Monday to Tuesday: in July, the American forty-something discreetly created a new company in California, Neuralink. On Twitter, the main person concerned confirmed its existence, promising more information within a week. For the moment, we still know little, but enough to see Musk's now well-established strategy. Still "embryonic" according to one of its co-founders, Neuralink is a "medical research" company whose objective could be, initially, to develop brain implants to treat neurological disorders such as epilepsy - neurostimulation by implanting electrodes is already used to treat certain patients with Parkinson's disease. But the Silicon Valley demiurge sees further. Utopia. For those who follow his public statements closely, this is not a surprise, and the affair has all the hallmarks of a millimeter-perfect teaser. In June 2016, during a conference organized by the technology news site Recode, Musk opposed the danger of artificial intelligence destined to transform us into "domestic cats" with what, in his eyes, constitutes the solution: a "direct cortical interface" between man and machine. The man who traces his Martian utopia back to reading The Hitchhiker's Guide to the Galaxy borrowed the expression "neural network" from the novels of the Scotsman Iain M. Banks. He has mentioned this project on Twitter a few times. And at the World Government Summit in Dubai in February, he again called for a "combination of biological intelligence and machine intelligence" to escape human "obsolescence." "We are roughly four or five years away from a significant partial neural interface," he said in a long investigation published Sunday by Vanity Fair. He is not the only one to believe it. The founder of Braintree, a subsidiary of PayPal, also launched a similar start-up last year, whose primary objective is to fight neurodegenerative diseases, but which aims in the longer term, again, to increase cognitive capacities, starting with memory. Facebook is recruiting an engineer specializing in brain-machine interfaces for "Building 8", its research and development lab headed by a former Google employee. Darpa, the American army's research agency, is also investing in the field. How much credit should be given to these major initiatives? For Jean-Gabriel Ganascia, an artificial intelligence researcher at the Paris-VI computer science laboratory and author of The Myth of the Singularity, we must above all keep a level head. Working on brain implants can "enable us to improve a certain number of medical technologies", he notes - he points out that neurostimulation for Parkinson's patients was developed in France, in Grenoble. It remains to be seen how far the Californian apostles of "disruption" are capable of going in this area... As for "this idea of directly connecting an external memory to humans", he considers it, at this stage, both "totally illusory"... and downright "nightmarish". "Survival." This is the whole ambiguity of Elon Musk, who is thus gaining a foothold in a new sector against a backdrop of quasi-millennial storytelling. Which, paradoxically, brings him closer to Ray Kurzweil, the champion of the "Singularity", that moment when the machine surpasses its creator. In recent years, the boss of SpaceX had nevertheless defined artificial intelligence as "the most serious threat to the survival of the human race", advocating "regulatory surveillance", in a pro-regulation tone that is generally not the Valley's strong point. Which did not prevent him from investing in the British company DeepMind, before its acquisition by Google and the highly publicized victory of AlphaGo, the program that beat the Korean go champion Lee Sedol. Or from co-founding OpenAI, a non-profit organization that aims to develop "open source" artificial intelligence, with free access. Musk now intends to counter the power of the machine by connecting man to it, in a logic, judges Jean-Gabriel Ganascia, of "pyromaniac firefighter". "With artificial intelligence, we summon a demon", explained the billionaire at the end of 2014 during a symposium at the Massachusetts Institute of Technology (MIT) in Boston. Before continuing the metaphor: "You know those stories, where there's this guy, with the pentagram and the holy water, and he's sure he can control the demon? It doesn't work." Premonitory?

## ###ARTICLE\_START### ID:2249

There is always a science fiction accent when we talk about artificial intelligence (AI). As if these two words had nothing to do together outside of a Spielberg film. However, it is a discipline of computer science that dates back to the end of the 1950s. Many different techniques have been studied and developed to allow machines to solve complex problems, with ever more impressive results - François Hollande announced on Tuesday an envelope of 1.5 billion euros of investments in this field over ten years (read on Libération.fr ). For a long time, several schools of thought have competed (decision trees, multi-agent systems, etc.), but since 2012, after spectacular results in the field of image recognition, one discipline of AI has taken precedence over all the others: deep learning. Based on what are called neural networks, which very schematically reproduce the structure of human brain cells, deep learning allows a program to improve through experience and to be able to solve the problem for which it is developed with results that were unimaginable just a few years ago. Putting everything on neurons Basically, a neural network is capable of understanding a logic of correspondence between initial data and the expected result. But the field of application is vast, so vast that it is difficult today to perceive its limits. All that is needed is a strong relationship between what is presented to the neural network and what is expected of it. It can therefore learn to distinguish elements in an image, to choose a move to make from a situation in a game (whether it is Go or a video game), to anticipate a movement based on the topography of a terrain, or to translate a text from one language into another. Translation is, besides image recognition, one of the historical challenges of artificial intelligence. It is undoubtedly the sector that is experiencing its greatest technological revolution since the first computer-assisted translation systems. Systran is one of the pioneers in language technologies. Created in 1968 in San Diego, California, the company first worked, in the middle of the Cold War, for the US Air Force on the translation of Russian scientific journals. In the 1980s, Systran became French following an acquisition (it has since been bought by a Korean company but its headquarters are still in Paris). It has closely followed the technological developments in the sector, in particular microcomputing, which exploded in the 1990s, and especially the Web. Systran thus provided the software base for well-known services such as BabelFish and Google Translate until 2007. But faced with the AI revolution, Systran has made a clean slate of the past. From a technological point of view, the company has decided to bet everything on neural networks to offer specialized translation tools to companies. It is working jointly with Harvard to develop an open source software, Open NMT, capable of learning on any textual base. The program itself is easy to use (and very short, only 4,000 lines of code). All you have to do is give it a text to study (the source) and the result you expect from it (the target) and provide it with many other texts, so that the network can build an effective model. For example, by entering the corpus used for decades by translation tools, namely the UN texts in several languages, you get high-performance translators. Systran currently offers 60 language “pairs”. Listening to Jean Senellart, the company’s CEO, you understand the importance of this technological upheaval. This researcher in computational linguistics by training, who joined Systran in 1999, seems fascinated by the technological promises of artificial intelligence: "With my background, I was used to mastering my tools. Today, I find myself discovering what the tools we have developed can do." In the style of Shakespeare And to list the different tests that his teams (two thirds of the 70 employees based in Paris work in research and development) and those of Harvard have carried out to evaluate the capabilities of Open NMT. We give him Shakespeare's texts, and he comes out with incoherent texts, but in the style of the English author. From the construction of cooking recipes, he is able to create new ones that seem credible but that we would not taste for anything in the world. Open NMT also knows how to create a network that will have learned to find titles from articles in the Washington Post (if this text becomes unreadable from here on, it is because the Libés' publishing department has gone on strike). Jean Senellart is expansive when he talks about his current research, a bit like an explorer who has discovered Shangri-La. And this is a common characteristic of all those who work on the subject today. He already talks about future progress, where he will integrate reinforcement logic, the same one that allowed AlphaGo to improve by playing against itself, into his program. "I would like to try it with a very simple type of book, like those in the Harlequin series. We could give the first half of the book to the program, and maybe it will manage to write its own version of the second half." And even if the researcher also talks about the prospects in terms of language learning (where the machine will accompany the student at his own pace) or assistance with translation on the model of spell checkers, we remain thoughtful about the troubling prospect that silicon could produce rose water.

## ###ARTICLE\_START### ID:2250

The Quebec City library network will contribute to the general public component of Digital Week with events accessible to all. In some cases, these will be films on artificial intelligence and robots, conferences on the history of digital technology, workshops to better understand your iPhone or iPad and Android devices. There will be introductory workshops on programming or on the use of free software to equip your computer, whether for word processing or image processing. But there will also be more surprising activities at the Félix-Leclerc and Paul-Aimée-Paiement libraries, which have just opened their media lab. Visitors will be able to see the digital drawing work of resident cartoonist Julien Paré-Sorel on a few occasions, and even ask him questions. Digital creator Louis-Robert Bouchard will do the same with participants' dreams for his oneiric stories. Digital technology is transforming the world of work, but reality is also moving into virtual mode and is coming to the Gabrielle-Roy library. And budding writers will be able to learn how to create digital books with the Hugo online platform. When you say IT, you also say sensitive data, and also open doors to hackers. We will therefore offer to familiarize yourself with good practices in terms of information security. Game fans will not be left out with old consoles and the new Nintendo Switch during a mini Warpzone for young people, while others will be interested in creating virtual universes. Some activities require registration. All the details are at this address: goo.gl/VNLLZa Crazy evening For its part, the Chambre Blanche is offering a crazy evening on April 4, the F5 evening, which represents the F5 function key to refresh the data on the screen, explains Jacques Blanchet, spokesperson for the event. It will be an evening showcasing the know-how of Quebec's businesses and digital community in many spaces of the Musée de la civilisation. Creators and artists will offer performances that include the virtual and the real. We will see circus arts and mime against a backdrop of animated digital drawings synchronized with the artists' movements.

## ###ARTICLE\_START### ID:2251

Last Sunday, we left Paris - its grey skies, its 10-degree thermometer and its Fillon-like Trocadéro - to land in the springtime mildness of Valencia, on the other side of the Pyrenees. Heading for the Internet Freedom Festival. At the end of the afternoon, in the lobby of the Las Naves cultural center, a few minutes' walk from the marina, a white column already stood bearing its slogan-manifesto: "Joining forces to fight censorship and surveillance." The next morning, the three former warehouses on rue Joan Verdeguer, converted into a Center for Innovation and Creation dedicated to young artists, quickly filled up. And for good reason: for its 2017 vintage, the event welcomed nearly 1,300 participants, twice as many as for its first edition in March 2015. In a tweet, the American Harry Halpin, a researcher in France at the National Institute for Research in Computer Science and Automation (Inria), summed up the affair with a well-chosen phrase: the Internet Freedom Festival is "like the Internet Governance Forum, without the rather boring people from governments and businesses." Also read: In Valencia, the free Internet does not disarm A composite galaxy has gathered here for five days of conferences and discussions, which has not yet given up on the promise of emancipation from the origins of the network: that of before electronic walls and mass surveillance, before cyber-harassment and debates on the proliferation of fake news... "Technicians, civil liberties activists, NGOs, start-ups", summarizes the German journalist Andre Meister. The website he works for, Netzpolitik, made a lot of noise two years ago, when the publication of documents on the surveillance of the Net across the Rhine led to the opening of an investigation for "high treason" - quickly abandoned in view of the outcry caused. Like 60% of the participants, Meister is participating in the Internet Freedom Festival for the first time, after having "heard about it from quite a few friends". Also read: Netzpolitik: "They wanted to intimidate us" "Bridging the gap" In fact, we recognize faces encountered here and there in Europe in hacker gatherings, events dedicated to free software (that which can be freely copied, distributed and modified) or forums devoted to fundamental rights in the Internet age. Developers of Tor, an anonymization network; of Tails, an operating system dedicated to the confidentiality of communications; or of GlobaLeaks, an online platform for whistleblowers, have made the trip. As have activists from Amnesty International or Reporters Without Borders. Also read: Free Software: conquering the general public On the T-shirts and stickers piled up on the tables in the entrance hall, we spot the logos of the Electronic Frontier Foundation, the Californian association for the defense of digital freedoms; of the Mozilla Foundation, the parent company of the Firefox browser; or Greenhost, a Dutch web host with a strong activist tropism. The face of whistleblower Chelsea Manning, the source of the secret US army documents published by WikiLeaks, is displayed on flyers inviting people to a support evening on Wednesday. Read also: Chelsea Manning, freedom in extremis for the whistleblower But the two founders of the event, the American Sandy Ordoñez and the Spaniard Pepe Borrás, are proud of having succeeded in "broadening the spectrum". That is the whole objective: to bridge the gap between those who make software and those who use it, between geeks and those who are less so, but also between the North and the South. This year, almost half of the participants are women - a rare ratio for an event of this type - and 114 countries are represented, from Brazil to Vietnam, from Sweden to South Africa. The content of the discussions reflects this. Over the course of a dense program - some 200 sessions over five days - we obviously talk about censorship of the Internet by states and surveillance of communications, but also, a lot, about ways to fight against online harassment, racial discrimination or repression targeting LGBT (lesbian, gay, bi and trans) people. We discuss Internet blockages in Turkey, digital policies in East Africa, debates on cryptography in Latin America. We meet Jung Gwang-il, a former prisoner in a North Korean prison camp, who today clandestinely sends memory cards containing Mad Max, Hunger Games or the Korean version of Wikipedia into the country by drone and from Seoul. "We know about fake news in Vietnam" As is often the case when online freedoms are affected, the event is taking place under very ecumenical auspices... In terms of financial support, there is notably the Open Technology Fund, a program funded by American public funds to finance tools to fight censorship and surveillance such as Tor, Tails or the messaging application Signal. The Las Naves center is lent by the city of Valencia, which switched from conservatives to the left-wing Compromís coalition in June 2015. Even Facebook and Twitter have contributed to a "diversity and inclusion" fund that helps finance the stay of participants from countries in the South. Also read: Tor: Mail-toi de tes fraises The festival is built by those who participate in it, emphasize Pepe Borrás and Sandy Ordoñez: it is "a living organism, a community of communities," describes the latter. It also wants to be, she insists, "a space where everyone feels comfortable." A detailed "code of conduct" prohibits discriminatory comments, but also the taking of photos - unless expressly agreed by participants - and sound or video recordings, so as not to expose certain human rights activists to the risk of reprisals. The situations are certainly diverse and contrasting, but "everyone wants to be able to be online, without having to fear being harassed, whether by authoritarian governments or by trolls," argues Trinh Nguyen, a member of Viet Tan, an organization that campaigns for democracy and political pluralism in Vietnam. "Access to information, an uncensored, unblocked Internet, these are universal values," she adds. And the exchange allows the focus to be shifted. "We've known about fake news for years," notes the young woman. They call it propaganda." Coming from Nairobi, Kenya, Sylvia Musalagani is in charge of the "Freedom of Expression" program for the Dutch NGO Hivos for East Africa. For her, coming to Valencia is a way of "bringing the African voice" into these debates, of reporting on the reality, in terms of access and uses, of the "least connected continent" on the planet, but also of the projects that are emerging there. And of pushing for Western aid in the digital field not to be limited to exporting working methods, but "to meet the needs of the populations" - a problem as old as development aid. Old dream These five days also bear witness to the way in which NGO activists, journalists and bloggers have taken up technological issues - there are countless digital security guides published by one or the other - while developers of tools to circumvent censorship and protect communications have gotten closer to users. "In the last three years, technicians have realized that they need to adopt a more human approach," notes Pepe Borrás. "We have seen the development of tools that are much easier to use. We are not far from making some of these issues mainstream." Other issues have become just as pressing and discussed, such as "the responsibility of the large platforms that enable mass communication." Throughout the week, debates and workshops take place, while the two patios host many informal discussions over coffee during the day, a cold beer when evening falls. Or even a few bottles of rum, offered to the winners of a crossword contest organized to accompany a showcase of anti-censorship and anti-surveillance software projects... Two food trucks, including one "100% vegan," ward off cravings. Some take a break by taking part in a night-time guided tour of the city, a bike ride or a paddleboarding class (where you stand on a surfboard and propel yourself with a paddle). The Mediterranean is still cool, but we met some who tried a morning swim. "For people who live under repressive regimes, it's also a bit of a holiday," smiles Trinh Nguyen. The organisers are already thinking about what's next. This year, they've packed out the place: to accommodate more participants, they'll have to push out the walls... "We're going to have to have this discussion," says Pepe Borrás. "We'd like to stay here, in Valencia, where there's real support from the city hall." And where, clearly, those who made the trip are enjoying their stay, recharging their batteries in an atmosphere that inevitably recalls a bit of the old dream of the "global village". Even when corrected for seasonal variations and rubbed against a brutality which, wherever it comes from, is not at all virtual, early utopias are hard to shake.

## ###ARTICLE\_START### ID:2252

INTERNET Defender of the open Internet with its Firefox browser, Mozilla now wants to ensure the quality of online content. In the era of fake news, this false information massively relayed on social networks, the organization bought the deferred reading tool Pocket at the end of February. The service allows you to save digital content, whether articles or videos, to consult them later. "This approach seemed essential to us. Fake news pollutes the quality and veracity of online information," explains Denelle Dixon-Thayer, sales manager at Mozilla, to Le Figaro. "However, Pocket gives the opportunity to better understand the nature of the articles or videos appreciated, shared and saved by Internet users, and to better sort between quality content and that which makes you want to click, without being read." The discussion between Mozilla and Pocket began a little over a year ago. In the meantime, the service has won over nearly 10 million monthly active users. It could be used to offer media or broadcasting platforms new ways to monetize their online activity, a crucial issue according to Denelle Dixon-Thayer. Internet, this common good A pioneer in online navigation, Mozilla launched Firefox in 2002 to counter Microsoft's Internet Explorer. Promising, the program built a great reputation among supporters of free software and defenders of online freedoms, before being supplanted by Google Chrome, launched in 2008. Denelle Dixon-Thayer does not deny the great difficulties her company has in competing with Google, which was recently attacked by several European players for its anti-competitive practices. "I tend to be optimistic, even naive in the eyes of some," she says. "For a long time, there was talk of fighting head-on against Google, Facebook or Amazon, which compartmentalize the user experience on the Web and can distance them from innovative services. But I still believe that it is possible to find a form of balance by creating bridges between these different environments, to redirect Internet users towards the Web." With Pocket, Mozilla hopes to have found a new way to distil its values. -

## ###ARTICLE\_START### ID:2253

SHERBROOKE - High school students will have the opportunity to learn computer programming by participating this Saturday, March 11, in the Hark QC competition, for the first time in Sherbrooke. From 10 a.m. to 4 p.m. at the Sherbrooke Exhibition Centre, thirty participants aged 12 to 16 will have the opportunity to learn programming on Scratch, a free software designed for learning computer code. Hack QC uses the Government of Quebec's open data portal to offer a day of activities to encourage the next generation of technology talent. "The invitation was sent to all high schools in the Estrie region," explains Magali Demers, project coordinator. "Usually, it's held in Montreal and Quebec City." The workshop will be hosted by Kids Code Jeunesse, an organization whose mission is to offer young Canadians opportunities to learn to code. “This first collaboration between MaCarrièreTECHNO, Kids Code Jeunesse and Hack QC allows us to join forces to stimulate the next generation in this field that is in great need of specialized labour,” says Vincent Corbeil, General Manager of TECHNOCompétences. Participants in Hack QC-Relève will have to develop a game related to the hackathon’s theme, sustainable mobility. Employees have been recruited to volunteer to assist the workshop facilitator. The City of Sherbrooke, SociéTIC and the Government of Quebec are partners in this project. claude.plante@latribune.qc.ca

## ###ARTICLE\_START### ID:2254

Two months before the presidential election, Axelle Lemaire, who is playing for her re-election as MP for the third constituency of French people abroad, decided on Monday 27 February to leave her post as Secretary of State for Digital Affairs. "I want to prevent my constituency in Northern Europe from falling into the hands of Marine Le Pen, but I want to be clear and transparent between what I do on my campaign and my action in government," explains to Le Monde the woman who will also support the Socialist presidential candidate, Benoît Hamon. Christophe Sirugue, the Secretary of State for Industry in the same ministry, is taking over his portfolio. Having joined the government in the spring of 2014, Ms Lemaire has shown herself above all to be attracted by the societal changes brought about by new technologies. Her greatest pride remains her "great digital school, which has provided training to 10,000 people," she explains. Main feat of arms: her law "for a digital Republic", promulgated on October 7, 2016. This provides, in particular, for increased opening of public data, the right to be forgotten for minors, net neutrality, a principle of equal treatment of content by telecom operators, and encourages the use of free software in the administration. "Shadow work" The main originality of the text is the consultation carried out, in advance, with Internet users. Five new articles inspired by the 20,000 proposals from citizens have been added to the law. "I wanted to implement a more horizontal and more open method," she justifies. In tune with the world of the Internet, this consultation will also have served her in her arm wrestling with Emmanuel Macron, the former Minister of the Economy. The latter, for example, tried to eclipse the text of the Secretary of State to impose his bill "new economic opportunities", concerning innovation and digital technology, and announced with great fanfare in November 2015. The text was buried while that of Ms. Lemaire, who managed to find support from François Hollande and former Prime Minister Manuel Valls, arrived in Parliament in January 2016. The opposition of the minister and the Secretary of State crystallized around French Tech, on which the founder of the En Marche! movement largely surfed, twirling at the Consumer Electronic Show in Las Vegas, pampering the most prominent French entrepreneurs, while Ms. Lemaire seemed more distant. "I refused to politically recover French Tech and give the label to political friends. But I did the work behind the scenes, and I carried it out," she defends herself. The woman who is going back on campaign "alone in ten countries with her backpack" has also left her mark on the video game sector, notably by creating a status for e-sport, these booming electronic competitions, and by increasing the tax credit for video games. "France has once again become an attractive country for companies in the sector," says Julien Villedieu, general delegate of the National Video Game Union. She is also the only one in government who defended Yves Guillemot, the boss of Ubisoft, attacked by Vincent Bolloré who broke into his capital. The Minister of Economy and Finance, Michel Sapin, preferred not to take sides - and risk displeasing the financier - on the pretext that it was "a private matter. A shadow on the horizon, Axelle Lemaire was also the minister of a government that adopted half a dozen security laws with a repressive digital component. According to Mediapart, she considered resigning, but ultimately preferred to play the "good student". Hence a certain tension with Place Beauvau. The latest example to date, the biometric "megafile": conceived by the Ministry of the Interior, the Secretary of State weighed in to obtain concessions. Questioned by Libération, she believes she played the role of "whistleblower".

## ###ARTICLE\_START### ID:2255

They had this strange and disturbing dream of tomorrows without uncertainty or hazards, of a transparent and risk-free judicial world. "Predicting" and "quantifying" are their new horizons. Several start-ups are launching themselves on the "big data" market, offering legal professionals the chance of assessing their chances of success in litigation, finding the most relevant arguments or predicting the amount of possible compensation. The company Predictice thus dangles on its website the "best of doctrine", a concentrate of "machine learning" and "document linking", the promise of "finding the best argument to defend one's client". "We created an algorithm whose goal is to guide the lawyer in choosing a strategy", summarizes Louis Larret-Chahine, 25, a former student lawyer at the Paris bar and co-founder of the company with two engineers and another lawyer. In a small meeting room in the 14th arrondissement of Paris, he demonstrates the beta version of his site. The home page is still bare, but the algorithm developed by Predictice processes 1.5 million decisions, mostly from appeal courts and the Court of Cassation, or administrative jurisdictions. Failed by poetry No more hours spent compiling case law, the software analyzes in a few seconds "natural language, in particular the grammatical links between words and in sentences." Louis Larret-Chahine estimates that his self-learning formula has a comprehension of around 96% but remains in disarray when a magistrate dares to use poetry, a flowery or ironic style in writing. "A cat in the throat" for example, plunged the robot into perplexity. By typing more prosaic keywords such as "dismissal" and "drunkenness", the algorithm is able to estimate that in 19% of cases including these two criteria, a "dismissal without real and serious causes" was pronounced. In this matter, a lawyer has a greater chance of success in Rennes (where the statistics are 35%) than in Versailles (12%), a jurisdiction that is clearly more repressive with alcohol. The machine also makes it possible to predict the amount of compensation. Let's imagine a dismissal for insult: the applicant has an 8% chance of obtaining between 1,000 and 5,300 euros. In the case of a divorce, it can be estimated that compensatory benefits are paid in 14% of cases. Of which 40% when there is adultery. According to the entrepreneur, "this effort of transparency and predictability benefits justice." He adds: "A trial is costly, painful, too long and traumatic. We hope that someone who has a 50% chance of winning will prefer negotiation." According to him, the lawyers who were able to test the Predictice prototype are "crazy". About fifteen Lille firms have volunteered for an experiment. Other companies are launching themselves on the market, like Case Law Analytics, founded by a magistrate and a mathematician, which asks on its site: "In your next procedure, will you "win"? Will you "lose"? And what will the amounts be decided by the judge?" The Supra Legem site, specializing in administrative law, is an exception because it is available, free of charge, in open source. Anyone can therefore model the decisions of administrative courts regarding the expulsion of foreigners, not only by jurisdiction but also by magistrate. We then discover that some judges have a confirmation rate of obligations to leave French territory (OQTF) close to 100%... Until now, none of these "legaltech" venture into the criminal field. "I want to be a conscious and responsible actor," explains Louis Larret-Chahine. Analyses on the criminal field could risk giving a map of the least repressive jurisdictions or certain criteria linked to the profile of the criminal." "Respect for privacy" It is the Lemaire law of October 7, named after the Secretary of State for Digital Affairs and Innovation, which is at the origin of the great upheaval. The text provides in fact that "the decisions rendered by the judicial courts are made available to the public free of charge while respecting the privacy of the persons concerned." This means that the available legal database will swell considerably because, if in practice the judgments are public, only a tiny part circulates outside of legal professionals. To date, the LegiFrance site has provided free access to nearly 15,000 court decisions per year (95% of which come from the Court of Cassation, and more marginally from the courts of appeal). There are also two internal databases, which can be consulted on the magistrates' intranet and are managed by the Court of Cassation: JuriCa - which offers an "annual flow of 165,000 civil decisions", or a current total stock of 1.5 million decisions, according to the details of Ronan Guerlot, deputy director of the documentation, studies and reporting department of the Court of Cassation - and JuriNet, which "corresponds to the private side of LegiFrance". These case laws are sold to publishers, who anonymize them before offering them to their clients. Ronan Guerlot estimates that it will take four to five years once the implementing decree of the law has come into force to allow all court decisions to be computerized. "The most difficult thing will be to bring back the first instance decisions of the TGI. We often have paper minutes [original of a legal act, editor's note], so we will have to create IT tools," he explains. Automaticity Predictive justice start-ups intend to exploit this new mine of data, which ultimately means more than 2 million legal decisions published each year. As Bertrand Louvel, First President of the Court of Cassation, announced in his back-to-school speech: "The 21st century must prepare for a new revolution: open data." "This sharing will tend to smooth out disparities, often linked to ignorance of the work of others," he continues, arguing that predictive justice will tend to increase transparency and legal certainty. "This shows a shift in justice towards the decision-making side and no longer towards the law, which is losing its splendor," analyzes Denis Salas, magistrate, essayist and director of the journal Les Cahiers de la justice. "If we only applied prediction, we would ultimately return to this conception of the judge considered as "the mouth of the law" in the revolutionary era." But this meeting between mathematics and law does not delight all magistrates. During her back-to-school speech in January, Chantal Arens, first president of the Paris Court of Appeal, deplored it: "The act of judging is becoming unstable." Before listing the "risk to freedom, risk of pressure on magistrates, risk of decontextualization of decisions, risk of standardization of practices..." According to her, predictive justice could lead to automatic decisions to the detriment of the "salient particularities of individual situations." All the interlocutors interviewed by Libération mentioned the same danger: that of performativity. Judges might be tempted to give the same answer as their peers. "The truth effect of an algorithmic science can paralyze judges," points out Denis Salas. "That would be catastrophic." Moreover, if we were to push the reasoning further, why not develop "robot judges"? Or go back to the automated judge outlined by the philosopher Cesare Beccaria in the 18th century? An experiment was developed by researchers at University College London concerning the European Court of Human Rights. Artificial intelligence analyzed 584 decisions in three categories: the prohibition of torture, the right to a fair trial and the right to privacy. In 79% of cases, the robot managed to render judgments similar to those of the judges. "Everyone thought of the remaining 20% and said to themselves 'fortunately'," jokes Denis Salas. In a world where citizens would be more reassured by an automatic decision than an artisanal one, the myth of machine justice would replace that of divine justice. "Predictive justice fascinates us perhaps because it is credited with the power to realize the oldest dreams of law: a law without the State, a law so positive that it merges with the machine and technology, a law that applies itself and needs no administration [...]. But would this justice still be human?" asks Antoine Garapon in conclusion of an article published in January in Semaine juridique. A click will never abolish chance. At least, let's hope so.

## ###ARTICLE\_START### ID:2256

Aggressive and hateful messages are rife online, polluting, among other things, the comment threads of many sites. Jigsaw, an organization owned by Google and whose stated goal is to "make the world safer through technology," was to announce on Thursday, February 23, the availability to all, in open source, of a technology supposed to help clean up discussion threads. Perspective, that's its name, was tested for several months on the New York Times website. It is an artificial intelligence technology, or more precisely machine learning, capable of evaluating, on a score of 1 to 100, the degree of "toxicity" of a comment. To achieve this, it analyzed millions of comments from the New York Times - but also from Wikipedia - and scrutinized the way in which they were treated by the site's moderation team. The program thus learned to identify problematic comments, based on the experience of humans who preceded it in this task. This tool therefore allows a comment to be evaluated much more quickly than a human - and for a much lower cost. But it is not intended to replace moderators. And for good reason: "This technology is far from perfect," readily acknowledges Jared Cohen, the founder of Jigsaw, emphasizing that these are only "the first steps" of this program: "The more the tool is used, the more it will improve." Sites can also use it as they see fit: for example, they can ensure that comments identified as being the most problematic are sent first to human moderators. They can also give Internet users the possibility of classifying comments according to their degree of "toxicity." Or why not, suggests Jigsaw, display a message to the commenter himself, when he is about to publish a message detected as violent? With this latest method, "it is possible to reduce this kind of discourse in an impressive way," assures Jared Cohen, referring to a similar experiment conducted by Riot Games, the publisher of the very popular video game "League of Legends." Jigsaw hopes to allow these sites "to host better quality conversations," explains Jared Cohen, but also to create a healthier environment to bring back people who no longer dare to participate in discussions. In addition to the New York Times, several media outlets such as the Guardian and The Economist have shown interest. For now, the technology works in English, but will soon be available in other languages.

## ###ARTICLE\_START### ID:2257

On February 9, the long tunnel of Fashion Weeks opened in New York, which, after London and Milan, will end in Paris on the evening of March 7. A frenetic month where we will be talking about fall-winter 2017-2018, silhouettes, artistic directors, stars and starlets in the front row... If we listen carefully, we might hear a few buyers talking about crazy price levels or the drop in store traffic, but no one will talk about "greenhouse gases", "carbon footprint", "wastewater treatment"... Fashion does not fit well with this vocabulary and the disasters it suggests. However, the two CAC 40 giants LVMH (37.6 billion euros in revenue) and Kering (11.5 billion) - they alone represent around thirty of the most influential luxury and fashion brands in the world - are starting to speak out about the actions they are taking to protect the environment, in a more structured way now. While Bernard Arnault's group has been interested in environmental footprint issues for twenty years under the leadership of Sylvie Bénard, LVMH's environmental director, who heads a department of eleven people, its LIFE (LVMH Initiatives For Environment) program only appeared in 2013. From wines and spirits to fashion and perfume brands (Guerlain is at the forefront in this area) to distribution (notably Sephora), everyone is aware. This allowed LVMH to announce the first results of the carbon fund that it set up internally in January 2016: for the past year, each time a house emits a ton of greenhouse gases, it must invest 15 euros in innovative projects that help limit these emissions. Last November, the fund had collected 6 million euros. "The preservation of natural resources is a priority included in LVMH's budget," emphasizes Sylvie Bénard. In 2016, the consolidated amount of expenses related to environmental protection reached 23.8 million euros (13.5 million in operating expenses and 10.3 million in investments). A total that also includes indirect expenses related in particular to the high environmental quality of buildings, technical training of teams or environmental sponsorship. At Kering, François-Henri Pinault has taken the subject in hand and personally preaches the good word to his brand presidents (Gucci, Bottega Veneta, Yves Saint Laurent, Balenciaga, etc.). "Sustainable development is not only a responsibility and a necessity, it is an opportunity to innovate, to create value through new organizational methods and, ultimately, to build a more sustainable business model," argues the CEO. "Luxury, which has this ability to set trends, has a major responsibility in this area..." "something with COP 21" In 2012, the group set up a sustainable development committee at the board level. Since 2015, it has published an environmental profit and loss account (Environmental Profit & Loss) for 100% of its brands. Among them, Stella McCartney, a pioneer of sustainable luxury, who has made zero leather and zero fur her trademark, has been publishing her own environmental income statement since last year. The opportunity for the designer to communicate on a 35% reduction in her environmental footprint on her "materials" supplies between 2013 and 2015. "Analysts are increasingly interested in the way companies approach sustainable development issues because they are an integral part of risk management. It is important to understand that if our convictions are sincere, this does not prevent us from reasoning as a listed group: we believe in them, and it is good for business," explains Marie-Claire Daveu, director of sustainable development at Kering, whose department has an annual budget of 10 million euros. The group also indexes its CEOs' bonuses on their environmental performance. "Something happened with COP 21, and whatever its motivations, the business world is more interested in these issues," explains Sylvain Lambert, partner responsible for sustainable development at PwC. "Initially, in 1993, there were two of us for the entire audit firm. Now, there are 40 of us in France and 800 worldwide, spread across 65 countries," he explains. "What is also striking is the growing interest since 2010 of private equity in companies with eco-compatible growth. In fifteen years, luxury has measured the potentially negative effects of not taking these issues into account, which can ruin a brand's image. But there is also a concrete fact: the deadline is approaching. When, at the Earth Summit in Rio in 1992, there was talk of the depletion of mining or agricultural resources on which this industry depends, the prospect of 2030 or 2050 seemed very real." distant... For these luxury houses that are still part of the heritage, the idea of sustainability and the notion of passing on the business are crucial, so they have anticipated. Fortunately, because 2030 is tomorrow... " When presenting its sustainable development strategy on January 25, Kering set itself goals for 2025, including creating a sustainable development index for its suppliers. Its educational efforts are real. The latest tool developed as a white label and free of charge: the My EP & L application, for "My Environmental Profit & Loss", launched at the end of 2016. Obviously, it's not Candy Crush and it's aimed more at fashion school students than at consumers. But it allows you to visualize in four simple steps the environmental impact of a product, from the raw materials it's made of to its finish. For a wool jacket (New Zealand), organic cotton lining (Turkey), thermoplastic buttons (China), made in Europe, the impact is estimated at 13 euros. Thus informed, a budding stylist will be able to choose the least harmful option for the planet in a few seconds. Gadget? Not so sure... "It is important that what we do is open source, because we will not achieve anything alone and without convincing each of the players in the sector, throughout the chain", argues Marie-Claire Daveu. On January 30 in Paris, nineteen international banks and investors presented their "Principles for positive impact financing", a sort of charter for achieving the Sustainable Development Goals (SDGs) set by the UN. Their idea is that we must set up transparent evaluation processes and methodologies while trying to fill the current gaps in sustainable development financing. Transparency, a complex criterionMeeting this program which aims to eradicate poverty, fight against climate change and protect the environment, "is expected to cost between 5,000 and 7,000 billion dollars per year by 2030, estimates Eric Usher, director of the UN Environment initiative for collaboration with the financial sector. The "Principles for positive impact financing" will allow us to direct the hundreds of thousands of billions of dollars managed by banks and investors towards clean, low-carbon projects," he rejoices. Transparency is certainly the most complex criterion to integrate for brands in the sector. "Like Monsieur Jourdain with prose, luxury has always been involved in sustainable development without knowing it, says Elisabeth Ponsolle des Portes, general delegate of the Comité Colbert, which brings together 81 brands. The values of sustainable development are inherent to the great French brands: they work by nature to ensure the sustainability of their products, to respect trades, know-how and people, to preserve raw materials..." But saying this is another story. Chanel is thus working to make sustainable development a reality shared by its employees and suppliers, without making it a communication axis. Hermès has appointed a sustainable development director who is keeping a close eye on things, but without departing from the legendary discretion of the brand. Slowly, however, even the most silent, like the Swiss Richemont, are coming out of their reserve, and 2017 should see many brands express themselves on the subject. If speech was restricted until now, it is because in the kingdom of luxury, admitting one's weaknesses remains difficult. "Sustainable development is a long process where perfection is never achieved," explains Barbara Coignet, founder of 1.618, an event and consulting agency focused on sustainable luxury. "Very well-known brands are contacting us to completely review their positioning and join this movement, convinced today of the growth it can generate in the near future." Caroline Rousseau

## ###ARTICLE\_START### ID:2258

This is a rather unusual shopping list, a Prévert-style inventory of some thirty questions asked by the CIA to the NSA. The aim: to mobilize the tools of espionage to find out everything about a major democratic event in French political life. It is also a unique and fascinating document, full of acronyms which, when deciphered, lift part of the veil on the American "intelligence cycle": who asks what, to whom, for whom, and how. It shows that the NSA is primarily responsible for answering the questions asked by its "clients." And that the CIA, not content with requesting the NSA's communications interception capabilities, also asks other Anglo-Saxon intelligence services to answer the questions it asks. While all eyes are now on Russia (to which the United States has attributed the hacking of the Democratic camp's emails published by WikiLeaks), Julian Assange's organization - regularly accused in recent months of playing into the Kremlin's hands - is getting involved in the French campaign. The document, published in partnership with several European media outlets - Libération and Mediapart in France and La Repubblica in Italy - reveals that in 2012, the CIA spied on the presidential election. Contacted through the office of the Minister of the Interior, the General Directorate for Internal Security (DGSI), responsible for counter-espionage, did not want to react to this information. Nor did the General Secretariat for Defense and National Security (SGDSN), which reports to Matignon. In this case, the CIA wanted to obtain in particular any information about the "interactions between Sarkozy and his advisors", the "main sources of financing" of the candidates, or even "any schism or alliance" within the UMP. The document obtained by WikiLeaks is dated November 17, 2011. The Bureau of Analysis on Russia and Europe, one of the thirteen analysis centers of the CIA, justifies its "expression of needs" ("Information Need" in the original version). Having followed the Socialist primary "very closely" and preparing to "observe very closely the French presidential election" of April and May 2012, its analysts explain that they are particularly interested in President Sarkozy, the Socialist Party, as well as the plans and intentions of the other "potential candidates". Considering that "the Union for a Popular Movement (UMP), the party in power, is not certain to win the presidential election", the CIA analysts asked the NSA for "essential information" and "additional information" on the electoral strategy of the PS, the FN, the UMP, "Dominique Strauss-Kahn (DSK)", Nicolas Sarkozy, Martine Aubry, François Hollande and Marine Le Pen. Objective: to allow its analysts "to assess the post-election French political landscape and the potential impact on US-France relations, and for the main American decision-makers to prepare for it" (see document 1). Dissemination The recipients of this information were three in number: the Bureau of Research and Intelligence of the State Department (equivalent to our Ministry of Foreign Affairs), the European section of the Defense Intelligence Agency (DIA, the main American military intelligence service) and, of course, the CIA. The classification "SECRET/NOFORN" (for "No Foreign National") of the document indicates that its dissemination is prohibited to non-American citizens, on the grounds, written in black and white on the first page of the document, that these are "friends-on-friends sensitivities": that is, sensitive, not to say hostile, activities towards a "friend", the disclosure of which could cause "serious damage" to the national security of the United States. However, the CIA does specify that "additional versions" of its list of questions were transmitted to human intelligence (HUMINT) officers - on the ground - of the Australian, British, Canadian and New Zealand services with whom, within the Five Eyes alliance, the United States shares surveillance and interception of telecommunications. The document also specifies that "alternative versions" were transmitted to the CIA's OpenSource Center (OSC), dedicated to "open source" intelligence, that is to say responsible for collecting information accessible on the Internet, in the press and in public databases. The CIA analysts requested information "on Sarkozy's or other senior government officials' thoughts about candidates in the 2012 election," or "discussions indicating Sarkozy's level of confidence in his ability to win the election" (see document 2). Other questions are so open-ended that one is left to speculate, such as the request for information on "attempts to provide advice or direction to parties or individuals regarding support activities or initiatives." The question of "how Sarkozy and his advisers interact" opens up a world of mystery: was it a question of identifying the phone numbers and email addresses of his advisers, so that they could then spy on them, or of identifying key advisers, those with whom he communicated the most? The questions asked about the UMP (see document 3) show that the CIA analysts were counting on a risk, if not of a break-up, at least of divisions within the party that was then in the majority. And that the answers to these questions could not be found in the press or the media, but by listening to the private conversations of the UMP leaders. The NSA was in fact responsible for reporting to the CIA "any discussion" by leaders or members of the party on "the possible difficulties in maintaining power after the 2012 presidential election", and in particular "discussions concerning perceived weaknesses or efforts to develop or change the ideological line of the party". Even more clearly, the CIA asked to be informed of "any schism or alliance developing within the UMP elite and their reasons", as well as the "opinions of members and leaders of the UMP on President Sarkozy". Big Ears The CIA's questions on the "strategic electoral plan of opposition political parties and candidates" (see document 4) are more numerous, and grouped under five major themes. First and foremost, the CIA asked the NSA to report information on "emerging party leaders, new political parties or movements, and emerging presidential candidates." And in particular on possible support from political or economic elites, "views and opinions on the United States," but also "attempts to reach leaders of other countries," including Germany, the United Kingdom, Libya, Israel, Palestine, Syria, and the Ivory Coast (probably because of the civil war that was dividing the country at the time). The CIA then asked to know the sources of funding for the parties and candidates, as well as the "vision of the French economy" held by the latter. Also on the menu, what the candidates thought about the Eurozone crisis, in particular "the role of France and Germany" in the management of the Greek crisis and the "vulnerability of French banks" in the event of a default by Athens. Finally, the CIA analysts concluded their Prévert-style inventory with a very open: "Please report any specific proposals or recommendations aimed at helping to resolve the Eurozone crisis." These three lists of questions are systematically followed by the mention "SIGINT sub-discipline(s): COMINT", indicating that the CIA was indeed looking for answers to these questions thanks to the "big ears" of the NSA: the interception of telecommunications ("Communications Intelligence") is in fact one of the components of electromagnetic intelligence ("Signals Intelligence", or SIGINT), which Edward Snowden helped to popularize. The document also states that the data collection was authorized from November 21, 2011 to July 31, 2012 (two and a half months after the presidential election), and that it was to expire on September 29 of that year. He also specifies that she was referring to another "expression of need" dating from 2005, without it being known whether, at the time, it also related to the 2007 presidential election, but which could also explain why the communications of Jacques Chirac, Nicolas Sarkozy and then François Hollande had been able to be spied on since 2006, as Libération had already revealed with WikiLeaks in 2015. The 2008-2013 strategic mission plan for electronic surveillance, revealed by Edward Snowden to the Guardian and the New York Times, also reveals that the expression "Band A", attached to these lists of questions, means that the information requested relates to "strategic" subjects which could "potentially seriously harm the United States or its interests". Aware that not all intelligence is necessarily intended to be collected through the interception of communications, the services are also invited to qualify whether the use of this type of means would be "additional, substantial, key, or extraordinary." In this case, the document obtained by WikiLeaks specifies that such a contribution would be "key." And the "national priority" box is also checked. A directive from the NSA's Directorate of Signals Intelligence specifies that "if the SIGINT priority is low, [...] the system may not have the necessary resources" to respond. Here, the priority is 9, the lowest level assignable, according to another Snowden document obtained by Spiegel. Mexican Army The request was nonetheless properly validated by two different organizations: the CIA's Office of Collection and Analysis Strategies, on the one hand, and the NSA's SIGINT Analysis and Production Subcommittee, on the other. The latter is responsible for evaluating and validating requests for signals intelligence. He chairs the Electronic Surveillance Needs Evaluation and Validation Subcommittee, which itself reports to the NSA's National Signals Intelligence Committee (SIGCOM). Composed of representatives from across the U.S. intelligence community, SIGCOM is responsible for validating requests for foreign surveillance expressed by the NSA's various "clients." This Mexican army of subcommittees may seem laughable, but it also and above all bears witness to the bureaucracy and the chain of control and command that govern the NSA's operations, and which this document is the first, to our knowledge, to document in such detail. Which is also what makes it so valuable, beyond the revelation that the CIA had asked the NSA to spy on the 2012 presidential election. It confirms the comments made by Robert S. Litt, legal advisor to the Office of the Director of National Intelligence, following the Snowden revelations. Responsible for ensuring that intelligence services comply with the Constitution and American laws, Litt explained in February 2015 that "neither the NSA nor any other intelligence service decides on its own what it collects." He explained that SIGCOM must not only ensure that requests fall within the framework of the priorities established by the President of the United States for the collection of information abroad and formalized in a framework document by the Director of National Intelligence, but also assign them an order of importance. The document obtained by WikiLeaks does not explain why the CIA's questions, described as "strategic," "national priorities," and "key contributions," were only given the lowest "SIGINT priority." It nevertheless attests that the NSA had been ordered to intercept telecommunications in order to respond to them. The document also indicates that the CIA's shopping list was part of its "Democratization and Political Stability" program. By early April 2013, when the CIA's request had expired, this program was no longer among the priorities of American foreign intelligence for France, unlike questions relating to its "economic and financial stability," its "emerging and disruptive technologies," or its "foreign policy objectives," for example. Coincidence? On April 12 of that year, Bernard Barbier (who was then the technical director of the DGSE, the French foreign intelligence service) and Patrick Pailloux (then director of the National Agency for the Security of Information Systems) were sent on a mission to the NSA, as revealed by Le Monde, after discovering that between the two rounds of the 2012 presidential election, the NSA had attempted to hack the Élysée. Bernard Barbier has since explained that François Hollande had asked them to go and "tell off" the NSA: "At the end of the meeting, Keith Alexander [director of the NSA, editor's note] was not happy. While we were on the bus, he told me that he was disappointed because he thought that they would never be detected, and he added: "You are still good." The great allies, we did not snoop on them. The fact that the Americans broke this rule, it was a shock." The document does not specify whether the attempted hacking of the Elysée Palace could have been part of the espionage campaign initiated by the NSA at the request of the CIA during the 2012 presidential election. But the last line indicates that this shopping list had indeed been transmitted to the NSA's S1111 unit, in charge of "customer relations."

## ###ARTICLE\_START### ID:2259

He wants to make it one of the "new frontiers of humanity", alongside land, sea and space. Jean-Luc Mélenchon focused on the chapter of his program devoted to the "digital world", Sunday February 5 in Lyon. "The digital continent must be returned to the people", declared the candidate of the La France insoumise movement at the podium. A theme structured according to two axes, explains Manuel Bompard, his campaign director. "Our program takes into account the opportunities opened by this field, while ensuring that the threats they can generate do not take precedence over the rest", he indicates. Among the measures that the MEP is proposing and that he listed in Lyon, we find the protection of personal data, support for the creation of video games, the abolition of the Hadopi law and the reform of copyright, the defense of Net neutrality, the promotion of free software, the termination of contracts between Microsoft and national education and the army, the fight against tax optimization practiced by web giants... Campaign tool A list that would not look out of place on the websites of associations defending digital freedoms, with which Jean-Luc Mélenchon's team also discussed in the development phase of its program. Frédéric Couchet, general delegate of April, which defends free software, was not surprised to find proposals long defended by his association in the program of the former socialist: "In his entourage, there are several people who are very active on these subjects, like Martine Billard [former co-president of the Left Party]. It's not a big surprise to us that they are campaigning on these issues." Mr. Mélenchon has also made digital a formidable campaign tool. His YouTube channel continues to be a hit - 210,000 people are subscribed to it -, more than 243,500 Internet users have "supported" his candidacy on his campaign site (all you have to do is give your contact details), his Facebook page has around 646,000 subscribers and his Twitter account has nearly a million followers. The hologram, which allowed him to hold a double rally in Lyon and Aubervilliers (Seine-Saint-Denis), was part of this same strategy. "The idea is to show what human intelligence can do," Mr. Bompard emphasizes. All this is done in the service of the political fund." Which does not prevent a few missteps: several Internet users have notably pointed out that the broadcast device for his rally used a computer running Windows, Microsoft's well-known operating system, rather than a free alternative. In 2012, Mr. Mélenchon's team had already responded to the long questionnaire sent by April to all candidates, and defended positions that were very compatible with those of the defenders of digital freedoms. While he has not changed his mind on the substance, Mr. Mélenchon had, however, put less emphasis on these themes during his previous presidential campaign. "We have always said that we deliberately wanted to address themes that showed a transversality and that are not necessarily addressed on the left, which is more traditionally focused on the social question," explained Mr. Bompard. No electoralist aim "These questions will occupy the entire century. They are decisive questions for your jobs, your life, your way of looking at your neighbors," judged Mr. Mélenchon during his Lyon meeting. A vision shared by the Europe Ecologie-Les Verts candidate, Yannick Jadot, and that of the citizen primary, Charlotte Marchandise, notes Frédéric Couchet, and at the other end of the political spectrum by Nicolas Dupont-Aignan, but on which the other candidates have not yet positioned themselves much. There remains one area on which Mr. Mélenchon is campaigning much more than his competitors: video games, discussed at length during his Lyon meeting as "a new world", a "total experience", "a therapeutic experience"... And a sector in which France is at the forefront. On January 27, on the sidelines of a trip to the Angoulême comic strip festival, the candidate made a detour via the National School of Games and Interactive Digital Media. Where the outgoing majority was banking mainly on tax credits to support this sector, the candidate of the left of the left is instead planning the creation of a national video game center, to support French creation, and "which would be financed by a contribution on the purchase of consoles, computers and games", specifies Enora Naour, one of the coordinators of the "digital booklet" of the program. It is above all Mr. Mélenchon's choice of words to evoke video games during his meeting that attracted many messages of sympathy on social networks. "Playing is not wasting your time, playing can be an opportunity to be bigger afterwards", he explained. Even if the candidate intends to address those who are distant, or even disgusted by politics, Mr. Bompard refutes any electoralist aim which would consist of seeking the vote of the youngest, particularly receptive to these subjects. "It's not a gimmick, affirms this close friend of Mr. Mélenchon. It allows us to show a collective challenge and to be part of the objective of giving the country some oxygen. It contrasts with the ambient discourse on withdrawal into oneself."

## ###ARTICLE\_START### ID:2260

On January 17, having just been nominated as a candidate for Attorney General by Donald Trump, Jeff Sessions defended the idea that "national security and criminal investigators" must be able to "overcome the encryption" of security that prohibits access to the contents of cell phones. Companies in the sector will have to cooperate with the FBI to "crack" it. On January 24, Nate Cardozo, the lawyer for the Electronic Frontier Foundation (EFF), a leading NGO in the field of digital freedoms, responded to him: if Mr. Sessions persists, he will soon "see him in court" to remind him of everyone's rights to secrecy and "privacy. There is no doubt: the crypto war, this legal and political battle that opposed the American government and the defenders of the democratization of cryptography in the 1990s, is well on its way to rebounding under Donald Trump. Let us recall what cryptography consists of - from the Greek kruptos: "secret." This involves, among other things, "encrypting" a message, making it incomprehensible using a scrambling technique: for example, for a letter, by substituting alphabetical letters for others according to a grid, or by shifting letters with a secret number. "These methods," recalls François-Bernard Huyghe, researcher at the Institute of International and Strategic Relations and co-author of a History of Secrets (Hazan, 2000), "are as old as diplomacy and military secrecy. The Spartan armies used them, as did Julius Caesar, and Louis XI, who taught his son: "He who does not know how to dissimulate does not know how to reign." With the internationalization of electronic communications, widespread computerization and the arrival of the Internet, encryption has become a science in its own right. High-tech companies use it to protect cell phones and messaging, financial institutions to secure fund transfers, and citizens to preserve their data. And dissidents, cybercriminals, mobsters and terrorists to hide their activities... It is in this context that the confrontation between the EFF and Jeff Sessions must be read. It follows the legal battle that opposed the American government and Apple last year. On February 16, 2016, at the request of the FBI, a Californian judge ordered the company to force the security device of the iPhone 5C of one of the terrorists of the attack of December 2, 2015 in San Bernardino (California), which left 14 dead. The FBI wants to track down the terrorist. Discover his possible accomplices. Despite the seriousness of the situation, on February 17, Tim Cook, the CEO of Apple, sent an open letter to his customers in which he explained why he refused to comply. He wrote: "We mourn the dead and want justice," "our engineers" helped the investigation as much as they could, but Apple refused to give in to an "unprecedented" demand. For Mr. Cook, the FBI wants to obtain from his services a trade secret, a software capable of "bypassing several security functions" which, if created, would allow in the future "to unlock any iPhone" - such a tool, protests Apple, would pose a "threat to the privacy" of all iPhone users. James Comey, the director of the FBI, responds that, while he recognizes that there is a "serious tension between two values that we all revere, privacy and public safety," the security requirement must prevail. This is an "exceptional" case. Especially, adds Comey, since it is a question of cracking the encryption of a single phone, not all of them. David O'Brien, a respected researcher at the Berkman Center at Harvard Law School, then defended a similar position in the press: "This is a case of domestic terrorism, which has resulted in more deaths than any other case since 9/11. All the emotion it has aroused justifies the government's argument that an exception must be made." Bill Gates, the founder of Microsoft, concurred a few days later: "They are not asking for general access, but for help on a specific case (...) It is the same issues as the right to request information from a telecom operator, or credit card statements." The Paris prosecutor, François Molins, the Manhattan prosecutor and the Spanish High Court prosecutor agree with the FBI. They had already made similar arguments in an August 2015 column in the New York Times, "When Encryption Blocks Justice." They recalled that access to "smartphone data was essential to the rapid investigation after the Charlie Hebdo terrorist attacks," and that justice can require forcing secrets: "In the United States, the United Kingdom, France, Spain and other democratic societies, the legal system gives law enforcement agencies access to private places where criminals hide evidence, including their homes, car trunks, storage facilities, computers and digital networks." For the three prosecutors, new encryption techniques for cell phones and emails make these legal actions difficult, which is contrary to the law: "On behalf of victims of crime around the world, we question whether encryption is really worth the cost." Neither the judge nor the FBI made Apple bend. Supported by the big bosses of high-tech companies (Google, Mozilla, WhatsApp, etc.), the company presented a 65-page brief on February 25, 2016, supported by two lawyers determined to appeal to the Supreme Court for unconstitutionality. For them, in this case, the future of free cryptography and the right to privacy is at stake. First, these lawyers argue, complying with the FBI's demands would force Apple to create "a hacking department at the service of government requirements," which would discredit the company in the eyes of its customers, to whom it must guarantee the protection of their privacy. This obligation to comply would create a historical precedent, a case law: "If Apple can be forced to write a program to bypass security devices," they ask, "what could prevent the government from asking it to write a program to activate the microphone or camera in order to help the government surreptitiously monitor and record conversations?" » Then, for Apple, the FBI's proposal to make "an exception" for the terrorist's iPhone alone is unacceptable and misleading. How can we be sure that in the future the FBI will not use the software that disables the protections of a cell phone to open them all? This would put public freedoms at risk in the name of a security request concerning a single person. But it would also be dangerous for "the security of all cell phones," warns Apple. Cryptography experts approve: the decryption software is likely to be quickly "hacked. Because, in our digital world, it is common for these programs to be hacked by Internet criminals. Ultimately, Apple summarizes, this would result in "weakening the protection" of all cell phones against cybercrime. Everyone's privacy would be undermined. "The Founding Fathers would be distressed," say the lawyers in their conclusions. As we can see, the positions are irreconcilable. To better understand the political and societal stakes of this confrontation, we must go back to the first crypto war. In the late 1980s, the NSA, the national security agency, which had control over research conducted on cryptography, designed a security chip - the clipper chip - which it wanted to install in certain consumer telephones to secure transmissions. When, in 1993, Clinton's team proposed it as a standard, manufacturers and the EFF were firmly opposed: they believed that with the clipper chip, whose encryption algorithm had been kept secret by the NSA, the government was opening a "back door" giving it access to all content. This would be an attack on freedoms. The project was abandoned. In 1993, the crypto war rebounded with the arrival on the scene of the American engineer and activist Philip Zimmermann. He made available to the public, in open source, a robust email encryption technology, Pretty Good Privacy (PGP). He was then accused by US Customs of violating legal restrictions on cryptography. Three years of criminal investigation later, he was acquitted. In 1996, PGP was adopted by many companies and individual users. For Philip Zimmermann, this democratization of secrecy is a fundamental right: "There is nothing wrong with defending your privacy. Privacy is as important as the Constitution." To the argument that an honest citizen has nothing to hide, he responds: "If you are really above suspicion, why don't you always send your paper correspondence on postcards? Why do you require a search warrant to let the police search your house?" Philip Zimmermann believes that it is politically dangerous to allow the state and the police to possess sophisticated surveillance technologies, without providing citizens with the means to protect their secrets, even if a few use them dishonestly. In June 2013, Edward Snowden resoundingly proved him right: he revealed how, under the legal pretext of the fight against terrorism, the NSA programs had illegally developed global surveillance of the Internet, spying on intercontinental telecommunications cables and global telephone tapping. These disclosures, explains Bernard Benhamou, who teaches Internet governance at the University of Paris-I, precipitated the rupture between defenders of freedoms, the high-tech industry and the American state: "The discovery of the extent of the data collected by the NSA from Internet giants was an earthquake for public opinion and technology players. These revelations created the conditions for a schism between industrialists and the American government," he wrote in 2014 in the journal Politique étrangère. Today, the citizen response to this mass spying is, for Edward Snowden and Philip Zimmermann, mainstream cryptography, that is to say the creation of an online space protected from all incursions, the "cipherspace". For them, as for the industrialists in the sector and the NGOs defending privacy, it is necessary to take the risk of the freedom to encrypt all communications, even if some divert them for criminal purposes. This protection is all the more necessary because it allows not only to free oneself from the security incursions of States, but also from cybercriminals of all kinds. In France, its supporters have found institutional allies. On April 7, 2016, Isabelle Falque-Pierrotin, the president of the National Commission for Information Technology and Civil Liberties (CNIL), published her annual report. In the prologue, we read this defense of encryption: "In a context of increasing digitalization of our societies and exponential growth of cyber threats, encryption is a vital element of our security. It contributes to the robustness of our digital economy" and allows us to "protect people and their privacy. Democratic requirements In March 2016, Guillaume Poupard, the director of the National Agency for the Security of Information Systems, linked to the government, sent a letter to several ministers to warn them against any desire to impose "back doors" in encryption software. These methods "would have the disastrous effect of imposing on designers of security products and services a weakening of cryptographic mechanisms (...) [Such] generalized weakening would be detrimental to digital security and the freedoms of the vast majority of users who respect the rules, while quickly becoming ineffective against the targeted minority. The European Data Protection Supervisor, Giovanni Buttarelli, defends in a July 2016 opinion the use of "end-to-end" encryption - that of the WhatsApp application, where only the people communicating can read the messages. A very robust technology, which is also used by the Telegram application, where 12 billion messages circulate per day, some of which are encrypted. We know that many jihadists use it for their secret discussions. Pressed for questions about these practices, its creator, the Russian Pavel Durov, defended himself on the TechCrunch site. While he says he regularly deletes subscriber channels (unencrypted) on Telegram where jihadists broadcast their messages, he intends to continue to protect "all private conversations" (encrypted), which are "sacred" for him: "I think that privacy and our right to privacy are more important than our fear of ongoing bad actions, such as terrorism," he explained in September 2015. For him, as for Snowden, "his personal hero," terrorism must not distract us from our democratic demands, otherwise it would have won: our fears and our security practices would have prevailed over our freedoms.

## ###ARTICLE\_START### ID:2261

You may not have heard of diabetic retinopathy, but it is one of the fastest growing causes of blindness in the world today. It poses a risk to the 415 million people with diabetes worldwide, or about 5% of the world’s population. The disease occurs when blood sugar levels are too high and eventually damage the blood vessels in the retina. And the worst part is that the disease is preventable with early detection. With so many people at risk, there simply aren’t enough eye doctors in the world to diagnose the disease, especially in developing countries. A few years ago, however, a team at Google put the latest deep learning techniques to the test to see if they could detect diabetic retinopathy. The results, published in November 2016, were exciting. Deep learning algorithms are able to identify diseases as effectively as doctors in the field. It is only a small step from there to imagining that we could thus give every smartphone user the ability to diagnose this disease. The British writer Arthur C. Clarke (1917-2008) once said: “Any sufficiently advanced technology is indistinguishable from magic.” This technology is about to take us into a magical universe, where humans will be able to take advantage of machine learning to prevent blindness, translate a statement and even save endangered species. And we are only at the beginning of the adventure. Just as the Internet and then smartphones have transformed our daily lives in recent decades, machine learning is about to redefine the way we interact with technology and the world around us. Silicon Valley companies are sometimes criticized for claiming to want to make our planet a better place, while only proposing incremental changes. In reality, technology can only help solve the problems it is applied to. It is up to future innovators to decide whether algorithms should be used to reduce energy waste or for other, more trivial purposes. And it is up to all of us in high-tech industries to harness technological advances and machine learning to solve the challenges that deserve our greatest attention. Optimistic Vision It is essential to provide technology that is for everyone, not just the richest, the most powerful, or those in our immediate circle. That is why it is important to democratize the tools we develop, so that those who live in Silicon Valley are not the only ones to benefit from the most powerful technologies in the world, whether it is search, satellite mapping, or an intelligent personal assistant available in multiple languages. At Google, we have chosen to open source our machine learning algorithms. Whether you’re a student in India, a scientist in North Carolina, or a farmer in Japan, you can harness the latest technological innovations to solve a wide range of problems. Despite this optimistic outlook, some have expressed legitimate concerns that these technological advances could reinforce inequality. Indeed, with some countries only just returning to their pre-crisis economic levels, the prospect of further job losses is worrisome. But there’s no reason to believe that advances in machine learning will inevitably lead to higher unemployment. Rather, history suggests that technological advances lead to greater prosperity, with more jobs, safer workplaces, and higher living standards. That’s what happened during the Industrial Revolution, when societies shifted from agrarian to industrial societies. And that process is still ongoing in developing countries. This is also what happened in the United States and Europe during the post-war years, when refrigerators, automatic telephone switches and air travel revolutionized our economies and greatly improved our daily lives. And although this profound transformation led to the gradual disappearance of certain professions, such as milkmen, switchboard operators and ocean liner crews, job creation actually accelerated during this period. digital education We can nevertheless act to best prepare our societies for these technological changes, and ensure that they are not destabilized by them. This involves in particular digital education and assistance with professional retraining. With this in mind, Google has trained more than 95,000 professionals from VSEs and SMEs in France free of charge since 2012 through our Google for Pros program, and more than 8,200 young graduates through our Digital Active initiative, which offers certification in digital skills. In the UK, Google has committed millions of pounds to provide every resident with five hours of free digital training this year. And since 2011, we have built six campuses around the world, all with the sole aim of providing a place for local innovators to meet, exchange ideas and create the jobs of the future. To prevent technological progress from deepening inequality, all governments and businesses should strengthen social protections and extend benefits (equal pay, parental leave). We are fortunate to live in an age where technology has the potential to radically improve the way we work, learn and live. It can make us smarter, happier and healthier. But it is up to all of us – tech companies, governments, businesses and civil society – to work together to create the conditions in which innovation flourishes. Only then will we enjoy the progress our societies deserve and demand. Only then will we see the magic.

## ###ARTICLE\_START### ID:2262

The presidential campaign has seen the emergence of a number of proposals aimed at promoting digital participation by citizens. "Citizen amendment" and "citizen 49-3" (Hamon), "citizen digital consultation" (Fillon): almost every candidate has their own idea. This development is a continuation of the experiences of citizen participation via the Internet, embodied in France by the consultation of Internet users as part of the adoption of the law for the Digital Republic in 2016. But these provisions are marginal institutional adjustments, while the political and economic situation justifies a genuine democratic overhaul through digital technology. There is indeed an urgent need. The proliferation of political scandals, of which the Fillon affair is only the umpteenth avatar, reveals the extent to which our representative institutions are weakened. Far removed from the lives of citizens, they do not leave them the decision-making space to which they aspire. Worse, they seem ill-suited to the realities of digital life, characterized by a dazzling evolution of technologies and a near-instantaneous nature of issues. The void of citizen representation on the Internet is abysmal and, above all, is the breeding ground for an implicit and pernicious process of delegation of national sovereignty to private interests... most often foreign. This void is used by global Internet operators to compete with democratic sovereignty, when it is not a question of completely freeing themselves from it. They establish rules on our digital territory, sometimes in violation of laws in force in the real sphere. This is particularly true in the area of data confidentiality, where national and European legislative provisions seem to be an outdated fiction. In the tax area as well, public authorities seem incapable of enforcing the law and subjecting Internet giants to tax on their profits. rebalancing the forces The void of digital democracy also affects the relationships between citizens and the administration. The law on intelligence has, for example, established an almost unlimited surveillance power for the police, with practically no direct or indirect control of citizens. Parliament ensures distant and superficial supervision of digital administrations (CNIL, Anssi, Arcep, etc.), which are nevertheless essential to safeguarding our fundamental rights. We, the signatories of this platform, call for the establishment of an Internet democracy by the Internet and for the free Internet. Coming from the right and the left, we have set up a think tank, Le Jour d'après, whose project is to support a rapid implementation of structural reforms during the next five-year term. We are asking for the establishment of a "Parliament of Internet users", stemming from the National Digital Council, which organizes citizen participation in public decision-making. It will have to have real skills to regulate online content, coordinate digital policies, and ensure citizen control of Internet surveillance. It will form the political basis necessary for the establishment of a strong digital industry, around a generalization of free software. We hope that these elections will be the occasion for a real democratic reconstruction, allowing the rebalancing of the forces present on the Internet for the benefit of citizens and the law. So that the digital transformation is not only an economic change, but also a factor of social progress.

## ###ARTICLE\_START### ID:2263

Every year, several thousand programmers meet in Brussels for the European Meeting of Free and Open Source Software Developers (Fosdem, in English, see also Libération of February 7). Not always well known to the public, open source software runs web servers, databases, cryptography systems, and even Android, Google's smartphone operating system, on a daily basis. Photo report from this great gathering of code tinkerers. Photo Sébastien Van Malleghem

## ###ARTICLE\_START### ID:2264

INTERNET Mozilla is changing course. The designer of the Firefox Internet browser is completely abandoning its mobile operating system, Firefox OS. The initiative was stopped last year for smartphones, but should have been extended to connected objects. This will not happen. Mozilla announced on February 2 that the team dedicated to its development would be disbanded. Around fifty layoffs are planned, including that of Ari Jaaski, the vice-president in charge of the connected devices division, and Bertrand Neveux, head of software based in San Francisco. In total, the foundation employs a thousand people worldwide. A pioneer in online browsing, Mozilla launched Firefox in 2002, to counter Microsoft's Internet Explorer. Promising, the program has built up a certain notoriety among supporters of free software and defenders of online freedoms, but has been supplanted by Google Chrome, launched in 2008. The foundation has since tried to diversify and invest in mobile, a growing source of Internet access. Without real success. "Mozilla was slow to take an interest in mobile," admits an American developer from the foundation to Le Figaro. "Google and its Android operating system had already invested in the market, and at a lower cost." Mozilla thus remains to this day the great absentee from the market for smartphones, tablets and connected objects. In January, Firefox's market share on computers was 14.9%, notes StatCounter. By integrating all terminals connected to the Internet, it fell to 6.8% Limited resources The early abandonment of Firefox OS does not signal the end of Mozilla's ambitions on connected objects. The foundation pursues research and development initiatives in line with its values - openness, protection and security of Internet users - and is currently working on several projects to maintain its presence in the sector. Among them, Vanni, a voice recognition interface for the connected home, a Smart TV initiative in partnership with Panasonic and Sensorweb, a home automation project. Mozilla will have to deal with limited resources compared to its competitors. Most of its revenue comes from royalties paid by major search engines after each use on Firefox. Google, Yahoo! as well as the Russian Yantex and the Chinese Baidu are currently among the partner engines of the browser with the fiery fox. The amount of these payments amounted to $421 million last year. "Mozilla's problem is trying to innovate "like the big guys", with passion, certainly, but without having comparable resources, whether financial or human," analyzes one of its senior developers. Hence a lack of involvement in certain projects and the sometimes hasty abandonment of promising initiatives. In 2016, Firefox notably put aside its "Boot to Geeko" initiative, an open-source operating system. To survive the competition imposed by other major players on the Web, Mozilla could refocus on its flagship service, whose market share is nevertheless gradually declining. The integration of Servo, an ultra-fast engine, into Firefox is expected to give it a boost and significantly accelerate browsing speed. Mozilla engineers have been working on this project for five years, in partnership with Samsung. The publisher's ability to develop its presence in new markets seems well and truly compromised. The mobile and connected objects market remains relatively open to challengers, faced with heavyweight competitors such as Google and Apple.

## ###ARTICLE\_START### ID:2265

This Saturday, the Solbosch campus is packed, but it is not the students who are moving from one room to another, shouting at each other in the corridors or crowding into the cafeteria. For a weekend, the Université libre de Bruxelles (ULB) is transformed into a hub for so-called "free" software: software that anyone can legally use, copy, modify and share, particularly because its source code is freely accessible. Since the morning, several thousand programmers have gathered here - from Belgium, France, Germany, Italy, Switzerland, Albania, the United States... As it has every year for the past seventeen years, the ULB is hosting the Free and OpenSource Developers' European Meeting (Fosdem), the European meeting of free and opensource software developers. The poster promises the presence of "more than 8,000 hackers", in the literal sense of the term, that of "tinkerers" of computer code. From one building to another, we come across contributors to Tails, an operating system designed for anonymity and confidentiality of communications and data, as well as a stand of the "Google Summer of Code", the program of the Mountain View giant that finances each summer the development of free software by students. "More women" At Fosdem, anyone can come, free of charge and without registration. "That's what makes the spirit of the event", smiles the Belgian Gerry Demaret, one of the organizers. With a budget of less than 100,000 euros, supplemented by a dozen sponsors and donations from individuals, the gathering operates mainly on elbow grease, the self-organization of the participants and the energy of a few dozen volunteers. The very first edition brought together between 100 and 200 people. Since then, Fosdem has grown and its sociology has evolved. "At the beginning, it was a very male audience, between 20 and 30 years old," remembers Demaret, who is in his twelfth edition. Today it is spread across all ages and there are more women." Logic: since the beginning of the movement, initiated by the American Richard Stallman in the mid-80s, "free" has continued to gain ground. The general public, who still overwhelmingly use Windows and Mac OS, the so-called "proprietary" operating systems from Microsoft and Apple, are rarely aware of it and most often only know a few examples of free software: the Firefox browser, the VLC video player, the LibreOffice office suite, etc. However, open software runs web servers, databases, cryptography systems, and even Android, Google's smartphone operating system, on a daily basis. Created in 1991 by the Finn Linus Torvalds, the Linux "kernel" (the heart of an operating system) has become very widespread. "The on-board computer in BMW cars runs on it," recalls the German Georg Greve, CEO of Kolab Systems, an online tools platform (emails, calendar, file sharing, etc.) which equips the city of Munich in particular, and develops only free software. "Four or five years ago, we started to see people arriving at Fosdem who came from the United States," recalls the Italian Stefano Zacchiroli, lecturer at Paris-VII and a long-time regular at this great European mass of "free software" advocates. Because even the giants of IT and digital have understood the interest of open and collaborative development. It seems a long time ago that Microsoft's bigwigs saw supporters of intellectual property reform as "communists of a new kind" and free software as a "cancer"... Common goods The Redmond behemoth is now a major contributor to the GitHub code-sharing platform. "The least expensive way to produce is to share," says Mirko Boehm, the boss of Endocode, an IT service provider based in Berlin. Companies see the benefit of pooling efforts on "non-differentiating" aspects, those where there is no competition. It is also a good way to identify and attract talent in the sector. "Developing free technologies helps recruit good engineers," summarizes Zacchiroli. In November, Microsoft even joined the ranks of the Linux Foundation, the non-profit consortium that finances the development of the kernel of the same name, and which also includes Fujitsu, IBM, Intel, Samsung and Twitter. But for Stefano Zacchiroli, if free software has become "essential" on the technological level, the rest has not necessarily followed. "Linux is increasingly popular, increasingly used, but this is not accompanied by greater freedom for the user," he regrets. This is the paradox of a movement that has continued to gain ground at all levels except at the end of the chain, in our daily interactions with our computers and smartphones. At the end of the 90s, the "free software" community was torn between the supporters of the term "free software", who insisted on the freedoms guaranteed to users, and those of open source, who emphasized the efficiency induced by the opening of the code. However, while the giants of the sector have understood the profit they could make from "digital commons" built by communities of developers, they have not changed the core of their business models. Open "bricks" do not make a freely accessible house plan: Windows is still locked, and Android is only partially transparent. "Google has changed its approach," Georg Greve says. "They have gone from the position of outsider who opens up as much as possible to that of dominant player who tries to close it." Over the years, however, free software has generated economic models. We don't sell the code, since it is available to everyone, but what is around it: turnkey solutions for companies, such as the American Red Hat, service, maintenance, etc. In France, according to a study by the Pierre Audoin Conseil firm, the sector generated an annual turnover of more than 4 billion euros in November 2015, and could represent 13% of the software and services market in 2020, compared to 5% in 2012. "Loss of privacy" Could the dynamics accelerate? German Frank Karlitschek is convinced. Nine months ago, he launched Nextcloud, a completely free file hosting solution "similar to Dropbox and Google Drive". The company now has 25 employees, plus a hundred volunteer contributors and works with ministries. In fact, the context is rather promising. Following Edward Snowden's revelations about NSA surveillance, and while remote data storage - cloud computing - continues to grow, free software players, mostly small and medium-sized businesses, are asserting their status as a local alternative to the influence of American Internet giants. "People understand that we can no longer not worry about where data is stored," notes Karlitschek. And the transparency of the code is an additional argument. In France, the debates around the digital law, or the controversies over contracts between Microsoft and public authorities, have demonstrated this: the question of technological sovereignty has become a political issue. However, there is still a long way to go. "European governments should not allow themselves to be locked into the American cloud," complains Georg Greve. There is a lack of political will." But for him, it is also the community of free software developers that must evolve towards "a more professional approach, more user-oriented." "You don't win users by saying "we're the same as Windows, but cheaper," Frank Karlitschek sums up. "The part of the technology that is common goods will continue to grow," judges Mirko Boehm. Free software is always an improvement, except when proprietary software is better than open alternatives, because there is a loss of ergonomics. This is why free and open source have developed in all sectors except office automation. We have not convinced users and for the moment, the problem of loss of privacy does not compensate for this question of ease of use." In any case, at a time of increasingly lively debates on the opacity of the algorithms that surround us, the supporters of open source code have a card to play. In Brussels, for two days, Fosdem was full. People made contacts, exchanged ideas, worked together. And the room dedicated to the presentation of projects aimed at "decentralizing" the network - from associative Internet access providers to boxes allowing you to have your own cloud at home, including new models of social networks - was full all Sunday. In this area, Stefano Zacchiroli acknowledges, we are still at the "prototypes" stage. But the energy and desire are there, and the alternatives that the "free" community is working on undoubtedly echo the aspirations of those who cannot accept seeing the original promises of sharing and emancipation brought by digital technology disappear.

## ###ARTICLE\_START### ID:2266

The advent of the Web in 1993 will have had the same economic and political impact as the advent of the Ford Model T assembly line in 1913. Both will have disrupted industrial economies. But unlike Taylorism, which was the condition for the advent of the "American Way of Life", automation based on algorithms, the "data economy", autonomous objects and the robotic revolution creates very few jobs. The economic and political horizon that predatory companies, of which Uber has become the symbol, are locking in, thus appears hermetically sealed, and this is all the more true since this economy, which is based on automated calculation, tends to form, with platform capitalism, systems closed on themselves, eliminating the diversity that alone could nourish open systems. What the lawyer Antoinette Rouvroy (University of Namur, Belgium) has described as "algorithmic governmentality" thus increases the tendencies towards entropic disorder, the dangers of which were analysed by the American mathematician Norbert Wiener (1894-1964) in 1950 in Cybernetics and Society (1952, reprinted 2014, Seuil). These entropic and short-term tendencies are further aggravated by the fact that they combine with what management researchers Mats Alvesson (University of Lund, Sweden) and André Spicer (Cass Business School, City University of London) have described as managerial "functional stupidity" (management by the absurd in companies). These self-destructive characteristics - which also resulted from the immense crash of 2008, from which no lessons have yet been learned - are literally precipitated by the disruption that seems increasingly inevitably to lead to the ruin of social structures. In such a context, it is impossible for the populations who suffer the consequences of public impotence in the face of this dynamic without drivers - but not without beneficiaries - not to become increasingly hostile to what is nevertheless an irreversible historical evolution, while waiting to become properly "furious". What to do? As at the time of President Roosevelt's "New Deal" (1934), the entire world - and not just North America - is facing a destructive technological and industrial mutation that requires a macroeconomic transformation of very large scale. Getting out of it requires a "new deal" capable of making sustainable an industrial system that has become planetary through digital networks which, in the absence of a major bifurcation, will irreversibly and fatally increase its self-destructive character. process of proletarianizationIndustrial development has led to a massive deterioration in the quality of life in general and in the hope of the survival of the human species, in particular because since the end of the 18th century, the industrial division of labor has led to an immense process of proletarianization that now affects all types of employment, to the point that work has been progressively eliminated by salaried employment. If so many jobs are likely to be replaced by logical or physical automatons, it is because they no longer require any knowledge, that is to say, no longer any capacity for de-automation. Unlike employment thus proletarianized, work is in fact that which produces knowledge - in all its forms: knowing how to live, knowing how to do, conceptualizing... In other words, knowledge is that which is capable of producing bifurcations limiting destructive entropy. Therefore, it is necessary to revalue work in a context of declining employment, which also means that a significant portion of the productivity gains from automation must be redistributed by remunerating work outside employment. This is all the more essential since, without redistribution, the system will generate immense overproduction. These are the findings and fundamental concepts of the "contributory economy", which fundamentally distinguishes work and employment, but without opposing them: there are obviously still jobs that remunerate work - about 50% of current jobs if we are to believe Carl Benedikt Frey and Michael Osborne, at Oxford (The Future of Employment: how susceptible are jobs to computerisation?, 2013) and Andrew McAfee and Erik Brynjolfsson, at MIT (Le Deuxième Age de la machine, éd. Odile Jacob, 2015). This economy is based on a conditional contributory income, inspired both by a system of allocation of resources outside of employment, such as the intermittent workers' system, by the cooperative organization of work that has been deployed for more than thirty years around free software, and by the organization of the "commons" defined by the American economist Elinor Ostrom, as communities of knowledge. A model of income, work and employment that the Plaine Commune urban community intends to experiment with in Seine-Saint-Denis over the next ten years. Conditional as is the intermittent workers' system, the contributory income is complementary to the minimum income of existence, which is on the other hand unconditional. The combination of these two new forms of redistribution, conceived as two aspects of a new macroeconomic reality and a new industrial dynamic, will make contemporary economies sustainable, desirable and capable of regaining the rationality that they now so lack. In doing so, they will regain their credibility with populations that are deeply and dangerously helpless. by Bernard Stiegler

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Rennes, special correspondent - The place looks like a fab lab (contraction of the English fabrication laboratory), one of these collaborative workspaces, equipped with digital tools, which have been spreading in cities and communities for ten years. Except that here 3D printers and computer-controlled machines rub shoulders with a child's wheelchair made from recycled materials. On a table, a "sonar glove", a sort of portable box supposed to detect the presence of obstacles from a distance, is being finalized. In the suburbs of Rennes, the Human Lab opened its doors in November on the initiative of a young man from Rennes who is now one of the four employees. Having had his right hand amputated in 2002 following a work accident, Nicolas Huchet made a name for himself by tinkering with a team of volunteers on a prototype of a robotic hand equipped with sensors that coordinate the movement of the five fingers according to the activity being performed. Do it yourself culture With the Human Lab, he wants to develop the collaborative manufacturing of prostheses and disability aids at low prices. Supported by the Fondation de France, the Google.org foundation, the GMF, the Agefiph and the Brittany region, the initiative complies with the MIT charter and is part of the global movement of makers and the DIY (do it yourself) culture born in the United States in the early 2000s. Able-bodied and disabled people collaborate on five projects ranging from hearing compensation to artistic creation with "Print my leg", a program designed to personalize your prosthesis. The prototypes are made from plans available on the Internet under Creative Commons licenses: everyone can use them on condition that they share in turn the improvements they have made. "We enrich the innovations of others, research progresses faster, we help each other with our neighbor's fingers," summarizes Hugues Aubin, former head of digital technology for the city of Rennes, who joined the Human Lab and campaigns for digital commons. With the development of 3D printing and free software, a network of handi labs is starting to develop in France, particularly in Brittany, a pilot region for collaborative culture. The Kerpape mutualist center (Morbihan), which accommodates 400 disabled people near Lorient, opened its own in February 2016. "Before, we worked to serve the disabled person. The interest of the fab lab is that we help patients and families who wish to do so to make these materials themselves. Things are moving faster and that brings self-esteem," explains Jean-Paul Departe, one of the two engineers, for whom innovation is first and foremost social. By participating in the manufacture of their prosthesis, the disabled person becomes an actor in the care even if, according to the engineer, the role of professionals remains essential. "The occupational therapist knows the pathology and its evolution. He can, for example, advise waiting a little in certain situations before designing an aid, to strengthen the muscles." On a daily basis, Sylvie Petit, a former restaurateur in Royan who had her right hand amputated after being knocked down by a truck, uses a prosthesis reimbursed by Social Security, a clamp "effective but limited compared to high-tech prostheses which are not covered", she explains. With a team of volunteers from CréaLAB, the fab lab in Angoulême, she designed the prototype of a hand equipped with a motor and sensors from Japanese plans. "For a long time, I only went out in long sleeves, I was ashamed. Even if my new hand is currently only a prototype, this project has changed my view of my disability", she notes. Custom-made at low cost At Kerpape, access to the handi lab machines also helps reduce the cost of certain custom-made projects. "As soon as we want to personalize assistance, we are faced with small markets with high prices," explains Jean-Paul Departe. For their part, manufacturers are watching these initiatives closely. "We can clearly see the interest of fab labs in terms of innovation," says Raphaël Terrier, biomedical engineer and head of the Electronic Assistance unit at Proteor, the French leader. But then the devices need to be standardized in an industrial process, and patients also expect after-sales service and regular updates that require commercial exploitation." At the fab lab at the University of Brest, Adamou Amadou Souley, head of the handi lab, is convinced: "Open source and collaborative spaces are a hope for a large number of disabled people around the world who do not have access to a prosthesis. » Originally from Niger, the young man from Brest, who has a motor disability following poliomyelitis, is coordinating a motorized orthosis project for lower limbs. "Not everyone can come to a rich country to get equipped. With free licenses, there are no more borders, we reduce the gap between poor and rich countries," says the man who plans to open a handi lab in Niger in a few years.

## ###ARTICLE\_START### ID:2268

In Rennes, the Human Lab laboratory helps amputees rebuild their lives by allowing them to make their prostheses using free software and 3D printers.

## ###ARTICLE\_START### ID:2269

In Rennes, the Human Lab laboratory helps amputees rebuild their lives by allowing them to make their prostheses using free software and 3D printers.

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Have you noticed how the world is shrinking? How we’ve gone from an ideal of technical miniaturization to a kind of reductionist nightmare? Lawrence Lessig recently said: “When Twitter was born, I talked to one of the founders. He was very excited about what they had done, and I said, ‘I understand, but aren’t you a little worried about generating a 140-character speech? Isn’t that a problem?’ He said, ‘That’s what people want, so we have to give it to them!’ It turned out that that wasn’t a good universal answer.” Social space is shrinking, discursive space is shrinking, consultation space (our smartphone screens) is shrinking, attention spans are shrinking and fragmenting accordingly. The history of algorithmic science and technology has become that of the tricks of technological persuasion allowing platforms to ensure that nothing can be hidden or concealed from them even though they will have every opportunity to impose this or that algorithmic determinism on us. What was sold to us yesterday as "empowerment" and "capacitation" has become, in a few years, powerlessness and alienation. Politicians and intellectuals are waking up, shouting "cry out" against the Google donkey or the Facebook mule. This late awakening is astonishing because everything was already perfectly clear in 2003, when Facebook did not exist and Google was not yet five years old. "When we consult a Google results page, or any other engine using a similar algorithm, we do not simply have the result of a binary combinatorial cross-referencing between pages that respond to the query and others that do not respond or respond less (matching). We have a view of the world (watching) whose neutrality is clearly absent [...] and based on classification principles that are no longer only implicit (such as classification plans or documentary languages used in libraries) but invisible and above all dynamic." This is what I wrote with a colleague in a scientific article published in 2003. Thirteen years later, the media storm surrounding "fake news" and "post-truth" is nothing other than the rise of these three phenomena combined: the digital reduction of spaces for consultation and expression, the ability of platforms to present us only altered parts of an informational and social reality, and the implicit, invisible and dynamic principles that govern the algorithms for prioritizing, visibility and/or obfuscating information. Any attempt at legislative regulation will be only partial when it is not entirely futile. Because the code has become the law. Calling for the "responsibility" of these platforms has about as much chance of success as asking Vincent Bolloré to respect some kind of journalistic code of ethics. Taxing their income more will only encourage them to hide it more. Calling for algorithms that are both "transparent to inspection, predictable for those they govern, and robust against manipulation" - The Ethics of Artificial Intelligence (1) - is a rule that can only prevail at the level of sovereign sectors if algorithms other than those of current platforms can prevent them from investing in said sectors. With the need for storytelling being the law and the climate of insecurity helping, politicians have mainly addressed these issues from the angle of the terrorist threat, incitement to hatred and online radicalization. The result was not long in coming: the platforms took back control, replacing a lack of ethics (the moderation of hateful content) with additional algorithmic obscurity and completing the sealing of a definitive misunderstanding between two worlds that only work together to the extent of what they hope to get out of it in terms of image or, literally, display. The only solution is to give substance to the idea of information science researcher Dirk Lewandowski, by creating an independent index of the Web. Because everything starts from there, starting with the end of current monopolies and rent effects. It is technically possible, in the short term, and at a reasonable cost. It is not a utopia but a necessity to avoid, collectively, a world government of Gafa (Google, Apple, Facebook, Amazon) in the pay of a few lobbies. As computer security specialist Bruce Schneier wrote, the history of the Internet is that of "a fortuitous accident resulting from initial commercial disinterest, government and military negligence, and engineers' inclination to build simple and easy open systems." If the Web of tomorrow is to be reinvented, this combination of circumstances will not happen again. More and more engineers (Tristan Harris, Paul Duan) are putting ethics back at the heart of algorithmic concerns. "Advisory" organizations are doing remarkable in-depth work (the CNIL, the National Digital Council). Associations are offering tools to "de-Google the Internet" (Framasoft), others are fighting on the front lines of the commons and digital freedoms (Vecam, la Quadrature du Net, SavoirsCom1), entrepreneurs are proposing virtuous models that respect privacy (MyCozy Cloud, DuckDuckGo, Qwant, etc.). The general public has opened its eyes following the revelations of Julian Assange or Edward Snowden. Public bodies (BNF, INA), foundations (Internet Archive), have digitized entire sections of the Web that could be re-exploited in this independent index. OpenSource search technologies exist and are often used by Gafa, which themselves have chosen to switch entire sections of their technologies to OpenSource. Even "the market" can no longer stand being subjected to Gafa's rent-seeking logic. All the conditions are in place for a general Web meeting to build this independent index that alone can give us back our freedoms and our lost illusions. Otherwise? Otherwise, the bulk of the future of the connected world will be played out in New York, where the bosses of Google, Facebook, Amazon, IBM, Oracle, Microsoft, Cisco and Apple met with Donald Trump on Wednesday. It is urgent. (1) "The Ethics of Artificial Intelligence" by Nick Bostrom and Eliezer Yudkowsky, 2011.

## ###ARTICLE\_START### ID:2271

With its six employees and thirty volunteers spread across twenty-eight cities in France, the Framasoft association has undertaken to change the face of cyberspace. To explain their project, its members have adopted an unpronounceable yet very telling slogan: "Let's de-Google the Internet." More precisely, they have decided to use their IT expertise to attack head-on the five global Internet giants, all American, the "Gafam": Google, Apple, Facebook, Amazon and Microsoft. At first glance, the task might seem daunting. Framasoft's headquarters occupies half of a small office in a non-profit building in the center of Lyon. Its general delegate, Pierre-Yves Gosset, 40, an economist by training, is aware of the work, but he is calm: "Our ambition is not to replace the Gafam, but to propose concrete alternatives. We are going to show that their economic, technical and cultural domination is not inevitable. Other choices are possible, we do not have to resign ourselves to the normalization of the global village by the Americans." Rather than speeches, Framasoft prefers direct action. The association has undertaken to create online services equivalent to those of Gafam, except that they are located in Europe and that they respect the privacy of users - no tracking or filing, no centralization, no exploitation of personal data, no complicity with state intelligence agencies... To further complicate the challenge, everything must work with free and open software. Originally, Framasoft was a site intended to promote free software, and all its members come from this movement. Pierre-Yves Gosset calmly explains that the fight is well underway: "In a few months, we have set up around thirty online services, open to all those who wish to leave Gafam." Among the most popular: Framasphère, a social network affiliated with the international Diaspora network; Framapad, a document sharing service equivalent to Google Docs; Framadrop, an encrypted service for sending large files; Framadate, to manage your schedule and coordinate your appointments; Framapic, to share your photo albums; or Tonton Roger, a metasearch engine that simultaneously queries Google, Bing and Yahoo, and delivers a selection of results while serving as a protective filter: the big engines do not know who is performing the search, because they only see Tonton Roger. Pierre-Yves Gosset is proud of the first results. "Framasphère has 32,000 accounts, Framapad contains 200,000 active files, Framadate receives 5,000 visits per day," he lists. That is, in total, 1.5 million visits per month, from schools, associations, unions, town halls... For the rest, Framasoft knows little about its users since they are neither tracked nor listed - that is the goal: "We are not looking to enrich ourselves or get bigger, no one can buy us or influence us. We seek the common good, and we fight with the weapons we master", recalls the boss of Framasoft. His alternative network, he says, rents servers in Germany, from the independent service provider Hetzner: "It happened a bit by chance, but, on reflection, it's a good thing not to be based in France, with the new surveillance laws..." For the moment, the costs are reasonable for an annual budget of 200,000 euros "coming mainly from small individual donations" and of which "technical costs represent barely 6% of expenses", the main item being salaries. "Spreading out" rather than growing More often than not, Framasoft has simply borrowed existing programs from the free software community, and adapted them to its needs. In other cases, it has been necessary to create the services from scratch. A complex task carried out by a dozen volunteers, and especially by Luc Didry, the association's system administrator. A former employee of the University of Lorraine, in Nancy, Luc Didry resigned to devote himself full-time to Framasoft. He now works from home: "I work my 35 hours, except in the event of an exceptional problem. In fact, one or two competent people can take care of most of the operations. It's not an overwhelming task, our system can easily be duplicated almost anywhere." However, this is precisely the ultimate goal of Framasoft, which has triggered a process of "swarming." "If we succeed in attracting a large number of users," explains Luc Didry, "we will saturate. There is no question of us becoming a large centralizing data silo, since that is what we are fighting against." Paradoxically, it is therefore important that Framasoft does not grow too big: "We are a group of friends, our AGMs are friendly meetings. If there were more of us, we would have to introduce bureaucratic procedures, that would be the end of our great adventure," says the system administrator. The solution? When Framasoft has reached its maximum desirable size, it will direct new arrivals to similar services. To do this, other associations must be encouraged to create their own bouquet of services and set up a support network for beginners. In October, the pragmatic Lyon association launched a national project called "Collective of alternative, transparent, open, neutral and supportive hosts", whose acronym Chatons seems to please geeks. In order to establish common rules, Framasoft has published an ethical charter: to become "Chatons", "you must use free software, never practice targeted advertising, respect personal data (right of access, non-transmission to third parties), practice transparency and neutrality (no surveillance or censorship) and encrypt data and connections, as much as possible. For beginners, Framasoft offers a basic analogy: "Think of each Chatons as an AMAP [association pour le maintien d'une agriculture paysanne], except that instead of a basket of vegetables provided by a farmer, it is online services provided by a local host." The first candidates for Chatons status were seasoned associations, already offering alternative Internet services. Among the pioneers, Infini (Internet Finistère), an access provider and host for associations, financed by its members and supported by the Brest town hall (PS). When the Framasoft team decided to start the project, in January, it traveled to Brest to officially launch the "Chatons call" from the Infini offices. The Brest Chatons opened in September, with half a dozen services. One of Infini's most active members, Denis Dordoigne, a 29-year-old computer scientist, had to go into exile in the Paris region to find work, but he participates in technical tasks remotely. For him, creating a Chatons was easy: "We simply copied Framasoft's programs to host them at home, in the spirit of free software." Infini will ask visitors to pay a "free contribution," according to each person's means. Eventually, Denis Dordoigne hopes to offer as many services as Framasoft, but there is no rush. Pioneers in Haute-Saône At the other end of the country, Chatons are represented by "La Mère Zaclys," a non-commercial Internet service provider created in 1998 by three friends from Frédéric-Fontaine, a village in Haute-Saône. Forty-somethings passionate about free software who do not wish to reveal their full names because they are civil servants. Tito now lives in Dijon, Romuald in Mulhouse, and Bill has remained in Haute-Saône, but this distance does not hinder the smooth running of the services, which they administer remotely in their free time. When they feel like seeing each other, they meet at the brasserie at Dijon train station. La Mère Zaclys (named after a picturesque character from the village of the three friends) already offers around ten services. It now has 18,000 regular users, spread throughout France, Belgium and Switzerland, 10% of whom agree to pay around ten euros per year. This is enough to pay for the rental of servers at the commercial service provider OVH, based in Roubaix. For a long time, La Mère Zaclys earned a little money by letting Google display ads on its site, but, as part of the "de-Googling", the three friends recently created their own mini-advertising agency for local associations and businesses. They have also stopped recording their visitors' IP addresses. They are now considering offering full data encryption. Bill, Tito and Romuald say they are eager to tackle their new mission: "The movement needs big Kittens like us to help the little ones and the beginners." They hope that the network thus created will increase the visibility of La Mère Zaclys and attract new users: "Everyone who wants free services must have access to them, no one should be left behind." Of course, they know that there will be abuse, but they are used to it: they have already ejected unscrupulous users, who were over-consuming the resources of their servers without offering anything in return. At the beginning of November, the Kittens movement already had ten active members, plus about twenty candidates waiting, including the French Federation of Angry Bikers. In Paris, April, an association promoting free software, has decided to join the collective launched by Framasoft. Nothing is in place yet, but its leaders are starting to look for volunteers and funds to rent servers. In Nantes, an association called Duchesse, created by a young computer scientist who is also the local leader of the Scouts de France, has launched an appeal for volunteers to create a Chatons nantais. A series of mini-Chatons for family use is even appearing. In Rennes, Emmanuel Ravion, 43, an IT engineer at Orange, offers a bouquet of services reserved for his loved ones. Until last year, he hosted his server at home, because he lived in the suburbs of Paris and had a high-speed fiber optic connection. Since he moved to Rennes, he no longer has fiber optics and has to rent a server from OVH: "It costs me 100 euros per year, and I spend about one day per month administering it," he explains. He joined the Chatons project to help newcomers, who he hopes will flock to it: "Creating a Chatons is not like sending a rocket to the moon, it is within the reach of most people, you just have to take the time to learn." As the motto of the Framasoft website says, the road is long but the way is clear.

## ###ARTICLE\_START### ID:2272

Sensing competition from traditional companies, some social economy organizations have decided to use patents to preserve their advances. This is the case of the Vitamine T group, which combines professional reintegration and retraining. Its president, André Dupon, explains that he "filed four patents after a 2 million euro search on liquid crystals for flat screens." "We pushed our responsibility and our demands to the limit," he continues. "We found technologies? It was up to us to protect them internationally." His way of not letting the competition freely seize the work provided by his teams. In the social and solidarity economy (SSE) sector, "this is rather rare," he admits. Patenting a technological innovation implies, upstream, a research and development capacity that few structures in the sector can claim. "You need to have a staff of engineers capable of providing such advances," confirms Jean-Marc Maury, a specialist in the SSE. However, for a long time, they did not want to come to the social economy. Things are changing a little from this point of view, but patents remain few in number. " "Culture of the common good" Such an approach meets with strong opposition from some of the players in the social economy. "Between their philosophy and what is underlying patent law, there is a world of difference, summarizes Jocelyne Cayron, lecturer at the Faculty of Law and Political Science at Aix-Marseille University. Everything concerning industrial property implies a search, precisely, for ownership and exclusivity. However, in the social and solidarity economy, we are much more in the "open source" and the desire to be "contagious". " Even if it means seeing competitors seize its innovations? "The sector has rather a culture of the common good, with the idea that the more an advance is taken up, the more impact we will have in solving a social problem, explains Hugues Sibille, president of the Labo de l'ESS. However, the debate on protection exists and it should become increasingly significant in the years to come." A debate that particularly concerns social innovations (original service, working method, organization, etc.), for which patenting is impossible today - based on a general principle of law: "ideas are free to circulate" and therefore cannot be appropriated. Hence the current search for a more flexible protection solution that is more compatible with the DNA of many structures in the sector. "Few organizations use collective trademarks, but they can nevertheless provide associations with interesting protection," believes Ms. Cayron. Know-how can thus be preserved and backed by a brand name. Advantage: flexibility that is likely to appeal to the world of the ESS. "This trademark can be used by anyone who complies with the usage rules established by the owner of the trademark," recalls the National Institute of Industrial Property.

## ###ARTICLE\_START### ID:2273

Their name alone says it all: Nova Ideo, Democracy OS or Fluicity... Often launched by French entrepreneurs passionate about public life, these platforms aim to "renew democracy" when they do not outright propose to "uberize political life". They are part of the vast civic tech movement, booming all over the world, which aims to put digital tools at the service of broader citizen participation in public life. The multiple initiatives display varied objectives: a platform for co-construction of the law such as Assemblou Nova Ideo, systems offered to municipalities by Neocity or Vooter, a citizen lobbying site like Make.org... Some actors come from associations where they have been campaigning for a long time, others, more opportunistic, are riding the wave. At the crossroads of innovation and public service, French civic tech companies are testing economic models against their Anglo-Saxon competitors. Cap Collectif, which provided the consultation tool on the Digital Republic law, is counting on "fundraising from investors to finance the 200 pending features," explains Cyril Lage, its co-founder, who advocates proprietary software. Others, such as Democracy OS, use free software "in the interests of transparency and improving the tool" and charge for support. "The sector is booming, but not all structures have the economic robustness that public stakeholders expect," notes Emmanuel Grégoire, deputy mayor of Paris, who is preparing to open an incubator dedicated to these "citizen" start-ups. For the elected official, "a community must be able to keep its hand on the heart of the reactor because its service provider can close the door at any time. The heart of the participatory democracy reactor is precisely data management and access to software source code, technical issues that fuel in-depth debates: how can we ensure the effectiveness of consultations? On what criteria can we guarantee their transparency? In which country is the data stored, and who can access it? To help public services find their way, Etalab, the mission that pilots the policy of opening up and sharing public data, plans to put a "toolbox" online during the global summit of the Open Government Partnership (OGP), from December 7 to 9. The site lists more than 1,200 solutions, in France and abroad, each with their technical characteristics and economic model. The portal also provides a direct link to consultation platforms which, in exchange for easier access to public markets, commit to a list of good practices such as access to data and its storage in France. After a lively debate, the list ultimately does not exclude proprietary software. "For simple and public votes, we can verify the transparency of the consultations by opening up the data," warns Etalab. "But the more complex it is, the more free software will be needed."

## ###ARTICLE\_START### ID:2274

Free Software Defenders Discouraged by National Education Five Old-Time Jobs That Everyone Has Forgotten

## ###ARTICLE\_START### ID:2275

We are well aware of artist squats, which are not always well received by local residents but which allow the emergence of talent and free artistic expression. We are also familiar with festive proposals such as urban beaches or one-off actions such as Sunday pedestrianizations. We are less familiar with the transformation of vacant spaces into "Swiss army knife" places, between coworking, incubators, accommodation and artists' studios. Or collaborative urban planning and the customization of a neighborhood by its residents. This attractive concept of "temporary urban planning", with multiple realities, inexpensive and often eco-friendly, is the subject of a meeting on Thursday at the Pavillon de l'Arsenal in Paris, with the Plateau urbain association and under the aegis of the Paris city hall. All these initiatives have one thing in common: they make obsolete the functionalist model embodied by Le Corbusier and which assigns a function to a space. These are bottom-up approaches, that is, they go from the bottom to the top, from the user to the architect or to the developer, and promote do-it-yourself, which is very fashionable these days. "The urban project is no longer a realistic sketch thought up by an architectural firm but a process," explains Mathieu Delorme, urban planning and landscape engineer at Atelier Georges and teacher at the Marne-la-Vallée school of architecture. The watchword that now prevails: remain flexible because no one is able to predict the city and its uses of tomorrow. One year renewable "Real estate vacancy represents three million square meters in the Ile-de-France region. The equivalent of 75 Montparnasse towers," says Jean-Baptiste Roussat, urban geographer and new president of Plateau urbain. It is on this observation that the association was created, with the ambition of promoting part of this heritage before it finds a buyer on the market or is destroyed. He continues: "The evolution of working methods means that a significant number of entrepreneurial, cultural or associative project leaders, who are sufficiently ingenious and flexible, can accommodate these temporary spaces, as long as they are given legally readable conditions. It is a shared rental of activities at a reduced price, the owner having often abandoned the idea of a commercial value of his property but not its use value." The occupants only pay the price of the charges. "The operation is a win-win, explains Laurent Vuidel, president of Lerichemont, a subsidiary of the City of Paris specializing in temporary and social housing. The owner does not have to have his property looked after, he covers his charges and gives a helping hand to artists or craftsmen. This is the case of OpenBach created with the Labolic association in Paris in the 13th arrondissement. In this small building of just over 500m2, which must be demolished to build a taller building, around fifteen structures focused on art and 3D printing have settled in for a renewable period of one year. "When balances are often difficult to find for young structures that lack funding, these low rents and these conditions, even precarious, appear as virtuous indirect subsidies. Another exciting temporary occupation: the Grands Voisins, in the heart of the Saint-Vincent-de-Paul hospital in the 14th arrondissement of Paris. It all began in 2012 with the installation of social and emergency accommodation by the Aurore rehabilitation association. In 2014, the hospital closed its doors and Aurore took the gamble of occupying the entire space: three hectares! Cost of the operation: 1.5 million euros per year. A three-way partnership is being created, with Plateau urbain, which will manage the mix of structures, and Yes We Camp, in charge of running the outdoor and cultural spaces. Result: 140 structures, 2,000 people, 600 residents (some of whom are in emergency accommodation) occupy what is to become an eco-neighborhood with housing (50% of which is social housing) and association premises. The agreement between the three and the City ends in mid-2017 with the start of work. Lightweight solutions Has this project made the city hall want to change its initial project? For Jean-Baptiste Roussat, "everyone agrees that the experiment is a success. The urban plan has evolved, so we have gaps in which we can continue to slip in. However, this thinking will come up against traditional urban planning and its usual funding." And for the occupants? "We will work on the degree of maturity of each structure and on their desires. Some are in incubation and will not wish to stay." Although there are marginal alternative movements such as the "rurbanites" who leave the cities for the countryside, the city remains a powerful pole of attraction, with its obvious assets: economic dynamism, proximity to public services and varied transport offerings. "It is mobility that has evolved the most since 1945," explains Benjamin Pradel, consultant researcher in sociology within the Kaléido'Scop cooperative. The speed of travel reduces distances and allows a geographical spread of the city. When it is undergone, this phenomenon can give rise to a feeling of frustration and downgrading calling for light, customizable and appropriable solutions." In fact, things are changing: "We always equate the dense city with the sustainable city. But, for several years, research has also taken another look at peri-urban spaces [beyond the suburbs, editor's note] that are supposedly anti-sustainable development, segregationist or individualistic. We now value certain creative lifestyles, certain ways of getting around, certain social proximities more." On the outskirts too America provides an example with Better Block. This non-profit foundation was founded in Dallas (Texas) by Jason Roberts, an activist hailed for his innovation by Barack Obama himself. And his idea is perfectly suited to the sometimes neglected suburbs. "About fifteen years ago, all my friends were starting to leave Dallas for cooler cities like Portland or Houston. The outlying neighborhoods where I lived had problems with crime and public disinvestment. I thought we had to change things and remobilize the residents. Those who couldn't move from here. With friends, we started by restoring an old theater that was falling into disrepair [the famous Texas Theater where Lee Harvey Oswald was arrested, editor's note], then I set up an association to bring back the tramway, then it was Better Block," says Jason Roberts. In order to confront local authorities with a fait accompli, he mobilized the residents of his neighborhood of Oak Cliff, in Dallas, and put up stickers to create a bike path, set up temporary stores or art galleries... And it worked. Today, the foundation provides support in many cities, especially American ones, to help organize citizen mobilization, identify local leaders, etc. For two months now, the foundation has also been offering open-source models to download, via the Wikiblock platform, to create wooden street furniture (benches, pedestrian islands, kiosks, cafes, etc.) to make yourself in a makerspace, shared spaces for rapid manufacturing that are developing all over the world, including in France. Let's mention the Volumes initiative, among others. This Parisian collaborative space supports and accompanies many initiatives focused on collaborative urban planning: FabCity Grand Paris, Civic Wise or the Bellastock association, which notably organizes an annual festival of experimental architecture. All these young, committed and brilliant actors form an effervescent fabric, which still needs to be structured a little, but which weighs more and more in the making of contemporary cities.

## ###ARTICLE\_START### ID:2276

Has digital technology killed IT? While Apple, Google, Amazon and Facebook are riding high in the global stock market rankings and raking in tens of billions of dollars in profits each quarter, the companies that gave IT its reputation are constantly "refocusing" and "re-sizing" themselves, looking for the formula that will give them back growth and promise for the future. Of course, they are still making money and some even have some nice war chests, but creativity, inventiveness and attractiveness are no longer on their side. Neither is growth nor, therefore, the future. A year ago, Hewlett-Packard split into two companies: HP Inc for printers and PCs, and HP Enterprise (HPE) for infrastructure, services and software. Meg Whitman, CEO of HP, made this decision to give more "agility" to the dean of Silicon Valley, which has been battered in its markets. After merging its services activities with those of the American CSC, then selling its software to the English Micro Focus, HPE saw its turnover plummet from 52.7 billion dollars (49.2 billion euros) to around 28 billion dollars. The more than century-old IBM has just recorded an eighteenth consecutive quarter of decline in its turnover. In five years, its overall revenue has decreased by more than 23%, going from 107 billion dollars in 2011 to 81.7 billion dollars in 2015. The American electronics giant, Intel, posted a turnover down 1% in 2015 compared to 2014. The network specialist Cisco closed its 2016 financial year at the end of July with a turnover of 49.2 billion dollars, stable compared to 2015. No better for the major software publishers. Oracle's revenue fell by 3% between the 2015 fiscal years ($38.2 billion) and 2016 ($37 billion). Germany's SAP has managed to maintain several points of growth, partly thanks to the acquisitions it has made in recent years in the more buoyant cloud market. Similarly, Microsoft is back in favor of growth - and therefore of the stock market - following a serious shift and heavy investments in the cloud, but its profits were almost halved between 2011 and 2015. In the space of just a few years, the IT stars of the 1990s and 2000s, which posted double-digit growth rates and brought joy to shareholders, are struggling, or even threatened with being bought out or even disappearing. Has IT gone out of fashion? No, quite the contrary. Our activities rely more than ever on digital technology, but it is precisely this massive digitalization in all areas that has changed the situation. The hardware and software offering on which these giants were built has suddenly become too slow, too heavy, too rigid and too expensive. a new era Until the mid-1990s, IT was used for the economic activity of companies and administrations, which each bought or rented their computers. Software was sold in the form of licenses, inevitably accompanied by an annual maintenance contract that represented around 20% of the cost of the license. All this required a lot of software development and support services that supported a large number of consulting and service providers. Until new technologies came along to shake up this world of IT by imposing rules that were also new. The primary cause of this disruption was the Internet. Its ability to give access to all holders of a connected terminal to all kinds of information and data has profoundly changed the use of digital technology and brought it within reach of the general public. Then mobility. Mobile phones, renamed smartphones, now offer, in a compact format, more features and power than a microcomputer. And none of these "old" companies, except Apple, produce them. In 2007, the year the iPhone was launched, the turnover of the company with the apple was three times smaller than that of IBM. Less than ten years later, it is more than double. Finally, the cloud. By making available to all companies, but also to all individuals, computing power on demand and storage spaces paid for by use, the cloud has tipped the computing into a new era. "We have gone from accounting software in an office to digital technology present everywhere in our lives, in all objects and in all our activities," summarizes Michael Dell, CEO and founder of the company of the same name. And the big beneficiaries of these changes are called Google, Apple, Amazon and Facebook. These new technologies, to which we can add connected objects, big data, new software development methods called "agile", artificial intelligence, 3D printing, etc., have brought digital technology into our homes, our pockets, our wrists, our cars... They have relegated the computer to the rank of accessory with which we must deal while waiting for the new to gradually replace the old. And they have completely reshuffled the cards. It is the classic pattern of creative destruction, dear to Schumpeter. The general public has taken precedence over companies and has become the driving force of industry. "The cloud allows new players like Uber or Airbnb to move very quickly, to create their brand and to reach the vast consumer market quickly by bypassing traditional IT players," notes Benoît Flamant, director of digital management at Fourpoints Investment Managers. Newcomers can develop a very innovative application or a new service in a few days by renting the computing power they need on Amazon. They will never equip themselves with an information system like the previous generation did. The key words of this new digital world are speed, flexibility, customer experience, the general public and disintermediation. "It's a war to the death that is being played out here, a war of speed, price and talent. We must innovate and generate growth more and more and faster. Players like Yahoo!, Nokia or BlackBerry have not survived this frantic race," says Patrick Rouvillois, director at the Boston Consulting Group (BCG), an expert in digital disruption. If they want to survive, the historic players in IT have no choice but to reinvent themselves and find new fertile ground for growth. Hardware, servers, PCs and laptops, have become a "commodity", a support for the applications and services offered. On the PC market, margins are shrinking day by day. Consolidation allows economies of scale to be achieved. This is the option taken by the Chinese Lenovo, which successively took over the PCs and then the servers of IBM, the PC business of NEC, the mobile phone branch of Motorola and, very recently, signed a "cooperation agreement" with one of the last Japanese in the field, Fujitsu. Only HP, Dell and the Taiwanese Asus and Acer manage to stay in this market. On the server side, the threat comes from the Internet giants. Rather than buying hardware on the market, Google, Facebook and Amazon develop their own equipment according to their own specifications. Here again, the traditional players will increasingly be bypassed. Of course, computer hardware will not disappear. Connected objects, smartphones, data analysis, the increasing use of video require ever more equipment in data centers. Thus, each smartphone sold requires a new server in a data center. "But hardware does not exist on its own, it is necessarily linked to intelligence. We do not buy a phone or a connected watch for the object itself but for the functions it offers", notes Philippe Herbert, general partner at Banexi Ventures. And, here too, the historical players are threatened. Software is in turn becoming a commodity. We no longer develop human resources, production or finance management software, written once and for all. Since the emergence of DevOps, these agile development methods, software has become a living, dynamic object, composed of market modules, often freely accessible (open source), which developers assemble to adapt it to the needs of an application or a company and which they develop as and when needed. This is the advent of code and coders. Software as a service (SAAS) simplifies usage by providing access to software that is constantly updated. The user pays per consumption, he no longer needs to invest in hardware and IT teams. For historical publishers, SAAS requires the redesign of software, in order to make it usable in the cloud in complete security. Above all, it leads to a drop in their revenues in the short term. Where it collected 100 in one go then 20 each year for maintenance, the publisher must now wait at least five or six years to collect an equivalent amount. This change in model has not finished causing damage. "we are mortal" To survive, historical players are buying companies born in the cloud and the Internet. In June 2013, IBM acquired the hosting company SoftLayer and its 13 data centers for 2 billion dollars. Since 2011, German SAP has acquired publishers specializing in SAAS, SuccessFactors (HR), Ariba (purchasing), Fieldglass (HR), Concur (travel expenses) for a total of nearly 17 billion dollars. HPE is in negotiations to acquire SimpliVity, a player in hyperconvergence, a key technology for data centers, for nearly 4 billion dollars. Oracle has just completed the acquisition of NetSuite (cloud management software) for 9.3 billion dollars. All these acquisitions will provide buyers with the skills they lacked, but it will take years before their contribution is visible in turnover. "Our advantage is that we know that we are mortal and that transformation is necessary," says Nicolas Sekkaki, president of IBM France, calmly. IBM is now banking on the cloud and artificial intelligence (Watson program), which should represent half of its turnover within five years. "Twenty years ago, IBM was number one, and HP number ten. Today, the other 8 in the top 10 have disappeared or been bought out," says Gérald Karsenti, President of HPE France. "All the players could disappear tomorrow. The sector is constantly changing and reinventing itself. The key is not to get left behind." So, they are trying to regain more flexibility and creativity by collaborating with start-ups and increasing the number of open innovation projects. But while they all hope to have found the surefire way to ensure a bright future, none of them can say that their strategy is the right one.

## ###ARTICLE\_START### ID:2277

Paul Duan is in high demand! The 24-year-old entrepreneur runs from radio studios to TV sets to present his latest project: the Bob emploi website. The media are fighting over the "little genius who wants to defeat unemployment in France". He doesn't like the description. However, the French graduate of the Sorbonne, Sciences Po and the prestigious American University of Berkeley, thinks he can "reduce unemployment by 10% in France in one year". An ambitious project that has caught the attention of the Minister of Labor and the President. For a year, the Élysée has been working with the man who wants to "put big data at the service of the common good". "Myriam El Khomri strongly supported the project", they say in the minister's entourage. "Politically, Paul Duan's project is in line with the minister's vision. The fact of using statistics for job searches and making them available to users convinced us", they add at the ministry. The founder of Bayes Impact, a non-profit start-up based in Silicon Valley, wants to use algorithms to reduce unemployment in France. With Pôle emploi, he launched Bob emploi, "a sort of digital personal assistant that will monitor and help the unemployed find a job," Paul Duan points out. "The tool draws on past experiences to better guide searches. For example, if Bob sees that, in the past, delivery drivers have found a job as bus drivers, he will recommend this direction to future delivery drivers looking for a job," he explains. To those concerned, he assures that the data is secure and anonymous. He adds that the "general interest start-up is open source, everyone can reuse the data, in complete transparency." Changing the world “Through hard work and energy, he managed to successfully complete his project with Pôle emploi,” emphasizes Michel Lévy-Provençal, who eighteen months ago asked Paul Duan to present his idea on the stage of L'Échappée volée, this community of experts who want to change the world. “The project is constantly evolving. It is a beta version, the tool is not yet perfect but everything cannot work the first time! The idea is to start and persevere, that is what Paul does,” adds the talent scout who salutes “his great determination, his listening skills and his humility. He is part of this generation that believes it can change the world,” emphasizes Michel Lévy-Provençal. How? “Big data can be used to do good on a large scale, with minimal investment,” emphasizes Paul Duan. "Ten people can save the lives of 10 million people through the power of data science," insists this altruist who has put this philosophy to use in his NGO, Bayes Impact. In fact, Paul Duan is not at his first attempt. The finalist of the competition for entrepreneurs under 30 of the prestigious American magazine Forbes has already developed several algorithms. His first statistical formula aimed to detect fraud and defaults by American microcredit companies. His non-profit organization then won contracts with American hospitals. Thanks to the data, he was able to optimize the route of ambulance drivers by applying algorithms similar to those of Uber drivers, or predict the risks of readmission of patients based on their medical data. He has also collaborated with the American federal government. Then, Paul Duan returned to the country to develop his vision of citizen public service because, in France, "we have this culture," he says. He was supported by actor Jamel Debbouze, who, like him, grew up in Trappes. "I grew up with chronic depression problems in a working-class suburb of Trappes, to Chinese immigrant parents who had been to Tiananmen, lulled as a child by stories of tanks and classmates who had been shot in the back," he says. "It influenced me, made me aware of social justice issues," explains the young entrepreneur. The family then "benefited from the social ladder," acknowledges Paul Duan. "My father became an engineer, we moved and I went to the Franco-German high school in Buc," a prestigious public institution. He was "lucky to find a path that worked. I earned a lot of money, very young, but I didn't like it. Rather than making money, I want to do something useful." I have experienced the two-speed system, I left one world to arrive in another and I would like to contribute to erasing the boundaries between these two worlds." The man who studied at Sciences Po thought about going into politics for a while, but then gave up to set up his start-up. But, with his intention of reversing the unemployment curve in France, it was the political world that came to him!

## ###ARTICLE\_START### ID:2278

The principle is simple. Easy to use. But the execution is devilishly effective. A bit like those applications straight from Silicon Valley that are flourishing on our mobile phones to help us order a taxi, a meal or even calculate a route. Except that Bob, the service imagined by the young entrepreneur Paul Duan, uses technology in order to help, free of charge, job seekers find a position that suits them as quickly as possible. To do this, the user must provide basic information in order to establish their profile: age, gender, possible studies, skills, but also desires. They will thus be able to indicate whether they wish to stay in their field or change it. The application then makes a quick calculation based on the data it has and offers them different results. Job offers, of course, but also actions to take every day in order to improve their profile and increase their chances of finding a position as quickly as possible: training to complete, a language to learn, a CV to refine. "Digest everything that exists" Day after day, the user will have a sort of super-personal assistant - "which is not intended to replace Pôle emploi or its advisors", assures the young man, who continues: "We do not want to "disrupt" Pôle emploi, we simply want to put big data at the service of everyone. We use algorithms to help people digest everything that exists in terms of offers, advice, training, etc." Paul Duan's service does not just give advice or guidance. He specifies them as much as possible: "If Bob tells you to train, he offers you the appropriate training and tells you where it is available. If he tells you to find out about a particular area that may interest you, he gives you a link to the articles or studies that talk about it", explains the young man. To carry out his project, Paul Duan entered into a partnership with Pôle emploi, which allowed him to suck up hundreds of thousands of data on the anonymized advertisements and career paths of the unemployed. "He was able to talk to job seekers and advisors to see what they were missing. We also gave our vision of what should be included in the service," explains Reynald Chapuis, digital director at Pôle emploi. Developed in open source, the algorithm can be improved by anyone who wants to. Intelligent, it is also designed to improve itself as it is used. In the purest spirit of Silicon Valley.

## ###ARTICLE\_START### ID:2279

Google had until Friday, November 11 to respond to the European Commission's accusations regarding its Android mobile operating system. The American online services giant complied on Thursday, November 10, without sparing any resources, particularly for journalists: videos, blog posts, colorful gifs, etc. The charges from Brussels are potentially very damaging for the American group, whose mobile business has become essential to its development (Android powers 80% of smartphones worldwide). And Commissioner Margrethe Vestager, who sent her indictment against Android on April 20, proved, with the order that Apple repay 13 billion euros to Ireland at the end of August, that she is not afraid. She accuses Google of abusing its dominant position by imposing restrictions on smartphone manufacturers and telecom operators. The group risks a fine of several billion dollars. According to Brussels, Google makes the granting of an operating license for PlayStore, its application store, conditional on the obligation for telephone manufacturers to pre-install its search engine on their machines and to make it their default search engine. The Commission also accuses the American of prohibiting manufacturers from selling smartphones equipped with modified versions of Android, although this operating system is free software, that is to say that it can be modified as desired by developers. A "vital" investigation As in the case of its "Google Shopping" engine, the subject of an indictment launched in April 2015, Google chooses, at least vis-à-vis the media, to defend itself by placing itself on a very general ground: the contribution, obvious according to it, of Android to the entire mobile ecosystem, and to consumers. "Thanks to Android, manufacturers do not have to buy or develop expensive operating systems - the software is free -. As a result, smartphones are now available at incredible prices - starting at 45 euros -", assures Kent Walker, one of Google's vice-presidents, in a blog post published online Thursday. The group also insists on the very strong community of mobile application developers, who would need manufacturers to install stable versions of Android, validated by Google, to work well. Google suggests that the Commission is having trouble understanding a sector that is evolving very quickly... An argument used since the dispute between the group and Brussels, which dates back to 2009. All of Google's supporters, official or not, spoke out Thursday. "The European investigation against Google is bad for developers", assures the "Developers Alliance", supposedly uniting 70,000 of these professionals. Information Technology & Innovation Foundation, a lobby group registered in Washington, accuses the Commission of "putting ideology before consumers." On the other hand, FairSearch, a club of Google opponents and complainants, but weakened by Microsoft's departure, assures that the investigation "is vital for consumers," and that "Google abuses its dominant position to avoid competition and innovation." The Commission, which did not react on Thursday, will not deliver its verdict for several months - an amicable agreement is possible at this stage. Cécile Ducourtieux

## ###ARTICLE\_START### ID:2280

In "Cash investigation", broadcast on October 18 on France 2, the director of public affairs for Microsoft France indicated that the State had entered into "an agreement with [the American company]", which allows it to "benefit from the information necessary for the security of its systems. Le Monde contacted the National Agency for the Security of Information Systems (ANSSI), responsible for the computer protection of the State. Without acknowledging the existence of a deal that binds its administration to the American, Guillaume Poupard, its director, tried to reassure and explain the scope of this type of agreement. Is there an agreement between Microsoft and the State, and more specifically ANSSI? The characteristic of this type of agreement is that they are confidential. There are many of them, between many people, and I do not know them all. We have, with all software publishers, a cooperative approach. We approach them by saying: "If you have information that concerns French victims, under what conditions can we have an exchange?" The role of Anssi is to identify French victims as effectively as possible. They are lucky to have an agency in front of them that knows how to keep secrets. We have this type of relationship with French and foreign software publishers. You don't say whether such an agreement exists... It would be very logical for such an agreement to exist between Anssi and Microsoft. Everything is in place for such a [deal] to be in place. What does a deal of this type look like? It provides for a time limit within which the alert on a security breach must be given, a commitment to confidentiality, and there is no money involved. Anssi does not buy this type of information. There is also, generally, a clause that allows the parties to suspend it whenever they wish. It is an agreement, rather a memorandum of agreement, as they say in English, ultimately not very binding. It is an exchange of good practices. For this type of agreement, do we know if the publisher notifies the French authorities at the same time as its national authority, the American National Security Agency (NSA) for Microsoft? We do not know much, but I would find it incongruous if the French were notified before the Americans. France's vocation is to be in the first circle, to have in advance the elements concerning the discovery of flaws. For software publishers, this is very sensitive information. The role of these agreements is to preserve the interests of each party, in particular confidentiality. Was it necessary for the ministry to use free software rather than Microsoft? Our task is to raise the level of security of the State's information systems. If, in a ministry, 80% of the positions are under Microsoft and they are told to get rid of it, we will lose people. Security also depends on the supervision of the network, its architecture. The opposition between free and proprietary software is [a battle] from another time. Reducing security to an opposition between free and Microsoft software is simplistic. Unhealthy codes are as complicated to detect in a Linux system as on Windows. It is as difficult to secure a network under Linux as a network under Windows. Anssi is in favor of free software, there is no reason not to move towards [it]. We must even encourage people to move towards it. But saying, "switch to Linux, you will not have any problems" is illusory. But the problem of the contract between Microsoft and the ministry is a problem of sovereignty. Sovereignty is ensured by controlling its system. I will make an analogy with weapons systems, such as warships or missiles: we no longer know how to make them, and for a very long time, with total control. Even in a nuclear missile, there are hardware and software components from the market. The weapon is controlled by the Directorate General of Armaments [DGA]: we have identified components, some can be general public, others must be built by trusted manufacturers. Others are so sensitive that the State must take charge of them. Sometimes, we integrate Chinese microprocessors or Windows, sometimes we have to manufacture the chip ourselves. This is the right way to act, compatible with economic constraints. Reinventing everything is totally unrealistic. It would not be a good use of public money. We can achieve security, even by integrating components that are not trusted individually. What role does Anssi play in the computer networks of ministries, in terms of security? For equipment transmitting classified defense information (defense secret, defense confidential, etc.), the DGA is responsible for project management and Anssi relays the needs of the ministries. Anssi also develops ISIS [the secure inter-ministerial intranet for government synergy, the network allowing the exchange of documents up to the defense confidential]. The approval which states that "such software protects such document" is signed by the director of Anssi. We carry out inspections in all ministries to assess their level of security, which result in a report to the minister concerned. Any IT project above a certain amount must receive a favorable opinion from the inter-ministerial directorate for digital technology and the State information and communication system, which submits a question to Anssi on security. We therefore have the capacity to intervene, even if it is not systematic. Would Anssi have a say if an agreement like the one between defense and Microsoft were signed today? I can't say. The question is not whether to buy a license or not, but what we do with it. Trying to control everything, to master everything, is ineffective.

## ###ARTICLE\_START### ID:2281

The program "Cash investigation", broadcast on October 18 on France 2, once again shone the spotlight on the contract between the Ministry of Defense and the Microsoft group. Since its revelation in 2008, this agreement, which allows several thousand computer workstations in the ministry to be equipped with Windows software, has been met with the wrath of defenders of free software, this type of program whose source code is open and built by the community as opposed to software developed by a company and whose code is secret. These activists believe in particular that the contract poses a danger to the sovereignty of the State, given the proximity of Windows to the NSA and other American security services.

## ###ARTICLE\_START### ID:2282

"Hybrid computing using a neural network with dynamic external memory": it is under this rather enigmatic title that DeepMind, an artificial intelligence company owned by Google since 2014, published an article in Nature on October 13. This is not the first time that DeepMind has seen one of its works accepted in the pages of the prestigious scientific journal. In January, it published a historic article there: the one in which it announced that one of its computer programs, AlphaGo, had managed to beat the European go champion. A feat that experts did not expect for at least ten years and which foreshadowed the victory, two months later, of AlphaGo over the South Korean Lee Sedol, considered the best player in the world. In total, three articles have already been published by DeepMind in the columns of Nature. They demonstrate Google's desire to present its research to the scientific community, but also the quality of its teams' work, likely to be accepted in the most renowned journals. A strategy on which the creator of the American search engine is not the only one to bet: most of the large Web companies are increasingly involved in fundamental research. But while some choose industrial secrecy, others - such as Google - choose on the contrary to share the advances in their research. At least some of them, carefully selected. With the aim of establishing themselves, in public and scientific opinion, as reference players in certain fields - also a way of attracting the best researchers on the planet. Imposing their technology With great fanfare, these IT giants regularly announce the publication of their work to scientists, and even to the general public. Facebook, for example, has published more than 200 articles online, sometimes co-signed with university researchers, from Berkeley to the School for Advanced Studies in the Social Sciences (EHESS). Some even go so far as to play the open source card: they simply make the source code of some of their most advanced computer programs accessible to everyone, free of charge. Anyone, individual, researcher or company, can take it, use it and modify it as they wish. Over the past twelve months, Google, Facebook and Microsoft, among others, have announced one after the other that they were going to "open source" some of their artificial intelligence tools. Each hopes in this way to impose its technology and standards at the expense of the others. The latest proof of this concern for sharing: at the end of September, Google, Facebook, IBM, Microsoft and Amazon announced an unprecedented partnership around artificial intelligence aimed at establishing "best practices" in this sector. This non-profit organization, which will conduct research, is committed to publishing the results of its work "under an open license. This time, it is not just about seducing the scientific community. But also, and above all, to reassure the general public by giving itself an image of transparency, while concern is growing around the progress of these technologies and the growing influence of these companies on our daily lives.

## ###ARTICLE\_START### ID:2283

The economic model that is probably thriving the best at the beginning of the 21st century is the one built on free work. "Probably", because, by definition, this work is neither valued nor measured. So, it does not exist in figures or in speeches. But since it does not give rise to any rights, does not know any collective agreement or regulation or limitation of any kind, it has served as a breath of fresh air to our financially very constrained economies: after having invaded all public and private spheres, it is changing scale and becoming widespread with the digital economy. We do not call it "free work". Because for the labor code, all work must be paid. And we know well that behind every oxymoron sooner or later hides a revolt. So, in order not to be caught, we have adorned it with all the virtues of disinterestedness. In the past, we called it conjugal love, that of the wife who took care of the accounting for her husband, a trader or doctor. But since it has left the private sphere, it has been disguised under all sorts of flowery names: volunteering, civic engagement, partnership, reality TV, activity, customer experience, community, game, competition, hackathon, contribution, etc. France now has 20.4 million volunteers, one in three French people, according to the association Recherches et solidarités, 10 million of whom give their time all year round. A workforce that is equivalent to nearly 700,000 full-time employees according to INSEE, almost as many as the hotel and restaurant industry. For ten years, explained researcher Viviane Tchernonog before a National Assembly inquiry committee in 2014, general councils have outsourced part of social action to the associative sector which, thanks to volunteering and lower-paid salaried employment, assumes it at a lower cost. Jacques Malet, the president of the association Recherches et solidarités, also recognizes that volunteering doubles, even triples, the effectiveness of associations in the field. It is therefore also in terms of labor costs that this development is analyzed. And rightly so, since in associations, "volunteer missions" are as precise and demanding as real positions, recruitment processes are also selective, and the relationship of subordination of volunteers is complete. It is also to be able to use a volunteer workforce that many start-ups are launching in the associative form, without fearing the mixing of genres... putting us to contributionBut look at yourself too. And count all that time you had to "work" to consume. We have become co-producers of the services of which we are customers, as researchers Marie-Anne Dujarier and Guillaume Tiffon have analyzed. Here again, this is not new, self-service terminals have invaded public spaces for a long time. But with the advent of the mobile digital era, large "service" companies such as banks, insurance companies, telecom operators, etc. are all replacing a large part of their agencies and call centers with a digital interface whose purpose is to involve us and manage even our various problems. For these companies, "customer experience" has become the fig leaf for this free work. To help it get by, we have once again mobilized customers brought together within "brand communities", customers who are supervised, supervised and controlled, and who are rewarded with points, badges and a ranking on the honor roll. They form the lifeblood of the support forums: at Bouygues Telecom, there are no fewer than 500,000 customers who respond to 1.2 million requests for help per month. This allows the operator to have only 50 internal "customer advisors". The twenty biggest workers were even selected in a "customer committee", asked to test offers, services and apps, and to report problems with packages, networks, etc. A real responsibility, in short. But to do this, it was necessary to create consent to work for free. How? By changing the way workers view their contribution. In associations, we value the meaning of their commitment. Among service operators, we convince the customer that his work is first and foremost a service to himself. And in customer communities, we use the springs of "gamification" which consists of offering a symbolic reward with a potential for hierarchical distinction, but purely formal and abstract. "It is not a playful activity that creates its own game, specifies Professor Kenneth McKenzie Wark, who teaches at the New School in New York. It is a game that extracts work in a playful form." It is in the digital economy, and more particularly in Web 2.0, that this model was developed on an industrial scale. In versions where the figure of productive work is more or less clear. Let's take the Wikinomics model, based on the collaboration of human groups. A model of which Wikipedia remains the purest example, but which has spread widely in the world of free software, developed in open source. As in applications like Waze, a mapping and real-time traffic alert tool developed and run by its users, who report accidents, roadworks, dangers, traffic jams, radars, etc. All the collaborators of this model repeat that they do not work, but that they contribute to a collective intelligence, to the "commons of knowledge", governed according to rules set and controlled by themselves. Because this model is built on relationships between equals. And they derive an immediate advantage from it with a service, encyclopedia, GPS guidance, that they previously had to pay for. the boundaries of work are being dilutedOn the other hand, there is indeed work when there is a transformation of a free act into market value by platforms that leverage the creative power of the multitude, "user generated content", to capture the bulk of the value created. When TripAdvisor mobilizes 60 million travelers who have posted 170 million comments on the sites and hotels visited, it monetizes free work that generates immense traffic through advertising, and, today, through a hotel reservation activity. In video games, when Media Molecule, developer of LittleBigPlanet, mobilizes its players to design levels, customize avatars, in short, create content under its motto "Play, create and share", it makes them work for free, to the point of controlling them and marketing their content. In both cases, this work has significant market value. But it cannot be reduced to that. At TripAdvisor, travelers like to rate, hoping to influence the reputation of hotels and restaurants, because they themselves use these ratings to choose one of them. There can be no monetization of this mass of information unless there is first an exchange of services within the community. As for the LittleBigPlanet players who were interviewed by sociologists William Robinson and Bart Simon, if they say they are aware of the value created, they appreciate the opportunity that is thus offered to them to become creative and to be recognized as such by the community of players. "They experience this unpaid creative work as an artistic practice," say the sociologists. Thus, some are paid in services, others in pleasure and recognition. But the collaborative economy is only completing a trend that was already underway: the counterpart of the work changes in nature and, with this transformation, the very boundaries of work are diluted. On the other hand, for the big players in digital, there is no doubt. The free work of the multitude is indeed at the origin of an enormous creation of wealth. As the experts Pierre Collin and Nicolas Colin summarize in their report on digital taxation in 2013, it is indeed "the absence of monetary compensation for the activity of users that partly explains the spectacular productivity gains in this digital economy". Also, the question of the "parasitic capture of the productivity of free work" arises. And not only among Marxists, even if they summarize very well the paradox of this economy: set out to be a peer-to-peer sharing space, "Web 2.0 has become a true capitalist paradise, a centralized system controlled by investors who pocket the value produced by unpaid users, profit from the innovations produced by the free software movement and kill the potential of the decentralization of peer-to-peer technology", estimated, at the end of 2010, the hacker Dmytri Kleiner, author of the Telekommunist Manifesto. He points out that when YouTube was bought for $1.6 billion (€1.45 billion) by Google in 2006, YouTubers received "zero, zilch, nada". Similarly, when the Huffington Post was bought by AOL for $315 million in 2011, the volunteer journalists who created this value received nothing. "Could it be that in this collaborative economy, everything is shared except the value created?" sums up Martin Richer, head of the social division of Terra Nova, on the website analyzing changes in work in Europe Metis. This is one of the reasons why Pierre Collin and Nicolas Colin proposed taxing digital companies based on the crowd's contribution to their value. It seems that the issue of sharing value is starting to be integrated by the players, as Metis reports: when, in September 2014, the community site Reddit raised 50 million dollars, it committed to returning 10% of the funds to its contributors. And the short-distance carpooling start-up La'Zooz distributes its capital shares according to the involvement of each of them, in a cooperative manner. Is tolerance for free work starting to crumble? Because, deep down, everyone knows that free work is not sustainable. First, it always relies on a system of subsidies by third parties: salaries, pensions, allowances, all income paid by others and allowing the worker to survive. Second, it is work that, paying neither social security contributions nor taxes, does not contribute to common expenses. And this is all the more so since the Internet giants themselves pay very little tax. Finally, because, IRL ("in real life") or "on line", unpaid work has a terrible crowding out effect on paid work, even low, on which the system of financing our solidarity is based. More and more, volunteers are replacing association workers, and all of us are going to do the work of hundreds of thousands of employees in public and private services. As for the contributors to Wikipedia or TripAdvisor, they are devouring the editors of the Encyclopædia Universalis and Lonely Planet. The balance of an entire world is broken. Valérie Segond

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Their universe has evolved, and so few have realized it... While the paradigm shift is ratified by a plethora of 2.0 artists, the old world of show-biz persists in sticking to its supposed achievements, like Napoleonic grumblers refusing to cross the Berezina. However, strong signs are there, not the least of which is the Souterraine adventure. Borrowing its name from a town in Creuse, with an obvious nod to the underground it necessarily claims to be, a small handful of determined activists is in the process of shaking up the landscape of uninhibited French music. One was a press officer at a distributor specializing in indie music; the other an artist who is truly underground; a third thief, a librarian at Sciences-Po and also a frenetic digger (searcher of rare musical nuggets), joined them a little later. The first two had left Paris to settle in Toulouse where they first founded Almost Musique, a flexible entity (production label, publisher, promotion service, music for the image). Inspired by the legendary mixtapes that hip-hop DJs distributed for free in New York in the 90s, before it became a business like any other, our oafs decided to release one from the Toulouse collective Aquaserge as a free download. It was the end of 2013. Three years later, more than 330 artists have been baptized (or confirmed) by La Souterraine. The pace is sustained: one delivery per week, under various names (La Souterraine, Mostla, Semi). Multi-artist compilations are the DNA of the structure, sometimes thematic like the recent Ondulée, devoted to reinterpretations of titles by the amazing Mathieu Boogaerts. "La Souterraine asked me by email to choose a song from a list and do a cover of it," says Cléa Vincent, whose first acidulous album, Retiens mon désir, was released on October 7 by Midnight Special Records. We produced a "home studio made" version and sent it to them, also by email. A record that is made in two email exchanges? That's what you call moving with the times. I like this record label model, because I don't like deadlines. I'm in favor of the circulation of ideas. Records that are made easily are often better. La Souterraine is a musical highway between the artist and the listener." "A clan spirit that endures" In addition to the compilations tracing a territorial network of pioneering songwriting creativity, the entity also offers single-artist mixtapes, also available for free download. "Groups that sing in French, without any priority of style, just the language, because 90% of indie production is done in English," explains Benjamin Caschera, co-founder. We started with two or three groups that we knew and we continued with this premise of mixtapes in the style of rap, applied to pop, rock, to what we now call "experimental French song." Faster than a wildfire, the focus on this song without blinkers benefits everyone and feeds a network on a daily basis to which all the participants contribute in turn (artists, promoters, graphic designers, etc.). "The notion of an indie label is obsolete," continues Benjamin Caschera. The indie world is highly dependent on subsidies, distributors and their goodwill, the media, promoters, etc. We are autonomous and integrated, there is a network that we share in open source. We are not against subsidized venues, we want music to circulate and we take everything that can be taken. From squats to Smacs [current music venues, venues certified by the Ministry of Culture, editor's note], we are a transversal, horizontal and vertical network. To break down the compartmentalization and break the niches." Because from the interest of a few prescribing media and the initiated public quickly arose a need for live confirmation of this abundance. In Paris, a partnership with the Olympic Café gave rise to concerts at La Souterraine, which have spread. Forty evenings in a season, that lays a solid foundation for you, which spawns offshoots in the provinces, and even abroad. A common thread at Lieu Unique in Nantes, carte blanche at the Gaîtélyrique in Paris, affiliated groups that organize French evenings in London or Liverpool, a niche at the Transmusicales in Rennes: the spider's web of influence is developing and, through concert tickets, is making its modest contribution to the overall economy of the project... "We make proposals," explains Benjamin Caschera. "There is a clan spirit that persists, a camaraderie between all the artists who have appeared on our compilations. People meet during live shows, and bonds are created. We are an accelerator, but at the rhythm of the groups. If it is not the right time for them, it does not matter, we have other things to take care of. We have found promoters for many artists, labels find themselves working together, instead of taking care of their egos. We create a knot between them, we aggregate energies. Without ever aiming for vertical growth, or one day having the Souterraine tower at La Défense." "Neither vanity nor greed" If the economic model is not far from utopia, it is a realistic utopia. Two small salaries for the team, and for the entity, cascading revenues: the dubbed artists end up (or not) recruiting her as producer, editor, promotional force... "These are micro-activities, for a dense overall activity, specifies Benjamin Caschera. We sneak in. Sometimes we barely have two months' budget in advance. Don't worry about that." Free downloading remains the foundation of the system, but certain products, compilations or mixtapes chosen from among the thirty revealed artists, are available for sale, in vinyl or CD formats, through Objet Disque, another division of the hydra la Souterraine. No one is safe from success. With the density of the clearing and the network, the beautiful company will inevitably release a Katerine, a Fauve, a La Femme, gone from pure indie status to mainstream phenomenon. A group that fills Zéniths. But it is not an obsession. "We are fed up with markets," Benjamin Caschera gets carried away. Let's do something solid, based on free. We put it online, and we promote it from there, it circulates where it should circulate, we have media relays, we focus on the content, we feed a flow to always be visible and present, with concerts and compilations, and we create favorable situations for the promotion of groups." Better than anyone, Souterraine embodies this new attitude of artists and entrepreneurs who take charge, care about all aspects of their creation (composition, production, financing, promotion, image, Internet), instead of dreaming of the lifestyle of a Johnny Hallyday or a Florent Pagny. "The goal is also to have fun, because all this is a bit too serious. We made a compilation of crazy covers, which go from Indochine to Louis-Ferdinand Céline! We received songs from obscure groups that don't even have 70 fans on Facebook, we put two of these unknowns on this compilation, and one of these two groups ends up on France Culture, and the other on the equivalent of France Inter in Canada. All that in three days!" La Souterraine is also aware of its social function. When sociologists want to look into amateur artistic practice in the 2010s, they will only have to scrutinize its catalog. "We don't want to create vanity or greed," concludes Benjamin Caschera. 90% of people are amateurs, that doesn't mean they're "bad", it means there's no structure for them today. Sociologically, it's exciting. It goes beyond music. We listen to everything we receive, and we give feedback, a sentence or two, with some advice if necessary. It's time-consuming, but we want to stay attached to the base, shine from below." Celebrated abroad (it was honored with an article on Pitchfork, an international reference for online musical opinion), Souterraine understood that free music, which threatened the world of music, was in fact a powerful lever to help its development.

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The association is celebrating the second anniversary of its project by launching six new free and ethical services, alternatives to Skype, Evernote, Google Groups and other web giants. Two years already. It's been two years since the Framasoft association launched its "Dégooglisons Internet" campaign, with its funny map of the Internet occupied by web giants in reference to Asterix and its offensives to offer a free service as an alternative to each American service of the "Gafam" (Google, Apple, Facebook, Amazon and Microsoft). The project is progressing faster than expected, and Framasoft is celebrating its anniversary by unveiling a new service every day of this week. A free village that resists the invader The initial idea, unveiled in October 2014, was to take advantage of the general public's awareness of the massive spying on our digital lives by American intelligence, following the revelations of Edward Snowden. This surveillance is facilitated by the Gafam to which the majority of Internet users entrust all their data: geographical movements on Google Maps (therefore Google), videos on YouTube (therefore Google), emails on Outlook (therefore Microsoft), video conversations on Skype (therefore Microsoft), and then shared folders on Dropbox, post-its on Evernote, file sending on Wetransfer... All private American services, opaque and closed, which dig into their customers' data to refine their advertising targeting and who knows what else (since their source code is secret), and from which it is very difficult to leave, because it is rarely possible to recover all the data that has been entrusted to them. Framasoft therefore wanted to show that it is always possible to find an alternative to centralized American services. The association's activists and developers from the free software community have proposed adapting or creating from scratch their own services, open and free, certainly less attractive and sometimes less easy to use than a Google Calendar, but which can be trusted. To leave Evernote and Skype, Framasoft announced that it wanted to launch ten "Framaservices" per year for three years, but "we thought that was an impossible goal", the association writes today on its blog. It was finally pleasantly surprised to discover that Internet users had answered the call: thanks to donations, "we are getting there!" Not only are existing services maintained, maintained and updated, but new sites are starting to emerge. Framasoft even recently launched Framinetest Edu, a clone for use in schools of the game Minecraft, now owned by Microsoft. And for the two years of Dégooglisons Internet, it's going to be a party all week long. Monday sees the release of Framalistes, the replacement for Google Groups. It's a simple service for managing mailing lists: "choose your subscription options, unsubscribe, access archives or manage lists you own, etc." Tuesday, it will be Framanotes, instead of Evernote to "create, store and encrypt your notes, images, files, bookmarks on boards." Wednesday, Framaforms to abandon questionnaires and online forms made in Google. Thursday, big chunk: Framasoft attacks Skype by releasing Framatalk. We will launch videoconferences or audio conversations without software or registration. One click to create the chat room, and it's ready. All you have to do is invite the participants by sending them the link. Friday, class: Framasoft launches its Framagenda. It's as pretty and complete as a Google Calendar, just a bit more complicated to synchronize with mobile devices. Two projects are still on the grill for 2016 -- a site for online petitions instead of Avaaz and Change.org, and a software translation tool. Then there will be 2017 to try to do something against the behemoths Twitter, Gmail and YouTube. We wish Framasoft good luck, but its activists seem over-motivated: de-Googling has "remobilized internal energies" while Framasoft "was on the verge of closing" in 2014: "Exhaustion of members, exhaustion of financial resources..." In two years, the association has "gone from two to five permanent employees", has just taken on a new CDD [fixed-term contract] and has welcomed "new volunteer members full of energy and ideas". An association offers alternatives to centralized American services.

## ###ARTICLE\_START### ID:2286

A breath of fresh air is sweeping through companies involved in associative projects. Skills sponsorship, which consists of making a volunteer employee available during their working hours for the benefit of a cause of general interest, is booming. Jean-Michel Pasquier, founder of Koeo, a digital platform dedicated to the deployment of skills sponsorship programs, is categorical: "We are clearly at a turning point. A few years ago, we would seek out companies to encourage them to lend a hand to associations, through their employees. Now, it is mainly they who take the step of registering on our platform." The latest Admical-CSA barometer confirms this trend: in 2015, the share of skills sponsorship reached 420 million euros, or 12% of the overall corporate sponsorship budget, a figure up eight points compared to the results obtained in 2013. How can this boom be explained? First of all, by the gradual consideration, at the level of company directors, of several major trends among employees: the search for meaning at work, the desire to get involved in experiences that carry strong values, the need to feel useful to the community. "I think that this rise in skills sponsorship is set to increase," explains Marianne Eshet, general delegate of the SNCF Foundation. There is a desire for commitment that is felt throughout society: we see it, for example, through civic service or the citizen reserve." Companies are therefore organizing themselves accordingly and often benefit from an investment in skills sponsorship. This is the case for ENEA Consulting, a consulting firm specializing in the energy sector. "Since the creation of the firm in 2007, we have integrated skills sponsorship into our business model," explains Vincent Kientz, its president. To give meaning back to the strategy consulting profession, we decided that 10% of our consultants' working time would be devoted to advising NGOs specializing in access to energy for free. The return on investment is excellent!" In terms of human resources management, first and foremost. ENEA Consulting attracts extremely competitive profiles, attracted by the company's hybrid model. "When we submit a consultancy offer, we receive an average of 1,500 applications, and not the least. They are often very bright individuals: the top student at the École Polytechnique applied! They could apply to larger firms, but their search for meaning pushes them to come to us," rejoices Vincent Kientz, head of a team of 30 people. Since 2007, ENEA Consulting has carried out more than 70 skills sponsorship missions in 25 African countries, lasting an average of two months. Recently, for example, the firm helped a British NGO develop mini hydroelectric grids in Zambia. ENEA Consulting conducted numerous interviews with all Zambian stakeholders (government, electrification agency, financial institutions, etc.) and based on this, built an economic model identifying the conditions for the financial viability of these mini grids. Business opportunities Skills sponsorship even allows ENEA Consulting to land business opportunities. "All the expertise we have developed in Africa with social entrepreneurs has opened doors for us: today we advise the World Bank and the UN," concludes Vincent Kientz. Other companies use skills sponsorship mainly to strengthen their internal cohesion. This is the case for Linagora, a free software services company with 150 employees. "We are a company with strong values, very much in line with the idea of solidarity. We are particularly attached to the plurality of media," says Alexandre Zapolsky, its CEO. We therefore created a mobile application for the newspaper L'Humanité, "La Cerise", which is a social mobilization network that allows actions to be publicized, petitions to be launched, etc. This project mobilized a team of five people full-time at Linagora for ten months." While he admits to "sacrificing a lot" on the fringes of his company for such actions, Alexandre Zapolsky does not intend to stop there. "This skills sponsorship approach is very rewarding for our employees, because we feel so much better giving than keeping everything for ourselves." However, several obstacles remain to the development of skills sponsorship on a larger scale: the lack of availability of employees, the reluctance of their hierarchical superiors, a certain complexity in the implementation of the system, etc. And this, despite the possibility for companies to deduct 60% of the sums committed to such an approach from their taxes. "In each company, we have about 10% of "pioneer" employees who have already launched into skills sponsorship, 80% who say "I'll do it tomorrow", and 10% who will never do it. The 80%, it is around the coffee machine that the pioneers must try to convince them", underlines Jean-Michel Pasquier. We can never insist enough on the strategic importance of such a device...

## ###ARTICLE\_START### ID:2287

It was at the BHV Marais, a store founded one hundred and sixty years ago, that curious onlookers and Sunday strollers took part in this urban, civic and car-free meeting, a day of debates on the city, its inhabitants and their metamorphoses. "Civic tech", "makers"... communities that are shaking things up In Paris, citizens are sketching out the future of a democracy that is running out of steam and considering new forms of mobilization. "Too often ignored by those who embody power, citizens want to assert their political competence in concrete terms", analyzes the philosopher Sandra Laugier. "It is time to revive the democratic experience", adds Benjamin des Gachons, director of the online petition site change.org and worthy representative of civic tech, these new actors who aim to improve the political system through the use of new technologies. For Alexandre Jardin, "the market for political promises is carbonized". In August, the writer launched "La Maison du Citoyen" via Facebook, an initiative that brings together nearly 126 local structures, made up of those he calls "doers": citizens, social and solidarity economy stakeholders, or local elected officials keen to take concrete and collective action "to do." Doers are also makers. This movement from the United States has found an alternative to industrial manufacturing in open source software, digital tools, and 3D printing. "We are witnessing the emergence of a new alchemy of social ties in "third places" located between traditional businesses and domestic spaces," analyzes sociologist Michel Lallement. A way of opposing "market fundamentalism," thinks philosopher Patrick Viveret. Can makers really challenge capitalism? Bertier Luyt, founder of FabShop Paris, believes in it: "In Berlin, the prosthesis manufacturer Ottobock welcomed Nicolas Huchet, a thirty-something from Nantes who lost his right hand, to its Fab Lab. He invented a bionic hand for just 300 euros." As for the global Ashoka network, it supports 3,300 social entrepreneurs: "Our credo is that social issues are too complex to be resolved by a single class of assets, individuals or companies," explains Jean-Marc Guesné, director of Ashoka France. All "green" and "Greater Parisians"? This return to a more human scale is also expressed through the environment. Indeed, under pressure from city dwellers, the city and buildings are becoming greener and nature is reclaiming its rights, here and there. For Franck Michigan, architect and creator of the BHV Marais green wall, "green roofs and walls provide freshness through evaporation and promote biodiversity." Wildlife also has a role to play in urban space, recalls Alain Divo, specialist in eco-grazing and goat breeder in the ditches of the Jardin des Tuileries. Goats in Parisian gardens that fight pollution in their own way, "especially when you know that a lawnmower that starts up releases as much CO2 as 40 cars," explains the breeder. "The permit to plant organized by the city of Paris should make micro-gardens grow on Parisian sidewalks," enthuses Alexandre Chemetoff, landscape architect. And perhaps save the sparrow dear to Piaf threatened with extinction... The city is therefore tending towards greenery and expansion, to the point of overflowing the ring road to encompass, since January 1, the 131 municipalities of the new metropolis of Greater Paris. At least on paper, since in reality, few suburbanites in the inner suburbs or Parisians define themselves as "Greater Parisians." "I am surprised that the metropolis has not broken down the division between the Paris of the arrondissements and the outskirts," laments Benoît Peeters. For the co-author of the comic strip series Les Cités obscures, the capital is "a city that loves itself in an old mirror and that has difficulty tearing itself away from this image." And yet, the intra-muros versus suburban opposition has become absurd, according to urban planner Paul-Hervé Lavessière, who makes the attachment of the inner suburbs to Paris "a real societal issue." "We are told about Greater Paris, but the Duo towers project punctuates the boundary between Paris and the suburbs a little more with two 180 m exclamation points planted in Masséna! [13th arrondissement of Paris, editor's note]," protests a man who came to attend the debate. "We must put an end to this phobia justified by the trauma of the Montparnasse Tower," replied Benoît Peeters, "Paris will also move by assuming a reasoned verticality capable of designing the city beyond its historical limits." At the end of the day, another limit was pointed out by the collective La Barbe, the lack of representation of women, on the podium as in life.

## ###ARTICLE\_START### ID:2288

The digital school disaster - A plea for a school without screens Philippe Bihouix and Karine Mauvilly, Seuil, 2015For them, the digital wave that will bring millions of smart tablets to French classrooms by 2018 is a huge headlong rush, a hoax motivated more by teachers' fear of being seen as technophobic nerds than based on real scientific data. Philippe Bihouix and Camille Mauvilly, authors of the recently published book The Digital Disaster, threw a spanner in the works of French educational circles this fall. Virulent critics of the strategy launched in 2015 by François Hollande to "connect" French schools by 2018, they are ringing the alarm bells about this "all-digital" policy that will ultimately affect more than 5.5 million students in public and private middle and high schools in France. "We are seen as monsters because we question the wholesale introduction of digital tablets into schools. Aren't there other solutions to make school more interesting and more effective?", the critical duo raises in their latest rant. Billions, for what? In the long term, the French government will swallow up a billion euros to bring schools into line with individual connectivity. "Imagine what we could do with a billion euros! We choose to sink it into computers and tablets rather than hiring more teachers and giving schools more resources," laments Philippe Bihouix. Because according to the authors, the many virtues attributed to digital technology to improve student learning could be nothing more than a sad mirage. The rare studies carried out on the impact of tablet use have produced mixed results, they say. And some even conclude that this wonderful connected object is detrimental to academic results. The results of the OECD's 2015 PISA (Programme for International Student Assessment) survey, Connect to Learn, show that "students who use computers very often at school achieve much lower results in most learning areas," Bihouix and Mauvilly point out. And this is regardless of their social status. Ouch! "There is increasing evidence that there is no proof of the true effectiveness of digital tools on academic results. There is rather an inverse correlation, according to PISA. Other studies see advantages, but is this due to digital technology, or the impact of active learning? We think that students are more focused, but in fact, they are stunned, amazed by screens," says this detractor. The former engineer and this geography and history teacher believe that the invasion of digital technology is a decoy first brandished by politicians to cure all the ills of schools, in disarray after decades of failed reforms. Panicked by dropout rates and declining academic performance, the tablet for all -- or the connected personal tool -- has become the "new Holy Grail", the magic solution to revamp a school that is searching for itself. The smokescreen The digital object at school is even seen by sociologists and left-wing politicians as a way to erase social inequalities, while a technological "divide" separates rich and poor students. How can we oppose it? "We are rather realizing that disadvantaged children are today the most equipped with connected objects, because the lack of parental presence is often replaced by connected objects. The digital school, which in principle requires closer parental monitoring, does not resolve inequalities, but deepens them further", believes Bihouix. The authors also question the impact of all things digital on the physical and mental health of students, while more and more studies are drawing a direct link between our new hyper-connected lifestyles and a sedentary lifestyle, obesity, the epidemic of myopia in children and various sleep disorders. "For us, the health risks are too worrying for us to rush into this without asking questions. What are the effects on visual acuity and sleep? Extending the presence of screens in schools will have an impact on lifestyles and metabolism," insists Karine Mauvilly. Invested in the precautionary principle, the Abeille law (named after the MP who proposed it) banned the presence of WiFi networks in daycare centers last year. But not in primary schools, middle schools and high schools where the vast majority of students walk through the door with the latest cell phones in their pockets. "Exposing children to risks when we only have a vague picture of the quantitative impact of this pedagogy is worrying," says Bihouix. A lucrative market More than an educational decision, the rapid invasion of digital technology is a profession of faith, fueled by the masterful efficiency of powerful lobbies, the authors believe. In particular, Microsoft and Apple, for whom the school markets hold a tremendous windfall. In the long term, if 12 million French students jump into the digital pool, this will be equivalent to 15% of the French market, the authors argue. For 10 years now, Microsoft has been preparing its entry into school benches by organizing forums for "innovative" teachers (of which it is the main sponsor) all over the world. In 2015, the French Minister of Education signed an agreement with Microsoft for the training of all its teachers and the provision of various software and services a few months after the head of Microsoft visited François Hollande's offices at the Élysée Palace. Forcing students and teachers to use targeted software, when free software exists, is to get involved in a spiral that stems more from commercial pressures than from educational concerns. Should we therefore place children in a gilded cage, disconnected from their time? No, concedes Karine Mauvilly, who recognizes that digital technology has its place in school, particularly for students with learning difficulties or who have vision or hearing problems. "Should we put a plaster cast on all children, because some have a broken leg?" The other big question, adds Mauvilly, remains that of age. Introducing tablets in kindergarten, at the age (in France) when the fundamental skills of writing and reading are learned (in the first grade in Quebec), is nonsense. There is no incentive to get started with digital technology early, since this learning can happen late in life, she claims. "School must be a refuge, act as a counterweight and remain critical of digital worlds," the authors insist. "A distinction must be made between home, social spaces and school. When Microsoft suggests "breaking down the walls of the School", it is worrying to say the least." "Imagine what we could do with a billion euros! We choose to sink it into computers and tablets rather than hiring more teachers and giving schools more resources," Philippe Bihouix, co-author of The Disaster of Digital Schools.

## ###ARTICLE\_START### ID:2289

We live in a wonderful time, a time when knowledge in all fields is shared, abundant and distributed; where tools are accessible and shared and software is practically free. We live in the era of "makers". Being a maker is a state of mind of curiosity, openness and sharing. For makers, everyone can innovate and change the world, everyone can bring new ideas, tinker, try, experiment. What allowed the advent of the maker movement is the open source sharing culture of computer programmers, the community culture of Burning Man, the appearance of the first fabrication laboratories, the fablabs at MIT in the year 2000, and the Web of user-generated content; forums and YouTube that allow sharing tutorials, tips and tricks, instructions between enthusiasts, between amateurs, to carry out a project, whether it is DIY at home, making a drone or a robot in a school or finally launching a start-up with an innovative product. The maker movement is the third industrial revolution, that of the circulation of information in the service of education, culture, society and innovation. In a few days, we can learn skills, create a community around a project, we can "prototype" at a lower cost, and present our idea, our product to the whole world. The values of sharing, community, and inclusion of the maker movement allow non-academic learning of techniques, sciences, arts and technologies at all ages. Makers are actors, not spectators, producers more than consumers. The communities they form are places of integration for all, places of welcome for populations in rupture: disabled, unemployed, foreigners. Sharing experiences, techniques, and know-how allows us to have self-confidence, to take control of our destiny, to take power. France has its place in this movement. The tradition of excellence in the crafts, but also the quality of our higher education, have made the reputation of French artisans and engineers all over the world. The maker movement is an opportunity for those who, like me, left the school system early, for those who have dropped out, for those who come from far away, to find communities in which everyone can find their place, learn, think, do and transmit. Paris, with its rich ecosystem of schools, associations, culture, innovators and entrepreneurs, is today part of this movement that is changing people's lives. We are all makers.

## ###ARTICLE\_START### ID:2290

Brought together at the head of the tournament since its creation, Franck Riboud, the president of the Danone group and the Evian Championship, and Jacques Bungert, the vice-president of the Evian Championship, take stock at the dawn of the 23rd edition. LE FIGARO. - With the qualifications established in the United States and Asia, is the mission of the Evian Championship today to discover talents? Franck RIBOUD. - It is not an objective in itself. A sport only develops with the emergence of champions, so it is more about setting up an ecosystem around the tournament. The Evian Championship should not be seen as just an annual event. We have created qualifications in France, South Korea and the United States, to be in line with our mission: to allow young talents to emerge and reach a new level. Jacques BUNGERT. - A recent example, the Danish Nanna Koertz Madsen, after obtaining her ticket to Evian during the European qualification, followed up with a victory on the Ladies European Tour (LET)... Are the invitations to the Evian Championship issued in this spirit? JB - The criterion remains sport: performance or track record, with the wild cards we have the possibility of offering young talents the opportunity to compete with the best. The Swiss Albane Valenzuela (18 years old, Editor's note) is a good example! She missed the cut at Evian in 2015 but then had a very good season in 2016 and a great performance at the Olympics. She will miss her return to Stanford to play Evian... another campus! FR - It is structuring, because I think that today the European Tour does not give young women the opportunity to earn a living. Even the top ten on the LET have to go and play tournaments thousands of kilometres from home in China, Australia, New Zealand, all while financing a caddy... it's not sustainable if they underperform. We are also campaigning with the American Tour so that European players can access the Symetra Tour. This would allow for a variety of nationalities at the top women's level. With Jacques, we have total freedom of speech and thought. No one is forced to follow us. We try to apply our convictions. I can announce for example that the Jabra Ladies Open, which we support, is continuing. I want to demonstrate that it is possible to create a local economy around a tournament. We want to make it a marketing case. Should we understand that the Evian Championship defends the idea of "social justice" for female golfers? FR - Why should girls earn less than boys? Why should some not be able to earn a living? Women's professional golf requires the same effort... The role of the Tournament is just as societal as it is economic and golf-related. In France, there are many things well done in golf. For this sport to continue to develop, there must be alignment: quality of the course, quality of the organizations, young talents... We are talking with the Americans, with the Golf National... on all subjects, for example why not initiate a horticultural sector specific to the golf course by creating internships for young people in Evian. The environment will be a real subject for golf in the future. We need technologies, research. Other ideas? FR - We are trying to implement our ideas in Evian. You know that young people who play golf well obtain, according to certain criteria, the Gold license. It gives priority in the federal grand prix and allows you to play for free on the courses in France. I decided that in Evian, those who have the Gold license can come and play in Evian 365 times for free during the year. These rules must be established. There are resources and means that are there, we must put them into perspective in order to serve a very simple objective: to bring out champions! JB - You know, after more than twenty years of building the tournament, and thanks to our Major status, we are more peaceful (smiles). We can now go "open source". At a time when everyone is building walls, partitions, we are open. It is great to hear Franck say to Annika Sorenstam about her projects for young people: "Come to Evian, what do you need?" To slap hands and do it... without ulterior motives, just to build with those who have projects. -

## ###ARTICLE\_START### ID:2291

Coincidence of timing. It was in the midst of controversy that Facebook celebrated, on Tuesday, September 6, the 10th anniversary of its "news feed", the social network's news feed where users can access all the "posts" - messages - published by their circle of acquaintances. The Californian firm had to face, last week, a major outcry in Norway, following the censorship of the photo of the little girl burned by napalm taken in 1972, during the Vietnam War, published by the major local newspaper, Aftenposten. The social network deleted the image from the newspaper's account considering that it contravened its rules of use. Facebook, which removes content based on reports made by Internet users, had already removed the photo from other accounts but, by attacking a newspaper, the group lit the fuse. On Friday, yielding to pressure from public opinion, it ended up backtracking. "We were surprised ourselves. We woke up one morning and found that users had requested the removal of the image. But two days later, we changed our policy to reinstate this photo that was of historical interest," explained Chris Cox, Facebook's product director, in Paris on Monday, September 12. "We are not perfect. But we are a platform that must both respect freedom of expression and preserve the security of its users." The history of Facebook's news feed, which has become the backbone of the social network, is not its first controversy. Its very creation had caused an outcry among students. Suddenly, the user knew that his friend Pierre had broken up with Silvia, that Valérie had gone to the movies or that Claude had become friends with Emma. Scandal! A petition had then denounced this unbearable intrusion into the lives of Internet users and many "anti-news feed" groups had been created. Mark Zuckerberg had to speak out to put out the fire. Multiple innovations Ten years later, the opposite phenomenon has occurred. It is because users complained about being deprived of information about their friends that Facebook decided to modify its algorithm a few months ago to favor personal messages to the detriment of articles published by the media. Chris Cox justifies this choice that has left many titles upset. "It is following quality panels that we noted that our users had the impression of missing the "posts" of their friends", indicates the product manager, defending himself from having knowingly excluded the media. "We have not analyzed the content of users' posts, but we have looked at the signals sent by users through their interactions", he says. And to recall that the company's philosophy consists first and foremost of "connecting family and friends", and only then of "informing". In the meantime, the social network has announced two measures intended to allow publishers to increase their advertising revenues. New formats will be offered in Instant Articles, its mobile technology. And the media will be able to insert advertising spots within live videos. In addition to publishers, the firm is particularly looking after its members. Its ambition: to connect "the next billion users". Mark Zuckerberg's group, which currently has 1.7 billion members, has multiplied innovations. It launched Facebook Live, which allows live events to be broadcast, launched a 360-degree video capture tool and installed "chatbots", robots capable of responding to Internet users on Messenger, its instant messaging service. In the spring, the company bought Masquerade, an application that allows a mask to be superimposed on a photo of a face. In order to attract developers and manufacturers, it has also made its 360-degree camera, the "Surround 360", "open source" (available to everyone), in order to encourage as many people as possible to create original content. But Facebook is mainly focusing on those with poor Internet connections. "In five or six years, everyone will have a super phone, but the networks will still be bad," assures the manager, dreaming of conquering India. Internally, "2G Tuesday" has been instituted, which consists of teams testing the social network at low speed. An offline mode has been imagined. "For some people, it's the most important feature," says Chris Cox. To bring the Internet to the most remote areas, Facebook is counting on Aquila, a crazy project based on giant drones stationed in the sky for several months.

## ###ARTICLE\_START### ID:2292

It seems that we were "behind", but that's over now: let's rejoice because "coding" is starting this year in elementary school, and that's very good news! With year I of coding at school, it's the arrival of an essential complement, which was missing from the B2i (Computer Science and Internet Certificate) which, since 2006, has helped support the emergence of creative, critical and responsible citizens in their digital practices. Now, it's about learning to program machines so as not to be programmed by them! However, it's a safe bet that unpleasant comments will come from all sides, so let's take a look at the recurring criticisms and clichés here. Let's look at things in a positive light. Coding is not reading "We're going to code instead of reading, writing and counting." Don't worry: programming is reading, writing and counting, and it won't be done as a substitute for spelling, Latin or Greek! Coding is a practice that assumes the complete absence of typing or logic errors. Successes are quickly spotted and rewarded. When the program, or parts of a program, work, it is immediately visible. Demanding and rewarding: great, right? The solitary geek Coding is not playing either. It is sometimes creating games (and many other things) but it is often done collectively: to move forward, we share, and we have the right to "copy from our neighbor". We are very far from the clichés of the solitary geek or the "no life" immersed in video games, cut off from any social life. Made in English Code is the Trojan horse of English and its procession of proprietary technologies and American companies. Bad choice! Programming languages use English but not only, and these languages are for the most part free in the sense of free software. The resources to learn them exist in French, some are free and free. Many of these tools have been funded by the French government's Investments for the Future Program (PIA), or are the result of the French or European economy. It is not a question of locking the consumer into the use of this or that commercial product, but of respecting their individual data. It is up to educational stakeholders to support and support them. Vocational school School is not there to train professionals but citizens. Knowing how computers, tablets and other phones "think" and "act" is not becoming a developer! Through this initiation, school does not open up to professions but to a citizenship that takes into account digital technology and its growing place in our lives and societies. More science Once again, scientific subjects are valued to the detriment of literary subjects. Wrong! Mathematical logic is at the heart of computational thinking, but programming languages are also languages that can be taught as such, with their syntax and grammar. Digital productions are spaces for promoting creativity and the ability to express oneself. Programming is therefore, on the contrary, a tool for developing interdisciplinary practical teaching! We are not ready There are not enough trained teachers so it will not be for everyone and not everywhere in France! Funny reasoning. Before, it was absolute inequality since you had to have parents from the profession or who could afford to pay for this initiation. Otherwise, you had to be lucky enough to be close to a place offering extracurricular or extracurricular training, be near a Public Digital Space (EPN), or an associative place offering coding workshops. Good news then, everyone will have access to it, especially girls and young women who remain too rare in engineering schools and specialized schools. It is true that it will take time to spread everywhere but, now, it is in the programs, teachers are being trained so everyone will have the right to it. Five million euros from the Future Investment Program have been set aside to promote the "culture of coding" and powerful consortia have been formed to train teachers, facilitators, committed citizens and volunteers on civic service missions. Their objective is therefore ours: to focus on priority education and make full use of the levers of creative digital technology to combat school dropout, to train educational stakeholders as close as possible to the regions and to offer everyone new dynamics of digital engagement (D-Clics numériques), to create new distance learning courses, supplemented by meeting times for education professionals who want to get started (Class'Code), to develop turnkey services and tools (Code-décode) to support school and extracurricular stakeholders (Ecole du code), to introduce students in a fun way to programming and digital creation and to equip teachers for support (Declick). So yes: the arrival of code in schools is good news and we should be happy about it!

## ###ARTICLE\_START### ID:2293

Want a technological boost for your renovations? No need to trace your plans with a ruler, or to hold paint samples at the end of your arm, some free tools take care of simplifying your life. Here are our suggestions for free software and free applications for the home. And to make sure that learning this technology is not more painful than its alternative, we tested them for you. HOUZZ (free) on iOS and Google Play Houzz is a mine of information on decoration. A message board of ideas, the application is also a catalog to order products, an address book to find a professional and a decoration magazine for tips and advice. Contemporary, urban, rustic, ethnic, there is something for everyone. And the range of products, if it is not for all budgets, includes unique items that should catch the eye. The directory of professionals is also very useful and allows you to consult their portfolio and contact them directly through the application. [+] Lots of ideas to inspire you, possibility to save decorating ideas [+] Very complete application, which allows you to buy, get inspired and quickly get in touch with professionals, or get tips for doing your work yourself [+] Original and high-quality products [-] Very incomplete French version. The menu is French, but the product descriptions and expert advice are in English [-] Not all products are available in Canada [-] In the Product section, there are few items for small budgets COLOR CAPTURE AND COLORSMART (free) on iOS and Google Play These two applications, one by Benjamin Moore, the other by Behr, allow you to draw inspiration from your environment to choose your colors. A flower, a piece of furniture, a painting; just take a photo and the application will suggest colors that closely match it. Both applications also suggest other colors that will coordinate to create your own personalized palette. Unfortunately, the applications do not allow you to visualize the color on the wall of a room. On the Benjamin Moore website, however, you can upload a photo of your room and thus test your duly chosen colors. The ColorSmart application also allows you to calculate the cost of the work. [+] Very easy to use, especially Color Capture [+] Very practical for getting inspiration or for locating a retailer later [+] The suggested color is very close to the photograph [-] No visualization of the color in its own decor [-] No cost estimate for Color Capture A word of advice: pay close attention to the lighting of your photo which can greatly influence the colors proposed. SWEETHOME 3D (free) ARCHIFACILE (free) for Windows and Mac OS X 10.4 to 10.11 SweetHome 3D and Archifacile allow you to draw the plans of your house. SweetHome also allows you to visualize them in 3D and add photographs, a plus if you are using the software to sell your house. During the test, we had a clear preference for SweetHome 3D which allows you to adjust the angle of the walls, in addition to being generally easier to use, despite a less inviting design. If the choice of virtual furniture is not very large, it is easy to adjust the dimensions of the furniture and visualize the space they will take up in the room. [+] Very simple to use [+] Allows you to adjust the dimensions of doors, windows and furniture in order to plan the space [+] Allows you to quickly draw a plan of your house, which will be useful for many jobs [-] Not focused on decoration [-] Not a large choice of virtual furniture or colors for the walls [-] For Archifacile: no 3D visualization and more manipulations for the same result For downloads: www.sweethome3d.com/fr/ and www.archifacile.fr/ A tip: If you prefer an application for tablet or phone, you can download Home Design 3D for iPhone, iPad and Android. However, with a touch screen, it is more difficult to draw the plans. The experience, although conclusive, was accompanied by several small frustrations. The Home Design 3D series also offers a version for the outdoor courtyard. MAGICPLAN (free) on the App Store and Android No need to take out the braid, MagicPlan allows you to quickly obtain a plan of your space. With the camera, you aim at the corners of the room and the application will draw a plan, including the measurements and the surface area of the room. Very practical before buying equipment or evaluating the cost of future work. In the application, you can add furniture, windows and electrical system, but most of these elements are paid. Similarly, to export the plan, you then have to loosen your purse strings. [+] Easy to use, a tutorial guides you through the steps [+] Fast, saves a lot of time when doing jobs [+] A section of the app allows you to plan the purchase of materials and predict costs [-] The free option is limited, you will have to pay $3.99 to export a plan [-] The margin of error is greater with this app than with a good old braid. MagicPlan is not ideal for precision work [-] Does not work on all devices. OTHER SUGGESTIONS FOR HOME APPS A - Smart Tools HD ($3.99) App Store and Smart Tools on Android Protractor, level, ruler and flashlight: no more digging around in your workbench. The Smart Tools range of apps helps you out with small jobs around the house. B - Home by Wish (free) on the App Store and Android For gadget lovers and bargain hunters, Home offers a wide range of products at often ridiculous prices. Small problem: the delivery time is very long and sometimes exceeds two months. C - Pinterest (free) on the App Store and Android No need for an introduction, this hyper popular application is a constant source of inspiration. A big plus for do-it-yourself fans, the application is full of decorating ideas and tutorials. D - Etsy (free) on the App Store and Android The Etsy application offers a vast selection of original items created by artisans, often at very reasonable prices. If you wish, you can also choose items made only in Quebec. E - reebee (free) on the App Store and Android reebee brings together all the flyers from stores near you. No need to dig through the Publisac, reebee simplifies the search by allowing you to compare sales for a particular item.

## ###ARTICLE\_START### ID:2294

The old system of hierarchical and pyramidal companies is cracking everywhere. New entrants from digital technology are shaking up business models. Companies are drowning in processes and inertia, incapable of innovating. Dehumanized, companies flood their employees with short-term imperatives and unattainable objectives. But, if this dark picture of the traditional company is increasingly common, the leaders of large companies remain disoriented by the digital transition, sometimes having become aware of the changes, but almost incapable of going beyond the level of discourse. For several years, Stéphanie Bacquere and Marie-Noéline Viguié, specialists in digital strategy and collaborative management, have been invited to large organizations to put hacking at the service of the digital transition. Disobedience How could a hacker serve as a guide? In the collective imagination, a hacker is a computer pirate who penetrates a system to bring it down or steal data. But this image is very reductive. The hacker is above all the one who decides, by working in a community, to tackle problems, to build in order to change the system from the inside. Their values go beyond the sole field of IT. Hacktivists have thus invested the political field, like Anonymous. Bio-hackers fight for participatory biology by developing open source seeds. The approach applies to all areas, including the workplace. Will hacking save traditional companies? This is the surprising idea defended by Stéphanie Bacquere and Marie-Noéline Viguié in the book Makestorming, le guide du corporate hacking (Diateino, 198 pages, 24 euros), which they drew from their experiences and which is intended, without pretension, to serve as a guide. For these two digital experts, hacking is the most suitable solution for successfully making the digital transition. The book is based on a widespread observation: most of the transformations underway in companies are nothing more than false solutions. The creation of an innovation department, for example, is contrary to the digital spirit, "because innovation comes from those who do, not from a small caste that would have the right to be creative while the professions would be content to follow and apply". Some managers throw themselves into the gadget race, they urgently order "a giant sofa, a ping-pong table or a table football after seeing a report on Google's headquarters in Mountain View - as if that would suddenly make the company more creative". But for Stéphanie Bacquere and Marie-Noéline Viguié, there is only one way to truly transform an organization: corporate hacking. The book, which combines theory, feedback and advice, offers an approach that everyone can use to become, "on their own scale and in their own way, a corporate hacker." The authors begin by introducing hacker culture, sweeping away the preconceived ideas that circulate on the subject, and show how this culture can change a company in a few months. They then explain how this revolution can take place, and tell stories of corporate hackers who have succeeded in changing their company or administration. Céline Alvarez has thus shaken up national education by disrupting classroom habits: today she shares, in free access, the educational tools developed. Frédéric Crétinon, project manager at Salomon, has managed to have his prototype of shoes adopted despite the reluctance of his hierarchy. They also mention the small acts of disobedience by which, every day, employees or civil servants hack their organization: sending an email to their line manager to short-circuit the incompetence of their line manager, starting a blog to make their expertise known outside, using their working time for other, more underground projects, or even playing with the rule when it is absurd, for example by sharing a bonus with their employees if the company only pays individual bonuses. "Another possibility" If the founders of Nod-A, a company that works to introduce new work practices in the digital age, are committed to this constructive rebellion, it is also because these reflections are particularly important at a time when work will have to reinvent itself. Automation is leading to a profound restructuring of our way of thinking about work, which is worrying in some respects, but which could also be the opportunity for a valuable societal reinvention, with people working "to do what they think is important, desirable and who act in places where they have something to contribute, or something they want to learn and develop". This society is possible according to the authors: it is the fall point of corporate hacking. "While waiting for this change, we must set an example. Be the incarnation of a new promise, of another possibility, full of dissent, of pleasure in being and doing, of impertinence and free will", they write.

## ###ARTICLE\_START### ID:2295

Who should pay for tablets and other technologies in schools? The debate was rekindled a few days ago when the mother of a teenager attending Le Sommet school in Quebec City complained that the school required him to buy an iPad tablet. The Ministry of Education agreed with her. According to the Ministry, the Education Act grants students the right to free teaching materials required for education, which includes tablets when they are required by the school (Le Soleil, August 8, 2016). A compromise was finally proposed for families who do not want to or cannot pay the required amounts (Le Soleil, August 15, 2016). This is one of the many issues raised by the use of information and communication technologies in education (ICT). Last year, the Commission on Ethics in Science and Technology mandated its youth commission (CEST-Jeunesse) to take a position on these issues. Here are some avenues for reflection resulting from this work. Avoiding fads The popularity of certain technologies outside of schools, such as touchscreen tablets, should not blind decision-makers when making technological choices in schools. To be acceptable, ICT must add value to teaching, and their use must be supported by rigorous research. The good news is that a recent study by the Université de Montréal showed significant benefits of using tablets at Le Sommet school. However, we must ensure that potential problems, such as the increased distraction that “multitasking” technologies can cause, are properly addressed. Ensuring equity between students, regions, and the public and private sectors The ability to use ICT is an essential skill in today’s world. There are significant disparities between individuals, both in access to computer equipment and in the skills needed to use it to its full potential. This "digital divide" between individuals is one of the forms of social inequality that schools should seek to reduce. The use of ICT in the classroom must be considered with this principle in mind. There is concern that technologies are not very accessible to less fortunate families, due to their sometimes high cost. Indeed, not all families have the same financial means. This also raises issues regarding the allocation of resources in the school system. We must avoid creating a two-tier school system where public schools are still the poor relation compared to private schools. Prioritizing the accessibility of equipment to students and respecting the public system's ability to pay, CEST-Jeunesse proposes three solutions. First, that teachers take into consideration that not all families have the same technological means available at home to complete work and homework. Consequently, that homework be adapted so as not to disadvantage those who do not have the latest equipment. Secondly, that the Ministry of Education encourage the implementation of free software in schools, in particular to generate savings that can be reinvested elsewhere. Thirdly, that the Ministry of Education ensure that, where possible, sharing of ICT (hardware and software) is established between schools, to reduce inequalities between these schools, for example by means of national licenses. Focus on the acquisition of transferable technological skills CEST-Jeunesse also wants to focus above all on the appropriation of technology, well beyond training in its technical aspects. This applies as much to students as to teachers. Everyone should be able to provide critical feedback on the technology and be as independent as possible in relation to it. Read the opinion Ethics and ICT at school: a view from young people, 2015, 34 pages The CEST's mission is to advise the Minister of Economy, Science and Innovation on any question relating to ethical issues related to science and technology. Every two years, it holds a youth commission bringing together college students and focusing on a topic that concerns them, in order to raise their awareness of ethics and to enrich the public debate with their particular perspective. Édith Deleury, President of the Ethics in Science and Technology Commission (CEST) Charbel Abi-Saad, President of CEST-Jeunesse 2015

## ###ARTICLE\_START### ID:2296

The irony is cruel for Imad. A call center agent at the French Teleperformance, one of the world leaders in call centers, this holder of a master's degree in computer science handles ADSL subscriber requests for a French operator. "We have six and a half minutes to resolve people's problems. It's a very stressful job, but it's just the time I need to find another one that suits me." This young graduate, overqualified for the position, would rather be hired as an IT specialist in charge of ADSL by a French telecoms company. Like him, few young Tunisians dream of a career in the country and in the sector. Because here, the great mirage of call centers is over: the market is at a technological turning point that leaves little hope. The turnover is still estimated at 300 million dollars (nearly 269 million euros) by the Ministry of Information Technology and Digital Economy, and Tunisia has 364 call centers for 22,000 employees. Remarkable figures for an activity that only appeared in 1999, which owe much to state voluntarism. Aware of the possible financial windfall, particularly with the contribution of foreign currency, the State increased its investments in telecoms by more than 15% between 2003 and 2007. Tunisie Telecom, the public telephone operator, has installed specialized lines that connect call centers to its network to avoid congestion. Optical fiber was marketed in 2012, two years before Morocco, its rival. This is a major technological advance for offshore call centers, those that work internationally and which represent 321 companies. At the time, Tunisia was a pioneer among emerging countries in terms of new technologies, and call centers took full advantage of this. Until 2011, it was the first on the African continent in the Networked Readiness Index, the indicator established by the World Economic Forum that measures the degree of readiness of a nation to participate in and benefit from information and communication technologies. In terms of taxation, offshore call centers enjoy exemption from income tax for ten years (capped at 10% since 2014) and state coverage of the employer's share for five years for higher education graduates when they start their first job. "Those were the good old days," recalls Anis Mabrouk, who then worked for Phone Control, a call center service provider. "We could do up to three installations per week." Hussars Paradoxically, it is this spirit of freedom and deregulation that introduced the worm into the fruit. In 2007, the government eliminated all administrative procedures for creating call centers. Immediately, a new niche developed: the rental of positions (operational positions). Investors then began to equip premises and rent them to call centers created from scratch. Next to the large buildings housing hundreds of call center agents, structures with a few dozen employees squat in places more or less suited to the activity. These new players are slashing prices, because the required investments are reduced to next to nothing. "It's nonsense," fumes Mamdouh Oueslati, boss of the Sirius call center. They stay a few months, and then they disappear. Generally, part of the contract is payable in advance. Some get the money and close immediately. They are ruining our reputation." The manager, whose company has 35 positions, had to adapt. Faced with the downward leveling, he chose to work with only one foreign client to offer him tailor-made solutions, but with the risk that the latter could leave at any time. Others decide to rent part of their premises to these telephony hussars themselves, thus ensuring a fixed income. The arrival of free call center software, such as Vicidial, has also turned the profession upside down. There, there is no longer any need to rent premises or a supplier, a computer is enough. "You still need an experienced technician to install it," qualifies Anis Mabrouk, "but the software is quite comprehensive." However, they suffer from a handicap: communications are made only via the Internet, which makes them less stable than those that use a traditional telephone gateway. These low-cost centers cannot claim contracts from large companies, which are looking for maximum reliability. But their presence allows them to put pressure on their subcontractors. "For large volume contracts such as a hotline, the customer can demand billing per minute spoken. If it is technical support, the call center may only be paid if the problem is resolved. The sector is becoming very fragile," laments Ridha ben Abdessalem, president of the union chamber of call centers at Utica (employers). In addition, technological progress is drying up the vein: new "omnichannel" offers propose the automatic resolution of requests previously handled by teleoperators. These robotic responses are available on all written media: SMS, social networks, websites, etc. "Software semantically analyzes the Internet user's request to find a solution in real time," explains Anis Mabrouk, who nevertheless sees it as a way for call centers to provide more quality: "The more individuals contact a company on social networks or elsewhere, the more they demand refined responses that only a human can answer." Teleprospecting, telesales or telemarketing, the historic missions of call centers, are not yet affected by robotization. It is in these niches that smart people, freed from all technological and administrative constraints, are proliferating in Tunisia. Their only obstacle: obtaining customer files, the essential holy grail for making consumers' lives hell. 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Call centers promise to hire them and train them themselves. In the first year, we had 60 students enrolled, in the second year, only 4 or 5," explains a training manager in Tunis. A lack of regulation that has one victim: the employee. The sector has never been known for its social policy, as this manager acknowledges in his own way: "Talking to journalists? To be called slave traders, no thanks." With fierce competition, call centers use teleoperators as an adjustment variable: unpaid and reduced breaks, unaccounted overtime, harassment... The salary is not bad, around 700 dinars (284 euros) plus bonuses that can be substantial (the minimum wage is 338 dinars), but the employees, many of whom are university graduates hired for their good level of French, feel, like Imad, humiliated. Strikes took place in June for better recognition. The UGTT, the country's main union, wrote to the French embassy to denounce the subcontractor it employs, TLS (Teleperformance group), which manages appointments for obtaining Schengen visas: it is threatening to fire three employees "for their union activity," assures Mongi ben Mbarek, UGTT general secretary of the federation of telecommunications centers. The union is demanding that a collective agreement be put in place by the end of the year, supported by the international union UNI Global Union and the French SUD. Utica is opposed to this, because "it would favor foreign call centers that will have no trouble aligning themselves," Ridha ben Abdessalem emphasizes. "Small companies will not be able to survive." Meanwhile, competitors are mobilizing: Madagascar and Mauritius are about to acquire a third fiber optic cable. 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## ###ARTICLE\_START### ID:2297

The irony is cruel for Imad. A call center agent at the French Teleperformance, one of the world leaders in call centers, this holder of a master's degree in computer science handles ADSL subscriber requests for a French operator. "We have six and a half minutes to resolve people's problems. It's a very stressful job, but it's just the time I need to find another one that suits me." This young graduate, overqualified for the position, would rather be hired as an IT specialist in charge of ADSL by a French telecoms company. Like him, few young Tunisians dream of a career in the country and in the sector. Because here, the great mirage of call centers is over: the market is at a technological turning point that leaves little hope. The turnover is still estimated at 300 million dollars (nearly 269 million euros) by the Ministry of Information Technology and Digital Economy, and Tunisia has 364 call centers for 22,000 employees. Remarkable figures for an activity that only appeared in 1999, which owe much to state voluntarism. Aware of the possible financial windfall, particularly with the contribution of foreign currency, the State increased its investments in telecoms by more than 15% between 2003 and 2007. Tunisie Telecom, the public telephone operator, has installed specialized lines that connect call centers to its network to avoid congestion. Optical fiber was marketed in 2012, two years before Morocco, its rival. This is a major technological advance for offshore call centers, those that work internationally and which represent 321 companies. At the time, Tunisia was a pioneer among emerging countries in terms of new technologies, and call centers took full advantage of this. Until 2011, it was the first on the African continent in the Networked Readiness Index, the indicator established by the World Economic Forum that measures the degree of readiness of a nation to participate in and benefit from information and communication technologies. In terms of taxation, offshore call centers enjoy exemption from income tax for ten years (capped at 10% since 2014) and state coverage of the employer's share for five years for higher education graduates when they start their first job. "Those were the good old days," recalls Anis Mabrouk, who then worked for Phone Control, a call center service provider. "We could do up to three installations per week." Hussars Paradoxically, it is this spirit of freedom and deregulation that introduced the worm into the fruit. In 2007, the government eliminated all administrative procedures for creating call centers. Immediately, a new niche developed: the rental of positions (operational positions). Investors then began to equip premises and rent them to call centers created from scratch. Next to the large buildings housing hundreds of call center agents, structures with a few dozen employees squat in places more or less suited to the activity. These new players are slashing prices, because the required investments are reduced to next to nothing. "It's nonsense," fumes Mamdouh Oueslati, boss of the Sirius call center. They stay a few months, and then they disappear. Generally, part of the contract is payable in advance. Some get the money and close immediately. They are ruining our reputation." The manager, whose company has 35 positions, had to adapt. Faced with the downward leveling, he chose to work with only one foreign client to offer him tailor-made solutions, but with the risk that the latter could leave at any time. Others decide to rent part of their premises to these telephony hussars themselves, thus ensuring a fixed income. The arrival of free call center software, such as Vicidial, has also turned the profession upside down. There, there is no longer any need to rent premises or a supplier, a computer is enough. "You still need an experienced technician to install it," qualifies Anis Mabrouk, "but the software is quite comprehensive." However, they suffer from a handicap: communications are made only via the Internet, which makes them less stable than those that use a traditional telephone gateway. These low-cost centers cannot claim contracts from large companies, which are looking for maximum reliability. But their presence allows them to put pressure on their subcontractors. "For large volume contracts such as a hotline, the customer can demand billing per minute spoken. If it is technical support, the call center may only be paid if the problem is resolved. The sector is becoming very fragile," laments Ridha ben Abdessalem, president of the union chamber of call centers at Utica (employers). 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## ###ARTICLE\_START### ID:2298

The "free software" committee of the World Social Forum (WSF) in Montreal intends to spread the idea that it is possible to free the planet from the yoke of these companies that lock their computer codes and generate profit from the personal information of their users. At a time when information can be copied infinitely and at practically no cost, the laws protecting intellectual property are contested by activists, who dream of the emergence of a world where knowledge is transmitted without barriers. In the meantime, "free software" solutions are emerging everywhere, but are still relatively unknown, even to other activists. Freedom, digital version Few people have not yet integrated technology into their daily routine. Computers, tablets and smartphones are our daily companions, as are digital social networks and entertainment services like Netflix or Spotify. "Just as we pay attention to what we eat, I believe that we must also pay attention to the technology we consume, so that it respects the digital ecosystem," Marianne Corvellec, a free software activist, makes the comparison. Just as she does not "only eat organic food," she believes that it is quite normal to use proprietary software. However, as computers take a predominant place in our lives, we have the right to demand access to them, to be able to tinker with their codes and, ultimately, to take ownership of the tool. "[Companies] put locks on technology. It is also an economic lock," explains the woman who is also a member of the board of directors of APRIL, a French organization responsible for promoting and defending free software. "I want computing to emancipate. Not restrict." Marianne Corvellec will speak at the major conference on free software entitled "Another digital world is necessary: with free software, it becomes possible!". She will share the podium with one of the world's leading figures in the field of free software, Richard Stallman. President of the FreeSoftware Foundation in the United States, Stallman is behind the development of GNU/Linux and the concept of "copyleft", a snub to copyright in the form of a license allowing the use, copying and modification of one's work, on the condition that these privileges are maintained for the next person. The revolution will be digital or it will not be The philosophy of the "free software" is resolutely anti-system: the dream of a universe in which no barrier prevents access to human knowledge, software, culture and hardware design. All would be accessible, free and ready to be improved by the community. The ideal is not limited to the niche world of programmers and web "geeks", but concerns all digital users. "It's a real political movement that goes well beyond technology," explains Marianne Corvellec, who specifies her activist side: we must fight against the American patent model." According to her, the protection of intellectual property harms innovation, and not the other way around. "Some companies that have the financial and legal means can file patents en masse [in the United States] just to stifle young shoots." If society were to benefit from the advantages of a well-established free system, it would still be necessary to promote it by choosing free software for the computers of our governments and the public system, she suggests. In Quebec, this fight is led by the non-profit organization FACIL, which notably promotes the "free software pact", which asks members of the National Assembly to "respect open standards in public administration and in the delivery of online services." Mathieu Gauthier-Pilote, president of FACIL, has no kind words for those he calls "pernicious digital giants", such as Apple, Microsoft and Facebook. "Google, for example, uses free software to collect our personal information. Others use DRM [digital rights management], like Apple. When you buy a real book, you can lend it, resell it. Not on iTunes!" According to Mathieu Gauthier-Pilote, there are several "free movements", politically both left and right. Some, rather extreme, do not recognize any copyright. They are those behind the illegal sharing of music and films via the BitTorrent protocol, for example. "The moderate movement favors free licenses like Creative Commons." While waiting for the major copyright reform, which may rebalance the rights of everyone, authors and consumers alike, this "moderate" movement that it claims to support encourages the development of free software, a "third way": neither piracy nor system. Making digital activism known... to activists Free software, however, suffers from a lack of public recognition. "We are a bit like the environmentalists in the 1960s," explains Mathieu Gauthier-Pilote. "We are not at the stage where it is taken for granted that our behaviors must change, much less at the stage where we know about alternative solutions." This problem even affects activists involved in social or environmental causes. "Even the World Social Forum did not use free software," laments the free software advocate, who noted the widespread use of Google, Facebook and Skype in organizing the Forum. Promoting the role of free software in the convergence of struggles is also a challenge for Marianne Corvellec, who is more used to speaking in front of specialists in the technological field and who are often already won over to the cause. She concludes by quoting the singer and social activist Bernice Johnson Reagon: "If you are too comfortable in a coalition, it is because it is not a broad enough coalition!" In short, it is time to seek out new allies. As a small victory, the free software advocates have germinated the idea of using free software for the organization of the next forums. In the meantime, it will be possible to consult them during a workshop intended to help the public and the participants of the WSF to become familiar with this software.

## ###ARTICLE\_START### ID:2299

The collaborative economy is booming. More than the Ubers and Airbnbs of this world, 170 organizations in Quebec are forging this new economic and social order, propelled by the Internet and a thirst to reconnect with the community. First part of a series of three texts on a movement that is snowballing. In a corner of the workshop, a young tech whiz holds a strange helmet equipped with neural sensors on his head. Next to him, an artist draws animals on a screen, transformed into paper origami using a laser cutter, while a 3D printer spits out plastic a few meters away to make the missing part of a device. Welcome to l'échoFab, the pioneer of "Fab Labs" in Canada, located on Peel Street in Griffintown. The community laboratory is part of a global network of labs created by MIT (Massachusetts Institute of Technology) in the early 2000s to provide the community with free access to knowledge and equipment that foster innovation. Accustomed to the idea that new technologies must serve the greatest number of people and promote social change, the founder of Fab Labs, Neil Gershenfeld, a professor at MIT, has created 1,000 of these labs in 78 countries in less than a decade, all connected to share knowledge, software, user guides and data in open source mode. (Almost) anything to make "The Fab Lab is a takeover of the world of objects. It's a community that helps each other to make... "almost anything"", says Monique Chartrand, director of Communautique, the founding organization of echoFab, launched in 2011. The cheerful director takes up the leitmotif of the very popular course "How to Make (almost) Anything" given by Professor Gershenfeld, which allows anyone to access digital manufacturing machines or any other machine tool free of charge to bring an idea, a project, into the world, and create a prototype at very low cost. "The Fab Lab is not just about sharing equipment. The primary principle here is that people collaborate, and it is this meeting of knowledge that is important. A Fab Lab has the same equipment as another laboratory, but the principle is to open up to all the knowledge of Fab Labs around the world that exchange information from one country to another," insists the spokesperson for Communautique. Since 2011, the Fab Lab has welcomed tinkerers, inventors and delirious artists looking for concrete solutions to concrete problems... or not. Of these, a quarter return as volunteers to help other tinkerers realize their wildest dreams by merging their experiences. "There are as many geeks who come to develop software as ladies who come to use sewing machines, architects, designers, artists. We even had cooks who made a portrait of Denis Coderre in chocolate with a 3D printer!" says the mother of the Fab Lab, which welcomes 1,000 tinkerers each year. Budding inventors Laser cutters, 3D printers and computers rub shoulders with machine tools, milling machines and industrial equipment in a room where a vague smell of burnt wood hangs in the air. A printer spits out small multi-coloured plastic objects, including a miniature of the Colosseum in Rome, a chainmail net and a strange vase with walls as thin as tissue paper. "These are all prototypes, tests," explains Ms. Chartrand. Not far away, there is a "kid's patent" cobbled together from recycled materials and the know-how developed in another Fab Lab that melts recycled plastic objects to produce "homemade" printing thread. "That way, we use less plastic," explains Monique Chartrand. "We can cast a 3D prototype for $10 instead of spending $10,000 to have it made in China. Other users help perfect these prototypes. It creates incredible discussions. It's a great opportunity for people to empower themselves," assures this fan of popular labs. Beginners and self-taught people come to make their own wind turbines or solar panels concocted from everyday objects, while others come to "trip out" on completely crazy creative projects. Why only aim for the utilitarian? Technology and contemplation can also go well together. Meditating in the lab This is the case for Frank, who, focused on his screen, controls software capable of recognizing emotions using a neural headset "plugged" into his brain. Like an athlete, he also trains his neurons to move a computer mouse without his hands. Objective? Create a drone that can be controlled by the mind! Why? "That's really coooool!" retorts the inventor of connected flying objects. "In fact, this technology would also allow people who don't have hands to control a prosthesis with just their brain," he says. "That could be very useful." Moreover, Fab Labs have helped amputee children to 3D print their own prostheses. This powerful feeling of "I can do anything," echoFab has chosen to instill in young cripples in youth centers. "It shows them that knowledge and innovation are not just learned at university and that everything can be learned from peers." "Even I," says Monique Chartrand, "I managed to print my broken dryer button. Why run to the hardware store?" Planned obsolescence, poorly designed and cheap objects: with its "Repair Cafés" open to all, the Fab Lab is making a huge snub to the Dollarama of this world and to industrial production, which is often more oriented towards profit than the interest of the greatest number. "We do research on ways to hack household appliances to make them more durable or better adapted to the needs of the elderly. Fab Labs ensure that people regain control over industry and overconsumption and use new technologies to reinvent objects for the benefit of citizens," insists the inexhaustible Gershenfeld follower. The citizen laboratory will also host the first Creative Aging Fair in August, a meeting that will not be a "gadget show, but a place for discussions to create sustainable aging. People want to stay active. New technologies must open up to the reality of seniors," explains Ms. Chartrand. Exoskeletons, high-tech walkers, modular homes: everything is in the sights of these creatives. At least, "almost anything," as the pope of Fab Labs says.

## ###ARTICLE\_START### ID:2300

2017 Éditions Larousse Le Petit Larousse illustré 2017 has something very special. This is an exclusive edition that celebrates the bicentennial of the birth of Pierre Larousse. A multi-page article is dedicated to him in the new edition of the dictionary. This year, 150 new words, mainly influenced by technology, are making their debut in the Larousse. Among them are téléverser, émotoïde and zika, as well as words borrowed from English such as spin-off, QR code or opensource. In addition, fifty personalities, including Quebec director Xavier Dolan, are added to a select list of men and women.

## ###ARTICLE\_START### ID:2301

We are programmed to seek order in chaos, system in anarchy. But this is not always possible. No one could have predicted that a madman would carry out a massacre in the streets of Nice, because this act was planned outside the terrorist networks. Because it was planned by someone who had, until recently, never been involved in the Islamist movement; by someone who did not practice his religion, who drank, who flirted with both sexes; by an unbalanced person, in short, by anyone. We knew that the so-called Islamic State group had launched an appeal to all its sympathizers last May, inciting them to target civilians in Europe during Ramadan. We could therefore have predicted that the risk of attacks would be high, just as we can predict that there will be other shootings in the United States, without being able to say where and when they will take place. In the case of shootings, the violence and horror are most often arbitrary, irrational. It is easier to deplore this violence than to predict or prevent it. The strategy of the Islamic State is to channel this force, this destructive energy, to its advantage. The time when terrorist action was reserved for radicalized, trained groups is over. It borrows the means of its time. We live in the era of open outsourcing (crowdsourcing), of open source code. The Islamic State has outsourced part of its action by publishing the source code everywhere. Mohamed Lahouaiej-Bouhlel's phone and computer told investigators more about his background than the arrests of his alleged accomplices. Yesterday, prosecutor François Molins spoke about the research that the murderer carried out in recent months, from the moment he became interested in the radical jihadist movement. It was through the Web that he became familiar with violent imagery, videos of hostage beheadings, which are the trademark of ISIS. He had been doing research "almost daily since July 1" on suras from the Koran or on the recent terrorist actions in Orlando, Dallas and Magnanville, said prosecutor Molins. What the Nice attack teaches us, above all, is that definitions - namely who is a terrorist or what constitutes a terrorist act - have less and less meaning and importance. An organization can carry out terrorist action on its enemy, but an individual can also do the opposite and offer, in a way, his gesture to the organization. Someone who finds himself at odds with society can thus believe, or give himself the illusion, that he finds meaning in the senseless, that he creates order in his inner chaos. “Religion is the sigh of the creature overwhelmed by misfortune, the soul of a heartless world, just as it is the spirit of a spiritless age. It is the opium of the people,” wrote Karl Marx in this famous quote. Marx wanted to destroy religion, while ISIS, on the contrary, claims to want to establish a religious state, a caliphate. But in the end, these Islamists look much more like drug traffickers than anything else.

## ###ARTICLE\_START### ID:2302

CYCLINGFirst Frenchman at the halfway point of the Tour (6th, 44 seconds behind Chris Froome), Romain Bardet spoke to Le Figaro. LE FIGARO. - First Frenchman in this Tour, do you have a patriotic streak? Romain BARDET. - Of course, I am very sensitive to the support of the public and, when I was a kid, I went to the side of the road to support the French riders. Afterwards, I was the first Frenchman for my first participation in the Tour and it didn't change my life... The other French riders are people I am quite close to in the peloton. We often chat together, we are opponents in the money time, we don't give each other any gifts, but, on the bike, we chat a lot in a frank and friendly manner. There really is this "French team" spirit. The French have long been mocked in the peloton... It's still the case! We don't necessarily have a great image in the peloton, but that's changing with the new generation of young foreign riders who are moving forward, I'm thinking of Fabio Aru (Italy). He's not like that at all. It's more a question of generation than nationality. Some riders from the old generation, like Fabian Cancellara, are stopping. Do you keep in touch with these old ones? I have no connection with Cancellara, he's never spoken to me. I don't think he even knows I'm a cyclist... After that, that's not the case with Contador, who is very respectful. Valverde, it's the same. It depends on the personalities. But, without taking anything away from the previous one, who rode his own bike, there's a new generation coming. Each generation has its own specificities. And the new one has less hierarchy, it's much more open. Even if Sagan is a little ahead, there's no longer really a boss in the peloton and so much the better. Because it will be more open to everyone. Personally, you embody this break with the cycling of yesteryear... A break, I don't know. We like to put cyclists in boxes, a bit rough, just good for pushing on the pedals with a well-tanned and shaved leg. But that's not it. We also think. We are deeply human. A rider has his favorites, his rants, a social life, a political awakening. I hate this cliché of the cyclist only good for pushing on pedals... Peter Sagan spoke for the riders in this Tour, particularly on safety. Could you be a spokesperson for this generation? I would agree if the riders were already capable of reaching an agreement among themselves. But that's not often the case. So, from there, it would be preaching only to part of the peloton. We are often employees, we follow the directives of our respective teams and, in an ultra-competitive environment like cycling, it is difficult to have unanimity. Cycling is also a world of precariousness with one or two-year contracts. We do not dare to commit to the long term for our sport and all these things mean that there is no common voice that emerges. And then, we are very rarely consulted by international bodies... Let's get back to you. We sometimes have the impression that you are racing against nature, by controlling your impulsiveness. I am not racing against nature, but I am aiming for the general classification. So I am waiting for the right moment so as not to regret it later. Spending five minutes at the front of the peloton to show my face on TV does not interest me. It pleases my fans, but it would be shooting myself twice in the foot for the future. And then, we are no longer in the 1990s-2000s where it was an open bar, where guys did raids and left the next day and won again. We are human. We know the importance of the third week in the Tour, and especially this year with copious stages in the Alps. Does that change your approach to this edition? We can perhaps allow ourselves to be a little less good in the first week, but it is not arithmetic, it cannot be planned to the millimeter. We cannot say, I am going to be great on July 14 for Ventoux. It does not work like that or we do not have the same methods. Are you influenced by what is done elsewhere, at the Sky team of the Yellow Jersey Chris Froome for example? There was a general influence in the cycling world with the arrival of the Anglo-Saxons. But we are more in our own dynamic, with our own skills. Apart from the scientific bibliography, in open source, we don't necessarily know what they do. So, it's our own experience. We have our own identity. AG2R is a family team where everyone knows each other well, where there are links outside of cycling. I love this jersey, this pride of progressing with this group and in this framework. It's an additional value for me because we dug together to get there.

## ###ARTICLE\_START### ID:2303

Library of Alexandria of software", "Wikipedia of source codes", "Preservation of the world's computer heritage", the president of Inria, Antoine Petit, did not lack emphasis, Thursday June 30 in Paris, for the launch of a French project of global scope, Software Heritage. Its goal is to archive all the computer programs on the planet. "Everything is software", recalled Roberto Di Cosmo, professor of computer science at the University of Paris-VII, at the head of this project mobilizing less than ten people, financed by Inria. Programs are indeed everywhere, in telephones, computers, cars, but also in transport or energy management. But when it comes to software, two things must be distinguished: the part understandable by the computer, the executable, and the part readable by the programmer, the source code. Often this part is kept secret by the owner and only the executable is distributed. Since the 1980s, a movement has developed: free software, whose operating licenses give the right to read, study, modify and distribute the source code. Software Heritage is interested in this large family that includes stars such as Firefox, LibreOffice, VLC or Apache, MySQL, Php (without which many Web services would not exist)... "Valuable knowledge" Ironically, one of the historical opponents of free software, Microsoft, has become the first partner of the project. "I am quite moved today because, fifteen years ago, I was not really a friend of Microsoft", smiles Roberto Di Cosmo, who, in 1998, accused the company of a "global hold-up" in a book of the same name. "Software is not just a tool. It is also valuable knowledge. What do we do to protect it?" asks the researcher, who emphasizes its "fragility". Indeed, developers use sites to write their programs that facilitate working together and downloading the famous source codes. This scatters knowledge and especially these platforms, the best known being GitHub, can disappear, like recently Gitorious or even Google code. Software Heritage remedies this by collecting several sources. The entire GitHub collection was recovered but also, in extremis, those of Google code and Gitorious. Added to this are the files of a famous operating system, Debian, equivalent to Mac OS X or Windows. In total, 2.6 billion files for 22 million programs will be hosted thanks to Microsoft and a foundation of the Netherlands Academy of Sciences. The interest is not only the collection and preservation of these "texts", it is also to provide a useful tool for research (reproduction of results, study of programs), industry (security analyses) or education (access to examples and references). For now, the platform only allows you to check if a source code is present, but not to search or navigate through these programs, which is planned for 2017. The initiators are counting on the community to help organize and classify this immense amount of information, so that the tool is truly useful.

## ###ARTICLE\_START### ID:2304

This 6th July 2005 was a great victory for Michel Rocard. On that day, the European Parliament buried, with 648 votes to 14 (and 18 abstentions) the directive on the patentability of software. It was the conclusion of a great battle that lasted more than three years and made the former French Prime Minister and MEP one of the most highly regarded politicians by defenders of digital freedoms. A status that was not at all obvious for the man who, in Libération in 2003, acknowledged that he was not "easy with computers" and had only discovered the digital world a year earlier. It was in February 2002 that the European Commission sent this draft directive to the Council of Ministers and Parliament. As Michel Rocard recounts in the preface he wrote in 2013 for François Pellegrini and Sébastien Canevet's book, Droits des logiciel (Software Rights), no one in Parliament is passionate about the subject. "I myself," he writes, "born long before the generation of the screen, I flee with almost a little terror anything I know nothing about." But the subject takes on the air of controversy. It is impossible for Rocard to shirk the responsibility. So he takes the issue head on, becomes rapporteur and strings together hearings and conferences to understand the issues hidden behind a text that seems abstruse. "In this sector, design is essentially sequential, we use thirty software programs to invent a thirty-first," he explains, an expert, to Libération, still in 2003. The patentability of software risks posing a terrifying financial and legal threat to software creators. It would slow down the growth of human knowledge and economic activity. We will no longer be able to create software in our corner without being threatened with paying exorbitant royalties." He then found himself in the middle of a trench war between the "young, often bearded prophets of free software," as he affectionately described them, and the big software manufacturers, supported by the conservatives of the European People's Party (EPP), who were then in the majority. Michel Rocard chose his side - "even if it meant often having to intervene to moderate positions and expressions." In 2005, the directive was rejected. It was a founding victory for free software activists in Europe, and a subject that would become an unexpected specialty for Rocard. In 2007, he submitted an erudite report to candidate Ségolène Royal, entitled "République 2.0 Bêta - Vers une société de la connaissance ouverte", which established a list of 94 recommendations, ranging from the opening of public data (a flagship measure of the digital law supported by Axelle Lemaire) to the teaching of computer science, including the digitization of museum heritage. He then took a position against the graduated response version of Hadopi and declared himself in favor of a global license that would legalize the sharing of works on the Internet in exchange for a flat-rate contribution from Internet users. In conclusion of his preface to Droit des logiciel, he thus evoked the then emerging sharing economy: "In many ways, the development of software law brings out the legal principles of tomorrow's social development. It is worth tackling."

## ###ARTICLE\_START### ID:2305

DIGITAL Low cost, but big ambitions. For 1.5 million euros over three years, including the salaries of the four researchers and two students who have been working on the project for eighteen months, the French National Institute for Research in Computer Science and Automation (Inria) has decided to create a sort of Library of Alexandria for all free software, whose source code is publicly available (known as "open source"), since the birth of computing. Software is now at the heart of all human activities, explains Roberto Di Cosmo, director of this project called "Software Heritage" (accessible via the site softwareheritage.org). But this knowledge is fragile and ephemeral: it evolves with programming languages, the arrival of new tools, such as mobile phones, whose computing power exceeds that of computers ten years ago, or new connected objects. In addition, software is used in all scientific disciplines, including the humanities, to build scenarios, conduct research and supervise or operate devices. The idea is therefore to create "a sort of large instrument with a global vocation. But, in the long term, Inria will fade away" behind its creation, says Antoine Petit, CEO of Inria, who nevertheless hopes that the organization's logo will remain associated with this initiative. Software is a "common good", adds Jean-François Abramatic, research director at Inria and former head of the World Wide Web Consortium, the main Internet organization that helped create major languages (html, xml, etc.). Jean-François Abramatic is one of the three scientific advisors of Software Heritage, alongside his colleagues Serge Abiteboul, professor at the École Normale Supérieure, and Gérard Berry, professor at the Collège de France. Above all, this initiative is justified because many sites, often American, had decided to play this role to host software written collectively, usable and modifiable by all... until these companies decided to close this activity by simple strategic decision. "A year ago, Google closed its GoogleCode platform, where there were 1.5 million projects, warning contributors that they had three weeks to recover their codes", recalls Roberto Di Cosmo. The goal of Software Heritage is therefore to "collect, organize, preserve and share the source codes of all software". This library will be able to help save considerable time in the development of research applications, because there will be no need to start writing again what has already been well done by others... This library should also improve the quality of the work, because researchers will be able to compare their approaches more easily. Software Heritage already brings together more than 22 million software projects, which have given rise to nearly 600 million modifications and 2.7 billion files. This data occupies some 200 terabytes (the equivalent of 200 personal computer hard drives). The software is hosted by Inria and will also be duplicated in Europe by Microsoft, which has converted to free software and is a partner in the project. All other IT companies in the world will be able to contribute to this major initiative. The Dans (Data Archiving and Networked Services) institute of the Royal Netherlands Academy of Arts and Sciences has decided to participate. Of course, Software Heritage, which is to become a foundation, is open to all institutions and research centres. Now that Inria has demonstrated that the project is feasible, there are still technical details to be finalised to allow everyone to have read-only access to the many programmes that will be archived there. This next phase should be completed in six months. Later, the programmes will also be able to be downloaded directly. It is already possible to query this database to find out whether a particular piece of software is present there or not. Another extension of this library could be that of the "legal deposit": an author (or a company) will no longer be able to claim paternity of software written by others previously... Collect, organize, preserve and share the source codes of all software THE MISSION OF SOFTWARE HERITAGE

## ###ARTICLE\_START### ID:2306

After months of discussions, the Digital Republic bill has finally come to fruition. Senators and deputies found common ground on the final text on Wednesday, June 29, within the framework of a joint committee. The common thread of this text is data, the black gold of the Web, which the Secretary of State for Digital Affairs, Axelle Lemaire, wants to make available to as many people as possible. A detailed review of the new measures. Open data Administrations and companies that have obtained public contracts will have to make their data available to everyone by default. The Senate had tried to reduce the scope of the system by imposing a "risk analysis" upstream, but this notion was ultimately removed. "Data stored in computers are little dormant treasures," says Ms. Lemaire. Innovative start-ups and citizens will be able to seize the speaking time of the Higher Audiovisual Council (CSA), case law or land values, in order to find out the price of a property. "In Nantes, all roadworks have been in "open data" for a long time. One day, someone created an application that allows a disabled person to identify wheelchair-accessible sidewalks," quotes MP Luc Belot (PS), rapporteur of the text in the National Assembly. "Everyone will be able to have access to the conditions granted as part of concessions (for highways, for example)," also specifies the Secretary of State. Loyalty of platforms Internet platforms, such as Google or Apple, will have to demonstrate greater transparency, by clearly indicating how the content that appears is classified. "The French need to know whether the first result comes from an algorithm or if it is because someone is paying," explains Mr. Belot. "We have included the principle of data portability [which allows data to be transported from one service to another]." The European Commission will take inspiration from the French text," says Axelle Lemaire. The parliamentarians also removed an "anti-Google" measure, which would have prevented the search engine from prioritizing its own services. Also abandoned was the obligation to host its data in Europe, which would have hindered the smooth running of many French companies with an international presence. Collaborative platforms The Paris City Hall wanted to take advantage of the text to block Airbnb's path, by requiring individuals to obtain authorization before renting out their apartment. Deputies and senators have chosen a less restrictive option. In so-called "tense" areas (where there is a proven shortage of rental housing, such as in Paris), renters will have to fill out a form online to obtain a number for their apartment. "But obtaining it will be automatic. Then, the platforms will have to declare the number of nights per apartment once a year," explains Luc Belot. This involves verifying that, in accordance with current legislation, private apartments are not rented out for more than one hundred and twenty days per year. On the other hand, platforms will not have to declare their members' income to the tax authorities, as had been suggested. Members of Parliament and senators have also removed the threshold of 5,000 euros above which income from collaborative platforms would have been taxable. Research data Researchers will be able to easily access sensitive data and carry out the searches they wish in scientific publications. "This is about ensuring the competitiveness of French research," claims Ms. Lemaire. This system has given rise to a Homeric battle with scientific press publishers. Right to be forgotten for minors The text establishes an automatic right to be forgotten for minors. The latter will be able to request the deletion and dereferencing of content concerning them. "This was essential when we see the damage caused by the publication of certain content," says the Secretary of State. Free software Free software (whose source code is public) will take a greater place in administrations. "The legislator wants the choice to fall on this software if it can ensure independence and sustainability," explains Ms. Lemaire. Software publishers fought hard - in vain - against this measure. Digital death A user's accounts will be deleted once the latter dies, "unless this data is needed for the purposes of an inheritance or as part of a right to family remembrance," explains Mr. Belot.

## ###ARTICLE\_START### ID:2307

Misunderstanding the digital revolution, its challenges and the drastic changes in economic paradigms that it induces, leads to an anachronistic Colbertist strategy according to which it would be a question of building a few "fortresses" to block access to our territory. This was the case of the "sovereign cloud", a project of a national provider of hosting of computer data, which only served to distribute tens of millions of euros to companies controlled by caste allies. This is now that of the "sovereign operating system (OS). Wanting a sovereign OS is to acknowledge that those that exist are not. In fact, many products from third countries have "back doors" - programmed flaws in the system - offering privileged access to the intelligence services of these countries. "Digital sovereignty" requires that our administrations, companies and citizens be provided with a loyal information infrastructure. However, financing a made in France SE makes no sense, because no publisher will ever adapt its software to such a small market. Using free software is the only viable alternative. By pooling development costs, free software allows its contributors to lower the cost of their software infrastructure and increase their margins. Placing under a free license perpetuates software, because the disappearance of the initial publisher does not prevent it from being taken over by others. It promotes the maintenance of jobs and skills and makes it possible to improve critical parts of the codes. Free software portfolio Promoting digital sovereignty while refusing priority to free software is inconsistent. A policy is built with priorities, not "preferences". This priority is not contrary to the "technological neutrality" of public markets. Because free licenses are not a technology, but a way of organizing the creation of value. In terms of digital sovereignty, the strategic State must invest in the development and sustainability of free software that allows it to fulfill its missions, relying on an ecosystem of publishers and service providers. This portfolio must include software as basic as file sharing, with efficient ergonomics. Indeed, it is because they are attracted by the latter that users turn to "free" applications and services, but which lead to massive leaks of sensitive data to third-party platforms. These services must be made available to all, with each company or administration that wishes to do so being responsible for deploying them in secure environments. Other incentive tools already exist, such as the general interoperability framework (RGI), which is supposed to give priority to open formats. The repeated redactions to which the RGI has been subject are unfortunately a very good indicator of the influences that subject the general interest to private interests and third-party States. The loyalty of computer systems requires the absence of any "back door" or "master key" that weakens their security. The story of the Clipper cryptographic chip, which allowed the American administration to listen to communications in the 1980s, has already demonstrated this: no one will ever invest in an unfair system. Endangering the entire information infrastructure of a country cannot be weighed against access to the data contained in a few devices. Criminals, for their part, will know how to equip themselves with technologies free from such flaws. In a shared space such as the Internet, the question of sovereignty must be thought of as a power strategy. Let's bet that the nation can finally display a coherent vision on this subject.

## ###ARTICLE\_START### ID:2308

Zurich, special correspondent - Designer workspaces, a canteen with a slide and a massage room: it is in its Zurich offices, in Switzerland, of which Google is so proud, that the new research group dedicated to artificial intelligence set up by the American company is installed. Officially launched on Thursday, June 16, this team of engineers will focus in particular on machine learning, and more particularly on "deep learning", a technology that has revolutionized the field of artificial intelligence in recent years. "All of this is so important to me," said Eric Schmidt, former CEO of Google and current president of its parent company Alphabet, by videoconference in front of journalists gathered for the occasion in the Swiss offices of the giant in Mountain View, California. "We are implementing this technology in all aspects of our operations, even in our data centers, to improve our cooling techniques. Even the most routine things are reviewed by this technology. » After Google Brain, its team dedicated to "deep learning", and DeepMind, the company bought by Google and at the origin of AlphaGo, the first program capable of beating humans at the game of go, this new entity presents itself as the third major research center of the company on artificial intelligence and more particularly on machine learning. The first is located in Silicon Valley, the second in London and the third in its center in Zurich, which already has 1,800 employees, the vast majority of whom are engineers. The new team has "a few dozen engineers" and aims to recruit "several hundred", announces Google, without further details. "The dam has collapsed" "Since Sundar Pichai took over at Google, he has changed the hiring policy, explains the Frenchman Emmanuel Mogenet, at the head of this new team. He realized that by growing massively in Silicon Valley, we were ignoring a phenomenal amount of talent elsewhere in the world. Europe is one of the richest places in terms of talent, particularly for research in "deep learning." If Google is investing so massively in "deep learning", it is because it has considerably advanced its various products. Whether it is voice recognition, automatic translation or image recognition, all these functionalities that we have recently become accustomed to have been made possible by this technology, as Emmanuel Mogenet explains. "Something happened in the last ten years: the combination of the computing power of computers, which has increased exponentially, and a few theoretical discoveries have really transformed machine learning. It was the hole in the dam, and the dam collapsed. All these tasks that humans are very good at but that machines were incapable of performing suddenly became possible. » The Zurich team will focus on three main areas. The first is to improve the understanding and production of natural language, in order to build applications capable of "understanding" language and no longer simply analyzing keywords. The second will be devoted to artificial perception. "It is very difficult for a computer to understand natural language because computers do not understand the world," explains the engineer. A 4-year-old child knows that cows do not fly, even if he has never been told. He learned this by observing the world. Our machines will therefore analyze a phenomenal quantity of images, videos and sounds to try to calculate the probability that a cow and an airplane will appear at the same time. And this, in order to help computers better understand language." The third axis will focus exclusively on "machine learning" and in particular on... the attempt to understand it. "Deep learning works but we don't really know why," admits Emmanuel Mogenet. He explains: "Machine learning research is a bit like alchemy was in the Middle Ages. Alchemists mixed a blue powder and a pink powder, and they saw that it exploded. They accumulated empirical knowledge like that, without having the chemistry behind it, which explains why it explodes. We are at the same point today. We would like to better understand how it works, so that our engineers can build new systems more efficiently while being guided by theory." Concerns The creation of this team comes a year after the launch of Facebook's artificial intelligence research laboratory in Paris, headed by Yann LeCun, one of the pioneers and renowned experts in "deep learning. Like Google, the main companies in Silicon Valley are investing massively in these technologies and communicating extensively on their progress. Not a week goes by without new announcements in what sometimes takes on the appearance of a communication war in this very strategic sector. Advances that generate some concerns. Personalities such as British physicist Stephen Hawking and American business leader Elon Musk have recently expressed their fears about the potential risks of these technologies. An open letter, signed by hundreds of researchers in the sector, also warned in 2015 against the "pitfalls" of artificial intelligence. Since then, the debate on the ethics of this research has been open. However, it is still in its infancy. While DeepMind, whose stated objective is to "solve artificial intelligence", has an ethics committee, the new team in Zurich has nothing of the sort. "Our objective is to do applied research, the horizon of the problems we will work on here is one or two years," explains Emmanuel Mogenet. I will try to be as transparent as possible about what we do, by sharing our work, publishing our articles outside of Google and making our tools "open source" [accessible to all]. So that we can have an informed conversation with all the actors involved: the people who develop the technology, the regulators, the associations, the politicians, the philosophers... We absolutely have to talk."

## ###ARTICLE\_START### ID:2309

Imagine a drug without side effects or, better yet, a remedy that treats several ailments at once. Rafael Najmanovich, a doctor of biochemistry and professor-researcher at the Faculty of Medicine and Health Sciences at the Université de Sherbrooke, is working to make this future possible. "Sometimes, all it takes is changing an atom or a bond. Our tool aims to help drug developers prevent cross-targeting, which is responsible for side effects," notes the biochemist. His bioinformatics tool (IsoMIF), made up of a database of interactions between molecules and proteins (more than 7,000 proteins with known structures and more than 14,000 binding sites), offers six structural ways to observe the bonds that are created in the presence of different molecules. This method helps researchers identify similarities in protein reactions -- similar reactions, in other words -- so that developers can modify the formula of remedies. "Proteins are like locks and the drug is the key that makes them react. We know the proteins and how they react to a type of drug and, by comparing them, we can develop more targeted molecules or develop ones that target both at the same time," explains doctoral student Matthieu Chartier more simply. The development of this tool and its Web interface for research have already been the subject of one, no, two publications. They were partly funded by the Consortium québécois sur le développement du médicament, which brings together the largest pharmaceutical industries in the country. The tool, the interface and the publications are available in open source so that other researchers can use them for free. "We are committed to technology transfer and open access to our work, because our funding comes from the public and must benefit it," emphasizes Professor Najmanovich. Precision pharmacology Personalized medicine, and more specifically precision pharmacology, is said to be the future of health. Our American neighbors have even invested $215 million in the Precision Medicine Initiative. To get around the limitations of creating new drugs, researchers could delve back into the existing pharmacopoeia and do a major sorting. It would also be possible to develop preventative drugs for future diseases, without experiencing the discomfort of taking drugs. "Taking a drug is often like a double-edged sword. If we can find another way to approach drug taking by reducing toxicity and increasing reaction targets, this would reduce the risks associated with polypharmacy," says the researcher.

## ###ARTICLE\_START### ID:2310

Relief printing has become established in medicine for inert materials and that of living tissues is progressing. A skull, a vertebra, a piece of hip, an ear, skin, cornea, a dental implant, a drug: are there things that 3D printing cannot do in regenerative medicine? This technology is no longer reserved for one-off experiments in China or the United States: its use has become a daily reality for about twenty years, and 3D printing is opening the doors of hospitals. In France, Professor Jean-Noël Argenson, head of the orthopedic surgery and trauma department at the Marseille University Hospital, was one of the first to use it for custom-made titanium hip or knee prostheses, which adapt exactly to the shape of the residual bone. A luxury that results in an additional cost of around 30%, but has not prevented the use of this technology from spreading. Other departments, particularly in maxillofacial surgery, are equipping themselves with a 3D printer to manufacture plastic skulls on site that exactly reproduce those of patients, in order to prepare for an operation, rehearse certain gestures or adjust metal plates to be implanted. 3D printing also represents hope for people with hand amputees, with high-tech, low-cost open-source prostheses via e-Nable in the United States or InMoov in France. The latest frontier of 3D printing: bioprinting human cells fuels the hope of a world in which organs can be created ex nihilo as needed. The human ear from Wake Forest already caused a sensation in the United States last February... \* The long version of this article was published in Le Figaro » on March 4, 2016. AUDE RAMBAUD

## ###ARTICLE\_START### ID:2311

The exercise, at first, looks a little too much like what unimaginative editors sometimes ask their journalists: "Find me ten well-known personalities, ask them the first three measures they would take if they were elected President of the Republic in 2017." Except that the question was posed here to the signatories of the "Convivialist Manifesto", launched in June 2013 by Alain Caillé, professor emeritus of sociology at the University of Paris-X-Nanterre and founder of La Revue du Mauss (Mauss: Anti-utilitarian Movement in the Social Sciences, and Homage to the Anthropologist Marcel Mauss (1872-1950)). Half of the work is presented in the form of a collection of 62 short texts by intellectuals and researchers from all disciplines. Let us cite for example Claude Alphandéry, Jean Baubérot, Olivier Favereau, Jean-Baptiste de Foucault, Jean Gadrey, Susan George, Jean-Claude Guillebaud, Armand Hatchuel, Jean-Louis Laville, Serge Latouche, Didier Livio, Dominique Méda, Edgar Morin, Bernard Perret, Roger Sue, Patrick Viveret... We regret that the publisher did not consider it useful to specify who is who... The reader can refer to the site Lesconvivialistes.org. The interest of the proposals is of course uneven, and it is therefore their synthesis, proposed in the first part, which makes all the richness of this book. "The political field is so blocked, so reduced to the game of soundbites and posturing, that we no longer see how forward-looking ideas could emerge from it. Everywhere, multiple citizen initiatives are giving birth to, experimenting with and defending such ideas. But, too scattered, without sufficient links between them, they struggle to show their coherence and to access sufficient visibility", write the authors in their foreword. Hence the objective of this gathering of intellectuals who have observed, analyzed, and even promoted these initiatives. They are invited, here, to "translate them into proposals likely to enlighten the concrete political debate, and to weigh effectively on it". Quietly The microphones and pens of the media remain stretched towards the clicking of the chains of the ghosts who still wander in the field of ruins of the political parties. The right aligns itself with its extreme to keep a few seats of a crumbling power that the National Front is preparing to conquer; the left has exploded in mid-flight, divided between those who still want to manage a system that is out of breath and the leftist apparatchiks who hope to replay the storming of the Winter Palace in front of laughing onlookers in a Parisian square. But for the authors of this essay - the bookish and reasoned counterpart of the documentary Demain, which they also cite in passing -, they are those who, voluntarily and on the most "micro" scale, live outside of the classic economic and political circuits and quietly move towards solutions to the crises that we no longer know how to resolve. What do they do, these anonymous people? They repair and manufacture, among other things in fab labs, the objects they need because they refuse planned obsolescence. They design and use free software, only distribute their personal data through secure applications, and only for operations receiving their informed consent. They exchange goods and services (including currency) between peers or within a territory without going through digital operator platforms, distribution channels, financial intermediaries. They practice agricultural and industrial activities that limit as much as possible the impact on natural resources and energy consumption. They also organize, in municipalities or on the Internet, a mode of political deliberation allowing the participation of everyone, using the power of network technologies or simply assemblies drawn at random from among citizens. They propose other measuring instruments to count - and tax - what really makes wealth. They use or demand other rules of governance to manage the company, the city, the school, the hospital, the justice system, the energy. They organize themselves to alert, denounce and combat conniving elites whose predatory hubris destroys nature and common goods, diverts profits to tax havens to the detriment of investment, captures national and European political institutions, sets classes and ethnicities against each other. These elites, and the media that serve them, tend to lump these protesters together with "populism", utopian, extremist, entrenched in the defense of identity, of the local community, of the praisers of "it was better before", by definition hostile to the modernity of openness to the world and to exchanges. The term "convivialist" smells good, it is true, of the 1970s and the withdrawal into the community. But the book, under this perhaps misleading title, actually presents a real program of progressive political and social action "of the left", just as did, in a perhaps more politically elaborate way, the "call to get out of the economic impasse", signed by 80 (since become 130) heterodox economists (Le Monde of February 11). It cannot be confused with a hateful withdrawal against the jolts of a globalization that disturbs us so much. On the contrary. The convivialist manifesto has been translated into ten languages and has sparked comments and discussions on five continents. Admittedly, it has received little attention in France.

## ###ARTICLE\_START### ID:2312

It was 2009. Driven by the digital buzz, we signed up for Twitter, a bit wary about the interest in multiplying social interactions in this way. After all, we already had 47 friends on Facebook to manage, weren't the 20 accounts we were about to follow going to overwhelm us? In 2016, this (true) question seems incongruous. With our 555 friends (338 on average worldwide in 2014) and our 850 subscriptions on Twitter, we have also signed up for LinkedIn, Instagram, Snapchat, Tumblr, SensCritique, Slack and others. And we don't rule out continuing to do so in the event of the release of a new, necessarily revolutionary service. How did we end up in the collection of friends, followers, contacts or scouts who "like" us, tag us, "pin" us or share us at all hours of the day? The explosion of mobile Internet and the fact of being connected full time are of course a big part of it, but the very ergonomics of social apps, their tendency to constantly remind us of themselves and the ease with which they grab us and never let go explain it all. In a fascinating article, "How technology is hacking our brains", Tristan Harris, who has spent the last three years thinking about design ethics at Google, details the different processes that come into play to generate a real addiction in users. The reward of seeing something new for sure when you take out your phone for the 149th time in a day, the social appreciation like tagging photos, the constant fear of missing something important, all these elements explain how we still manage to install a new stylized square on the screen of our smartphone. And when that happens, to know where to put it, we have prepared boxes for you. Boxes are always practical. Institutions When banks and clothing stores started to stick the address of their Facebook page on the window, this site stopped being a social network and became the official directory of life. There is your uncle and your mother-in-law, your mutual insurance company and your archery club, Questions for a Champion and the Glacier Museum in Höfn (Iceland). Sensing that the young and trendy public was slipping away, Facebook bought Instagram in 2012. It was the best way to extinguish the "hype" of sepia-toned photos: today, you can find Leclerc Drive, Pope Francis and Queen Margrethe II of Denmark there. Instagram has just launched "business" profiles, which can transform their photos into advertisements to "reach even more customers". It sells dreams. As for Twitter, its messages scroll so often on TV that even grandma understood what it was about, and it has become the easiest way to contact the after-sales service of Bouygues Telecom and Monoprix. Finally, WhatsApp is the last major network (1 billion users) that still looks more like a messaging service than a commercial platform. But since Facebook also got its hands on it in 2014... it won't be long. And also: WeChat has exceeded 760 million active users, mostly Chinese. You're too old to understand They weren't the first on the scene (before, they were on Skyblogs), but once the place was taken over, they did what they wanted with it. When young people arrived on Facebook, they started sharing anything and everything. When they landed on Twitter, we discovered the "RT if followback" of teenagers looking for social validation. And then, finally, they had their own place, with a concept so strange - conversations without archives based on captioned images - that it de facto excludes anyone over 25. Since 2013, Snapchat has been the favorite application of young people who have appropriated all its codes and who have, as always, created their own. And it works so well that the app has just overtaken Twitter in number of users (150 million compared to 140 million at the blue bird) and is reportedly valued at double that (more than 20 billion dollars, or 17 billion euros). For those who have never used Snapchat, the app is not intuitive and you have to learn as you go to master the uses of filters and stickers. Above all, like any self-respecting social network, it is only of interest if you have friends who use it. Which is problematic when you are too old (over 25, therefore). To try to get around this barrier, Snapchat now offers "stories" produced by established media (CNN, Vice, Buzzfeed, etc.), which exploit the smartphone format particularly well. A passage to adulthood that Periscope is about to succeed in, which has remained for months the preferred place to broadcast the moods of idle teenagers. With Rémi Buisine's follow-up of Nuit debout, we discovered that live video could go beyond the framework of introspection on the couch. And also: Ask.fm, Kik, Miitomo, Line. What the hell am I doing here? There are networks that we build little by little, where we add relevant contacts, just to get a decent flow of information, and then there are those that we signed up to in a moment of madness, in response to yet another email telling us that a contact was waiting for us there. We filled out a profile, added a few equally misguided people, and moved on. But we don't ignore a social network with impunity. Once we're signed up, it does everything it can to remind us of its existence. This is the specialty of LinkedIn, a network of professional contacts. Once hooked, the user is solicited non-stop by emails like "people are viewing your profile". From time to time, we click. To realize that, in fact, we don't care. But there's no question of slamming the door. Social networks are specialists in "deactivated" accounts, all of whose data they keep. But it's for our own good. In case we want to come back, you can be sure... In this very subjective category, we also find all those services that we subscribe to, but we can't remember why. Over time, they're starting to become numerous. And also: Viadeo (let me go!), Pinterest (cupcakes, actually, no), Google + (but who created an account for me?) Shooting stars We can hate Facebook for the billions of dollars it rakes in by shamelessly selling its members' private lives, but we can't kill it anymore: the monster is too big. All the brave knights who have tried have failed. Ello, which made the high-tech press fantasize in 2014 for its lack of ads and its respect for privacy, has quickly become an ugly black and white site for creative hipsters. Path, which raised $30 million (€26.4 million) in 2012, promised to share "thoughts" and photos privately by default within a circle of up to 150 friends. Come, go, go. As for Mindie, the app where you added music to short Vine-style videos, we laugh a lot today remembering that its French founders wanted to launch "the next YouTube." Even if it got all the investors on the planet excited and disappeared within three months, we might as well laugh at the idea: we only have a fond thought for Yo, whose only feature was to send contacts an audio notification that said... "yo." And also: Pair, the app dedicated to couples, Whisper, where you exchanged "secrets," Peach and her "magic words"... RIP, Réseaux in pace The social media graveyard is not very big. There are not many services that have been officially shut down. The most notable was probably Orkut, a network launched in 2004. Owned by Google, it managed to compete with Facebook until 2012, but only in Brazil. In 2014, squeak, Google decided to stop the costs. The greatest irony of the digital economy is probably the recurring inability of the web giant to establish itself in the sector. Google +, Wave, Buzz, so many aborted attempts to make a place for themselves under the sun of social. Good luck to the latest: Spaces and Allo. If the cemetery is a little empty, it is because many social networks resemble Dr Malcolm Crowe, played by Bruce Willis in The Sixth Sense: they are dead, but they are the only ones who do not know it. So MySpace ("thanks for the addition", remember?) continues to believe that it can unite artists, Foursquare ("check-ins" to become mayor of your bar, remember?) imagines itself as the new Yelp, and Copains d'avant still remembers the time when it was the first social network in France. That was in 2008. And also: Bebo (which wants to "swipe" like Tinder), Friendster (one of the few aware of its own death)... Service included In January 2011, we were already fed up before even trying this Quora that we were constantly hearing about. But we didn't understand. Far from being "yet another social network" (YASN for yet another social network in English), Quora serves a specific purpose: to organize the meeting between Internet users who have questions to ask and specialists who have the answer. Examples: "What's the difference between a $500 suit and a $5,000 suit?" "Are you also attracted to your wife's twin?" Today, Quora is still going strong in this field. Many other sites where you have a list of friends also serve as niche tools or networks: SensCritique for the book and movie club, Slack as a professional exchange platform for developers and entrepreneurs, Steam for the gaming community... And for creatives, Tumblr remains a good source of inspiration and Vine a great video app for inventive montages in 6 seconds. Even Diaspora, which was predicted to have a bright future as a general social network, has found its niche among free software activists. And also: LinkedIn and Viadeo to find a job, Medium, Tinder...

## ###ARTICLE\_START### ID:2313

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## ###ARTICLE\_START### ID:2314

The $17.5 million contract awarded without any call for tenders by the RAMQ is an inevitable consequence of the "wonderful world of IT," ironically stated Minister Gaétan Barrette, stating that he "will do everything to avoid this kind of situation." The minister was responding in a press briefing to the report by the Bureau of Investigation published yesterday morning about the contract awarded to the firm Oracle, a partner of the RAMQ for two decades. Changing technology would have cost $47 million more according to their calculations, so dependent is the organization on the American firm. "In the wonderful world of IT, and I say this with irony, there is always an update planned and required (...) Everyone finds themselves somewhat in a situation" of having to pay, he continued, adding that he had chosen, for hospitals, a uniform system that will not be owned by the private sector, but by Quebec. "WE'RE GETTING FILLED" CAQ MNA Éric Caire believes that a call for tenders was necessary. "If it's true that there were no other solutions, let's go to a call for tenders and then we'll know if the minister is right." "The government wants more free software, but when there's a chance, we decide not to even go to a call for tenders," he regrets. "We're getting filled. The truth is that they (the RAMQ) are comfortable in their slippers and it's much simpler to keep the same technology (...) It's terrible. It's the force of inertia that forces us to be captive to a technology." "It's as if the government had transformed itself into an Oracle salesman to find reasons to have Oracle," he adds. PQ MNA Guy Leclair also deplores the fact that there was no call for tenders. "I don't think that reassures people. The Auditor General told us that we lacked expertise. And now, what do we do? We take out the cheque book by mutual agreement and the minister says that we don't really have a choice," he explains.

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The law required the RAMQ to issue a call for tenders, but the organization was able to invoke the exception by claiming that this process "would not serve the public interest." To do so, it produced a study that was forwarded to our Investigation Bureau. The RAMQ thus signed a new five-year contract to modernize the management of its databases with software and support from Oracle, a firm with which it has been linked for two decades. The ten-page document states, among other things, that replacing Oracle technology "would have major impacts." The Régie is so dependent on Oracle products that it estimates that implementing something else would cost it approximately $47 million more. "Considering the high level of expertise required," the RAMQ believes that the chosen solution (from Oracle) was the preferred tool, explains the organization's spokesperson, Marc Lortie. PLANNING One of our sources involved in government IT management was devastated by this rapid outflow of public funds. "If you plan ahead, it doesn't happen," she says. It should be noted that the needs met by this highly-priced software can also be met by free software, some of which is completely free. Several public organizations now use free technology to manage their databases. The RAMQ maintains that replacing Oracle would require rewriting at least 10 internal systems. "Come on! We never have to rewrite everything when we replace our database management," replies our source. - Dependence on Oracle has also cost the SAGIR project dearly. The firm has decided that it no longer supports version 11 of its software package that powers SAGIR. We must therefore upgrade to version 12. Quebec is thus forced to pay $50 million to migrate, including only $3 million to conduct the study and prepare this upgrade with Oracle, which has nothing to reproach itself for in these cases. Do you have any information on this subject? f 418.929.9145 cJEAN-NICOLAS.BLANCHET

## ###ARTICLE\_START### ID:2316

The government's lack of vision is leading it into dead ends and urgent action is needed, believes one of Quebec's leading information systems specialists, Daniel Pascot. A professor for 37 years at Université Laval in the Department of Organizational Information Systems and still associated with the institution, Mr. Pascot has also collaborated with Quebec public organizations and groups to defend free software. "We can do better for less money, provided we do it in advance in an overall plan and not at the last minute on a case-by-case basis," believes Mr. Pascot. He adds that the study was "formulated late, without reference to an overall plan for information systems, with the result that such a contract without competition is the only option left." "BUCKING" In his opinion, this is a "common strategy in administrations that are reluctant to embrace technological developments and their imagined risks." The other options "are not described, only some are cited without precision" and the study is "relatively opaque because of its level of generality and the approach used." Even if the RAMQ emphasizes that the use of the Oracle solution "is directly or indirectly linked to the delivery of all the services" of the organization, Mr. Pascot considers that this is not entirely the case: "We have here systems that are rather peripheral to the central mission of the RAMQ." He adds that using the same supplier for several tools has "the advantage of consistency and a certain simplicity, but leads to a stronger dependence on the supplier and a greater rigidity that can prove costly." The specialist estimates that in general, managers "systematically avoid any questioning and consider that the major suppliers hold the truth."

## ###ARTICLE\_START### ID:2317

On Friday, May 20, Taiwan’s new president, Dr. Tsai Ing-wen, officially took office. The outgoing prime minister, Simon Chang, was a nonpartisan Google engineer. His successor, economist Lin Chuan, is also an independent. The two men agreed on a transparent transfer of power, with government documents published online. How did an island of 23 million people go from decades of bipartisan politics to a pioneering experiment in digital democracy? It all started in March 2014, when students in the “Sunflower Movement” occupied parliament for 22 days. A trade agreement with Beijing was considered an internal matter and could not be debated in the same way as an international treaty; the occupiers wanted to organize their own debate on the subject. Hundreds of g0v (“gov-zero”) hacktivists set up communications systems to transcribe the discussions, which were then broadcast to half a million people on the street and millions more online. Why are there so many hackers in Taiwan willing to work for democracy? I think it’s because our generation is the first to express itself freely after forty years of Chiang Kai-shek’s dictatorship. 1988 saw the advent of freedom of the press and the arrival of personal computers. 1996 was the year of the first presidential election and the rise of the Internet. The Internet and democracy have evolved together. Making the deliberative process enjoyable When we create free software, we always worry about its social impact. I’m happy to see that the Nuit Debout digital committee has adopted several tools that we developed during the “sunflower movement.” In late 2014, many “sunflower” activists entered local government in municipal elections, while the national government worked with civic hackers to reinvent the way public policy is made. Our first major task was with Uber. Uber is not just a company, it is host to a mind virus known as the “sharing economy.” Governments can do little about it; the city of Paris may close its local office, but the app will still work. In 2014, taxi drivers in Taipei City surrounded the Ministry of Transportation and demanded negotiations to oppose it. But how do you negotiate with an epidemic? Jaclyn Tsai, the minister of cyber affairs, called for a discussion with all stakeholders. She joined forces with the g0v hacktivists to set up a deliberative process. Deliberation, which involves deep collective reflection on a topic, is an effective vaccine against viruses of the mind. Assisted by the intelligent conversation system developed by Pol.is, a Seattle startup, participants—passengers and drivers, academics and government officials—were able to discuss and build consensus; we have immunized ourselves against any future “communication” campaign by one lobby or another. The Uber and Airbnb cases and crowdfunding laws are just the beginning. For local deliberations at the city level, we will soon be deploying 3D modeling, data visualization, and virtual reality tools to bring citizens together in a single space, erasing space-time gaps. The goal is to make participating in the deliberative process enjoyable—a bit like watching and acting in an IMAX 3D movie. We are reinventing democracy.

## ###ARTICLE\_START### ID:2318

Engaged in a battle to shed light on the functioning of the APB post-bac admission system (read opposite), the association Droits des lycéens is not the first to question the opacity of the administration's algorithms. It took almost two years for the source code of the tax calculator to be made public, after the efforts of Adrien Fabre, then an intern at Etalab, the interministerial mission responsible for piloting the policy of opening up public data. As he recounts on the Etalab forum, it was as part of his work on OpenFisca, a tax reform simulation software, that he requested the famous source code from the General Directorate of Public Finances (DGFIP). But at Bercy, they turned a deaf ear. After six months, Fabre decided to contact the Commission for Access to Administrative Documents (Cada). Issued in January 2015, the latter's - advisory - opinion is unambiguous: the "computer files" produced by the DGFIP that constitute the source code are indeed "administrative documents", and the latter is, as such, "communicable to any person who requests it" - except for exceptions related, for example, to defense secrecy or state security, which do not apply in this case. However, Bercy continues to drag its feet. Fabre then decides to refer the matter to the Paris administrative court. A few days before the latter rules in his favor, on February 18, he is finally given the source code of the tax calculator. Which is finally made public on April 1... and is even the subject of a "hackathon", a computer code marathon. Free software. The bill put forward by Axelle Lemaire, the Secretary of State for Digital Affairs, and the debates that accompanied it have been there... During the online public consultation on the text in the fall, the association promoting free software April proposed an amendment to explicitly include source codes in the list of administrative documents that can be communicated to the public. A proposal strongly supported by the participants in the consultation, and subsequently relayed by several parliamentarians, including the socialist Christian Paul. "We have known for years that algorithms are becoming omnipresent tools for public decision-making," explains the MP for Nièvre. "However, they are neither neutral nor innocent. Hence the need to not be completely opaque." After its passage through the Assembly and the Senate, the bill, which is to be examined by the joint committee in June, now mentions source codes. "This is a validation of case law," rejoices Frédéric Couchet, the general delegate of April. He nevertheless regrets the limitations imposed by parliamentarians. The source codes produced by "public or private persons responsible for a public service mission in a sector exposed to competition", such as the SNCF, will not be affected, nor those whose communication could undermine "the security of the information systems of administrations", a "fairly significant restriction that could be put forward by those who do not want to play the game", he fears. The Green senators have also judged this exception to be "disproportionate" since there are already grounds for non-communication such as state security or the safety of people. Missions. The fact remains that examining a source code requires skills that are not within the reach of just any citizen. Two provisions introduced by parliamentarians are intended, in addition, to promote the transparency of the operating rules of algorithms: "The specifications are at least as important as the source code", insists Christian Paul. Thus, with some exceptions, when an administration makes a decision based on an algorithm concerning a citizen, it must mention it. And public entities will be required to publish online "the rules defining the main algorithmic treatments used in the accomplishment of their missions, when they are the basis of individual decisions", at the latest two years after the adoption of the law, in the senators' version. For APB, these "rules" should wait less time: while waiting for the opinion of the Cada, the Ministry of Higher Education has promised to explain them before May 31. For Christian Paul, the challenge is to "organize, around these algorithms, an informed democratic discussion". Because if the questioning of "algorithmic governmentality", according to the expression of the researcher Antoinette Rouvroy, is in full emergence, "the way in which public decision is constructed is a subject as old as democracy".

## ###ARTICLE\_START### ID:2319

Can neuroscience research and experimental psychology help education? Officially recognized by a 2007 OECD report, neuroeducation (a combination of cognitive and educational sciences) has aroused some reservations, but is beginning to gain traction in France. Is this enough to save an education system that is running out of steam? The results of the latest PISA (Programme for International Student Assessment) survey, which analyzed the skills of 15-year-olds in 65 countries, were made public at the end of 2013 and made a big impact. Between 2003 and 2012, the percentage of students experiencing difficulties soared in our country, rising from 16.6% to 22.4%; and the education system has become more unequal. A UNICEF report, published in April, placed France 35th out of 37 in the ranking of educational gaps. What happens in a learning brain? How does a child's behavior change when learning to read or do math? What can be done to optimize learning? To explore these questions, research teams rely on a range of tools: brain imaging tests, neuropsychological and cognitive tests, but also big data mining, animal experiments, etc. Concrete collaborations between researchers and education professionals are increasing. But scientists remain cautious. "We believe that recent knowledge about the brain can be useful, but we do not claim to revolutionize teaching," warns Francis Eustache, who heads the Inserm "neuropsychology and human memory imaging" unit at the University of Caen-Normandy. Many concepts have long been validated by educational sciences and are already applied in schools. What neuroscience allows is to theorize them,” continues the researcher, emphasizing in passing the ambiguity of the term “neuroeducation,” likely to induce a “bad fantasy” in some teachers. “The notion of exchanges with teachers, in both directions, is crucial to progress. What they tell us is that our work sheds light on their practices,” adds neuropsychologist Bérengère Guillery-Girard, researcher in Francis Eustache’s unit and co-author with the latter of La Neuroéducation. La mémoire au coeur des apprentissages (Odile Jacob, 172 p., 17.90 euros). For the past ten years, innovative work, including that of Stanislas Dehaene’s team (director of the Inserm-CEA cognitive neuroimaging unit in Saclay, Essonne), has helped to elucidate the neural mechanisms of certain learning processes. Thanks to MRI scans, it has been established that the acquisition of reading develops an effective connection between the vision of letters and the coding of language centers. The process requires the recycling of a region of the brain initially devoted to the recognition of objects and faces to respond to letters and their combinations. Cutting-edge research, but with concrete applications since they have been able to confirm that training letter-sound decoding (graphemes-phonemes) is the fastest way to develop the reading network. A strong argument to put an end to the long-heated discussions between supporters of the syllabic method and those of the global method. Cognitive neuroscience has identified four pillars of learning, summarizes Stanislas Dehaene in his conferences. The first is attention, which functions like a projector and channels learning. Then there is the active engagement of the learner, through self-assessments and regular knowledge checks. The third pillar is feedback, as the brain needs to make mistakes in order to progress. Finally, the fourth pillar is automation, which is acquired in particular through the daily repetition of learning and through sleep, which consolidates the day's learning. Cognitive science research teams often specialize in one area: attention, memory, etc. In the Laboratory of Child Development and Education Psychology (LaPsyDE) at the Sorbonne, Professor Olivier Houdé and his colleagues focused on inhibitory control, i.e. the brain's ability to resist some of its automatisms and change its reasoning strategy. "Our idea is that during school learning and certain logical reasoning tasks, a certain number of systematic errors can be explained by our tendency to rely on our automatisms. We can train the brain to avoid them by teaching it to resist these automatisms," summarizes Professor Grégoire Borst, deputy director of this laboratory (CNRS, Paris-Descartes University). To solve a problem, we have the choice between two reasoning strategies, continues the researcher: "Either a heuristic (an automatism), a fast strategy, which often works but not always; or an algorithm, slower and more cognitively costly but which always works." According to the LaPsyDE team, recurring errors frequently encountered during learning are due to the erroneous application of a heuristic strategy. Thus, certain spelling mistakes, such as je les mangeS, which result from the reflex of putting a plural after a les. Another classic trap: arithmetic problems with verbal content, such as "Louise has 25 marbles, she has 5 more marbles than Léo. How many marbles does Léo have? "Many students answer 30 (when the correct answer is 20), because they automatically triggered an addition when they heard the word "plus." Making a child aware that they are facing a trap is essential for them to be able to foil it, emphasizes Grégoire Borst. In functional imaging, we have shown that the brain moves from error to success by reconfiguring itself. There is a shift in brain activation from the posterior part of the cortex - involved in automatisms - to the prefrontal cortex, the area where heuristics are blocked." Inhibition is a key learning mechanism, just like neuronal recycling, believes the researcher. To assess the potential benefits of teaching this resistance to automatisms, the LaPsyDE team is starting a study with 150 CM1 students in Caen. They are invited to "play" fifteen minutes a day for five weeks with a touchscreen tablet, using different methods. One group trains in inhibition, a second in mindfulness meditation, a third in working memory. The relative effects of each of these learnings on the brain will be assessed by cognitive tests and MRIs, before and after these trainings. At the Pasteur Institute in Paris, the "perception and memory" team, led by Pierre-Marie Lledo, is exploring other original approaches to neuroeducation. Using an optogenetic technique - a combination of optics and genetics that allows the activation or inhibition of a neuron to be remotely controlled - researchers Mariana Alonso and Anne Grelat are studying the role of reward on olfactory learning in mice. In the same unit, a mobile application is being developed, one of the main objectives of which is to help optimize cognitive performance. It could be used by students. "Every day, during a quick test, the user informs the software about their behavior: sleep, mood, consumption of products, etc.," explains Professor Lledo. This data, as well as other data recorded by the smartphone's sensors - relating to voice, facial expressions, movements, etc. - are analyzed by an algorithm. In return, the application almost instantly returns information to the user about their cognitive state, and possibly makes suggestions for readjustment. The program can, for example, detect a slowdown in the execution of tasks." The application, which will soon be tested, could be available in open source before the end of the year. Research work is abundant, as are projects involving scientists and teachers. But the subject of neuroeducation is still debated and, in the field, the dissemination of neuroscience within the education system remains difficult, emphasize the authors of the "Neuroscience and pedagogy" file, published in February in Cahiers pédagogiques. "Neurosciences are now having a huge appeal in the teaching community, with the risk that some might see them as holding truths about classroom practices," says Ange Ansour, head of the Savanturiers program at the Center for Interdisciplinary Research (CRI). "Neurosciences have made huge progress in explaining and describing how the brain works. However, there is no direct link between describing these phenomena and prescribing to teachers what they should do in their classes," notes the former schoolteacher. For researchers, the field of neuroeducation promises to be exciting and particularly broad. Beyond children in normal learning situations, cognitive science data can be used to help students with specific difficulties: "dys" disorders, such as dyslexia and dyspraxia, memory problems caused by severe epilepsy or autistic disorders. And children are not the only ones concerned. “Education is not just about school, and it is all the more essential because its repercussions are felt throughout life,” emphasizes Francis Eustache. “Intellectual activities play a decisive role in preventing memory disorders. Several studies have found that the incidence of Alzheimer’s disease is starting to decrease, particularly among women. This development can be explained in part by the fact that girls of this generation have had more access to education than those of the previous generation.”

## ###ARTICLE\_START### ID:2320

Founding CEO of Skyrock radio, Pierre Bellanger is the author of Digital Sovereignty (published by Stock in 2014), a concept that he was among the first to introduce into the public debate in France. This supporter of strong state regulation on a subject that he considers eminently "regal" warns of the dangers of capturing the economic value generated by digital technology for the sole benefit of a handful of giants, all American, imposing their technological ecosystems and confiscating our data. At a time of globalization of which the Internet seems to embody the ultimate stage, is it not strange to see this theme of digital sovereignty flourish? The world of the colonial empires of the 19th century was a globalization. This domination did not resist the desire for freedom of the populations. A colony is under foreign authority, its resources are stripped and freedom of expression is under external supervision. This colonial domination is found today transposed onto the network. Our exchanges and data on the Internet are subject to foreign law. Worse, our legal status is that of statelessness: our data is no longer protected by European law because it is housed in servers across the Atlantic and is also not subject to United States law because we are not American citizens. This is untenable. Everyone must be able to use the network with the guarantees of freedom and rights of its Constitution. Today, there is a global awareness of this imperative of democratic control. Can you define this concept of digital sovereignty? Sovereignty, in a democracy, consists of a common law chosen by all on a given territory. This sovereignty establishes a law that guarantees our freedom. Digital sovereignty is the extension of the Republic to cyberspace. For you, is digital sovereignty above all an economic concept or is it about strengthening the defense of its cyberterritory? It is a political concept that establishes our freedoms and rights in cyberspace. The digital citizen exists in the form of data. Aggregated, these individual data form a network of solidarity data that associates us all: it is both the people and the territory. Its border is delimited by the encryption that determines access and use. Without sovereignty over these data, there is no fair economy: currently some players see the cards of others because the masters of the network control the data. There is no defense either: without secrecy, no strategy. In other words, without sovereignty, our only insurance is foreign benevolence. Was the Snowden affair (the revelation that the American NSA was listening to the world's communications) the detonator that changed everything? Will the global players that are the Gafa (Google, Apple, Facebook and Amazon) have to adapt to new local cyber-sovereignties? Nuclear independence implied computing power. It was an imperative of sovereignty. Europe then forgot that it had been a creative center of gravity of the network: the Frenchman Louis Pouzin inspired its protocols, the Englishman Tim Berners-Lee invented the Web, and the Finn Linus Torvalds, developer of the kernel of the free software Linux... Much more modestly, France en ligne, launched with France Télécom in 1993 to create a network service, was abandoned in favor of the American browser Netscape... But it was Edward Snowden in 2013 who opened the planet's eyes to the loss of sovereignty of States in the digital age. The acronym Gafa is inappropriate because only operating systems count. Services, however powerful they may be, depend on this software that controls the machines. Isn't the risk of digital sovereignty to favor what defenders of digital freedoms call a "balkanization of the Internet"? Was the end of the British Empire a balkanization? The free and open Internet of the Web is marginalized. Access to the network via mobile and apps is becoming the majority in what the Anglo-Saxons call "walled gardens". On mobile, we use coordinated services, associated with their distribution platform and their operating system. This fragmentation has already taken place and the original utopia of an Internet that is above ground and belongs to all is in danger. Digital sovereignty will give a democratic basis to the network. Will this not be a brake on the development of economies? Subordination is not a factor of development. Our innovations on mobile are subject to the goodwill of omnipotent platforms. Innovation is under supervision. Interoperability? It is moribund: private operating systems are becoming incompatible with each other. On the contrary, we will owe it to digital sovereignty to guarantee the neutrality of the operating system, a condition for development and innovation. Does thinking about digital sovereignty from a legal perspective make sense if it is not based on a powerful technological and industrial ecosystem? The entire digital ecosystem is there, but in puzzle mode, not assembled. It lacks nothing except a solid base. We have all the services to run the house, but we lack its foundations. How can we regain lost ground? First, by deciding on the ground. That of the Republic. Digital sovereignty interrupts the plundering of data, legally localizes services and servers, and ensures fair competition. Then, how can we offer an alternative? On the network, the most open wins. We need an open and collaborative network of apps supported by a community and carried by an operating system (OS) designed on the free Linux kernel: the sovereign OS. Data encryption that guarantees freedoms and privacy shares this data between applications. All non-specific software bricks are shared between apps, thereby reducing development costs. The OS is no longer a competitor to the applications that use it, and everyone, entrepreneurs and users alike, can find the guarantees and choice of the best services there. Why should the Gafa share their digital sovereignty with States? Sovereignty is the prerogative of States and not of companies. The large American companies of the network are in symbiosis with their State of origin. An intelligence industry has also developed from social networks. And these major players know how to accommodate the demands of authoritarian nations. It will be all the easier for them to respect the laws of democracies. It is also in their interest. The current absence of law generates instability and anger, which threatens them. Only fair law guarantees long-term security, for us, as for them. What do you say to those who accuse you of bringing us back to an outdated concept of sovereignty? What would these people do if their data suddenly disappeared, if it was diverted and their lives shattered by a few digital manipulations? Would they take a plane to file a complaint in the San Mateo court in California or would they suddenly discover that Nanterre is closer? Isn't it up to everyone to conquer their own digital sovereignty? The elites educated in the network will get by. But we must think collectively. Modernity is what protects the weak. Let's not forget the majority who always place their trust in public action.

## ###ARTICLE\_START### ID:2321

Digital sovereignty? In 1996, the planet had fewer than 100 million Internet users, and for many of them, raised on libertarian or libertarian cyberculture, the formula would have bordered on an oxymoron. "You have no sovereignty where we gather," the American poet and Internet pioneer John Perry Barlow said to the "governments of the industrial world" in a "Declaration of the Independence of Cyberspace" that has remained famous. For this specimen of "California ideology," if there was sovereignty, it could only be that of "virtual personalities" freed from the "tyrannies" of the physical world. Twenty years later, more than three billion Earthlings are connected by the network of networks. Far from the post-hippie imaginary of autonomous cyberspace, it has seen the balance of political, social and economic forces replayed. "The principles of self-regulation and unhindered circulation of information that govern it are now being challenged and discussed by societies that claim their sovereignty and respect for the laws in force on their territory," notes geographer Boris Beaude in Les Fins d'Internet (Fyp, 2014). For Bernard Benhamou, former interministerial delegate for Internet uses and now secretary general of the Institute for Digital Sovereignty (ISN), what is at stake is the ability to "master all technologies, from an economic, social and political point of view" and to "determine oneself to have one's own technological trajectory." But who decides what, and how? These are plural sovereignties that are articulated or confront each other on this Internet that no one governs. 1. The debates on "Internet governance" "The Internet was ours," Barack Obama said last year in an interview with the Recode website. "Our companies created it, expanded it, and perfected it in ways that the competition can't keep up." This statement of ownership is debatable, but it is a reminder that the United States retains a preponderant weight, the fruit of a history that has associated the private sector, universities, and DARPA (the Defense Research Agency) in the development of the network. The technical management of the Internet itself is the responsibility of several internationally oriented entities based in the United States: the Internet Engineering Task Force (IETF), which works on communication protocols, and the World Wide Web Consortium (W3C), which deals with Web standards. The Internet Corporation for Assigned Names and Numbers (ICANN), which coordinates the management of domain names, is under the supervision of the US Department of Commerce until the end of 2016. All these organizations participate in "Internet governance", according to the established formula. It brings together States, companies and civil societies, according to a so-called "multi-stakeholder" model intended to preserve a single, open and decentralized network. But this model is the subject of fierce debate. At the World Conference on International Telecommunications, in December 2012 in Dubai, several countries tried to place Internet regulation under the aegis of the United Nations. In vain. China, Russia and Saudi Arabia, regularly singled out for their censorship and network surveillance practices, defended the "sovereign right" of governments to "regulate the national segment of the Internet". In addition to the United States, European countries opposed it, as did companies in the sector. 2. After Snowden, the issue of personal data Edward Snowden's revelations about mass surveillance by the NSA changed the shape of the debate. Targeted by the American agency's wiretapping, the suspended Brazilian president, Dilma Rousseff, led a front in 2014 demanding a thorough reform of Internet governance. But it was above all the problem of the accumulation of personal data by major American digital players that was highlighted. "Snowden raised awareness of the seriousness of data concentration," summarizes Laurent Chemla, member of the freedom defense association La Quadrature du Net, and of the scientific council of the ISN. It was indeed after the revelations about surveillance by the NSA that the Court of Justice of the European Union decided, in October 2015, to invalidate the agreement on the transfer of personal data from Europe to the United States, the "Safe Harbor". It is now being renegotiated. For Bernard Benhamou, "the question of "data residency" is on the table" - namely a principle of localization on the territory of users. This would be, he suggests, "not only a tool for protecting freedoms, but also for development and industrial strategy". 3 Sovereign rivalries and economic rivalries The confrontation is being played out on all levels. "The Internet is under the domination of oligopolies that are becoming more powerful than States, with consequences for individual freedoms and for the exercise of the law, denounces the socialist MP Delphine Batho. It is also a major economic problem as the entire economy is reconfigured by digital technology: it is the possession and exploitation of data that creates value. The European economy is being siphoned off, laissez-faire is no longer possible." During the debates in the Assembly on the bill "for a digital Republic", the elected representative of Deux-Sèvres brought an amendment, voted by deputies from the left and the right, to ask the government for a "report on the possibility of creating a Digital Sovereignty Commission". This body would have had the mission of setting up a "sovereign operating system" and "data encryption protocols". The Senate removed these details, keeping only the objective of "the exercise, in cyberspace, of national sovereignty and the individual and collective rights and freedoms that the Republic protects". But in the meantime, the idea of a made-in-France operating system to compete with Windows or Mac OS has been lambasted by many experts. "If it is to redevelop an operating system from scratch, technically, it is nonsense", judged Guillaume Poupard in January, the head of Anssi, the French agency responsible for cybersecurity. If it is to be controlled by the State to put a lot of dirt in it, I will oppose it." For Bernard Benhamou, this idea would amount to "recreating a citadel". Delphine Batho defends herself: "It does not mean State control over data. The sovereign operating system is obviously in an open and collaborative vision", that of free and open software. The fact remains that the costly failure of the "sovereign cloud", supposed to counter the storage offers of Amazon and others, shows that the French stamp does not guarantee adoption by users. 4. Privacy put to the test by States The question is all the more sensitive since curbing the wishes of States is also, since Snowden, a crucial issue for companies. They must restore the trust of their users. But in the United States, but also in Great Britain and France, the authorities are increasingly openly waging war against cryptography, accused of hindering the investigations of anti-terrorist services. This is evidenced by the highly publicized conflict that took place between Apple and the FBI over access to data contained in the smartphone of one of the perpetrators of the San Bernardino massacre. "The demand for sovereignty must stop when we touch the 'pillars of the temple', when we threaten the entire ecosystem," says Bernard Benhamou. This is the whole problem posed by the limitation of encryption. Or even "back doors", these secret accesses to software or hardware, which sooner or later end up falling into hands other than those for which they were intended. In France, the National Commission for Information Technology and Civil Liberties (CNIL) recently took a firm position in favor of cryptography and against backdoors. 5. What sovereignty for users? The debate is complex and crucial. It touches on the exercise of fundamental freedoms, industrial issues, and geostrategic power relations. "It's not that complicated," says Laurent Chemla ironically. "The goal is more democracy and more freedoms. Whether it's the control of essential companies or surveillance by states, the fight is against both." It's about "giving the user back sovereignty over their data," not "closing the borders." Digital sovereignty is, no more, no less, an extension of popular sovereignty. For his part, Bernard Benhamou insists on the fact that digital sovereignty "only makes sense if it is exercised within a democratic framework." He argues for both a European basis and for "a transatlantic agreement, then expanded, on "digital democracy." How can we counter the logic of capture without risking the "balkanization" of the network? How can citizens' rights be protected there? In this complex game of powers and counter-powers, it is also the utopian part of the Internet that is at stake. And the future, at a time of disenchantment, of a network without a center and without borders.

## ###ARTICLE\_START### ID:2322

Montreal (Canada), correspondence - A vast project of mobilization and technological initiatives in a city center, the Quartier de l'innovation (QI) of Montreal "was born of an academic and not political desire," insists its general director, Damien Silès. Initially, two institutions joined forces to capitalize on their complementarities in research, training, innovation and entrepreneurship: a twenty-five-year contract was signed in 2009 between McGill University and the École de technologie supérieure (ETS) of Montreal to design a joint project covering, over 5 km2, three districts in the southwest of the city - Griffintown, Saint-Henri and Little Burgundy. Former cradle of Canada's industrial revolution, transformed into a ghost town after the closure of the Lachine Canal in 1970, this area was revitalized by the establishment of the ETS campus and a Multimedia City. It has also become a trendy neighbourhood with the arrival of young executives, artists, start-ups and researchers. “We absolutely wanted the QI to be a living environment and not just a work environment, to humanize innovation,” adds Mr. Silès. The idea was and remains that citizens – long-time residents or new residents – would be active participants in the project. “Creativity hub” A non-profit organization funded equally by public entities and private companies, the QI was officially launched in 2013, two years before the city’s other English-speaking university, Concordia, joined the contract. Since then, initiatives have multiplied, all of which are intended to be “models of sustainable development.” A Sulpician church now houses shared workspaces that allow “businesses, community organizations and neighbourhood residents to share resources, train and network.” A former planetarium, bequeathed by the city of Montreal to the ETS, which is investing the equivalent of 3.4 million euros in it, is on its way to becoming a "creativity hub". A "neoshop", designed within Laval Mayenne Technopole in France, will open its doors there, both as a launch pad for productions developed by young shoots - currently 450 in the QI - and for testing these products by consumers. An "EchoFab" invites everyone to come and work on personal or collaborative projects. A "free software house" welcomes students wishing to train there, while a ten-story "data center" is being built. The QI is also concerned with culture: at the end of June, an "urban trail" will wind through the city center. It brings together artists, merchants, companies and the general public.

## ###ARTICLE\_START### ID:2323

The release dates were kept secret. It was necessary to avoid any risk of leaks, to be the first to shoot. What are we talking about? A politician's book? A document classified as top secret? No, it is one of the works most consulted by the French: the dictionary. The Petit Robert de la langue française (Editis group) and Le Petit Larousse illustré (Hachette group) are engaged in a merciless battle. It is almost as if methods worthy of espionage are not used to find out what the competitor is up to. It must be said that these encyclopedias are found in most homes - approximately one million copies are sold each year; nearly 2.5 million copies if we take into account derivatives (junior, bilingual, pocket, etc.). The sector's turnover exceeds 23 million euros, even if it is experiencing tension. Without providing figures - secrecy obliges - the management of the Petit Larousse agrees to release this information: "One is sold every minute", says Carine Girac, director of the dictionaries and encyclopedias department. That's more than 525,000 copies per year. The Petit Larousse holds nearly 70% of the market. These dictionaries are mainly purchased in September, at the start of the school year. But, and this is linked to this issue, they are coming out in bookstores earlier and earlier. So much so that Le Petit Robert 2017 will be available from this Thursday, May 19, 2016! And Le Petit Larousse 2017 will be published next week. The two publishers have the same fear: seeing an old edition enthroned in the French people's library - who doesn't have, in a corner of their home, a Larousse or a Robert from the 1990s, or even an older one? To sell a dictionary every year, you have to bring new editions to it every year. There is, first of all, a commercial reason for this anthology of neologisms: otherwise, how can you justify buying a dictionary if 2017 looks like 2016? In fact, with each entry, the two encyclopedists compete in new words and meanings: 150 for each edition. "Uberize" is already in Le Petit Robert The publishers try another explanation. It is worth what it is worth: these dictionaries are supposedly a reflection of our society. "A true observatory of the French language, Le Petit Robert is once again integrating many words, expressions and meanings this year. These contribute to enriching and qualifying our way of speaking and understanding the world. They are real indicators of the strength of our language and our individual capacity to reinvent it day after day", justifies Charles Bimbenet, general director, in the presentation document for the 2017 edition. This is probably why selfie is already in both works - you couldn't miss the phenomenon. And that the 2017 edition of Larousse includes flasher, opensource, QR code, troll, emoticon (with a circumflex accent), while Le Robert 2017 already includes twittosphere, emojis, youtuber, geeker and even the selfie stick! All this is well and good, but isn't there a risk in seeing a word fly away as quickly as it appeared? In new technologies, this is common - through obsolescence or fashion. We wonder if dictionaries are not rather a reflection of current events. An example. In 2010, during the Football World Cup held in South Africa, everyone was talking about a kind of trumpet: the vuvuzela. Le Petit Robert included it in its 2011 edition. Who talks about it today? This year, Le Robert also admitted uberize, defined as follows: "Destabilize and transform (a sector of activity) with an innovative economic model that takes advantage of new technologies." Is uberize conjugated in all tenses? Isn't that rushing things a bit? In its 2009 edition, Le Petit Larousse had to abandon the verb minitelize. "Flash in the pan" words These are "flash in the pan" words, according to the pretty expression of Camille Martinez, who works with Orthodidacte.com, a site specializing in the French language. This lexicology researcher defended a thesis on "The evolution of spelling in dictionaries" with, as research director, the "dicopathe" Jean Pruvost, professor of lexicography and history of the French language at the University of Cergy-Pontoise. Like a memorialist, the former winner of the Dicos d'or scrupulously lists the words that are disappearing. In this cemetery, we discover, among others, botoxé (born in Le Petit Larousse in 2014, stillborn in 2015) or onglerie (2012-2013). For these two terms, the encyclopedist had forgotten that they were registered trademarks, Botox complained about it, especially since the definition was a bit pejorative. Coupéspace (2005-2012), publiciel (2001-2005), électrorock (2009-2012) did not last long, just like outplacement (1998-2012) which was all the rage. "Initially, lexicographers tend to take many terms, especially those from the French-speaking world; then, they prune a little. They take risks by integrating so many new words," explains Guillaume Terrien, the founder of Orthodidacte.com and French spelling champion. And she adds: "There is a good deal of communication in this competition between the two dictionaries: who will communicate first? Who has their share of new words?" Is it also a fad? The media only have eyes for things related to gastronomy. Result: most of the new words come from this register. "It is true that culinary and gastronomic expressions are making a strong entrance. On the other hand, we notice that there are fewer terms from ecology and psychology," says Carine Girac. Examples? Burrata, ciabatta, argouse, phô, wrap. "World food" is expanding. In the dictionary too. At Le Petit Robert, the trend is the same, but with other words. We now accept viandard, viandarde (“Hunter, unscrupulous fisherman/Person who loves meat, who eats a lot of it”), pad thai (a traditional Thai dish), piquillo (sweet pepper from the Spanish Basque Country), alfalfa (“Cultivated alfalfa, rich in protein and calcium”), mara (“Small strawberry whose aroma is reminiscent of wild strawberries”) and ristrette (“Very strong coffee”). Another fad? We accept antispeciesists and antispeciesism (“Ideology that opposes speciesism” - speciesism is an ideology that postulates a hierarchy between species). Both publishers react quickly to current events. Marie-Hélène Drivaud, editorial director of the Petit Robert, acknowledges this half-heartedly: “The attacks that hit Paris and Brussels are not without consequences for the vocabulary. These tragic events led us to introduce a certain number of new examples to illustrate the existing definitions: loss of nationality, foiling an attack, candidates for jihad, jihadist, radical Islamism... The definition of attack had to be revised; until now concerning a person, in a political context, it was extended to a group in an ideological context," she says. Yezidism, migrant (with a new definition) and living together are now in the dictionary. Larousse has added an extension to wolf, with lone wolf. This war between the two dictionaries forces lexicographers not to give words time to settle. At the Académie française where the reference dictionary is developed, for a new name to have a chance of being retained, it must have proven itself over time. A minimum of ten years. "The creation of a dictionary is a long-term process," said Maurice Druon, who already in his time mocked the frenzy of new words by contemporary encyclopedists: "Language is subject to seasonal fashions. Expressions born from the last rain will disappear with the next drought." It must be said that the Dictionnaire de l'Académie française is only at the letter "R" and lists around 35,000 terms, while the two "Petits" have more than double that. The editors of Larousse and Robert do not have the luxury of time, even if major overhauls are carried out every two decades or so, an opportunity to "get rid of" obsolete terms or to adapt the spelling. Good news: Anglicisms tend to give way to French. The two publishers work in much the same way: a committee made up of many specialists considers the usefulness or otherwise of integrating a new term. Each one is rich with a "word bank" that brews about ten thousand taken from the media or books, and their choices are guided by the occurrence records collected by their observatory. 1,000 to 2,000 words are then sifted through, to retain only a hundred terms. The selection is tough. Thus, at Larousse, badant was not elected, depressing was enough.

## ###ARTICLE\_START### ID:2324

The west wall of the Grand Théâtre de Québec will be covered in graffiti, but not just any graffiti. These will be virtual drawings created by a group of eight students from Joseph-François-Perreault high school accompanied by visual artist and graffiti artist Patrick Beaulieu. The digital performance Encres & Lumières lasts two hours and will take place in the evening of Friday, June 17 on a wall 160 feet wide and nearly 50 feet high instead of the graffiti done haphazardly on a corner of the wall. The project, announced at a press conference on Tuesday, is led by Louis-Robert Bouchard of the Interférences collective for all technological development, and by artist Nathalie Côté, a scenographer. Since the beginning of May, Ms. Côté has been offering introductory workshops on graffiti and built heritage to the eight young people who are learning about the technology developed by Interférences. In addition to the performance control software designed using open-source software, Mr. Bouchard developed a digital paint can with Alexandre Quessy to reproduce the physical characteristics of the graffiti artists' real can. Unlike the graffiti painted here and there in the city, digital graffiti disappears as soon as the performance is over. But it can be archived and presented elsewhere or reproduced in rebroadcast. Series of workshops Until the presentation of their work, the eight young people continue the series of artistic learning workshops by refining their knowledge of the history of the 23 heritage buildings selected for their training. At the same time, they learn to master the technology and tools they will have to use to impress the crowd. In the event of bad weather on the evening of June 17, the performance will take place the following day. If the weather is good on Friday evening, Saturday evening will be devoted to rebroadcasting the performance by integrating the selected drawings submitted by high school students from the Quebec City region on the interferences.ca website. The creators of this event combining art, heritage and technology responded to the call for projects Graffitis et tags virtuels launched by the City of Quebec. The whole thing is funded by the Cultural Development Agreement between the Ministry of Culture and Communications and the City. Even though it is a one-night, ephemeral event, Louis-Robert Bouchard wants to push the experience and development of digital tools further so that other artists can also perform digitally in front of the public. ytherrien@lesoleil.com OUR VIDEO videos.lesoleil.com

## ###ARTICLE\_START### ID:2325

It's called InMoov. This humanoid robot, born in France in 2012, is worth a visit in itself. It is one of the stars of the exhibition "3D Printing - The Factory of the Future", on view until July 9 at the Lieu du design in Paris: it can perform a variety of tasks, greet you with a firm handshake or hold a baby in its arms. And yet, it was entirely printed in 3D, piece by piece, and progresses thanks to shared knowledge, through open source platforms. It alone sums up the power of additive manufacturing technologies, "3D printing", invented thirty years ago. "The second industrial revolution generated a segmentation of work. This revolution, on the contrary, creates continuity, fluidity between the stages and actors of production, and sees the emergence of a collaborative dimension", analyzes François Brument, designer and curator of the exhibition. "Thus, the factory of the future encompasses, in a transversal manner, design, manufacturing, distribution, and even consumption, in a transformed space-time," explains this teacher at the Ecole supérieure d'art et design de Saint-Etienne, where he is working on the opening of the post-graduate program "Design (neo)-industrial: think, do, undertake digital technology", planned for the 2016-2017 academic year. A cranial implant based on Limoges ceramic, created in 2001 by 3DCeram, or a series of Solid chairs by French designer Patrick Jouin, created in 2004, like tangled ribbons... In the exhibition at the Lieu du design, which brings together nearly 70 French and international creations, some "ancestors" of 3D are to be admired. But most of the pieces are very recent, like these glasses designed by Ron Arad for the company PQ Eyewear, made in one go, with foldable arms and frames, thanks to powder sintering, in 2015. Or, from the same year, these shoes printed in the shape of conch shells and yet comfortable since they were based on a model of the foot, on which five big names in architecture or design have worked: Ben van Berkel, Zaha Hadid (who died on March 31), Ross Lovegrove, Fernando Romero and Michael Young. Self-reproducing printer Precious materials are now lending themselves to the game: 18-carat gold, platinum or silver, with which the artist Miguel Chevalier has made rings with shapes that were previously impossible to conceive, i.e. an interweaving of voxels, the three-dimensional version of the pixel. Do factories for mass-producing the same objects, in a "mass market" way, still have any interest? Nothing prevents small series construction, where the need arises: the start-up MX3D is currently manufacturing, in Amsterdam, on site, a steel bridge with a robot placed on each bank, each creating towards the other, without scaffolding (delivery scheduled for 2017). The American company Made in Space is developing tools designed for a gravity-free context, so that astronauts can print parts on a mission rather than transporting them from Earth. Technology is progressing by leaps and bounds, like this printer - a micro-factory in the home - capable of self-reproduction (RepRap project, since 2005, United Kingdom). Supported by increasingly efficient software and by the sharing of knowledge worldwide, completely open source designs optimize each project like never before. "My robot is enriched by collective intelligence, information that currently passes through Google," emphasizes Gaël Langevin, creator of InMoov. He doesn't belong to me anymore and he only understands English... One day, he and his little ones might find that we humans are of little use to the planet. They might even think that we are nothing more than troublemakers. And act accordingly..."

## ###ARTICLE\_START### ID:2326

It's called InMoov. This humanoid robot, born in France in 2012, is worth a visit in itself. It is one of the stars of the exhibition "3D Printing - The Factory of the Future", on view until July 9 at the Lieu du design in Paris: it can perform a variety of tasks, greet you with a firm handshake or hold a baby in its arms. And yet, it was entirely printed in 3D, piece by piece, and progresses thanks to shared knowledge, through open source platforms. It alone sums up the power of additive manufacturing technologies, "3D printing", invented thirty years ago. "The second industrial revolution generated a segmentation of work. This revolution, on the contrary, creates continuity, fluidity between the stages and actors of production, and sees the emergence of a collaborative dimension", analyzes François Brument, designer and curator of the exhibition. "Thus, the factory of the future encompasses, in a transversal manner, design, manufacturing, distribution, and even consumption, in a transformed space-time," explains this teacher at the Ecole supérieure d'art et design de Saint-Etienne, where he is working on the opening of the post-graduate course "Design (neo)-industrial: think, do, undertake digital technology", planned for the 2016-2017 academic year. A cranial implant based on Limoges ceramic, created in 2001 by 3DCeram, or a series of Solid chairs by French designer Patrick Jouin, created in 2004, like tangled ribbons... In the exhibition at the Lieu du design, which brings together nearly 70 French and international creations, some "ancestors" of 3D are to be admired. But most of the pieces are very recent, like these glasses designed by Ron Arad for the company PQ Eyewear, made in one go, with foldable arms and frames, thanks to powder sintering, in 2015. Or, from the same year, these shoes printed in the shape of conch shells and yet comfortable since they were based on a model of the foot, on which five big names in architecture or design have worked: Ben van Berkel, Zaha Hadid (who died on March 31), Ross Lovegrove, Fernando Romero and Michael Young. Self-reproducing printerPrecious materials are now lending themselves to the game: 18-carat gold, platinum or silver, with which the artist Miguel Chevalier has made rings with shapes that were impossible to conceive until now, i.e. an interweaving of voxels, the three-dimensional version of the pixel. Do factories for mass-producing the same objects, in a "mass market" way, still have any interest? Nothing prevents small series construction, where the need arises: the start-up MX3D is currently manufacturing, in Amsterdam, on site, a steel bridge with a robot placed on each bank, each creating towards the other, without scaffolding (delivery planned for 2017). The American company Made in Space is developing tools designed for a context without gravity, so that astronauts can print parts on a mission rather than transporting them from Earth. Technology is progressing by leaps and bounds, like this printer - a micro-factory in the home - capable of self-reproduction (RepRap project, since 2005, United Kingdom). Supported by increasingly powerful software and by the sharing of knowledge worldwide, completely open source designs optimize each project like never before. "My robot is enriched by collective intelligence, information that currently passes through Google," emphasizes Gaël Langevin, creator of InMoov. "It no longer belongs to me and only understands English... One day, it and its offspring will be able to find that we humans are of little use to the planet. They might even think that we are nothing but troublemakers. And act accordingly..." Véronique Lorelle

## ###ARTICLE\_START### ID:2327

Virtual reality is the new fad of consumer technologies and, as always in such situations, marketing has seized on it. Much better than 3D glasses, Google Cardboard has become the accessory that allows brands to project themselves into a 360° world, which is precisely what they have been promising to offer their customers or employees for a long time. Since last year, operations combining Cardboard with virtual reality content have multiplied. Food brands such as Kellogg's, McDonald's, Häagen-Dazs or Évian, car manufacturers (Mitsubishi, Lexus), NGOs (Amnesty International), hotel chains (Marriott), luxury brands and of course the entire film industry have seized on this piece of cardboard which gives them a playful dimension and a technological aura and allows them to promote their different dimensions (viewing advertising content, virtual tours, immersion in different situations, etc.). "Creating the event" For example, as part of its latest advertising campaign with baby surfers, Évian offers its customers an immersive experience in a 360-degree wave: the Cardboard user who has downloaded the application and slipped their mobile into the Cardboard finds themselves in the shoes of a baby in a surfer's wetsuit who can perform surfing tricks... Objectives: "create the event, surprise and offer a moment of freshness and lightness", while feeding the promise of an iconic brand. Chinese and European sectors Faced with the craze for Cardboard among brands, an entire sector has been set up. The open-source plan for Google's cardboard helmet has allowed a whole bunch of manufacturers to rush into the breach to offer personalized Cardboard according to the brands' requests. "Production should at least double to reach 10 million copies this year," predicts Milan Boisgard, co-founder of Original Cardboard, a French distributor that sources from China but also from France. "We tried about thirty Chinese manufacturers before finding the right one." Beware of false bargains! Plastic versions, which are more solid and do not face the humidity problem that damages cardboard, are also appearing. Current quotes range from 100 to 500,000 pieces. French, German and Asian sellers share this booming market by offering more or less well-finished versions, at prices ranging from single to triple, from less than 20 euros to 70 euros. Currently, the market is on a tight schedule. The Cardboard craze should reach a peak for the end-of-year holidays. In France, major retailers such as Carrefour and Fnac are placing orders. "It's an object that can hang around in a living room without looking too geeky," observes Milan Boisgard. Virtual reality is well and truly on its way to becoming more mainstream.

## ###ARTICLE\_START### ID:2328

How about a good beer? And one that you brew yourself? Then head to La Montreuilloise (1), a microbrewery nestled in the hills above Montreuil, in Seine-Saint-Denis. Every Saturday, for 135 euros for half a day, François Cariou and Jérôme Martinez teach a recipe as old as the world, that of beer: you need malt (especially barley), that is to say a sprouted cereal that is cooked so that it releases all its aromas, water, yeast and hops. The rest, on the surface, seems as simple as making François Cariou's beloved crepe batter: mix and heat everything before the yeast transforms the malt sugar into alcohol and carbon dioxide during fermentation and, above all, forget about this booze while it becomes one of the 40 types of beer described by the Montreuilloise in her bible Faire sa bière à la maison (2): smoked red, white with red fruits, extra strong bitter, Belgian triple, the list is as long and beautiful as an afternoon sipping foam on the moleskin of this zythophile temple that is the Mort subite in Brussels (3). A few weeks later, the trainees leave with their trophy, namely 20 liters of their beer to enjoy among friends. Put like that, making your own blonde, brown or red beer seems almost easier than uncapping a can with your teeth. But, on closer inspection, we realize that the first brew in a life is a bit like a first date: an open door to a story that tells much more than the cuisine of malt and hops. For a long time, we believed that beer was a bock on the zinc supplied by multinationals that made it in combines as complex and secret as a North Korean arms factory. At best, we quenched our thirst in the August heat, we abused it during the third halves and all this ended in repetitive urination. And then slowly came the little music of microbreweries from the United States and Great Britain. In their cellar, their garage, their barn, a handful of hoppy Mohicans have developed poetic beers like a Prévert inventory: Bière du pintadier, la Gueule noire, la Brasserie des babouins jurassiens, la Gironnette. From the light froth of the beginnings that made neighborhood festivals and concerts in the county town foam, craft beer has become background noise with nearly 800 microbreweries that have just formed the National Union of Independent Brewers. Of course, it is not yet the Grand Soir in the face of the heavy industry that is Heineken or Carlsberg. But the microbrewery has opened a hidden path that is now a furrow imbued with the idea of drinking good, local, made with complete transparency, and of campaigning for other forms of consumption than the packs of cans from mass distribution. "Agricultural". To convince yourself, you have to leave the metro at the terminus of the Mairie de Montreuil. Go back up on a brisk spring morning towards the historic district of the peach walls (4), an old Montreuil heritage where thick plaster masonry accumulating the heat of the sun encouraged the growth of fruit. In this maze of orchards, gardens and wasteland, the Montreuilloise has invested in an old laundry built at the end of the 19th century. Hops run in conquering vines in the middle of this moorland flowered with marigolds, dandelions, tulips, also dedicated to multiple "agricultural" activities: beekeeping, theater, music, permaculture campaign for other ways of life while the nearby highway rustles. The Montreuilloise produces 2000 liters of beer per month. Photo Fred Kihn As is often the case with microbrewers, the Montreuilloise was built at the crossroads of two destinies when forty reminds you that the time to choose will not necessarily ring twice. In another life, Jérôme Martinez, 45, took care of undocumented immigrants until he became secretary general of Cimade: "It was good, but after twenty years, I was exhausted." He took a sabbatical year, traveled and "rediscovered a taste for the associative world" with Sens de l'humus, which develops agroecology on the lands of the peach walls. He pushed open the door of Zymotik, one of the first microbreweries in the Ile-de-France region, founded in 2010 in Montreuil by François Deneubourg, a professor of natural sciences who had dabbled in malt and hops in New York. At the time, Jérôme Martinez knew nothing about beer other than the lukewarm lava that he drank at the metal concerts where he sang. "I did a first workshop at Zymotik and, one thing led to another, I trained there for a year. I was a small hand, I did a lot of dishes." When Zymotik and its owner moved to Cahors, Jérôme Martinez bought some of his equipment and founded Montreuilloise in the spring of 2014, with the idea "of creating something other than a standard beer factory. I wanted to do something that made sense. I am attached to environmental, social and local issues. This brewery is involved in the fabric of a city that I love, where certainly not everything is rosy, but where very different people talk to each other." François Cariou joined Montreuilloise in the spring of 2015 after working with the homeless for twenty years. Like Jérôme Martinez, "he drank everything and anything before discovering the beer culture in Wales and Ireland", and brewing with the wind with defenders of free software and die-hard fans like him of Iron Maiden, whose T-shirt he wears - the singer Bruce Dickinson had also developed a beer recipe, The Trooper, in reference to their famous song. Thermometer. At morning coffee time, Jérôme Martinez and François Cariou are already leaning over an old milk tank converted into a mash vat where 100 kilos of crushed malt are mixed with 300 liters of hot water in order to transform the barley starch into sugar. "I like working with the material that is malt," explains François Cariou. There is also an element of reflection, of intuition that I will refine. The brewer can play on multiple parameters: the alcohol content, the color, the texture, the bitterness, the flavors. "When in contact with water, the malt becomes a sort of large semolina cake with biscuity aromas, called "maische" (from the German maischen, to mix). "It is the temperature of the mash that will determine the roundness of the beer. Here we aim for around 65 degrees," comments François Cariou, glued to the probe of his thermometer. What is counterintuitive in beer is that you need a lot of hot water to make a cold drink." Without realizing it, we quickly understand that making a brew is a little more complicated than a pancake batter. Between the incessant washing to eliminate the slightest bacteria that could transform the recipe of the day (an English pale ale, a top-fermented beer, traditional in pubs), the weighing of hops to the nearest gram, beer does not tolerate approximations even if each brewer loudly proclaims his subjectivity. "I prefer empirical cooking to the molecular one of El Bulli," jokes Jérôme Martinez. "Put twenty brewers in the same room to discuss, after an hour, they'll be fighting each other," adds François Cariou while handling the "fourquet", a wooden shovel with holes for mixing malt and water. On the handle, three words are engraved: "Action, passion, emotion." At the end of the morning, a golden-colored juice is collected: it is the must, sweet and promising. "We make the must and the yeast makes the beer," smiles François Cariou. From the big cake of mash, there now remains the "dregs", barley residues that Montreuilloise composts near a field of nettles but which can also flavor bread, feed livestock. Montreuilloise makes 2000 liters of beer per month. Photo Fred Kihn "Life". At the snack bar, outdoors on a light wood table, Jérôme Martinez compares the microbrewery "to a groundswell that reappropriates a product that had been mistreated". Montreuilloise (2,000 liters of beer per month) has joined the Nature & Progrès federation which has been campaigning for organic farming for fifty years. To limit the impact on carbon dioxide emissions, it sources its malt and hops from France, Germany and Great Britain. "It wouldn't make much sense to buy organic hops from Japan", justifies François Cariou. Montreuil's drinking water is rich in limestone, a natural flavor enhancer. The wort boiling in three vats offers a creamy surface that must be skimmed gently like a pot-au-feu. "We're going to have a beer with a copper color," promises Jérôme Martinez, who adds a first hop to give the beer its bitterness while stabilizing it. A green foam appears on the surface of the vat. "That's life," the brewers say in unison. Another hop will be added for its aromas, which can be floral, herbaceous, spicy, peppery, with citrus notes. In the middle of the afternoon, the must reaches this clever vat that is the fermenter at a precise temperature like a railway abacus: "22, 23 degrees, that's the ideal temperature for fermentation to start." François Cariou adds the yeast recovered from the bottom of a trainee's brew. It is a thick liquid, the color of mustard sauce. "At the crust the yeasts, you have to peck the sugars from the must," smiles Jérôme Martinez. In a month, the brew of the day will be able to be tasted in the company of a few others written in chalk on a blackboard: Smoked Porter (6 euros for 75 cl), Rousse aux raisins (5 euros for 75 cl). Sunday May 15, from 2 p.m., the Montreuilloise opens its doors to celebrate its second anniversary with music and sips. Until then, François Cariou will still be thinking about the beer he would like to brew in homage to Ronnie James Dio, the late singer of Black Sabbath. "I will call it Dio, like Do It Ourselves." (1) 97, rue Pierre de Montreuil, 93100 Montreuil. Info: 06 81 22 65 87. (2) Faire sa bière à la maison, Tana éditions, €16.95. (3) Rue Montagne aux herbes potagères 7, 1000 Brussels. (4) Federationmursapeches.org

## ###ARTICLE\_START### ID:2329

Big Data. The expression is undoubtedly popular. It may therefore seem incongruous to wonder whether this label, despite appearances, is not misleading. Because even when it resonates in French - megadonnées -, the expression lets technological overtones emerge that obscure the essential. Not that technology is now relegated to the background. Simply, access to "open source" software and the rise of cloud computing platforms now put "big data" within reach of each new start-up. As a result, investing massively in research and development to develop new solutions is no longer an absolute necessity: true innovation lies in the use of data, which is ever more numerous as our economies become digitalized. The most emblematic companies of the new sharing economy prove this. In existing markets - that of mobility for Uber and short-term rental for Airbnb -, these two companies are shaking up historical players to connect supply and demand. How does the balance work? The analysis and then exploitation of data will make it possible to mobilize underused private resources (the owner of a vehicle in the case of Uber; individuals ready to rent out their accommodation for Airbnb) in order to meet a need. The feat is not so much technological as service-related. In terms of employment, such prospects open up new avenues for improving the functioning of the labor market. And this is due to the nature of unemployment in our country. More than in our main European partners, unemployment in France is structural. The fault lies with unsuitable institutions (labor code, unemployment insurance, social dialogue, etc.) and chaotic data management. This results in information asymmetries that penalize the balance of supply and demand. As a result, finding a job or a candidate can seem like a dead end. Big data can already help to get out of it. Through its ability to make intelligible a large amount of data from currently unexploited sources, it helps to illuminate the back roads leading to the desired goal. An example. A company that is looking in vain for a valve fitter will know that it can, instead, recruit a mechanic fitter. These professions share enough skills that it is possible to establish a bridge between them - even if it means introducing a little training. Big data applied to employment does not intend to replace the candidate or the recruiter. On the other hand, it is a decision-making tool for landing a job or finding the rare pearl. In short, a more than encouraging application while open data is still far from being a reality. How effective would it be if the data from public employment services were completely open!

## ###ARTICLE\_START### ID:2330

Because they are capable of processing very large quantities of data in real time, simultaneously and cross-processing, algorithms fascinate as much as they worry. It should be noted that more than half of the applications installed on a smartphone are predictive and that we already entrust a large part of our decisions to algorithms and their "superpowers" of automation and optimization. And if some of these decisions are only relatively important, others may be more essential for our lives tomorrow. The potential of algorithms then appears infinite. They allow us to create innovative applications, improve a service or simply make daily life easier, in all areas: marketing and advertising of course, but this is also true when we are interested in transport or employment. Capable of making the city "smart", they would also be able to solve unemployment? At Pôle Emploi, we have bet on digital and algorithms. We provide a lot of data in open access and we work with developers and start-ups to imagine new applications, capable of streamlining and optimizing the job market. We have also joined forces with the NGO Bayes Impact, in a spirit of collaborative innovation, to create a new service for job seekers and advisors; it is about providing access to the right information, at the right time, and suggesting actions useful for the career path. This service will be open source, that is to say potentially reusable by any structure able to feed it with interesting data for its operation. This capacity for innovation also relies on our advisors, who can become "intrapreneurs": and this is how we developed "The right box" or "The right training". We made this bet without forgetting that the job search or hiring of a candidate is not only a question of mechanical and automatic matching between a profile and an offer (or vice versa). Of course, algorithms and digital technology can facilitate a job or candidate search, in the sense that they can detect opportunities, reveal potential or initiate a meeting. But they will never replace the work that advisors do on a daily basis. They welcome, listen, offer training, guide and support job seekers and companies in a personalized manner. A recent survey even showed that the prospecting work of Pôle Emploi business advisors increased the number of permanent hires by 13%. The human contact, the exchange, the expertise provided by advisors accelerate job creation or remove obstacles to a hire that might never have happened. And above all, we pay particular attention to ensuring that these new tools can benefit everyone, including the most vulnerable groups, for whom accessibility to digital technology is a challenge that we are committed to meeting. It is by putting them at the service of advisors, job seekers and businesses that algorithms will truly be at the service of employment.

## ###ARTICLE\_START### ID:2331

It is now generally accepted that the good old GDP is a poor measure of people's well-being. But we also realize that it is increasingly failing to reflect simple economic reality. We know the song well by now. The standard used since the Second World War to measure the performance of economies each month is a very poor indicator of the well-being of their population. By adding up the final market value of all the goods and services produced in a society, the gross domestic product (GDP) remains the same, for example, whether wealth is distributed equally or is monopolized by a privileged few, whether you can count on help from your neighbors or not, or whether you trust your political leaders or not. It decreases when you reduce your working hours to take care of a loved one. And it increases every time we build a prison, buy more medicine or cut down a tree to make planks. Defenders of poor GDP will counter that it was never meant to sum up the collective happiness of a nation and that it is only a measure of economic activity. However, it is criticized for having more and more difficulty in fulfilling this task as well. First developed to support the war effort, GDP remains today more adept at counting standardized manufactured products than at taking into account the evolution of the performance of these goods or measuring the economic weight of more intangible factors such as services, which nevertheless account for more than 70% of developed economies. Among other things, it will see as an economic setback the sale, for a few hundred dollars, of the latest smartphones, when the bricks that once served as cell phones cost much more. It will also have difficulty determining the value of public services offered for free. The digital revolution Things are only getting worse with the development of digital technologies, the former chief economist of the Bank of England, Charles Bean, noted in March in a report on the state of economic statistics commissioned by the Cameron government. The reality in this area is changing so quickly that statisticians look, with their old tools, as if they were "trying to measure space travel with a ruler", the economist notes. How do we take into account the diversity of supply between hotel rooms and accommodation found through the Airbnb sharing site? What value is given to being able to buy a plane ticket or carry out financial transactions yourself on a computer from home rather than having to pay a middleman or queue at a counter? What to do with all those people who write blogs, write Wikipedia articles and program free open source software? This is a far cry from the traditional image we have of the economy, with brick-and-mortar companies that produce and households that consume. In his report, Charles Bean looks in particular at the case of music and information, which, thanks to Internet streaming services and news aggregators from Google, Apple and Facebook, have probably never been so abundant, diverse and of such quality, although the value of their revenues continues to decline. One may wonder how much longer artists and journalists will be able to continue to live at this rate, but that is another story. Learning to count differently This digital blind spot in official statistics perhaps explains part of the enigma for economists of the time it seems to take for the digital revolution to translate into productivity gains and economic growth. The revolution would indeed take place and produce effects, but we would not be able to measure them. In his report, Charles Bean estimates for the moment this missing part of the economy at only 0.3 to 0.7% of British GDP. He urges statistics agencies to loosen up a bit by plunging their measuring instruments into the mass of information available on life in the webosphere. Among other things, he suggests that the economic value of activities be estimated based on the time people spend on them and their cost in terms of average hourly wages. Of course, all this does not solve the problem of measuring people's well-being. It is hard to see how this could be measured in dollars and summed up in a single indicator. The many experiments currently underway, including several launched following the fiasco of the last financial crisis, tend to multiply indicators in order to cover as many areas as possible. Then there remains the impossible challenge of assigning a relative importance to each of these aspects of life in order to obtain a final score, unless we stick with a bundle of indicators that paint a fragmented picture of reality. But isn't reality complex and fragmented? In general, as is the case for economic issues alone.

## ###ARTICLE\_START### ID:2332

The program we use most to go on the Internet is the browser. It allows us to join and consult sites on the Web. Each site has its address on the Network. The browser finds it thanks to a central directory of main addresses called "DNS root server" (for domain name system). This reference directory is managed by a company, Icann (Internet Corporation for Assigned Names and Numbers), placed under the authority of the American State. For years, your browser on computer, tablet or mobile has used this directory by default. But now a subtle change has occurred: Google's Chrome browser replaces the Icann directory with its own without warning. With this invisible substitution, Google installs an alternative root server that it alone controls. You think you are browsing the Internet... here you are on another Internet: a clone of the first, managed directly by Google. For the moment, the registry owned by Google is a copy of that of Icann: the user does not realize it. Access to sites is often faster, as on other roots outside ICANN, since they are often freed from control and surveillance steps. But the risk is major. The manager of this privatized Internet can add or delete addresses at will. You are looking for a site, a page: gone! You will not change root server because you do not know that you are in a parallel Internet. This maneuver does not come from a marginal player. Quite the contrary, in April the Chrome browser took first place worldwide, overtaking Internet Explorer. This is all the more worrying since the browser and the search engine have the same interests. Visibility on the Google search engine is a right of life or death. Google has also announced the launch of its own root ".google", just as there is a ".com" or a ".fr". Perhaps the sites that exclusively choose the Google root will be better ranked? Will the recalcitrant sites take longer to load? Isn't the scenario that devalues the Icann Internet for the Google Internet already written? An example of this scenario? Without explanation, for two weeks in April, in the United States, Google removed from its search results the so-called "in-depth articles" feature that groups links to pages dealing with a subject in detail. Then, the section came back. Error? Test? Demonstration of power in any case. Through this exchange of directories, Google also collects all of your activity on the network, on its network... But you are used to that. you have given your consent The "good news" is that you have given your consent to this change. Article 11 of the "Chrome terms of use" authorizes automatic updates and article 20.2, which you have of course read, establishes your acceptance by default of feature improvements, at the sole discretion of Chrome. The directory of Internet sites is constitutive of our freedom. It is responsible for our digital sovereignty, that is to say, for the application of the Republic to the Network. In this case: guaranteeing the conscious choice by each person of the ICANN directory or another. There is also a creative, collaborative open roots movement, whose spirit is that of free software. According to the World Bank, 4.2 billion people on the planet do not have access to the Internet, including 1.1 billion Indians. And yet, India has refused the Internet diminished, controlled and bagged by Facebook under the name of "Free Basics. For the Indian telecommunications regulatory authority, as for a hundred academics, restricting the choice of the user is an attack on his freedom. As for us, will we let the Internet that has changed the world, a global common good, a French and European invention, be reduced to a dangerous manipulation?

## ###ARTICLE\_START### ID:2333

Born in the United States in the early 2000s, the movement is about to conquer France. A new kind of DIY enthusiast, passionate about computer-assisted crafts and armed with their 3D printers, the "makers" have already created hundreds of digital workshops, "fablabs" and other "makerspaces" on this side of the Atlantic where they experiment with new ways of creating objects and transmitting know-how. Within this teeming movement, three large families of "makers" coexist: entrepreneurs, alternatives and "mechanics". All these makers regularly meet at festive events, where they come to share their passion and knowledge with the general public. entrepreneurs in a hurry This spring weekend, the Florence-Arthaud maritime high school in Saint-Malo lent its premises to welcome an exuberant, colorful and cumbersome tribe: the Maker Faire, the "fair for makers", amateurs who like to work with their hands, and who freely create objects, useful and useless, using digital technologies. For two days, 140 makers worked tirelessly on around forty stands, in front of more than 2,500 visitors. Electronics engineers, computer scientists, chemists, roboticists, experts in 3D printers and laser cutters rubbed shoulders with carpenters, tailors, leatherworkers, welders and bicycle repairers. This mix of genres is at the heart of the makers' project: to bring together fans of new technologies and traditional artisans, so that they can freely share their know-how and together invent a new way of working and producing, more united and more equitable. Very focused on the local, the maker movement is nonetheless a global network, headed by the American company Maker Media, which coordinates certain activities, imposes precise rules and receives royalties on each event (3,000 euros minimum). In France, the concept was imported by the entrepreneur Bertier Luyt, head of the industrial design studio FabShop and the event communication company Makers Events, which will organize around ten Maker Faires across the country this year. For each meeting, Makers Events makes a subtle balance: one third commercial companies and two thirds "disinterested amateur projects". Usually, entry to a Maker Faire is paid, but the one in Saint-Malo is free, because the municipality helped organize it. It is also sponsored by the Leroy Merlin chain of stores, which, moreover, is starting to open its own TechShops, paid workshops open to the public. According to Bertier Luyt, France is establishing itself as a leader of the movement on a European scale: "In a sense, we are a predestined country, thanks to the immense wealth of our craft tradition." But makers are disrupting the established order: "In our country, craftsmen have long been organized into guilds and networks that cultivated intimacy, secrecy, and that restricted the sharing of knowledge. Our mission is to break down certain mental barriers, and to transmit knowledge more freely, outside of existing frameworks." Makers are also the spiritual sons of free software and open data activists. In Saint-Malo, high school students from Brest are exhibiting a device that they invented and built from scratch: the Panobus, a wooden box equipped with electronic cards and multi-colored lights, which indicates when the next bus will arrive. To do this, the Panobus is connected to the computer network of the Brest public transport company, which has been freely available to its technical data since June 2015. Ultimately, the makers hope to instill a new attitude: "When we understand how the devices around us work," says Bertier Luyt, "we gain more self-confidence, and we can take control of our environment" - for example, to create our own business. Among the public of Saint-Malo, the change seems to have begun. Nicole, a semi-professional carpenter who makes wooden fish to sell on the Internet, is fascinated by the modeling software, 3D printers and laser cutters, which could make her work easier and help her diversify her production. Marie-Mathilde, a physiotherapist who was introduced to 3D printers by her son, a visual arts student, is considering starting to manufacture utensils adapted to the specific disability of each of her patients: "The possibilities are endless, especially for custom prostheses." At her request, her son has already built, using a 3D printer, a cup holder that can be easily attached to a wheelchair. A modest start, she admits, but promising. For their part, the members of the Atelier de la Flibuste, the new fablab in Saint-Malo, believe that to become a pure maker, everyone must simultaneously practice cutting-edge digital techniques and traditional crafts. They divide their time between making a mini-robot controlled by smartphone and building a small old-fashioned foundry to create their own tools, like the blacksmiths of yesteryear. alternative tinkerers Alongside the start-up-minded Maker Faire, another exchange circuit has been set up: that of the Open Bidouille Camp (OBC), a resolutely alternative and libertarian network, even if this does not prevent it from forging links with the business world. This year, a dozen Bidouille Camps should take place in France. Ophelia Noor, one of the association's managers, emphasizes the participatory atmosphere that reigns there: "These are not exhibitions, but temporary workshops, where people come to learn and make together. Unlike the Maker Faire, our events are entirely voluntary and free." The OBC network is also very decentralized: "The association provides national coordination, but each territory organizes itself as it sees fit, there is no recipe to apply uniformly. » The Bidouille Camp in Paris was held at the end of March, in two locations located on the same block in the 19th arrondissement: the Ourcq Blanc, a former Pôle emploi building transformed into an artistic squat, and the WoMa, a neighborhood association workshop providing its members with digital machines - 3D printer, laser cutter, electric milling machine... In a very festive atmosphere, around twenty teams showed their work to visitors. The most popular stand was that of Lorem, a fablab in the 14th arrondissement, which has become a renowned center for the manufacture of artisanal drones. The "dronists" brought their most spectacular machines to the Ourcq Blanc - including a six-propeller machine that can carry several cameras, and a mini competition drone that flies at 160 km/h. The organizer of the Bidouille Camp in the 19th, Alexandre Guerguadj, 25, works at WoMa as a part-time employee and lives in Ourcq Blanc, one floor of which has been converted into a residence. Installed in the collective kitchen of the squat, he explains the meaning of his mission: "Today, people do not have access to these machines, or only as subordinate employees, deprived of any creative freedom. We give them back the tools of which they have been dispossessed." WoMa must also be a place of collective learning: "It is not a simple park of self-service machines, the community dimension is essential." Alexandre does not consider himself an activist, but he is aware that his action has a political dimension: "If, thanks to us, the population appropriates a technology that has been confiscated by a few, it is a political act. » In the short term, he has set himself a more pragmatic goal: "We must first learn to repair our everyday objects, instead of throwing them away and running to the store to buy new ones." On the floor below, the Open Bidouille Camp is in full swing. A maker explains to children the principle of passing electric current between two luminous jewels made for the occasion. Another shows how to bend a PVC pipe without pinching it, while a young woman gives a course in making makeup products from natural ingredients. Associated "mechanics" On the ground floor of a large building located in an industrial zone of Nanterre, in the suburbs of Paris, the volunteers of the Electrolab are building a 1,500 m2 den, a series of meeting rooms and workshops that they have renovated and fitted out themselves. Today, this giant makerspace, still under construction, offers a vast arsenal of tools and machines to make almost anything. Its 180 members are young people eager to discover different technologies and technicians who want to work for their pleasure. Sylvain Radix, one of the association's managers, sums up the philosophy of the place: "Our key words are multidisciplinarity and crossover. We are a melting pot of skills." Near the entrance, the first workshop is a multifunctional space housing various projects: repairing a radio, building a unique heating system for camper vans, etc. Further on, the "electronics zone" is a jumble of measuring, assembly, and welding devices, etc. Some tools are missing, but the makers have recovered dental instruments that they have modified to work on their electronic cards. At the workbench, Nicolas Roux, a computer scientist, is using them to try to repair his old vacuum cleaner: "The potentiometer is dead, the vacuum cleaner will always be on full blast, but it doesn't matter, I'm learning." » Not far from there, Martin Lindenmeyer, an electrical engineer, is finishing the construction of a "teaching suitcase", a machine stuffed with removable electronic modules, which will be used to teach the basics of electronics to beginners. In a hurry to finish, he spends all his free time here, sometimes until the middle of the night. There is also a sewing workshop. Somewhat by chance, it was installed in an electronics room, but this proximity has proven fruitful. The geeks and the seamstresses have worked together to transform an old sewing machine into a digital embroidery machine connected to a PC, capable of reproducing any pattern drawn on the screen on fabric. A supreme refinement, which perfectly illustrates the maker spirit: the needle guide arm is removable, allowing the sewing machine to be used for its normal purpose. At the back of a dark corner, we discover a computer server the size of a cupboard: "We recovered it from a ministry," explains Sylvain Radix. "They were going to throw it in the trash. Once repaired, it works perfectly." Now, the computer makers are going to embark on an even more ambitious task: building a supercomputer. The other half of the premises has a completely different appearance, as it is becoming a heavy mechanics workshop, with equipment recovered from various factories: milling machines, lathes, a sheet metal cutter dating from 1904... Of course, to access these machines, users will first have to take a safety course. In the near future, the members want to create a carpentry workshop, a mini biology lab, and a studio to record educational videos that will be broadcast on the Internet. Despite this intense activity, the association manages to self-finance: "Our members pay 15 euros per month, 7 euros if they are really broke. We also welcome small start-ups, which pay rent. » Today, the ElectroLab is open every afternoon and two evenings a week, but Sylvain Radix hopes that it will soon operate 24 hours a day. Like all the services essential to the lives of citizens.

## ###ARTICLE\_START### ID:2334

They meet twice a week at Place de la République in Paris. On Wednesday, April 27 (or “March 58,” according to Nuit debout’s calendar nomenclature), despite the winter cold, there were about fifteen of them sitting in a circle to take stock of the activities of the “digital” commission. During the day, a new version of the Nuitdebout.fr website went online. It includes a map of the gatherings, a participatory agenda, links to accounts on a dozen platforms (from Facebook to Periscope), the Radio debout feed, and updates from local (Marseille, Toulouse, Nantes) or thematic (the “popular education” commission or the participatory library “Biblio debout”) sites. It should also allow local gatherings and commissions to easily set up their web showcase, via a “multisite” version of the WordPress software. "Passerelle". From the very beginning, the Internet has been a part of République, whether it be to communicate with the outside world, to raise awareness of safe online practices or to imagine tools to support the "convergence of struggles". A "hacking debout" commission was created, later renamed the digital commission. On paper, it set itself two objectives: "to assist the other commissions and actors of Nuit debout", but also "to debate and raise awareness on political issues relating to digital technology". So far, it is the urgency that has clearly decided in favour of the first part. "There is an enormous need for digital infrastructure", notes Tom Wersinger, a thirty-something developer who worked for Owniet Rue89. He got involved, with "five or six people", in developing the website. Other tools have been set up: the map of gatherings embedded on the site, a chat platform, a "wiki" to gather information (contacts, resources, reports, etc.). And even a question-and-answer tool, which the "democracy" and "general strike" commissions proposed to test on Thursday, so that participants could question the unions, invited to join the Place de la République at the end of the day of demonstrations. Common point: the priority to free software, whose code is open and that everyone can improve. A question of "digital ethics" that has reached consensus, explains Christian, IT manager in a school. On April 17, the commission also hosted, for an open-air conference, the American Richard Stallman, initiator of the free software movement in the 80s. "For me, we are a management, a logistical tool," says a big guy with glasses, a project manager, who participates in the commission under the pseudonym AbuFelix. We give others the means to do what they want more easily." For Christian, it is also "a bridge between very technical people and people who have not yet seen the challenges of digital technology." Beyond the coordination or circulation of information, the "geeks" of Nuit debout also think about ways to help with deliberation. We brainstorm and test: for example, Loomio, a collaborative decision-making software, or Appgree, another participatory democracy tool used in particular by Podemos in Spain. Heard at a meeting last week: "We are in an ideation phase where everyone is trying things in all directions." Another challenge: to infuse. There are many requests, they say, but the uses are not yet established. A subcommittee dedicated to "education" aims to train the other committees on the tools in place, in particular the wiki, and to raise their awareness of the use of secure means of communication. And each project raises new questions. So for the site, now operational: what should be highlighted on the home page? "We need an editorial process that is clear, fair, democratic," Tom Wersinger emphasizes. Especially since the digital commission has to deal with the debates, the disagreements and even the tensions that run through Nuit debout. Today, two sites coexist, the historic Convergence-des-luttes.org and Nuitdebout.fr, whose domain name belongs to Raiz, a community management consulting start-up. Two members of the Raiz team participate in the "media center" of about fifteen people who manage the Facebook and Twitter accounts. On April 15, an activist presenting himself as a member of the collective that called for Nuit debout denounced at a general meeting: "These people [who] now own the tools that are supposed to speak for Nuit debout" are said to favor "care bear messages" and, in 2011, let the "soralians" and the "crypto-fascists" enter among the Indignés de la Défense. The video was widely circulated, a complaint was filed. Resilience. However, "the people who have the domain name have never intervened" on the content of the website, insists Tom Wersinger. They "let the communication and digital commissions decide on the use" that is made of it, adds Benjamin Sonntag, co-founder of Quadrature du Net, who hosts the site "in a personal capacity." To unblock the situation, the association for the defense of online freedoms has offered to manage the ownership of the domain name, while the movement "has an ad hoc legal structure." The transfer is underway, according to Raiz. As for the future of Nuit debout, the "geeks" are asking themselves the same questions as the others. Some see the development of digital tools as a possibility for resilience. "What will become of the movement? I don't know," replies Juliette (1), a young digital marketing consultant. "I'm not sure we can stay very long. One of the goals could be to develop tools that allow the debate to move." For Christian, digital technology can help "duplicate Nuit debout everywhere." "That's why we're hurrying up," says Wersinger. So that Nuit debout can also be remembered by the network. (1) The first name has been changed.

## ###ARTICLE\_START### ID:2335

Angélique Zettor stands out. A woman, young, an entrepreneur, in the still very masculine world of technology, mixed race, from a disadvantaged neighborhood, a graduate of a business school (ISC Paris)... She combines these particularities without paying much attention to them. At 30 years old, "31, July 14", she tells her life story with the experience of an old hand used to "pitches", these brief presentations made to investors and customers. A woman in a hurry, she created Genymobile in 2011, with her sidekick Arnaud Dupuis. If he is the engineer of the duo, it is indeed Angélique who had the founding idea of the company. "We are the two hemispheres of the same brain", Arnaud Dupuis likes to say to describe their relationship within the company that they co-chair. A complicity made possible by the personality of "Angie". From her studies, she got involved in associations, with the idea that she would create her own company one day. "Luckily I liked school," she sighs, her way of saying that she was raised by a single mother, without much academic support. She simply explains that she studied at the ISC, after having tried only one competition because she "didn't think she could finance her studies. Having a student loan when your mother is on minimum wage is very complicated." She quickly took on a series of odd jobs to pay for her studies. She says little about her childhood, apart from her fear of the fireworks on July 14, her birthday. "But now, it's okay," she laughs. Smartphone simulator Her life now revolves around Genymobile, her company for which she moved to San Francisco almost two years ago. "It's remarkable, nothing stops her. When she left for the United States, she spoke English poorly, it must be said. She learned well,” says Pierre Aussure, CEO of Ivy Executive Search. The man is full of praise for the winner of the 2014 Ivy Prize - awarded ten years earlier to Pierre Kosciusko-Morizet. “She has an easy interpersonal relationship, at all levels, and the ability to mobilize people around her,” adds Pierre Aussure. She is by far the youngest member of the Ivy Club, which brings together “presidents, CEOs and division directors of major companies in the technology sector,” but that doesn’t stop her from being perfectly at ease in all circumstances. A real asset for an entrepreneur, especially in a field as specialized as hers. After cutting her teeth selling open-source software, Angélique Zettor had an idea. Help developers create applications on Android, Google’s operating system for smartphones and tablets. Five years ago, the bet was bold. It was impossible for a developer to have all the models and versions of phones to test their application, some 24,000 different terminals are used in the world, taking into account the different screen sizes and versions of Android in circulation! So, Angélique and Arnaud invented a solution that allows you to recreate all these configurations on a computer, a sort of smartphone simulator - emulator, in the jargon - like there are flight simulators. Long hours "This allows developers to test their applications in all configurations without having to buy the smartphones. This is fundamental since half of consumers uninstall an application at the first bug", enthuses Angélique Zettor, passionate as soon as it comes to talking about "her" baby. She also has the faults of her qualities. If she knows how to listen, it is difficult to stop her when she starts talking about the subjects that fascinate her! Expansive, she remains secretive about her private life, simply recounting an "exciting life in California". She is also very proud to describe her travels by bike, "but electric, eh, because it's still a lot of climbs". Just as she confides "working a lot". The hours are long when you live in San Francisco and a large part of the team is still in France. You have to manage the 9-hour time difference. Listening to others, she developed a participatory management system in her company which now employs 65 people and generated 4 million euros in turnover in 2015, from 10,000 customers. Praised by Google for its solutions, Genymobile raised 7 million euros last summer. A sum which allows it to continue to develop. "For the moment we are not profitable because we invest a lot in research and development", confides Angélique Zettor, confident in the future of her company. "Our goal is to reach a turnover of one billion euros," she says. A sentence that is not at all provocative and sounds like a simple objective for the young boss. "She has the potential of a Unicorn (these start-ups valued at more than a billion dollars, Editor's note)," estimates an expert in the sector. She would be one of the first French women to reach this Grail.

## ###ARTICLE\_START### ID:2336

TRAINING teachers, experimenting with Code in schools, analyzing student learning data, providing a cloud ecosystem... For these services offered to the National Education system, Microsoft will put 13 million on the table. This partnership signed in November is causing a stir in the world of free publishers and digital industry. After an appeal filed in January with Minister Najat Vallaud-Belkacem, the Édunathon collective, which was formed for the occasion and brings together around fifty free digital companies, has drafted a complaint to the Paris administrative court, which will be filed within two weeks. It will be accompanied by a criminal complaint. For Jean-Baptiste Soufron, who is leading the case, this partnership should have been classified as a public contract and should have been concluded within this framework. The lawyer, a former member of Fleur Pellerin's office in the Digital Economy, is therefore requesting its cancellation. "Where are we going with this type of partnership?" Tomorrow, Bayer laboratories will sponsor the Medicines Agency? », asks François Aubriot, president of Ploss-Ra, which brings together free software entrepreneurs in Rhône-Alpes. Questioned by Léa-Linux, a mutual aid association around free software, the minister's team explained that Rue de Grenelle was "technologically neutral", worked "with free software" and that publishers should not "hesitate to propose". Which retort that they do not necessarily have 13 million to pay. And that there could have been separate calls for tenders, around teacher training, learning the Code, and not a "pack" that they denounce as "a straitjacket". Especially since this partnership could encourage departments to buy Microsoft products... President of the association of digital education manufacturers (Afinef) which brings together 56 SMEs, Hervé Borredon says he is "taken aback" by this way of doing things. "This allows teachers to be trained in digital technology, which is positive in our eyes. But this agreement generates dissatisfaction among our members because there is distortion." He states that "this plan does not cost Microsoft much, it is a valorization of partly existing marketing actions. On the other hand, it allows the government to display 13 million more in its digital plan." "An old fantasy" Thierry de Vulpillières, the head of education for France at Microsoft, dismisses these accusations: "Pluralism is good. But free software companies do not offer much. We mostly hear them criticize." He denounces a misunderstanding: "We are diving into conspiracy theory. We are suspected, with the ministry, of circumventing a call for tenders, but this is false since it is the local authorities who decide on their equipment and resources! " Its defenders, including among the digital industry, observe that free software is "an old fantasy: it doesn't work". For Jean-François Clair, in charge of the digital file at the National Union of Secondary Education, "it seems as if the partnership was entirely written by Microsoft". The most criticized part of the text concerns the "experimentation of a platform for analyzing student learning data". Isn't this the role of the National Education's prospective and evaluation service? But above all, where and how will this data be stored? The agreement stipulates that a "trust charter" intended to ensure the "protection of the privacy" of students and teachers is "currently being drafted". It was not a prerequisite. CB and M.-EP

## ###ARTICLE\_START### ID:2337

Former Secretary General of the Élysée Palace from 2005 to 2007, Frédéric Salat-Baroux is now a partner in a law firm. In his book, which is coming out tomorrow, La France EST la solution (Plon), he explains that we must move quickly to take the necessary corrective measures while thinking about the choices that will determine our future. LE FIGARO. - We learned last week of the death of Laurence Chirac. You are the husband of Claude Chirac and were Jacques Chirac's collaborator, can you tell us about the links that existed between Laurence and her family? Frédéric SALAT-BAROUX. - Losing a child is the worst thing that can happen to you. For President Chirac as for Bernadette, it is a terrible moment. Laurence's illness had shaped their lives. Laurence was a magnificent human being. Her life of suffering had made her a being who listened to others. She leaves an enormous void. Why did you write this book in the form of a manifesto? It is a way of going against the declinist fashion? I have a deep passion for France. I was raised by my parents in the cult of this country that welcomed them. But beyond this admiration and even if I do not ignore our delays and our weaknesses, the new world we have entered will allow the great return of the French. France is a magnificent oak that we are not about to cut down. Originally, I was working on another book. Until I discovered a book by Fred Turner, From Counterculture to Cyberculture. I realized that we cannot understand the new economy if we do not know that it was born from the unpredictable marriage between the libertarian and community hippies of the 1960s and the American ultraliberals. Two worlds that share a passion for technology and a hatred of all rigid, state structures, of everything that makes up traditional capitalism. It is much more than an economic movement, it is a change in civilization. The sharing economy, or Uberization to simplify, can just as easily tip us into an unbearable system of precariousness and inequality as it can give rise to a fairer, more sober, more united model. The certainty is that everything will change. But this new world can still be written in one direction or the other. After realizing that I was an "old fool", I told myself that I had to contribute to this debate and that the pre-election period was the right time. Why such a shock? Until then, I had not fully understood that we were experiencing three radical changes. First of all: the West no longer dominates the world. China has just overtaken the United States in GDP, calculated in purchasing power parity. Globalization is not just about offshoring, it is the revenge of the empires that we have colonized and put "in irons" to use Gandhi's words. This reading is very Chiracian... I did not want to make this book a Chiracian pro domo, but it is obviously very inspired by him. This new globalization is the revenge of the damned. Alongside the return of the old empires, China, India, we are also witnessing the return of community production methods. The technological revolution makes them more efficient today than the massive, hierarchical and pyramidal structures of the industrial revolution. Free software is more efficient than Microsoft. We are entering the era of the "prosumer" to use Rifkin's term, both consumer and self-producer. The dazzling progress of 3D printers is one of the vectors. The third mutation is artificial intelligence. It could very well divide humanity into two groups. Between a race of lords who command robots and have the means to merge with the machine, what we call transhumanism, and, on the other, the mass of useless men, servants. And while these ultra-rapid developments are turning everything upside down, we look the other way... We only talk about identity problems with this obsession with religion that devours our mental space - even if I am not unaware of the question of radical Islamism and terrorism - and the equally legitimate question of preserving social benefits. But to take an example, if we take another five years to resolve the problem of the 35-hour week and labor law, we risk waking up in a world that will be that of so-called self-entrepreneurs, working, in the most total precariousness, for these digital platforms, which Nicolas Rousselet calls "the Barbarians". What can we do then to prepare for the future? My message is to say that we must move quickly to take the necessary catch-up measures (35-hour week, pensions, tax cuts, simplification of administrative levels, etc.) and have time to think and make the choices that will determine our future, such as the total transformation of our education system thanks to digital technology, the emergence of a participatory state - that is, relying on the innovation capacities of citizens and, of course, encouraging the emergence of a hybrid economy that is both capitalist and sharing. This is where the real right-left border now lies. And you, do you want to work for a politician? No. I left this world almost ten years ago and I have built a new life that I love. The main thing is the debate, and that is why the proposals that I put forward will be put online so that everyone can contribute, according to this open source logic, which is for me the major progress. I am nonetheless a citizen. I wish for my country the victory of Alain Juppé. I was his collaborator. He is a true reformer, not at all a moderate, and he is terribly endearing emotionally when you take the trouble to know him. Today, he is ready, and his teams, of which I am not a part, are ready. I am convinced that he is the man for the job. My message is to say, we must move quickly to take the necessary corrective measures (....) and have time to think and make the choices that will determine our future.

## ###ARTICLE\_START### ID:2338

No one has forgotten Augustin Legrand, spokesperson for the homeless who organized the Quechua tent camp on the banks of the Canal Saint-Martin in Paris in the winter of 2006-2007. Within the association Les Enfants de Don Quichotte, this actor, who would be a regional councilor for Ile-de-France for Europe Ecologie-Les Verts (2010-2014), deployed considerable energy in the media and in ministry offices to denounce the homeless scandal and force the authorities to react. He devoted three years of his life to it and has mixed feelings about it, with the frustration of only being able to act on the margins. "Volunteering, after a while, sucks," admits the man who defines himself as a fighter. "I was born like that. It's physical. Ever since I was a child, I've always wanted to keep my freedom to do what I want with my life. If I were to die tomorrow, I'm straight in my boots. There's nothing under the carpet." This big guy with thick hair and beard, who lets out his words in bursts, found another cause: the fight against junk food. It was while watching Jean-Paul Jaud's film Nos enfants nous accuseront, on the links between junk food and cancer, that the trigger happened. "I knew that if I continued to eat shit, I would poison myself. I had to get out of it. It's not like cigarettes, you can get rid of them easily. You go to Naturalia, even if you don't have a lot of money, you buy seasonal vegetables, a little cooked, a little raw, rice, an egg or canned mackerel and you make your organic bowl. It cost me two balls fifty. » From his personal diet, Augustin built a restaurant canteen project: Le Bichat, which opened in September 2014 in the 10th arrondissement, a stone's throw from the Canal Saint-Martin. It was first a family business in which he brought together his mother, his brother, his sister, his brother-in-law, his cousin, his uncle and a childhood friend "struggling with work. He had been living above the premises that had been empty for nine years. Thirty thousand euros for the key money, a salvaged decor for a cool atmosphere, a pressure cooker to prepare everything in jars because there is no air extractor in the premises and the adventure started with a simple idea: eat healthy, cheap, organic products, homemade. Develop direct purchasing This popular canteen was a "hit" from the first week in a 55-seat room, part of which is on the mezzanine. The system of the 7-euro bowl that changes every day quickly won over customers. "Today," explains Augustin, "we have wholegrain Thai rice with cooked vegetables - celery, chard, carrots, leeks with paprika, cardamom and allspice - and in the raw, black radish, red cabbage, white cabbage, beetroot. Then, you add vegan, a portion of lentils for 1 euro, and if you want to stuff yourself, you take an egg, chicken, pork or fish for 2 euros more." Everything is organic via wholesalers in Rungis, Biocoop for rice and seeds, or the organic farm of Mesenguy, in Picardy, for pork. "Fifty percent of the menu is local, but we hope to progress further by developing purchases from producers. At the beginning, people thanked me. "You have changed my life," some said with that little sparkle in their eyes that betrayed their happiness." Beyond this initial success, Augustin does not lack ambition. "I think that in the next ten years, we're going to have lots of little brothers and sisters like us in Paris and elsewhere." After Le Bichat, three new establishments are due to open in September, Le Myrha and Le Bréguet - named after the streets where they are located, in the 18th and 11th arrondissements - as well as Le Pantin - in Pantin, this time. Each time, several hundred square metres with a real kitchen and an organic grocery store are in the pipeline. No question of a chain, brand or franchise, which are contrary to his principles, but a common set of specifications. "Do you want to open a restaurant like Le Bichat in Toulouse? You come, I'll give you the keys, I'll show you how we work, how we make our margins and you do the same. Here, it's "open source". " Born in Beauce, Augustin dreamed of being a farmer. "As kids, we ran through the corn, we had the sweet taste of fertilizer in our mouths. Today, I know that there is a 120-hectare farm for sale there. The idea is to buy it and do permaculture. It will take three or four years to prepare the land. I plan to work with INRA researchers, young people who have just left agricultural school and who have no land, who are not sons of. I want to start on a hundred hectares, do fish farming, livestock breeding, grow natural plants. All organic." Ideal for supplying restaurants. He is also thinking of a loyalty card for customers based on the model of loyalty cards at the cinema. "You take a card for 20 euros per month and you can go to any of our restaurants to get a free soup and you pay the rest. It would be a way to unite the restaurants. If you have 2,000 members at 20 euros per card, that's 40,000 euros that fall into a common kitty each month. It's huge!" Augustin Legrand has a passion that is infectious. Not only is he teeming with ideas, but he puts them into practice with the same desire to fight against injustice. "And the more restaurants like us there are throughout France, the more exemplary we will be, the more we will change things for another model of food." Words of a fighter.

## ###ARTICLE\_START### ID:2339

QMI Agency Man has not yet set foot on Mars, but Earth technology continues to make progress towards the red planet, with the signing of a new agreement that will allow remote control of mobile exploration robots. Yesterday, the Canadian Space Agency (CSA), Obeo of Nantes, France, and Savoir-faire Linux of Montreal signed an agreement intended to push the possibilities of exploration on the surface of the planet Mars a little further. Obeo is a free software company that offers modeling and graphic representation tools. "We never could have imagined that it would be used to make robots to go to Mars," said Étienne Juliot, vice-president and co-founder of Obeo. NO MISSION Réjean L'Archevêque, robotics engineer at the CSA, specifies however that at this stage, there is no mission as such. "But there is constant technological development to ensure that Canada remains at the cutting edge. "The partnership we have just entered into is a small grain of sand in a large ocean," he said. CSA engineers are now looking to improve their knowledge so that they can control these devices remotely.

## ###ARTICLE\_START### ID:2340

INTERNET Oracle is not ready to make peace with Google. The American company, which specializes in software for professionals, has been in conflict with the web giant over copyright issues for several years. A new hearing in the case between them is scheduled for May. Oracle could claim nearly $9.3 billion from Google, according to information from the websites PCWorld and Business Insider. This amount comes from a document sent to a federal court in San Francisco, the author of which is an expert who was commissioned by Oracle to estimate the sum supposedly owed by Google. This conflict goes back six years. In 2010, Oracle sued Google for violating its intellectual property. According to him, the web giant had abusively exploited several elements of Java software in the development of its Android mobile operating system. Oracle has in fact owned the program since buying its developer, Sun Microsystems, in 2009. More precisely, it accuses Google of copying "the structure, sequence and organization" of around thirty Java APIs (interfaces for connecting two services together). A new trial in May According to Google, however, this exploitation is protected by "fair use". This concept limits copyright under certain conditions and authorizes copying. In other words, Google claims that the use of lines of code cannot be compared to that of a photograph or a film. As proof of its good faith, the web giant claims that Java had been made available as open source (i.e. freely usable and free of charge by all) by Sun Microsystems before its purchase by Oracle. Google first won its case in first instance in 2012. Then, two years later, an appeals court finally ruled that Oracle's claim was justified and that the Java APIs, now owned by Oracle, were indeed protected by copyright. Google then took the case to the Supreme Court. However, the latter refused to rule on the matter. The conflict has since been referred to a federal court. This new trial, which will be held in San Francisco, is scheduled to begin on May 9. A preliminary hearing is also scheduled for April 27. If proven, the new amount claimed by Oracle is particularly high. In comparison, the group had paid more than $5.6 billion to acquire Sun Microsystems. In 2011, it had already claimed between $1 and $6 billion from Google, a sum deemed too high at the time by the judges. This $9.3 billion claimed by Oracle is divided into two parts by the expert. He estimates that the company could have made $475 million in profits if he had sold a Java license to smartphone manufacturers. The remaining $8.8 billion is an estimate of Google's profits from operating Android. Oracle justifies the increase in the amount claimed by the increased place of Android in the mobile sector, which equips more than 80% of smartphones worldwide. For its part, Google estimates the damages at $100 million.

## ###ARTICLE\_START### ID:2341

In a world divided between Mac and PC, Chromebooks are playing the mavericks. They run on Google's Chrome OS system software, and most applications depend on an Internet connection. Easy to use and inexpensive (starting at 250 euros), they are particularly suitable for students. Can they replace a traditional laptop? To judge, we spent a week with one of its representatives testing its ability to adapt to daily use combining work and entertainment. A quick tour of the owner The computer itself, a Toshiba CB30-B104 (349 euros on Amazon), is not the most attractive with its plastic casing and visible screws underneath. But it only weighs 1.3 kg and is easy to transport. Its keyboard is rather pleasant and the layout of the keys is reminiscent of that of a PC. The 13.3-inch Full HD screen, in panoramic format, is very bright and a webcam allows you to communicate by video call. In addition to two USB connectors, it offers an HDMI output, a headphone jack and an SD card reader. In terms of battery life, it works for six to eight hours before recharging. Getting started The first start-up is a bit confusing. Apart from the web browser, there are no menus or folders on the screen. You have to click on the small magnifying glass icon to discover the handful of applications available. And to go further, you will have to download extensions, apps or shortcuts to online services. You just have to enter your Google credentials to find all the data associated with this account: Gmail messages, contacts, personal videos on YouTube, online storage on Google Drive, etc. At work... To type my first text, I can choose Google Docs, the word processor usable from a web browser, or its Microsoft equivalent, Word Online, which displays the same interface as Word for PC. The idea takes me to download a version of the free software LibreOffice Writer... and the result is disastrous. After changing the default language and restarting the software, I realize that typing is prohibitively slow. I give up and switch to Google Docs. This simplified word processor offers several formatting functions and can read Word documents. No problem writing my text: typing is fast, the software options are obvious and each modification is immediately saved online, on my Google Drive space. On the bus, I continue to type my text, but without an Internet connection. The modifications are then saved in a part of the computer's memory. As soon as the Chromebook finds a Wi-Fi connection, it automatically synchronizes my document, which I can import if necessary onto another computer. The principle is the same with Gmail: the responses and messages that I write will be sent the next time I connect to the Internet. Back at my desk, I consider printing my text. The computer then looks for a Google Print-compatible printer... which I don't have. I would need to set up another computer connected to the Internet and connected to a printer to transfer the prints to it. I prefer to import the text onto this other computer to print it. Handling photos and videos When I left the press conference I attended, I left with a USB key containing the press releases and product sheets, as well as photos and videos. This was an opportunity to check that the Chromebook would be able to handle this type of content. I plugged in the USB key and a window appeared, allowing me to discover the files stored on it. No problem reading the Word, Excel and PDF documents that the computer presented in its web browser. The photos were displayed separately in a window that offered a few editing tools. I could crop the image, rotate it and adjust its brightness and contrast. The changes were not instantaneous: the result only appeared once you had finished moving the sliders. To work on the images in more detail, I can also use Photo Editor or, if I'm connected to the Internet, import them into the online service Pixlr. Video playback is more capricious. It works perfectly for some sequences while it stops for others after a minute and a half of playback. I still manage to watch a demonstration in HD. The image is fluid and of rather good quality. The sound, however, leaves something to be desired... I take the opportunity to test the video calling by downloading the Hangout application, the equivalent of Skype for Chromebooks. Could do better: the image, jerky, freezes sometimes and the sound arrives with a delay. A little relaxation Venturing into the Chrome store, I discover a few games that run in the web browser. Achievements, puzzles, small arcade games. Nothing very spectacular compared to a PC or a Mac. Let's listen to a little music. I plug my iPhone into the Chromebook. It recognizes it and I can view photos and videos, but to enjoy my music library, I would first have to transfer all my songs to Google Play Music... Might as well use that service. Or access websites that create playlists from YouTube. Conclusion It's hard to compare the Chromebook to a Mac or a PC. It fulfills the role of a typewriter and Internet browser well and can be used occasionally to distract yourself by watching movies. But for professional use, its limitations complicate things. Tasks as routine as printing a text quickly pose problems, others require a lot of patience. And then, since the Web browser is the Chromebook's main tool, you have to get used to juggling between tabs to switch from one application to another. And to closing them to see more clearly. Finally, the need for an Internet connection limits its scope of use. You can certainly use your smartphone as a Wi-Fi gateway, but at the risk of blowing your plan. Nevertheless, due to its affordable price, the Chromebook is an interesting solution for students or as a secondary computer.

## ###ARTICLE\_START### ID:2342

What if the 21st century was the century of sharing and creativity? This is the humanist (and marketing) message that the giants of the world or large institutions are delivering by opening up to creative people of all kinds, architects, designers, programmers, students, developers, artists, simple Sunday DIYers or citizens. The concept: bring them together in labs to invent the future, change the world or give free rein to their desires. Dive into the heart of these places where the future is taking shape. The cultural lab Until now, the laboratory referred to a space where researchers in white coats carried out experiments. In the labs, out went the white coats and the purely scientific character, to put creativity at the center. These places are designed as more fluid, more flexible spaces in which one can easily move from the idea to its realization. In 2011, Google opened its first and only non-profit cultural institute in Paris. From the inauguration, it brought together twenty-five in-house engineers, whose "mission is to create technological tools and solutions for partners in the cultural sector such as museums, archives centers, iconic places", explains Laurent Gaveau, director of the institute's Lab. Set up two years ago, this space welcomes engineers to "prototype", but also to meet artists and curators. It is also a place of residence and thematic meetings, such as recently on the place of women in art and technology. One of the first global successes of this lab is the invention by two French engineers of the Cardboard, a kind of cardboard mask purchased or made yourself, which allows, once equipped with a smartphone, to virtually immerse yourself in an artistic and cultural universe. For example, you can discover, in 360 degrees, the first movement of Benjamin Millepied's ballet at the Paris Opera "Clear, Loud, Bright, Forward". But since Google is not just a benefactor of humanity, what are its other (real?) motivations for being so interested in culture? Laurent Gaveau: "What is good for the Internet is good for Google." Clearly, content is the major issue (economic, in particular) of the coming years on the Web and therefore for Google. It should be noted that by installing this lab in Paris, the American giant is consecrating the French capital as the epicenter of the artistic and cultural world. The techno lab Another type of laboratory: the Fabrication Laboratory, "Fab Lab" for those in the know. The idea is to offer technical and technological equipment to professionals or individuals. This is how Leroy Merlin has just opened a "collaborative manufacturing workshop" in Ivry-sur-Seine in partnership with the Californian specialist TechShop. For a subscription, you can access semi-industrial machines to create, manufacture and share. From wood to plastic, from laser cutting to 3D printing, the workshop promotes the DIY (do it yourself) trend that is so trendy these days. A new space is announced in Lille at the end of the year. More focused on start-ups, the Usine IO, located in Paris in the 13th arrondissement and financed by the essential Xavier Niel (1) and Jacques-Antoine Granjon (2) in particular, offers, in addition to a Fab Lab, rapid prototyping training and a team of experts who promise, for example, to open "their address book to find subcontractors". The Usine IO then transforms into an incubator. Brought together in the same space, young entrepreneurs can experiment, share their knowledge and even fail: the stakes and pressure would be completely different if they had had to buy the machines themselves. The Space 10 design lab in Copenhagen, supported by Ikea, is revealing of the spirit and method that drives the labs. The origin of this concept-prototype is Carla Cammilla Hjort, creator of Rebel Agency, a Danish branding and marketing agency, Art Rebel, a network of Scandinavian artists, and the Trailer Park Festival in Copenhagen. "Innovation must be counter-intuitive, otherwise we no longer talk about innovation but about development," explains Guillaume Charny-Brunet, head of innovation at Space 10, which brings together young designers, engineers, and creatives of various nationalities and confronts them with themes focused on the future. The first was held in November. To see its impact, just type "fresh-living lab" into a search engine. For the occasion, Space 10 has formed a partnership with the Copenhagen Institute of Interaction Design. This school-incubator-research center trains 25 girls and boys each year to "humanize technology," according to Alie Rose, head of training. Vihanga Gore, a 27-year-old Indian designer, says: “We started with a word cloud that the notion of ‘fresh-living’ evoked. We then researched the issues caused by the concentration of humans in cities and decided to work around energy. We knew that Ikea already offered bedside tables that wirelessly charge smartphones. That’s how we came up with the idea of developing a process capable of recovering the heat from anything that can be placed on a table, from a cup of coffee to a computer, and transforming it into energy to charge our devices wirelessly.” Sergey Komadenkov, a Russian co-creator, also 27: “This project has generated a lot of conversations with people around the world.” Among the notable projects, two Indians have imagined an object capable of opening and closing windows depending on the indoor and outdoor temperatures, wind and pollution levels. "We could imagine networking these connected objects and thus creating beneficial air currents, on a neighborhood scale, in densely populated and polluted cities," dreams Akshay Verma, who worked on this project. Another suggestion is a connected chair whose seat rises to encourage you not to sit for too long. Or this faucet that sees red when you stay in the shower too long. Ikea does not intend to develop all of these projects. Space 10 is above all intended to be a window on the future capable of fueling its thinking. Göran Nilson, in charge of the project: "It is also a way of securing the future of the company by inventing new innovation procedures. The first lab shows that the method works. I am impressed by what these young people were able to produce in such a short time." Alongside these very compact workshops, exhibitions are being set up, on themes always related to the future and open to the public. Like "Tomorrow's Meatball" which explores how we will eat in the next twenty or thirty years. Ephemeral labs A contraction of hack and marathon, the "hackathon" brings together computer or technology aces around a problem. These geeks are literally locked up for a given time, at the end of which they propose solutions and prototype them. A Parisian edition took place from January 15 to 17 at the Hôtel de Ville. The theme: how to strengthen the city's security? The affair had been conceived by the city hall, in collaboration with the police headquarters, the firefighters, the hospitals of Paris, in partnership with Xavier Niel's 42 school and under the supervision of an ethics committee that included the National Commission for Information Technology and Liberties (CNIL). 400 participants from all over the world were divided into 38 teams, and 10 projects were finally selected. Jean-Louis Missika, deputy mayor of Paris in charge of innovation: "It's a huge accelerator. It allows us to confront people who think differently. In three days, applications and software were prototyped that would have taken years to develop. I'm thinking of a software called Repaire that will allow law enforcement to access plans of public or private buildings in 2D or 3D from scans made by the National Geographic Institute. In the short term, it will also be possible to contact law enforcement by SMS." Enough to comfort supporters of open source and co-creation, and fuel hopes of a deployment of "participatory democracy" in research and development. (1) Head of Free, creator of 42, a school that trains in digital professions and co-creator of the future largest start-up incubator in the world at Halle Freyssinet. (2) Founder of the Ventes privées website.

## ###ARTICLE\_START### ID:2343

From 1968 to 1972, Google's ancestor was called the Whole Earth Catalog. It contained products useful for life in an American hippie community, from the potter's wheel... to the first computers. As old as the world, do it yourself met computing - "from counterculture to cyberculture", according to the expression of Fred Turner, author of Aux sources de l'utopie numérique (ed. C&F, 2012). Since then, the ideals of autonomy, openness and sharing have given birth to both free software and Google. And nourish thousands of places of manufacturing and "tinkering" - hackerspaces, makerspaces, Fab Labs - to the point of being gobbled up by Leroy Merlin and Ikea. Or how the citizen reappropriation of the means of production is next to the reinvention of capitalism.

## ###ARTICLE\_START### ID:2344

The number of ransomware campaigns, software that takes control of PCs, tablets and smartphones, increased by 26% in the last quarter of 2015 compared to the previous quarter, notes the report. The hackers then demand money - a ransom - from the user of the device in exchange for the code to unlock the data. These attacks can be very lucrative. According to the authors of the report, a single campaign brought in $325 million. Without giving an estimate of the total amount extorted, the report counted some six million attempts to install this malware. EASY PRACTICE Steve Grobman, technical manager at Intel Security, identified several factors for the rise of this practice: easy access to malware available for free (in "open source"), criminal networks offering this service, and difficulty in tracing the authors who hide on the Web. "In many ways, it's a more lucrative business model than traditional forms of cybercrime," he told AFP, noting that these attacks are now targeting other targets than just users, such as hospitals, schools and police stations. These victims are chosen, according to him, "because they don't have the IT protections that you see at banks or defense contractors" and because they have data that can be taken "hostage." Ransomware has been around for several years, but the techniques have become more refined, making them more exploitable. Tracking down the perpetrators is also much more complicated in the case of bitcoin payments.

## ###ARTICLE\_START### ID:2345

A victim of its own success, bitcoin is facing a growth crisis, which is coupled with a crisis of governance. For professionals and activists of the anonymous currency, the continued increase in the money supply and the number of transactions is rather good news -- proof that the cryptocurrency is establishing itself in the global financial landscape. In March 2016, the 15.5 million bitcoins in circulation were worth more than $6 billion. However, in its current configuration, the bitcoin network will soon saturate, which risks causing traffic jams and a degradation of service. For all stakeholders, the solution is obvious: technical innovations must be introduced that will allow the network to absorb more traffic. But how to go about it? Opinions differ on the method to adopt. In recent months, we have seen the emergence of two opposing camps, which openly confront each other. Proponents of a quick and easy solution want to increase the size of the "blocks", these files containing the transactions, which are added to the blockchain, the unique directory of all transactions. Today, the maximum size of a block is 1 megabyte, which can represent up to 3000 transactions. In theory, it is enough to increase the size of the blocks to 2 MB, to solve the problem, at least temporarily. Recently, supporters of this "easy method" have created an informal group, called Bitcoin Classic. It brings together in particular historical developers of bitcoin and about thirty commercial companies: "miners", who integrate the new transactions into the blockchain by solving mathematical equations and earn bitcoins for each new block, as well as portfolio managers, exchange sites, technical service providers ... On the other side, another group, composed largely of the coders of the original team, Bitcoin Core (hard core), advocates a more gradual and more "elegant" approach. According to them, instead of increasing the block size, it is more sensible to reduce the size of each transaction. The Core are not opposed in principle to increasing the block size, but they first want to carry out the necessary tests to ensure that this change will not cause unforeseen disruptions. In particular, they fear that it will affect the fluidity of traffic: in this case, large providers with high-speed connections would be at an advantage over their smaller, less well-equipped competitors. In addition, to sustainably increase the network's capacity, the Core want to create sidechains, "side chains" attached to the original blockchain, which would manage microtransactions. In this two-layer system, the original blockchain would mainly be used to carry out large transactions and clearing operations. For their part, the Classic prefer to keep the single blockchain system. The disagreement is therefore complete. The fight is bitter, because the technical debate hides economic issues. Eric Larchevêque, director of the security company Ledger and head of the Maison du Bitcoin in Paris, who is a Core supporter, sums up his vision of things: "The reason for bitcoin is to provide an egalitarian and decentralized monetary system, in peer-to-peer, which makes it very resistant to attacks and attempts at censorship by authoritarian governments -- for example, at the moment, Russia. The Core have remained faithful to this original ideal -- that of free software activists and crypto-anarchists." On the other hand, according to him, the Classic have other priorities: "There are among them businessmen who would like to transform bitcoin into a commoditized and centralized payment system -- as if they wanted to compete with Visa." The Classic supporters claim on the contrary that their solution will preserve free competition. A long-standing bitcoin developer, Gavin Andresen, explains on his blog that if the network is allowed to reach saturation point, it will cause a movement of concentration: "We will see the emergence of highly centralized agreements between exchanges, miners and merchants, or even a merger of miners and transaction creators." Breaking the impasse Similarly, Brian Armstrong, CEO of the wallet management company Coinbase, which has about a hundred employees, accuses the Core of being unrealistic purists: "They want 'perfect' solutions rather than 'correct' solutions. And if there is no perfect solution, they prefer inaction, even if it puts bitcoin at risk." In addition, according to him, the solution of reducing the size of transactions is very complex, and its implementation will take too long to prevent saturation of the network. Very aggressive, he goes so far as to consider creating a new team of coders to replace the Core. Despite several conciliation meetings, the Classic and Core have not managed to reach an agreement. Éric Larchevêque notes that the Bitcoin community lacks effective decision-making mechanisms: "We have no majority voting system or conflict resolution process. The rule of informal consensus is paralyzing." To break the impasse, each camp has taken unilateral action. In February, the Classic released software that increases the block size to 2 MB. If it is adopted by 75% of stakeholders, it will become the de facto new standard, and the network will switch. For their part, in April, the Core will release their own program, which will reduce the size of each transaction. In addition, some members of the Core work for the Canadian company Blockstream, a leader in sidechain technology. Blockstream has just successfully raised $55 million, which allowed the French group Axa to enter the capital. Faced with this unprecedented conflict, Éric Larchevêque is worried: "One of the two camps may quickly win, but we can also imagine a scenario where each system would be adopted by 50% of the players. It would be chaos, the breaking of the network into two subsets, with uncontrollable consequences."

## ###ARTICLE\_START### ID:2346

A victim of its own success, bitcoin is facing a growth crisis, which is coupled with a crisis of governance. For professionals and activists of the anonymous currency, the continued increase in the money supply and the number of transactions is rather good news - proof that the cryptocurrency is establishing itself in the global financial landscape. In March 2016, the 15.5 million bitcoins in circulation were worth more than $6 billion. However, in its current configuration, the bitcoin network will soon saturate, which risks causing traffic jams and a degradation of service. For all stakeholders, the solution is obvious: technical innovations must be introduced that will allow the network to absorb more traffic. But how to go about it? Opinions differ on the method to adopt. In recent months, two opposing camps have emerged, openly confronting each other. Proponents of a quick and easy solution want to increase the size of the "blocks", these files containing the transactions, which are added to the "blockchain", the unique directory of all transactions. Today, the maximum size of a block is 1 megabyte, which can represent up to 3,000 transactions. In theory, it is enough to increase the size of the blocks to 2 MB, to solve the problem, at least temporarily. Recently, supporters of this "easy method" created an informal group, called Bitcoin Classic. It brings together in particular historical developers of bitcoin and about thirty commercial companies: "miners", who integrate the new transactions into the blockchain by solving mathematical equations and earn bitcoins for each new block, as well as portfolio managers, exchange sites, technical service providers... 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In addition, some members of the Core work for the Canadian company Blockstream, a leader in sidechain technology. Blockstream has just successfully raised $55 million (€49 million), which allowed the French group Axa to invest in the capital. Faced with this unprecedented conflict, Eric Larchevêque is worried: "One of the two camps may quickly win, but we can also imagine a scenario where each system would be adopted by 50% of the players. It would be chaos, the breaking of the network into two subsets, with uncontrollable consequences."

## ###ARTICLE\_START### ID:2347

Programmer Richard Stallman, creator of the GNU operating system and founder of the free software movement, believes that the state should only use free software and not proprietary software like that made by the Microsoft and Apple companies of this world. "The state should never use 'proprietary' software, because the state does computing for the people. It is important to know who manages the server, who has control of the server, because it is legitimate for the state to manage the computing of the state or public agencies," said Mr. Stallman during his conference given in the grand salon of the Maurice-Pollack pavilion at Laval University. The Quebec government has already created its Centre d'expertise en logiciellibre and a law now requires ministries to include solutions that open the door to free software in calls for tenders. Computing and politics For Stallman, who is considered the father of free software, computing, politics and democracy are intimately linked. He also invited his large audience to give three cheers for Edward Snowden, the computer scientist who made public top-secret data from the American National Security Agency (NSA) concerning the American government's telephone and Internet tapping programs. "Those who want to steal our privacy use false propaganda means. A non-democratic state is much more dangerous than terrorism," Stallman replied to a student's question about the overlay computer network and the Tor browser, which allows anonymous access to the darknet. "Democracy requires that the people know what the state is doing. We need a lot of whistleblowers, but how can you be a whistleblower if the state always knows who is communicating with whom? It then becomes much too dangerous to be a whistleblower!" the American summed up. Against computers in elections Stallman also spoke out fiercely against the use of computers in public elections, even with free software. "Because of the dangers of fraud without the possibility of correcting them later," he insists. "It would take decades to establish whether such a system is reliable, even if it is completely free. For proprietary software, the manufacturer has control, and for free software, the copy belongs to the electoral authority. In both cases, it is possible to substitute a malicious copy to commit fraud," he explains, calling the idea of Internet voting "completely crazy." "The state that uses Internet voting the most is Estonia. Their computer systems have been analyzed and several flaws have been found," he continues. But then, what would be the best voting system, asks a student? "Paper!" Stallman answers spontaneously. "It is not a perfect system, but with paper, large-scale widespread fraud is very difficult." The man who once called for "eradicating Facebook to save democracy" also admitted that he does not use any social network, not even Diaspora, the social network and free software whose development began in 2010. "I work most of the time without an Internet connection. I use email and my site." ibussieres@lesoleil.com

## ###ARTICLE\_START### ID:2348

Artificial intelligence, the new El Dorado of Gafa? It's hard to doubt it. Google, Apple, Facebook, Amazon, but also Microsoft or IBM: everyone is in the running. Behind AlphaGo, the Google DeepMind algorithm capable of beating one of the best Go players in the world, nearly 1,200 projects are in the pipeline at Mountain View. The Apple company, for its part, bought in a few months VocalIQ, a start-up specializing in voice recognition, Perceptio, which has developed automatic photo sorting technology, and Emotient, which works on recognizing emotions from facial expressions. Assistants. Even Tesla Motors CEO Elon Musk, who had nevertheless worried about the dangers of artificial intelligence, participated in December in San Francisco in the launch of OpenAI, a non-profit research center also funded by Amazon Web Services. The giants of the Internet and IT are investing heavily - and recruiting. In March 2013, by acquiring the Canadian start-up DNNresearch, Google hired its founder, researcher Geoffrey Hinton. A specialist in artificial neural networks known as "convolutional" and a pioneer of "deep learning", which allows machines to learn by themselves (read opposite). In 1987, Hinton welcomed a young Frenchman, Yann LeCun, as a post-doc at the University of Toronto. He now heads the artificial intelligence department at Facebook... Having fallen into disuse in the 90s due to a lack of sufficient computing power, deep learning has been experiencing a spectacular comeback in the last five years in terms of visual and voice recognition. Its applications - and those of AI in general - are already numerous: image detection and classification, the development of personal assistants (Google Now, Siri at Apple, Cortana at Microsoft or "M", currently under development at Facebook to be integrated into Messenger), but also autonomous cars, or assistance with medical diagnosis - on which IBM is banking with its Watson program, which became famous in 2011 by participating in the TV game show Jeopardy!. Not to mention robotics and its challenges for the industry, and predictive algorithms. The digital giants "do things a little differently, but the technologies are identical, underlines Jean-Gabriel Ganascia, professor of computer science and researcher at the Pierre-et-Marie-Curie University. Each has specific needs and will invest in this or that aspect". In terms of development model, on the other hand, the divide is clear. There are those who are discreet and keep their projects under lock and key - starting with Apple - and those who are open. Google's machine learning tool, TensorFlow, was published as open source in November 2015. Facebook's AI lab did the same for several image recognition and language modeling software modules, and IBM for its SystemML machine learning system. Even Microsoft, a long-standing supporter of closed source code, has made its deep learning "toolbox," CNTK (for Computational Network Toolkit), used for automatic translation of Skype conversations, available on the online platform GitHub. "Regulator." A commendable effort at transparency? Not only that. First of all, it is an excellent way to advance technologies by ensuring user feedback. But also, warns Jean-Gabriel Ganascia, to "recover a large part of the work of the scientific community, even data." "The way science is developed is very different from what existed thirty or forty years ago, with new players," the researcher judges. This raises many questions: where the State had a regulatory role, there is today a shift that we are not measuring." This is not the least of the challenges in this race for AI that the Internet giants are engaged in.

## ###ARTICLE\_START### ID:2349

Contrary to what was written in Fabien Deglise's article entitled "Eradicate Facebook to Save Democracy", published in our March 14 edition, the conference by Richard Stallman in Montreal, president of the FreeSoftwareFoundation and free software activist, was organized by the Association pour le développement des technologies en éducation (ADTE), a group of specialists campaigning for free computing in higher education, and not by Dawson College. However, it is at Dawson College, on Thursday, March 17, that the event will be held as part of the ADTE's 2016 free colloquium.

## ###ARTICLE\_START### ID:2350

For the founder of the free software movement, Richard Stallman, it is impossible to live freely in environments where socialization and computing are subject to private companies that mark human activities with proprietary software or with services whose codes and intentions are kept secret. The man, passing through Quebec this week, where he was invited by Laval University and Dawson College to talk about digital freedom and free software, is asking governments and citizens to become aware of the injustices that accompany these numerous submissions and is even calling for the dismantling of the Facebook network, to save democracy. "We must eliminate Facebook to protect privacy," said in an interview with Le Devoir the famous American programmer, founding president of the FreeSoftwareFoundation and long-time activist for free and open computing. The man is, for example, at the origin of the GNU/Linux operating system which, for years, has been thumbing his nose at the proprietary computer systems developed by Apple or Microsoft. Without this privacy, without the ability to communicate and exchange without being monitored, democracy can no longer continue." For Mr. Stallman, in a world where communications are monitored, the possibilities of denouncing abuses, of knowing what the State is doing necessarily diminish, with the key being a loss of control by the citizen over this same State. To use or to be used? Mark Zuckerberg's digital social network "uses its users much more than its users use it," he says jokingly. "It is a service perfectly calculated to extract and to amass a lot of data on people's lives. It is a space of constraints that profiles and files individuals, that hinders their freedom, which necessarily induces a loss of control over the aspects of daily life that we express there. "And according to him, even if the pleasure of use accentuates a certain dependence among several users, the social and political consequences can only be harmful in the medium or long term, especially if the power of this network is reinforced over time by the subscribers who multiply within it." We see this with private computing [the one supported by the Apple and Microsoft of this world] which, for years, has left no room for the alternative of free computing, summarizes Mr. Stallman. The companies that subject people with these products earn a lot of money, money that they use to amplify the social inertia that blocks all the exit doors. "Freedom under surveillance And yet, such domination is harmful to governments, he assures. By letting their public administrations be subject to the yoke of companies, they lose their power while not serving the citizens they represent very well. "Public computing in the interest of the people is not computing whose control is in the hands of private companies that cultivate secrecy about their computer codes, says this former Massachusetts Institute of Technology (MIT) graduate who attacks software patents and digital rights management. Proprietary software monitors its users, decides what can or cannot be done with it, contains universal backdoors that allow remote changes by the owner, imposes censorship. When you use it, you necessarily place yourself under the influence of the company that sells it. With this power, the owner is tempted to impose features to take advantage of users. You cannot freely decide what code you install or not. You are therefore necessarily subject and less free. "In Quebec City on Wednesday, during a conference organized by the Institute of Information Technology and Society (ITIS) of Laval University, then in Montreal on Thursday, at Dawson College, the man will also reiterate the calls he is now making to the four corners of the globe to free themselves from these digital chains and regain the freedom to create, share, and build data, far from the constraints imposed by the digital giants. "Governments have an important role to play in combating these injustices by escaping the proprietary frameworks in which they have placed themselves," he says. The school system must also make its contribution by no longer imposing students' dependence on private IT entities. It should only teach free software. This is the only way to collectively regain lost freedom and regain control over activities that have already escaped us," he concludes.

## ###ARTICLE\_START### ID:2351

Three phones to encrypt Hoox (Atos) Distributed by Orange: €1,500 excluding VAT, plus a monthly subscription. Reserved for businesses. Uhuru (Nov'IT) €350, plus the price of the smartphone (Samsung). Audio calls are encrypted by the Team on the Run service, for €6 per month. Reserved for businesses. Blackphone $2,799, available over the Internet. Five apps to encrypt Telegram Referred to by Western media as the preferred discussion channel for radical Islamists. Encrypted and anonymous sending of texts, images and sounds, to one or more correspondents. Weak points: messages and encryption keys are stored in the cloud. The software, partly locked, cannot be audited. Free. Signal Free software operating in peer-to-peer mode, without a centralized server. It encrypts messages and calls end-to-end, and creates new keys for each session, which are used only once. For Android, Signal also offers a simplified application, SMSSecure. Free. Hoccer A lightweight and discreet application created by Berlin hackers. It works without asking its users for personal information. Free. Threema Encrypts messages, calls, multimedia files, and leaves very little trace on Internet relays. €1.99 for iPhone, €2.49 for Android. CryptTalk The free version allows you to exchange SMS and receive encrypted audio calls, but not to make calls. The full service costs between €10 and €30 per month, depending on the options.

## ###ARTICLE\_START### ID:2352

Computer, printed circuit, transistor, Internet, computer mouse... All these inventions have shaken up our societies since the Second World War. Walter Isaacson, American journalist, former editor-in-chief of Time and biographer of Einstein and Steve Jobs, draws up an impressive gallery of portraits of some fifty researchers, engineers and computer scientists. The risk would have been, faced with so many brilliant figures, to bow down and deliver a hagiographic catalogue, useful but a little indigestible. This is not the case. This pitfall is fortunately avoided because the author mixes important biographical elements and historical anecdotes with more sociological passages that try to explain the origin of these technical breakthroughs. This work is therefore as much a biographical reference as a sort of management manual for successful innovation. We understand the importance of the collective versus the individual, the intimate relationships between theories and experiments, or the subtle links between fundamental research and answers to a technical question. The role of war and the military-industrial complex is also often highlighted. The author finally distinguishes three types of organizations that are key to success: those implemented by the State, those of companies, and those that are a little more "hippie", made by individuals concerned with freedom and openness who self-organize among peers. The author himself innovated and tells in conclusion how he improved chapters by publishing them and opening them to comments. This panorama of visionaries begins (and ends) with a woman, Ada Lovelace, who in the 19th century laid many of the mathematical foundations of what would later be called programming. The rest of this technological history is, on the other hand, very masculine. Only or almost, the small "calculating" hands used by the United States and the United Kingdom to run the first computers during the Second World War come to Ada Lovelace's aid. Then we find Alan Turing, Claude Shannon, John von Neumann, William Shockley (transistor), Jack Kilby (printed circuit), Douglas Engelbart (the mouse), Steve Jobs, Bill Gates, Tim Berners-Lee... The author also does not forget a few "marginals" like Richard Stallman ("inventor" of free software) or Linus Torvalds (creator of the Linux kernel). Nor a more political figure, Vannevar Bush, who theorized the model of organizing research into a virtuous triangle: government funds, public laboratories and companies. A flaw in this work, without doubt, is that it almost forgets Europe. The admittedly already complex pages on the origins of the Internet would have, for example, gained even more controversy by mentioning the networks that were being built at the same time on the Old Continent.

## ###ARTICLE\_START### ID:2353

With fifty-one years of experience behind him, Jacques Rouveyrollis' eyes light up when he thinks of the great technological leap made by the art of lighting in half a century. "We've gone from the Middle Ages to science fiction, and we're still only at the beginning," says the man who was one of the pioneers of stage lighting in France and around the world, and who remains, at 70, a reference in the field. The first to dare to place spotlights on the ground, for Michel Polnareff in the late 1960s, doesn't hesitate for a second when asked what, for him, constitutes the most significant innovation of recent years: "The arrival of LEDs." Light-emitting diodes have invaded everyday life, from street lighting to car headlights, before arriving in concert halls about ten years ago, supplanting traditional incandescent or fluorescent lamps. LEDs are to lighting what digital was to film in photography. With a much longer lifespan than their predecessors, they barely heat up, consume less energy but, above all, thanks to the constant innovations of engineers, they have lost the coldness of their beginnings and gained in autonomy and handling. "The colors are cleaner, the products more powerful. We can arrange lines of LEDs, we can create shapes, universes", explains Thomas Dechandon, young designer of the collective specializing in visual arts Concept K, according to whom three quarters of systems are now equipped with these light-emitting semiconductors. But this is not the only toy available to lighting designers. We can add "video mapping", a technique for projecting images onto any physical medium, already very present in events, or slave projectors, these "lyres" whose movements, colors, effects can be controlled remotely from a console. Instruments that are nevertheless old-fashioned in the eyes of these passionate and ingenious technical artists, always up to date with the latest developments. Created in January 2012, the All Access Design (AAD) agency has set up a room entirely dedicated to its research, "to try not to limit ourselves to what projector manufacturers give us," explains Pierre Bernard, one of the founders. "When we create other sources, other surfaces, it multiplies the possibilities," adds his associate Victor Lagiewski, who cites the example of their Sunny Mirror, a stainless steel mirror parabola including a pixel-by-pixel controllable LED strip around its edge. Romain Tardy's OX machine, in Rennes in January. Photo Boris Allin. Hans Lucas Blood pressure The AAD agency, with a dozen employees, works alone, but others create in networks to move forward. Visual artist Romain Tardy designs his machines with engineers and shares his discoveries. "Being able to develop your own open-source software while being in contact with communities of developers is a game changer. It's a mentality of mutual aid, anyone who has a small stone can contribute to the building." Innovations are sometimes drawn directly from the imagination of programmers. Coming straight from computers and video games, Kinect technology, for example, allows musicians to control a lighting effect by clenching their fist or raising their arms. Soon, the spectator will increasingly be required to intervene themselves, thanks to blood pressure or body heat sensors capable of gauging their level of pleasure, which the artist will be able to transcribe in the form of holograms. The range therefore seems limitless, which producers and artists are well aware of, at the risk of sometimes asking too much. A race for the all-spectacular fueled by ever flashier photos posted on social networks. No more question of drawing a "light plan" on a corner of a tablecloth. Only a Rouveyrollis can afford it. Others must present their project in 3D, using dedicated software, such as the renowned Wysiwyg (for what you see is what you get). "Before, we relied more on words and trust. Today, we have to deliver the visual in advance. It's tricky because the vision we have will be different from that of the artist, who will not take into account certain dynamic notions of perspective and scale," regrets Thomas Dechandon of Concept K. Another downside of the technological coin is that video imaging can dull concerts, which are reduced to a parade of clips. Automation, while essential for controlling increasingly sophisticated machines, also tends to stiffen stage performances. For example, each sound sent by the musician can be assigned a lighting effect. All the work is then done upstream, by encoding, and the lighting technician no longer intervenes live. "We become operators of a system. We check that everything is fine, but the show is going on without us, notes François Beuchot, of Franz & Fritz, a young agency known for its bold aesthetic choices. In France, we still like to have the idea of the possibility of change, but in the United States, they follow a strict time code, with a clock that starts at 0:00, and everything starts at the same time, music, lights, machinery, video." 80,000-watt machine The profusion of effects is particularly popular in television, where we hate the slightest black corner on the screen, and in the electronic scene, where lights can represent up to 90% of a show's budget. In the case of electro, they compensate for the poverty of certain performances, divert attention when the artists are sometimes too glued to their machines, but also allow interaction with a more "physical" audience than in rock or song by offering them broad sensory stimulation. "I'm happy when people leave in an ecstatic state," admits Yossi Derhy, a freelance designer who remembers having one of the largest strobes in Europe, an 80,000-watt machine, in his hands for the Pitchfork festival in Paris in 2014. "I had put it behind the stage, and I only turned it on four times, because each time nothing happened. It's as if everyone had been 'tasted'," he laughs. This overbidding "could correspond to a context where musicians found a second wind thanks to the visual, notes the artist Romain Tardy, in allusion to the Daft Punk pyramid in 2006 or Etienne de Crécy's Square Cube a year later. But we can use technologies intended for the spectacular and turn them towards the intimate." It is even undoubtedly one of the keys to the future. The pyramid-shaped laser prototype from the young company Minuit Une, already tested by Detroit techno pioneer Jeff Mills. Photo N. Tisserand Emotion of sounds "What hasn't changed much is that we always present these light installations in the same places," emphasizes the former video jockey (VJ). For logistical and budgetary reasons, these shows often remain confined to large structures and have difficulty appropriating small spaces. OX, a "sensitive machine" that Romain Tardy designed on the initiative of the Absolut Company Creation sponsorship program and which itself chooses the visuals by interpreting the type of emotion of the sounds sent by a DJ, is on the contrary intended for clubs. This is also the challenge of Minuit Une, a young company that has created a pyramid-shaped laser prototype, already tested by Detroit techno pioneer Jeff Mills, with a cost comparable to a high-end projector, or around twelve thousand euros, capable of adapting just as well to the Eiffel Tower as to the interior of a small venue like the New Morning in Paris (with a capacity of 500 spectators). "We realized that, apart from large venues, there are many places where it is complicated to have a real creative contribution in lighting that goes beyond the simple concept of dressing," says Aurélien Linz, one of the company's founders. Intimacy, interactivity, 3D immersion, there are many avenues for deepening a profession that is constantly being renewed. "We are close to the moment when we will be able to do great things with very little spotlight," summarizes Jacques Rouveyrollis, before adding, a refrain heard from the mouths of most of his young colleagues: "We must constantly improve technology, but always maintain control." Words of a wise man.

## ###ARTICLE\_START### ID:2354

Twice a month, Le Devoir challenges philosophy, history and history of ideas enthusiasts to decipher a current issue based on the theories of a leading thinker. The thorny conflict between taxis and the Uber company that is raging in several major cities around the world (New York, Paris, Toronto, Montreal, etc.) is not a trivial and passing fact that will calmly resolve itself over time, but a symptom of a much more fundamental transformation linked to the emergence of a new "collaborative economy" that is already beginning to change the landscape of the job market, consumer habits and forms of social cooperation. While some rather simplistic analyses consider that it is above all an opposition between the privileges of an outdated industry and the progress of new technologies, the Hungarian historian, economist and philosopher Karl Polanyi (1886-1964) would undoubtedly paint a very different and more nuanced portrait of the situation. How could this original thinker, known above all for his famous book The Great Transformation, which deals with the birth of the market economy and the socio-political crisis of the 1930s, enlighten us on the ambivalences of the collaborative economy, on the contradictory reactions it provokes and the legislative perspectives that could regulate these new economic practices? An institution First of all, Polanyi developed a broad and multidimensional conception of the economy that is not limited to free and voluntary exchanges between individuals on the market. Far from being an abstract space of interactions between homo economicus, the economy is first and foremost an institutionalized process, that is to say a social process intimately linked to norms, customs, rules and laws that govern its functioning. "The human economy is [...] embedded and encompassed in economic and non-economic institutions. It is important to take into account the non-economic aspect. For religion and government may be as crucial to the structure and functioning of the economy as monetary institutions or the existence of tools and machines that alleviate the fatigue of work." (1) According to Polanyi, the market is not a natural and spontaneous phenomenon but an institution, that is, a social construction whose history we can make. Contrary to the Marxist perspective which analyzes capitalism as a mode of production based on the exploitation of the working class by capitalists and private property, Polanyi mobilizes the tools of economic history, anthropology and comparative sociology to understand how complex economic practices that were previously "embedded" in society gave way, in the 19th century, to the belief in a self-regulating market separate from the rest of society. The "disembedding" and deregulation of the economy resulting from the commodification of labor, land, and money brought about significant social and environmental consequences, sometimes devastating, triggering strong reactions among the groups concerned to limit the negative effects of this transformation. Market forces and social forces To return to the case of Uber, a company that owns mobile applications that connect users with drivers providing transportation services, we are witnessing the emergence of a new economic model that, evoking the idea of free competition, makes it possible to circumvent current tax, social, and administrative regulations: taxi licenses, fare controls, group insurance, etc. Since Uber considers its drivers as "partners", that is, as independent subcontractors and not as employees of the company, this company can externalize the risks on the independent workers while freely modulating the prices according to a mechanism based on supply and demand, with rates ten times higher on New Year's Eve for example! If we add the fact that Uber combines tax optimization techniques, aggressive lobbying and huge advertising expenses to circumvent the tax system, thwart attempts at regulation and crush competition, it is not surprising that the actors made precarious by this new player use different means to protect their interests and make their voices heard. According to Polanyi, taxi drivers would aim to counter this movement of commodification operated by Uber in order to "re-embed" the economy in society. "For a century, the dynamics of modern society have been governed by a double movement: the market has continually expanded, but this movement has encountered a counter-movement controlling this expansion in specific directions" (2), he wrote. On the one hand, market forces seek to free themselves from social obligations in order to increase the mobility of capital and labor, while social forces push in the opposite direction in order to limit the ravages of widespread commodification. Here, taxi drivers are demanding several forms of social protection, whether through the defense of their rights, a legal framework for Uber's practices, or even the outright banning of this company. If Polanyi would not be surprised by the social, political and legal conflicts surrounding Uber's activities, what would he think of the possibilities and problems of the collaborative economy in general? Sharing Economy The collaborative economy, also called the "sharing economy", is based on new forms of "horizontal" organization that facilitate the pooling of goods, spaces and tools in order to promote barter and exchanges between individuals rather than exclusive personal property. As Aristotle already pointed out two thousand years ago, "wealth lies much more in use than in possession". Innovative digital platforms and mobile applications now make it possible to considerably expand the scope of exchanges that were once confined to the family sphere, circles of friends and the community, by multiplying peer-to-peer (P2P) relationships between strangers through systems based on trust and reputation. These exchange platforms promote a better allocation of resources, recycling, atomization of supply, elimination of intermediaries, the creation of income outside traditional employment channels, and access to goods and services that were previously offered only by companies. The sharing economy includes collaborative consumption (community-supported agriculture, carpooling), collaborative lifestyles (coworking, cohousing), collaborative finance (crowdfunding, alternative currencies) and collaborative production (Wikipedia, Fablabs, 3D printers). "Ideological hold-up" But why has a Silicon Valley start-up become the icon of the collaborative economy, to the point where the term "Uberization" now refers to all of these new social practices? Polanyi would probably not be impressed by the $50 billion market value of the company that operates in more than 60 countries, and would probably share the observation of economist Benjamin Coriat, for whom "Uber has carried out an ideological hold-up on the collaborative economy, transforming a civic disposition into a source of profits. It has set up a predatory economy in place of a sharing economy" (3). Indeed, how can we distinguish between organizations as diverse as Airbnb and couchsurfing, TaskRabbit and local exchange systems (LES)? Polanyi would distinguish here three "forms of integration" to designate "the institutionalized movements by which the elements of the economic process are linked -- from material resources and labor to the transport, storage, and distribution of goods" (4): reciprocity, redistribution, and exchange. First, reciprocity refers to the various forms of sharing and operations based on the principles of symmetry, mutuality, and gift. Second, redistribution designates the methods of collecting and allocating goods according to a principle of centrality (such as the welfare state, for example). Third, "exchange as a form of integration depends on the presence of a market system; contrary to a frequent conception, the latter constitutes an institutional structure whose origin does not lie in isolated acts of exchange" (5). This third model thus includes market relations between individuals or companies, the price system, the mechanism of supply and demand, etc. This original tripartition has notably inspired the idea of a plural economy put forward by the promoters of the social and solidarity economy who distinguish it from the public economy (State) and the private economy (market). How does this distinction between reciprocity, redistribution and market exchange allow us to understand the dynamics of the collaborative economy? Polanyi would undoubtedly argue that "uberization" represents a form of "commodification" of social, economic and domestic activities, based on monetized access to the goods and services of others and the principle of supply and demand, while the sharing economy would be based above all on reciprocity, giving, mutual aid and solidarity. If we take Airbnb customers for example, they are looking above all for comfort at an affordable price, a clean place near a tourist center. These "purchase criteria" are different from the evaluation criteria of the followers of the free service Couchsurfing, for whom the essential thing is the person met, the moments with the host and the hospitality. If TaskRabbit offers paid exchanges between individuals, a local exchange system (SEL) allows its members to share skills and know-how through a logic of giving and a special currency whose unit of account is not money, but time. (6) Hybrid model In summary, the Polanyian analysis shows that the collaborative economy represents a hybrid economic model worked by two forms of integration in tension: commercial exchange and reciprocity. Companies like Uber would contribute to accelerating the process of commodification, the flexibilization of work and the precariousness of living conditions, by extracting a rent extracting the monetary value of cooperation between individuals. We would then be dealing with a kind of "netarchic capitalism" (7), to use Michel Bauwens' expression, which designates the "hierarchy of networks" governed by large private corporations such as Google, Amazon, Facebook, Apple, Uber, Airbnb, etc. On the other hand, Polanyi would undoubtedly observe that Uberization directly favors a counter-movement of social protection aimed at "re-embedding" the economy in society, not only through institutional regulations (legislation on taxis, hotels, self-employed workers, etc.), but through the emergence of citizen initiatives, social innovations and economic models based on reciprocity: free software, common goods, activity and employment cooperatives bringing together independent entrepreneurs benefiting from social coverage (Coopaname), open design, and other "concrete utopias" aimed at extending cooperation through new digital tools (platform cooperativism). Thus, the collaborative economy is not primarily a technological revolution, but a complex social form ranging from an "à la carte" market economy to a sharing economy that may eventually allow us to go beyond neoliberalism, or rather the "market society" that Polanyi speaks of. This expression "simply means that society is managed as an auxiliary of the market. Instead of the economy being embedded in social relations, it is social relations that are embedded in the economic system" (8). "New great transformation" If the Hungarian philosopher has always criticized the "economist fallacy" (9) that reduces all socioeconomic practices to market exchanges alone, it is because he considered the economy to be always and already rooted in a history, a society, a territory. He thus proposed replacing the formal conception of the economy, based on the efficient relationship between means and ends in a context of scarcity, with a substantive definition of the economy, which "underlines the fundamental fact that humans, like all other living beings, cannot live sustainably without a physical environment in which they find their subsistence" (10). In an era marked by the dismantling of the welfare state, the setbacks of globalized finance and the ecological crisis, Polanyi's work is useful not only for understanding the workings of the "new great transformation" underway, but also for imagining the institutions and social practices that will ensure an ecological and democratic transition of the economy. (1) Karl Polanyi, "The Economy as an Institutionalized Process", in M. Cangiani, J. Maucourant, (eds.), Essays by Karl Polanyi, Seuil, 2008, p. 59 (2) Karl Polanyi, The Great Transformation, Gallimard, Paris, 1983, p. 193 (3) Martine Orange, "Benjamin Coriat: Uber has made an ideological takeover bid for the collaborative economy", Mediapart, February 9, 2016. (4) Karl Polanyi, The Subsistence of Man. The Place of the Economy in History and Society, Flammarion, Paris, 2011, p.77 (5) Ibid., p.84 (6) Martin Denoun, Geoffroy Valadon, " To Own or to Share? ", Le Monde diplomatique, October 2013. (7) Michel Bauwens, " The Peer-to-Peer Economy is More Productive Because It is Passionate ", Without Model, March 13, 2015. (8) Karl Polanyi, The Great Transformation, p.88 (9) Karl Polanyi, The Subsistence of Man, p.37-54 (10) Ibid., p.55 Comments? Write to Antoine Robitaille: arobitaille@ledevoir.com.

## ###ARTICLE\_START### ID:2355

Could the digital world be fertile ground for the social and solidarity economy? Some cooperatives believe so and are trying to combine new technologies with an economy that is truly based on sharing. The social and solidarity economy (SSE) is "too little present" in the digital economy, declared Thierry Jeantet, president of the Rencontres du Mont-Blanc, during a symposium on the social economy and solidarity finance held at the Université du Québec à Montréal on February 4. "The digital economy is necessarily a fertile ground for participation, collaboration and co-construction. I do regret that, in the organizations that shape exchanges on the Internet, the social and solidarity economy is so little present," then specified the man who is at the head of the International Forum of SSE leaders, in an interview with Le Devoir. "There are of course all sorts of informal associations that are being formed, but I think that the social and solidarity economy should think about the evolution of the Web and its exchanges, in order to make them more civic-minded and less absorbed by the traditional commercial system." What about Quebec? Several ESS companies have created or developed transactional sites adapted to their mission. For example, the La Mauve cooperative, which brings together some forty farmers and market gardeners from the Chaudière-Appalaches region, launched a site in 2014 that allows customers to order their food basket and determine its composition online. For its part, the Chantier de l'économie sociale launched Commerce solidaire in 2013, a transactional site for group purchasing for 350 social economy companies. Transactions carried out using this platform now total more than three million dollars per year. Wireless Island But are social economy businesses responding to the development and deployment of the technologies themselves? "It's true that there is a lack of social economy players," says André Boisvert, general manager of the non-profit organization Île sans fil, whose mission is to provide free, public wireless Internet access in Montreal. "It's mainly because it's a competitive market segment and private companies are wondering what we're doing there." In the coming months, a change in the financial model will be made: in parallel with Île sans fil, a solidarity cooperative will be created to allow for better capitalization and the creation of a reserve with the aim of expanding and improving the service. "It takes solidarity businesses in profitable fields of activity," says Mr. Boisvert. "We are entrepreneurs like any other. It's our purpose that is different." "There are a few, but there could be more," agrees Simon Emmanuel Roux, a working member of the Territoires cooperative, whose mission is to create digital tools that contribute to the cultural and social development of the territories. This cooperative is notably behind the Mur Mitoyen, a sort of online bulletin board that groups together and structures cultural and civic events planned in Montreal and Quebec City into a calendar. Mr. Roux nevertheless identifies obstacles: "The financial levers are not always obvious compared to the imagination of the start-up. In the technology sector, there is strong competition. And speed of execution counts for a lot. Also, entrepreneurs in the technology sector are not necessarily aware of the fact that there is the possibility of creating a social economy enterprise." His group first founded the non-profit organization Espace Temps in 2009, before launching the cooperative in 2013 to better finance their ambitions. "We are trying to be a flagship project, to demonstrate that through a coop, we can develop a world-class digital tool, just like a start-up," emphasizes Mr. Roux. We did not want to turn the project into a private enterprise, because we believe in the great principles of the social economy and we want the product to remain collectivized." He participated in the Platform Cooperativism conference last November, which took place in New York. Among the inspiring models he discovered there, he highlights the success of the Stocksy cooperative, based in British Columbia, which has deployed an online royalty-free photography service and which pays member photographers fairly around democratic governance. Mr. Roux also meets other entrepreneurs within the Regroupement Techno Social. "It's an informal group for now, but we aim to formalize it," he says. "We're trying to see how we can create winning conditions so that there are more digital businesses in the social economy." Code 3 The Code 3 solidarity cooperative, for its part, develops free software, which can be used, distributed, duplicated and modified, and whose philosophy is in line with the values of the solidarity economy. This approach offers an alternative solution that is often more flexible and less expensive than purchasing a pre-designed IT solution or developing custom single-use software. It allows for a division of costs and gives users control over the software. The cooperative acts as an information technology department for organizations that, alone, could not pay the salaries of project managers, designers, programmers and analysts. Code 3 therefore has worker members, but also user members and support members, who pool the costs associated with developing software, setting up IT support and managing the technological infrastructure of servers. "It's sharing, but not for the purpose of making a profit. It's sharing the risks and costs of IT development," summarizes François-Xavier Guillemette, co-founder of Code 3. A free software, Code 3 has designed one for the member management system of the Ordre des architectes du Québec. "The goal was to allow other professional orders to recover a copy of the source code and adapt it to their needs," explains Mr. Guillemette. I don't sell the license or the software. The goal is to program and continue to improve in our field, but by working as hard as possible." It is on the same principle that Code 3 developed the claims system for the Professional Liability Insurance Fund of the Barreau du Québec. "We developed software just for them. It's a small environment, the insurance funds. And since the others had the same need, they shared the software. We didn't make money on the sale of the software, but we went to do the adaptation for the different clients." Mr. Guillemette also believes that the cooperative system prevents clients from seeing the IT firm they do business with being bought by a company that no longer has the same priorities.

## ###ARTICLE\_START### ID:2356

Before the "hacktivists" emerged in the media and in the eyes of the general public, in particular thanks to the major WikiLeaks revelations and then the Arab Spring, the American Gabriella Coleman immersed herself, in 2007, in the Anonymous nebula, of which she is to this day the best specialist. Anonymous. Hacker, activist, forger, informer, whistleblower (2014), very recently translated and published in French, is, she writes, a "popular ethnography", nourished by her very numerous exchanges with "Anons". A broad study, as dense as it is fascinating, on this elusive collective which revisits the springs and the modalities of the engagement. For the anthropologist, now Wolfe Chair in Scientific and Technological Literacy at McGill University in Montreal, hacker communities, in their diversity, are at the heart of the "pitched battle over the future of privacy and anonymity." How do you define a hacker, beyond the very reductive cliché of the computer pirate? There are several types of hackers: programmers, system administrators, people who break into computer systems... For my part, I define hacking as a practice, often oriented towards IT but not exclusively, which combines know-how, the search for excellence, and cunning, the art of diversion. Know-how is tradition; cunning is the challenge to tradition. The two meet in hacking. We see this for example with copyleft(1), which is a diversion of copyright, or with WikiLeaks, which renews the way of "blowing the whistle." There is also a great attachment to ingenuity and humor. I use a Linux operating system. One day, my computer was running out of memory, a warning appeared, at first very technical, which ended with this sentence: "To solve the problem, do this or sacrifice your child." A classic programmer would not have left this kind of joke. There is also a great political diversity among them... The prevalence of the entrepreneurial culture of Silicon Valley has meant that, since the early 80s, hacker sensitivity in the United States has been put to use in a model where "social good" is achieved through capitalism, and in a start-up culture. In Europe, this culture is much more limited, this has allowed for engagement in other types of practices. The main hacker group in Europe, the Chaos Computer Club (CCC), is very structured, it has existed for a long time, and its conferences have helped to politicize the European hacker scene. But beyond the differences, there is a shared fraternity, as well as an ethic of know-how: hackers are attached to excellence, they take great pride in it. And even if the discourse can be very individualistic, the practices are often very collective. Finally, the question of freedoms is central. Even hackers working for the government can be furious when the latter tramples on civil liberties. Also read Under the Hackers' Tent Precisely, hacktivists, these hackers who get involved, have become visible political actors, particularly against surveillance. How do you analyze this evolution? Many of them are socially privileged. However, even if not all hackers invest in the political field, more and more of them are doing so, especially in the last five years. There is no simple explanation, but there are several factors. The anti-authoritarian mentality is highly valued in hacker circles. It is not political in itself, but it involves a way of thinking, of using technology, whether to find a solution to a problem or to penetrate a system. Politicization came when states started to prosecute them in the 90s, and to adopt new laws. Finally, very early on, they gathered in online "chat rooms", on mailing lists, in conferences, "hackerspaces" ... They built spaces, online and offline, that gave them their sense of autonomy. Finally, WikiLeaks really changed the game, by becoming a major geopolitical player. There has always been politics in the hacker world, but WikiLeaks made it visible. In a 2011 interview with Google CEO Eric Schmidt, Julian Assange made it clear: WikiLeaks is a project to moralize politics... Assange tapped into a sensibility that already existed among hackers, saying: there is corruption, there are ways to expose it, it is our moral duty to do so. The WikiLeaks revelations, and the intense response of the American government, fundamentally changed the landscape. Assange took risks, and today he is paying the price. Even though he is a controversial figure, including in the hacker world, many people respect that. The other new thing was Anonymous. WikiLeaks is the project of a small group of people, Anonymous is the opposite, a turbulent hydra, a participatory movement, based on direct action, a kind of "guerrilla" counterpart to WikiLeaks. Now, with Anonymous, a space opened up where people who did not necessarily have great technical skills - some in Anonymous have them, others do not - could enter this geek and hacker universe. Also read Julian Assange: what now? Anonymous also raises the question of the relationship between the individual and the group... Traditionally, the language of the individual has predominated in the hacker world. But free software, for example, is based on the collective. And at Anonymous, the word of the individual is not tolerated. Here are two examples in which collectivist practices appear very clearly. I believe that hackers struggle with the language of the collective, with the "we". It is a dialectic between individualism and collectivism, and the two coexist, because there is also a strong commitment to respect individual opinions: anyone can use the label Anonymous... Individualism will never disappear, but we have an interesting dialectic here. Also read Networks and rhizomes of cyberspace Can hacktivists be seen as the main counter-power on the network? Yes, absolutely. If they weren't there, there wouldn't be this battle over civil liberties on the Internet. They are not the only actors, but they are the technological force, because they have the capacity to act. They build tools, they sound the alarm... And many of them also work on political and legislative changes: we find them in NGOs, at Privacy International in Great Britain, in the American Civil Liberties Union in the United States... They want to work with governments, even if they fight them; they don't just work on code. What makes them a counter-power against surveillance is the fact that they use civil disobedience, legal channels and technological tools at the same time. Basically, what do they change in politics? There is no single mode of intervention, but there is in any case a strong component of direct action. The free software movement is about creating your own rules because you are unhappy with software patents. It is a way of "hacking" intellectual property, which later inspired Creative Commons licenses. Whistleblowers existed before Assange and WikiLeaks, but they changed the parameters, by creating a form of "clearing house" to ensure the security of those who want to transmit information. Hackers are renewing traditional activism with these forms of action that consist of building new tools, technical, legal, journalistic... Tools that can also escape them. We saw it with Indymedia [alternative media platform, launched in 1999, editor's note], created by a handful of very left-wing hackers. They built Web 2.0 before it existed. Today, some of them are still very activists, but others work for Flickr and Twitter. They brought Web 2.0 to the rest of the world... Can they really help change the balance of power? It's a complex question. Some hackers are progressive, some are not... But generally speaking, they like to think of themselves as outsiders, and as long as they keep that mentality, they will continue to act. The heart of their commitment is the battle for civil liberties. It's important for liberals as well as radicals. The Internet is still a battlefield, and they have the technical capacity, if not to ensure a truly progressive Internet, at least to develop enough technologies to create progressive spaces for activists, journalists, lawyers... They have already helped revitalize the media, in the United States in particular, by encouraging journalists to work with whistleblowers. That's where their contribution can be. This is just the beginning. (1) Copyleft is the authorization given by the author of a creation (from a work of art to a computer program) to use, study, distribute and modify his work, provided that this authorization is preserved by the users. Photo DR

## ###ARTICLE\_START### ID:2357

After three years at the head of the National Digital Council (CNNum), Benoît Thieulin, founder of the communications agency La Netscouade and director of Ségolène Royal's digital campaign in 2007, is handing over the reins. He is being replaced as president of this advisory body, which largely contributed to the digital bill, by Mounir Mahjoubi, deputy director of the BETC Digital agency, creator of the local producer purchasing platform La Ruche qui dit oui and former "free electron" of Hollande's digital campaign in 2012. Benoît Thieulin, what is your assessment of these three years? Benoît Thieulin: I think, I hope, that we did the job. We were able to cover a fairly broad spectrum, which corresponds to the vision of digital that I wanted to convey, that of a phenomenon of global transformation of society. We started with subjects that appeared very technical, but were in reality very political, such as Net neutrality or the "loyalty" of platforms. We worked on taxation, start-up financing, education... The aim was to build a body of doctrine that would form the basis of a reflection for a real European and French policy. We argued that we needed a comprehensive law on digital technology and that we needed to give ourselves the means to reflect by consulting very widely. It is not the law as I would have dreamed it 100%, but it would be unfair to say that I do not understand it. Major principles, such as net neutrality, will enter into French law, and I am delighted about that. On security issues, on the intelligence law, you were not listened to... BT: We failed, very clearly, but could we succeed in a context where these issues are politically sensitive? At least we were able to prove our independence by responding unfavourably to the government on several occasions and by fuelling the parliamentary debate. Mounir Mahjoubi, how are you approaching your mandate? Mounir Mahjoubi: The CNNum has managed to create a special place for itself in recent years: even if its consultation is not mandatory, most major bills have been submitted to it. It is also an institution that consults a lot to write its opinions. We will continue this and try to take our recommendations to new places. My practice is the culture of the field, of understanding users. The reports are very useful to the government, to the legislator, I would like them to be also to the public. We are going to publish one on higher education, which will contain recommendations for universities. We could also support experimental phases. BT: Today, it is less about thinking about strategies than taking action. The government has what it needs to decide, and it has done so in part. The question is that of the execution of public policies. It is a very good thing that the new CNNum is working on the concrete translation of the major recommendations, on digital inclusion or education. In this new CNNum, there are mainly entrepreneurs... MM: When appointing a council of thirty people, you can't be representative of everything. None of the members represent the institution or company they work for, they are there as experts. Of course, there are no representatives of associations promoting free software, for example, but many members are attached to them. You were the "free electron" of Hollande's digital campaign... Are you going to work completely independently? MM: Professionally, I have always been independent. I joined the campaign as an expert in platforms and digital engagement, I was an employee during this period, then I took a job in the private sector afterwards. I supported the government in my areas of expertise, for example by getting involved in the Entrepreneurship Conference or in the work on the major digital school. There is no need to worry about my independence. Benoît Thieulin, the question arose for you in 2012... BT: The government gave us the opportunity to demonstrate our independence! I never felt any pressure. What protects the president of the CNNum are the other members. We have never been prevented from taking a position, which does not mean that our opinions have all been pleasing. Our freedom of speech is what made the digital ecosystem support our consultation process. What did you think of the debates on the digital bill? BT: These debates came from the handful of deputies and senators who are experts on the subject. There are now, in wider circles, people who have become aware of the issues. Even the debate on the "sovereign" operating system (1), which has been much discussed, is a good symptom: I do not think it is the right answer, but raising the question of digital sovereignty in the Assembly proves that we have made considerable progress. MM: There may be a mechanism to set up with the free software community to think of a sovereign French response. Free software is first and foremost software that is transparent about how it is built and how it has the information it processes. BT: Tomorrow, what will count is the structuring of databases or new types of networks. But this debate has the merit of showing that politics must be concerned with even low software layers and the way in which infrastructures are designed. We have made progress, now we will have to take action. The CNNum had put forward the recognition of "digital common goods" (2) in the law. Without success... BT: We have failed, but it is only a half-failure. There was a real debate. My conviction is that this is only the very beginning of a profound change in society and the economy. But it will also teach us to think better about how to defend these new concepts that amend complex systems. We probably did not work hard enough. And in the debates we had with part of the cultural world, it was decided to have a modest, somewhat timid position. It was a political error. We must assume the responsibility of drawing the vision that the commons give of tomorrow's society and economy. The next big project is employment issues? MM: There are many burning questions about employment linked to digital transformation. The Terrasse report put on the table all those that relate to collaborative platforms. At least half of the report concerns employment and the status of people who participate in these platforms. These questions will, we hope, find an answer in the El Khomri law or in the inclusion of the provisions of the Noé law [for "new economic opportunities", editor's note] in other texts. We are called to be experts on these subjects. Benoît Thieulin, when the "digital ambition" report was submitted in June, you said that there was also a European path to be found? BT: There are several possible digital worlds, but today there is a Californian drift. The history of Europe predisposes us to create, from digital, a different society, which responds to the other major transition, the ecological transition. We must build a world in which there is a collective and commons, which has nothing to do with a hypercapitalist, libertarian vision of questioning States. It is up to Europe to take up this challenge, and France must play a role. MM: The convergence of the digital and ecological transitions is an essential subject. Ségolène Royal and Emmanuel Macron announced a call for "Green Tech" projects. On this, we have a vocation to express ourselves because we believe that this question goes far beyond the creation of environmental and technological start-ups. What are the new fields that the CNNum will explore? MM: There are two topics on which I really want him to position himself. The first is SMEs and SMIs. We are the second largest European economy but we are second to last in e-commerce... We are talking about several million employees who will have to be supported in the transition of their jobs. The second topic is the commitment of the French. Today, there are more and more operations based on "soft engagement", that is to say lighter, either in financial terms or in terms of time. To set it up, we need platforms managed by an association or by a community. Meu Rio (3), for example, is based on digital technology. We need to think about what we can do so that this type of tool benefits the desire of the French to be more useful. (1) A "made in France" system. (2) Shared resources, managed by a community, like Wikipedia. (3) Launched in 2011, the participatory platform Meu Rio (200,000 members) aims to reorient public policies. Photo Manuel Braun

## ###ARTICLE\_START### ID:2358

The 9th Netexplo forum is being held on Wednesday 10 and Thursday 11 February at Paris-Dauphine University. This event, organised in partnership with HEC, the Senate, the State Secretariat for Digital Affairs and UNESCO, provides an opportunity to take the pulse of the technological revolution each year and to recognise projects at the forefront of innovation. Julien Levy, an affiliated professor at HEC, where he heads the Digital Centre, is the author of the annual study "Netexplo Trend" which has scrutinised over 2,000 digital innovations around the world. He discusses the latest advances and the thoughts they have raised. IKO Creative Prosthetic System, the 2016 Netexplo Grand Prix, is a robot prosthesis, made with a 3D printer. What does this innovation say about our future uses? This project is part of a global trend: the increasingly strong desire to push the limits of the body by relying on technology. Today, on every continent, laboratories and start-ups are seeking to simulate the living or to integrate digital technology into it. The idea of merging man and machine is not new, but this quest is accelerating with the progress of technologies and the use of big data. Thanks also to the increasingly low costs of DNA sequencing. Is the "augmented" man coming soon? Let's say that the line between the natural and the artificial is increasingly tenuous. In Sweden, the Karolinska Institute is working, for example, on artificial neurons. In Switzerland, the Blue Brain Project reproduces the functioning of the brain on a computer. In another Swiss experiment, DNA Data Storage, pieces of DNA are used to store coded information, which can be used after the fact, which paves the way for the biological computer. It is now becoming very difficult to distinguish what is biological from what is technical, and therefore human will. Some innovations are indeed moving towards transhumanism, a man as the fruit of human will. What was once speculation is becoming a reality even before the issues at stake have been considered. One of your ten winners, Amino, even offers a kit for manipulating living things at home... It is the little chemist's box in the age of genetic manipulation. And this project is not the only one. Another, the OpenSource Insulin Project, which was created thanks to crowdfunding, is trying to manipulate bacteria in order to produce insulin at home. These innovations are of course emerging, but they clearly raise new societal questions. Research on living things has always been both very regulated and very costly, which limited its scope of application. If these techniques leave the laboratories and become more widespread, the regulatory system becomes unsuitable. After digital hacking, the hacking of systems to divert their use, here is the emergence of bio-hacking. The Google Car, which is already running in California, is at the beginning of our history with robots? Household or industrial robots are already very present in our lives. We are now adding artificial intelligence to their mechanical performance, with the clear desire to move towards the autonomy of these machines. Some innovations are troubling. Such as the Self-Teaching 3D-Printed Robots, imagined in Norway. These robots, equipped with artificial intelligence, assess their weak points, then give improvement instructions to produce new generations with better performance. Here again we see the desire to push the limit: from a tool, the robot becomes an actor, and an actor of itself. Questions that science fiction authors asked thirty years ago are now before us. Netexplo highlights new digital platforms. What does this herald? Some winners, in fact, propose finding work directly by smartphone (Wonolo in the United States), registering a property without a notary (Bitland in Ghana) or securing our online identity without recourse to an authority (Colu in Israel). For Ronald Coase and Oliver Eaton Williamson, two American Nobel Prize winners in economics, the existence of a large company can only be justified if its internal costs (wages, organization, etc.) are lower than the cost of transaction on the market. The Californian company Uber and all these new platforms select partners, organize interaction, reduce risks through a rating system, which reduces transaction costs. They thus become credible alternative economic models to large groups, whose often cumbersome and slow structures must be rethought. These uses pose another challenge to large structures: do young talents, fans of these new modes of collaboration, want the relationship of subordination that defines employment? The "blockchain" technology, used by the Ghanaian or Israeli winners, goes even further by bypassing central authorities. What could be the consequences? Until now, it is the institutions that guarantee a title of ownership: a central bank for the value of paper money, notaries for title deeds, banks for transactions, etc. With the blockchain, it is a network of servers and a technological protocol that replace the institution. Without going into technical detail, the consequence is twofold. On the one hand, certain institutions may become obsolete; on the other hand, the costs associated with the transaction fall, which opens the way to new uses. The Ghanaian Bitland project effectively makes it possible to do without a notary to register land. But above all, it provides access to the law to a mass of people who were previously excluded, by having property recognized where it was not possible, due to the deficiency of state services and corruption. It is a way of transforming what the Peruvian economist Hernando de Soto Polar calls "dead capital." That is, capital that is not in the statistics and that does not allow access to credit or discounting, due to the lack of title deeds. The issue is global. It is also a way, even if it is not sufficient, of giving legal security to millions of people, whereas previous systems were costly and inefficient.

## ###ARTICLE\_START### ID:2359

They are called Harry's, Astéréotypie, BrutPop or Wild Classical Music Ensemble. Born less than ten years ago, these collectives make post-rock, noisy improvisation, noise - in short, experimental music that claims a non-melodic approach or breaks the codes of classical harmony -, play at the Sonic Protest festival, at the Villette Sonique or at the Olympia, and take a unique place on a stage in search of new experiences. Their particularity: a radical approach drawn from unique artists, most of whom are autistic or mentally deficient. The experience is not new. "For a long time, the old-timers of improvised music have been doing interventions in places of care," admits Olivier Brisson, psychomotor therapist in a psychiatric hospital and head of the Vert Pituite la belle association, which organizes experimental music concerts. The new thing is that this time, it comes from the inside, from the people who work in these places and who also have noise-loving practices. "Namely, a nebula of educators, luthier psychologists and psychiatric nurses who are fans of grindcore, minimal punk and other weird music to whom it seemed natural to build bridges between these two margins. "For us, who are sensitive to this music, the connection is made very quickly," continues Olivier Brisson. When you're interested in Terry Riley or La Monte Young [pioneers of minimalist music, editor's note], it immediately makes you think of the beat and the binary on-off mode of autistic people, who can spend hours swinging, turning the light on and off..." When, six years ago, Antoine Capet, a special needs educator, started improvising noise workshops during lunch breaks in his Parisian institute, he made the same association of ideas: "I remember a young man who was obsessed with sounds under bridges. And I have musician friends who studied electroacoustics at the conservatory on sound resonance in metal tubes." From left to right: Christophe Dupuis, Lilianne Lebreton and Joseph Lesolleuz, from the BrutPop company, in Mantes-la-Jolie (Yvelines), in 2015. Photos Brutpop In October 2015, at the Olympia, Stanislas, Yohann, Kevin and Aurélien, four young people from the Astéréotypie collective, swing the flow of their oblique thoughts, chronic fixations and semantic inventions on waves of post-rock music. The 2,000 people who came to listen to Moriarty's folk ballads received a slap of electric rock as an appetizer. On stage, on drums or modular synthesizers, there is the other band of madmen who made it all possible. With, as leader of the troop, Christophe Lhuillier, a specialized educator at the Bourg-la-Reine medical-educational institute (Hauts-de-Seine) officiating in various dream pop and post-hardcore groups. It was he, with the educator Claire Mahé, who launched Astéréotypie, in 2010. "At first, I was quite reluctant," says Christophe Lhuillier. Autistic people, we tend to make them sing things about world peace in choirs, and I didn't want to make concessions on that. Then they started to inspire me. The weird things they said in meetings, their particular way of declaiming texts, their fixations on transport, cartoons, logos... something aesthetic and poetic emerged from it. We started with writing workshops, then the music came." After Collectif Astéréotypie, their first self-produced album, Arthur B. Gillette and Eric Tafany, guitarist and drummer of Moriarty, joined the project, went on stage with them, notably at the CentQuatre, in Paris, in April for the Sonic Protest festival, before offering them an opening act at the Olympia and soon recording an album on their label, Air Rytmo. "I don't want people to think: "It's not bad for autistic people." I want it to be taken seriously, adds Christophe Lhuillier. There is no therapeutic aim, we are not here to prove that contact with an audience is favorable. We just want to make a group without any notion of pity or academicism." "Something unusual that awakens a primary emotion in people" No music therapy: an assertion common to all these collectives. "In what is done elsewhere, we tend to want to demonstrate that autistic people are capable of doing like the others, explains Julien Bancilhon, psychologist at the Antony day hospital (Hauts-de-Seine). Here, the gap is to say that they are unique artists who are capable of collaborating with other unique artists." With Frank de Quengo, musician, ex-boss of the Bimbo Tower record store and co-programmer of the Sonic Protest festival, he created the Harry's, in 2009, a group with an unclassifiable style, between noise, free-jazz and noisy improvisation, composed of six young autistic people who, in their relationship with sounds, come to challenge the most crazy of noise people. "They don't respect any code, are capable of singing a popular r'n'b thing or a TV jingle over noisy music, comments Frank de Quengo. At the same time, some autistic people have an amazing ability to play. In two minutes, they can reproduce a hyper-complex drum movement." Hence a certain fascination exerted on the musicians who collaborate with them, like Adrien Kanter (initiator, among others, of the electro duo Trésors or the psychedelic group Le Réveil des tropiques), who went on stage with the Harry's in September, on the occasion of the release of their first album, Ggots(1): "I have never felt such freedom. It is the ultimate improvisation, it opens the doors of creativity wide. Every time I work with them, it surprises me. It is very exciting for a musician." For Arthur B. Gillette, of Moriarty, "they have no inhibitions about expressing the violence within them and dare to do things that we would never have thought of. This results in a sort of rocker ideal. In music, everything is often so calculated. There, something unusual is happening that awakens a primary emotion in people." Fabrice Fastrez, Amandine le Gal, Serge Cheradam and Jeniffer Levasseur. Photos Brutpop "We defend the idea of singularity" But what is happening goes beyond joyful initiatives launched by a group of slightly punk educators. After organizing noise workshops in institutions for six years, the Ateliers Méditerranée, led by educator Antoine Capet and the singer of the rock group Cheveu, David Lemoine, have decided to change their name and broaden their ambitions. An event organizer, multiplying meetings and partnerships, BrutPop has become the figurehead of what is beginning to resemble a movement of music and thought. "What unites us all is the conviction that talking about disability with pathos is doing a disservice to the cause," explains Antoine Capet. With David, we have a big network in the underground scene, we know the codes of music, and we can play them." As proof, they managed to get carte blanche at the Gaîté Lyrique for four days in December as part of the "Paris Musique Club" exhibition, "in the same way as twelve trendy music collectives," says Antoine Capet. For the past two years, they have also been collaborating with fab-labs (Réso-nance numérique in Marseille and the 8 Fablab in the Drôme) to create simplified open-source instruments that are therefore accessible to any audience, as well as the BrutBox, a digital console equipped with sensors that can control sound based on movement, light or brain waves. A way of spreading their musical activism. "Because, beyond music, we defend the idea of singularity," says Olivier Brisson, from the Vert Pituite association. This is a very difficult question for the institution to hear, in an era that aims to reduce the scope of deviant behavior and where these young people are asked to integrate into society by making as little noise as possible. Hence the importance of moving forward as a group." And the web they are weaving extends beyond France. Astéréotypie should soon play with the Belgian group Wild Classical Music Ensemble (five mentally handicapped people and drummer Damien Magnette); the Sonic Protest festival has invited the Finnish group PKN, a hardcore punk group made up of people with Down syndrome, for its next edition; and BrutPop plans to organize its next meetings in Brussels and São Paulo. An international of noisemakers who are likely to make some noise. (1) Harry's, Ggots (Metamkine).

## ###ARTICLE\_START### ID:2360

In a text published in Le Devoir on January 12 ("Uber and the necessary social control of algorithms"), researcher Yves Gingras raised the very pertinent question of the opacity of algorithms used by digital services to which we are increasingly accustomed in our society (for example Uber). The subject was discussed again on the radio show Médium large on January 14. This issue concerns us as citizens and activists of free computing. The philosophy of free software, we believe, sheds essential light on the issues of digital technology and, hopefully, will help the Quebec public to find their way a little better. Mr. Gingras invites us to exercise "social control" over decision algorithms, real "black boxes" about which we know nothing. We agree. Society needs "computer programs that people can read, fix, adapt, and improve" instead of the "black boxes" that the major players in the industry provide, Richard Stallman, the founder of the free software movement, told us in a 1994 essay. Indeed, if we are to exercise adequate social control over algorithms, we will need to consider not only the laws, regulations, and institutions, but also the source code of the software through which the algorithms are implemented. Unfortunately, the source code of software is usually hidden from users' view by abusive exploitation of copyright by the developers, typically the companies that own the software. Free software does exactly the opposite, exploiting copyright in a way that protects users' freedoms from potential abuse by developers. Possible scenarios Hypothetically, we can very well imagine the community of Uber users (the online service) evolving independently of the Uber company, its business model, its practices, its choice of algorithms. What would the Uber community (users, carriers, developers and technical operators) do if the online service had no owner, if it were the common thing of all? Many scenarios are possible. Among these scenarios, several are ethical, legal and very advantageous both for the users of the service and for society in general. It is the lack of freedom that prevents the materialization of the best scenarios that we could conceive. The opacity of software, it is easy to see, has caused, causes and will continue to cause abuses of all kinds. Since the Snowden affair, it is the abuses relating to the right to privacy (mass surveillance) and the right to freedom of expression (censorship) that attract the most public attention. However, it is important to understand that the list of possible abuses using secret software is very long. It will continue to grow in the coming years, in this era where "software is swallowing the world."

## ###ARTICLE\_START### ID:2361

Anonymous doesn’t joke around with anonymity. Even within its own ranks. In January 2011, a Washington Post reporter contacted hacker expert Professor Gabriella Coleman to track down Anons, members of the international collective that often acts to defend freedom of expression. Anonymous was conducting saturation attacks on MasterCard and PayPal at the time because those payment companies refused to accept donations to WikiLeaks. The reporter then tracked down AnonSnapple and described a bunch of details that allowed those who knew him to recognize him. As soon as the article appeared, other Anons used channels like #reporter to pounce on the text “like a pack of dogs on a bone,” writes Professor Coleman in her book Anonymous, recently translated and published by Lux Éditeur. The digital activists were against the press, once again. They were especially upset that AnonSnapple spoke for the other pirates without even taking any risks during the operation. "What I witnessed stunned me," Coleman writes. "I was aware of the prohibition against namefagging (the act of associating an Anon's identity with his or her actions). This rule is firmly rooted and rarely violated, and dates back to the days before Anonymous was a militant group." An anthropologist by training, the world-renowned Anonymous expert then draws a parallel with the methods used in some traditional cultures to enforce a strict principle of equality. She explains how the Kalahari Bushmen use mockery to temper the pride of hunters who capture a large animal. "While, to a certain extent, Anons are willing to congratulate each other, they disapprove of any attempt to spread an internal reputation outside their circle," concludes the observer. As long as we get out of it Like philosophy, anthropology can lead to anything, as long as we get out of it. Originally from Puerto Rico, Gabriella Coleman (whom her friends and Internet users call Biella) chose to study free software as a doctoral student in anthropology in Chicago in 2009. She now holds the Wolfe Chair in Scientific and Technological Literacy at McGill. "I made this 180-degree turn because I got sick during a year spent glued to my computer," she says. "After that year, I was very impressed by pirates. When I chose my thesis topic, my supervisor warned me that with this specialty, I would not find a job in anthropology. "No way! Her scholarly subject matter has also given her a reputation that is probably unmatched on the continent in her discipline. She says she has given more than 300 interviews since the beginning of the decade on Anonymous and related topics. "At the beginning, in 2011, I was always asked how to contact the leader of the group," she says. "There is none. The request stopped in 2012, although it still comes up from time to time. As recently as last year, CBS asked me how to contact the leader of Anonymous to talk to him about the actions against the armed group Islamic State." Drop by drop The meeting takes place in a café across the street from her university campus, in the city center, another place serving lattes to students still glued to their screens. The ceiling leaks and drops on the professor's head, who nevertheless keeps her cheerful face. We change tables. To understand them, Mrs. Biella spent years online starting in 2008, if only to cajole her suspicious subjects, who ended up feeding her with confidences. The book recounts this journey chronologically, so to speak one global action after another. For example, she tells us in detail about the attacks on the Church of Scientology, the online actions at the time of the Arab Spring, the reactions to the global scale of web surveillance revealed by whistleblower Edward Snowden. Translator Nicolas Calvé has managed the feat of making the specialized material digestible and even pleasantly clear and flowing. A glossary helps you find your way through the jargon. In total, some chapters are devoured like detective stories. The author, who is on her "eighth or ninth translation," also says that the Quebec intermediary working for Lux is the only one to have contacted her several times to validate the rendering of certain particularly specialized passages. The committed observer frequently inserts excerpts from online conversations with pirates and more rarely the story of a few furtive encounters in the flesh. Basically, Dr. Coleman has done virtual fieldwork by documenting her postmodern "noble savages" for years after having succeeded in convincing them of her generous intentions. Mythical character Anthropology has also helped her understand the spirit of the prankster and the rogue that links the Anon to the "trickster." This mythical character, present in all cultures, is called the "deceiver" by the anthropologist Claude Lévi-Strauss. This smart guy can fool everyone and play dirty tricks, but he mainly serves to say what the authorities would like to keep hidden. "Anons are perfect examples of tricksters," says the professor. "And besides, why wouldn't modern technological societies have their own? Pirates in general have the same traits: cunning, intelligence, deviance, sometimes even moral, love of jokes." In their jargon, geeks and nerds talk about "lulz", this pleasure of playing tricks, black humor, sometimes even meanness. With this weapon of gags, the deceiver certainly serves to make society, but can he really serve to remake it? Overall, what does the anthropologist retain from his dive into this secret, obscure and masked world, "generally on the left" which constantly messes things up without revolutionizing anything? "My goal in writing this book was for people to understand Anonymous and engage in political action," she says frankly. "Hackers take risks and our societies need strong digital activism. Anonymous has demonstrated the value of anonymity in this context. Being anonymous is important and allows you to act in a world under high surveillance. And now, this fundamental observation is embodied in a movement."

## ###ARTICLE\_START### ID:2362

The Catalans' strategy for gaining independence is inspiring the young Option nationale (ON) party, which wants to put an end to the gradualism that the Parti québécois has been promoting for four decades. The small pro-independence party, founded by Jean-Martin Aussant, is preparing to adopt a new strategy in the hope of founding the "country" of Quebec: holding a referendum election, drafting the Constitution of the country of Quebec by all of civil society and holding a referendum on the Constitution at the very end of the process. "The Catalans have the best of both worlds: they are breaking with gradualism and they have a democratic project. If they achieve independence, it will be through the people, not through a political party," says Sol Zanetti, leader of Option nationale. The small party, considered "the vanguard of the independence movement," is scheduled to debate this change of direction next weekend at its annual convention in Quebec City. The ON political commission, supported by the leader, will propose this solution, which aims to "put an end to the ambiguity of the Parti Québécois." In an interview with Le Devoir, Sol Zanetti makes no secret of it: he says he hopes that the Parti Québécois and Québec solidaire will also draw inspiration from the Catalan strategy. The sovereignist coalition of this region of Spain took power last September with 47.8% of the vote, promising to set in motion the process of accession to independence. It was a referendum election: a vote for a sovereignist party was an unequivocal vote for independence, recalls Sol Zanetti. Rather than promising to hold a referendum on sovereignty, the Junts pel Sí ("Together for Yes") coalition has committed to setting up a constituent assembly responsible for drafting the Constitution of an independent Catalonia. The new Catalan president, Carles Puigdemont, has promised to submit this Constitution to a referendum in 2017. "The referendum comes at the end of the process rather than at the beginning," emphasizes Sol Zanetti. "People will vote on a political regime that would be better and more democratic than the one they currently have." For him, it is a break with the gradualism advocated for four decades by the PQ, under the leadership of Claude Morin. "The Parti Québécois says: "Vote for us, it does not necessarily mean the independence of Quebec, we will consult you on that." We must put an end to this ambiguity," says the leader of ON. One step at a time With this congress, the young party intends to take another step towards maturity. Option nationale wants to be a resolutely pro-independence party. Former PQ MNA Jean-Martin Aussant founded the party in 2011 after leaving the Parti Québécois, which he considered ambiguous on the issue of independence. Despite critical success, particularly among young people -- and Jacques Parizeau, who supported the party -- ON has never surpassed the 1.89% mark in an election. At its convention next weekend, the young party must also propose the development of a digital policy for Quebec. ON plans to take a position in favour of free software, web neutrality -- as opposed to commercialization, which gives priority to wealthy companies that can afford to pay to appear at the top of the list in search engines -- and the teaching of programming in public schools, among other things.

## ###ARTICLE\_START### ID:2363

Brendan Eich wants nothing less than to "fix the web." The inventor of JavaScript, the computer language used on the web, and co-founder of Mozilla, the organization behind Firefox, launched on Wednesday, January 20, a very first version of a new browser, called Brave. Its goal: to tackle advertising, or at least some of its online forms, which collect data on Internet users and slow down the loading of Web pages. Brave includes an ad blocker by default, which will also directly attack certain cookies - files placed in an Internet user's browser and which memorize information about them. But not all ads will be removed: those that "meet our quality criteria [non-intrusive, no trackers...]" will be able to appear, we can read on the browser's website. Criteria that are similar to those applied by the controversial ad blocker Adblock Plus. But, above all, Brave will not only block ads... it will replace some of them with others, which it will have chosen itself. This is where the economic system of this free browser, under open source license, is based. "We reduce the number of ads received by the user and increase their quality and relevance, while blocking the trackers that spy on your activities on different sites," explains the company. "Avoiding war" The revenue from these "clean" ads will be shared between the publishers of the sites on which they appear and Brave, assures Mr. Eich. But also with the users of the browser, who will have a sum in bitcoins, this anonymous and decentralized currency, which they can allocate to the sites of their choice. Concretely, Brave users will have complete control over the presence or absence of advertising on their browser: they will be able to decide to block them all, to accept them on certain particular sites, and to refuse the replacement ones offered by Brave. On the other hand, if they accept them, Internet users will be able to use the money thus collected to give a financial boost to their favorite sites. Brave promises not to store its users' data "without their permission". Available for Windows, Mac, Linux, iOS and Android, Brave is still in its infancy: its first version is intended for developers, so that they can contribute to its improvement. The company nevertheless promises a browser much faster than its competitors, thanks to this advertising reduction. "We are building a solution designed to avoid war", justifies Brendan Eich. Ad blockers have, in fact, been the subject of a heated debate for years, rekindled in 2015 by their arrival in Apple's iOS 9, the company's operating system. Many site publishers complain about the growing use of these "adblockers", which deprive them of part of their revenue, and whose economic model is sometimes opaque.

## ###ARTICLE\_START### ID:2364

Sharing your car, exchanging your house, launching a community tool workshop: the collaborative economy is all the rage in Quebec, but the new think tank OuiShare Montréal intends to push this snub to ambient capitalism much further by multiplying its influence in all spheres of the community. They were initially just a handful of contributors to a blog. They are now the unifiers of an entire community gathered behind OuiShare Montréal, a satellite organization of the global OuiShare community, created in France in 2012 to promote the acceleration of ideas, training and production related to the sharing economy. Today spread across twenty countries in Europe, America and North Africa, the organization, still nascent in Quebec, has several thousand members worldwide. "OuiShare Montréal is a think tank, but above all a "Do-Tank" to advance projects. It brings together self-employed entrepreneurs, citizen movements, people who use open source [open and royalty-free computer code]. We give conferences and provide training in companies for those who want to integrate collaborative processes, but our ultimate goal is to break the image of the geek, to involve Quebecers from all backgrounds by demonstrating that open source can serve the community and be useful to everyone," says Alexandre Bigot, OuiShare's "connector" in Montreal. Where is the collaborative economy in Quebec? A multitude of isolated initiatives exist on various platforms and in various communities, but few work in a network. But not for long. In conjunction with the Observatoire de la consommation responsable (OCR) at UQAM, OuiShare Montréal will publish a white paper on the collaborative economy in Quebec in April, a local map of everything that is being done in the field. "We need to bring these communities together to make their solutions available to as many people as possible," says Mr. Bigot. The other economy The organization has listed no fewer than 150 collaborative experiences in Quebec. So what does this new, vaguely defined underground economy look like? In addition to the Airbnbs of this world and other globalized Ubers, perceived as "capitalist predators" by the collaborative movement, there are a plethora of local organizations aimed in particular at sharing or exchanging goods and services, with or without fees, such as collective kitchens and gardens, or "libraries" of tools and other useful objects. Among them, Esplanade, La Gare or Ecto, all coworking spaces shared by self-employed workers, or Sharing kit and La Remise, companies lending and sharing tools for DIY enthusiasts of all kinds. Community workshops, or "Fab Labs," are also emerging here and there, such as Sensorica, where low-cost prototypes of objects are designed using 3D printers, laser cutters and open-source software. A springboard for young entrepreneurs, these local workshops help lower production costs by providing access to expensive equipment and limiting transportation and energy costs. "In Barcelona, Fab Labs are emerging everywhere, partly funded by governments or other organizations," explains Mr. Bigot. Within the walls of E-180, created three years ago, the aim is not to share goods, but knowledge. A sort of "human Wikipedia," the Montreal organization has developed a platform that promotes "brain dating," explains Alina Meizel on the organization's Facebook page. "Instead of typing in Google, we meet a human being to expand our knowledge potential by not leaving this encounter to chance." In short, the sector is in full swing, but all these initiatives benefit from little public or legal recognition. "At present, a legal gray area surrounds this movement that is disrupting all traditional conceptions of income and property. Collaborative action must be integrated and taken into account by the laws," says OuiShare spokesperson, Connexion Québec. In France, the new Minister of Culture, Fleur Pellerin, changed the law so that the State can launch calls for projects from various Fab Labs. Giants have recruited these new players in the economy, such as the Société nationale des chemins de fer français (SNCF) to review its ways of doing things and breathe new life into its disused stations. OuiShare was also called upon to rethink certain products of La Mutuelle, a large insurance cooperative, and brought together 50 ideators from various countries in Paris during COP21 to create prototypes of innovative objects, promoting sustainable development. Boosted by the arrival of the Internet, social networks, and then the economic crisis, the collaborative economy presented itself as a response to the income crisis and the environmental dead end. Even many of those who adhere to it are primarily motivated by the desire to reduce their expenses. "There is also a need to take back power and connect to communities. Today, we are arriving at excesses that are justified only by performance," insists Alexandre Bigot. Is the sharing economy gently subversive? Although criticized by companies that pay taxes, this new player who runs on the community ideal is nonetheless pragmatic, defends the OuiShare connector. "We are not hippies, but pragmatists who think about new development tools and trust communities. This is not left-wing activism, but a way to achieve a more resilient society. We are all a bit of entrepreneurs, we have to get organized!"

## ###ARTICLE\_START### ID:2365

There are probably not many of them - between thirty and forty, at most, at peak times - but let us recognize that the deputies who debated the bill "for a digital Republic" this week often know their subject well. And that beyond the handful of fanciful amendments or the inevitable "legislative riders", the discussions, which were very dense, were, more often than not, rich. They were, above all, very political. Beyond the opening of public data, the rights of users over their personal information online, access to digital technology in the territories and for the most vulnerable, what is at stake are the means of dealing with the hyper-domination of the major players in Silicon Valley. But also the weight of algorithms - in public decision-making as well as in private business models - and, of course, the passionate and fiercely debated question of "digital common goods". This area, as we know, often renews so-called traditional divisions. Thus we saw opposition on one side of the socialist rapporteur Luc Belot, and on the other Nathalie Kosciusko-Morizet (LR) and André Chassaigne (PCF) on the question of free public data when reused by companies. We also saw common fronts ranging from environmentalists to right-wing MPs on the "freedom of panorama", to authorize the reproduction of works placed in the public space when they are covered by an intellectual property right. Other oppositions are more expected, as in the debate on the obligations of Internet platforms. In truth, only one essential element is missing: more political courage. This political courage which could have allowed, in the words of the president of the committee for reflection on law and freedoms in the digital age, the socialist Christian Paul, to recognize "only one lobby, that of the general interest"; which could have pushed to go further in terms of "Internet neutrality", rather than opening the door to automatic filtering of content, fraught with dangers; to promote more strongly the use of free software in administrations - the best way to respond to the concerns of "digital sovereignty" of several parliamentarians; to include in the text a definition of the public domain, as already recommended by the Lescure report in 2013, beyond the progress - real - of an amendment that allows associations to go to court against abusive reappropriations; or to offer recognition to digital common goods, from collaborative projects to works distributed under Creative Commons licenses. So many subjects nevertheless largely highlighted during the online public consultation phase. The fact remains that the journey of the bill continues and that, on these points, the debate - which has been going on for years - has certainly progressed. The online consultation is undoubtedly not for nothing. In this regard, we will not fail to watch for the follow-up to the request made by the deputies for a report on the possibility of systematizing the approach.

## ###ARTICLE\_START### ID:2366

So, you can't write "egg" without breaking your keyboard? That seems to be the idea of the Ministry of Culture, which wants to work on a standard to inspire French keyboard manufacturers. In a note, the General Delegation for the French Language and the Languages of France develops the various arguments in favor of a successor to the azerty to which our fingers have been converted. Let's remember that the azerty keyboard we use is not scientific. Its main purpose was to space out the most frequently used letters together on typewriters to prevent the typing hammers from getting tangled up too often. So there are few reasons left to cling to your azerty. Complicated accented capitals, impossible cedilla, "e" in the "o" impossible to find. The proposal for a new keyboard adapted to French has the merit of bringing a lot of people together. Those who try to remember letter combinations (alt+0201 for "É"). Or those who write down an "oe" ready to be copied and pasted. Or those who search for the right sign on Google. But for the accessibility of accented or special characters, all these examples actually only concern users of the Windows operating system, many of whom it is true. The French Language Delegation would therefore like several things: that the keyboards are all arranged in the same way, that they put the right letters in the right places and that the different available options are drawn on the keys. Of course, these provisions would improve the lives of new users a little. The main problem in fact is the Windows keymap (i.e. the way the keys are organized). So don't bother. Don't change your keyboard: change your keymap, use free software, keep your keyboards and everything will be fine.

## ###ARTICLE\_START### ID:2367

DIGITAL Prime Minister Manuel Valls wanted to make it "an important moment for the country, in order to establish our place as a major player in digital technology on the international scene". Seven months after the government's draft digital strategy, the bill debated since Tuesday in the National Assembly appears more like a collection of specific measures than a text with a clear vision for France in digital technology. This all-encompassing bill covers the issue of the loyalty of Internet platforms as well as the deployment of fiber optics in buildings, the process of verifying reviews on travel sites and the fate of data after a death. It establishes the opening of public data by default, creates an electronic registered mail system and requires the transfer of messages when changing messaging. It introduces provisions to recognize video game competitions and protect Internet connections in the event of non-payment. Some measures in the text defended by Secretary of State Axelle Lemaire are causing tension. On Monday, the National Publishing Union and the National Federation of Specialized Information Press railed against the bill, which they see as "the gravedigger of French scientific research." The issue is an article that provides for "free access to scientific publications resulting from research funded by public funds," after a six-month embargo period. Another battle concerns free software and copyright. An amendment was finally adopted in committee to "encourage" the use of free software when developing, purchasing or using a computer system in government departments and public sector companies. A provision of the draft bill was also reinstated to introduce a positive definition of the public domain, which rights holders are fighting against. The government is expected to oppose it during the debates in session. Fine from the CNIL During the examination of the text in committee, a new article was added, against the advice of the government and the rapporteur Luc Belot. It aims to strengthen the repression of the unwanted dissemination of images or videos of a sexual nature, what is known as "revenge pornography". More unexpectedly, deputies also wanted to have a report within three months on the possibility of creating a digital sovereignty commission responsible for the creation of a sovereign operating system and data encryption protocols. Some 841 amendments were tabled in public session. One of them, closely watched by the major platforms, aims to increase the ceiling of fines imposed by the CNIL from 150,000 to 20 million euros, or 4% of the company's turnover. The government should give it its support. Another, more comical, intends to penalize the dissemination of computer hoaxes that are spread by email. Republican MPs criticise the text for not taking into account other European texts on digital technology, particularly on the issue of personal data, echoing reservations expressed by the Council of State. And also for ignoring tax or societal issues. "I hear that the text would go too far or lack ambition, go figure. Digital technology has never been approached in such a global way", replied Axelle Lemaire on Tuesday, praising an "everyday law that gives new rights to users".

## ###ARTICLE\_START### ID:2368

Will the administration end up converting completely to free software? The recurring debate has regained strength during the discussion of the bill for "a digital Republic" by Axelle Lemaire, the Secretary of State for Digital Affairs, this week in the National Assembly committee. Unlike proprietary software, such as Microsoft's, the source code of this software is public. Any developer can take it, improve it, modify it and use it for free. The client does not pay any operating or licensing fees. Free software has long since made its place in the administration. But, gradually, its supporters are trying to make it mandatory. On Thursday, January 14, MP Delphine Batho (PS) had an amendment adopted proposing that all government departments "encourage" the use of free software and open formats, with the support of Secretary of State for Digital Affairs Axelle Lemaire. For the first time, this notion would be enshrined in law. "I am sensitive to the subject of "free" and open source. It is an important economic sector for France, which generates a turnover of more than 4 billion euros per year, with a growth rate of 9% for 2015, and has 50,000 jobs," justified the Secretary of State. For the moment, parliamentarians have not managed to go further by making "open source" essential. Such a provision would lead to a modification of the public procurement code, and would introduce a form of discrimination in public calls for tenders favoring developers of free software to the detriment of publishers of proprietary software. It would have a chance of being invalidated by the Constitutional Council. This was, in any case, the analysis of the Secretary of State, who did not support the more restrictive amendments. Axelle Lemaire is also keen to protect publishers of proprietary software, a very dynamic sector in France. "It's a market of 50 billion euros, potentially, that is deployed each year in France," she said. In the immediate future, the measure is therefore far from satisfying the promoters of free software. "When we see that Microsoft is capable of concluding large-scale agreements with national education, we say to ourselves that we don't weigh much," says Frédéric Couchet, the general delegate of April, an association defending free software, which denounces the close ties between the private group and the public authorities. Last November, Microsoft had caused a stir by signing an agreement with the Minister of Education, Najat Vallaud Belkacem, providing for training plans and the free provision of solutions, such as its cloud services. A "discriminatory" text Even if, for the moment, the amendment does not exclude them from calls for tender, digital professionals are speaking out, fearing that the dam will end up bursting completely. "90% of French software publishers have chosen the proprietary model to finance their R&D and would be de facto excluded from public procurement," four associations launched in a press release: Fevad, which represents e-commerce sites, Afdel and Syntec Numérique (software publishers) and SFIB (information technology industries). Even the Union des fabricants, which defends intellectual property, denounced a text that "will mechanically penalize and discriminate against young entrepreneurs. For four years, measures attempting to impose free software have multiplied. In 2012, a circular signed by former Prime Minister Jean-Marc Ayrault defined the main rules for using open source. While the document promoted it, it also set certain limits. In 2015, the Disic, the public administration responsible for managing the various IT departments of the State, went further, by recommending the adoption of open software for office needs. Potential collateral victim: Microsoft's Office suite. This new guideline, validated by Matignon, is currently being examined by the European Commission. Today, parliamentarians do not intend to stick to the promotion system voted on Wednesday, and dream of going further. MP Isabelle Attard (PS) has already planned to get back into the fray, during the public debates on the bill for a digital Republic, which begin on Tuesday, January 19.

## ###ARTICLE\_START### ID:2369

No, the world is not as dark as it seems, it still has some nice surprises in store, such as the emergence in our contemporary societies of a desire to consume differently: less but better, and by sharing or exchanging with others. Proof that the withdrawal into oneself, reflected in the rise of populism and the extreme right in many corners of Europe, has not completely won. Of course, this time for sharing has largely taken root in the violent economic crisis of recent years, which has pushed many consumers to find other ways to satisfy their needs. But its roots go much further, in an awareness of the abuses of overconsumption and especially its harmful effects on our bodies and on the planet. We must salute in passing all these associations and NGOs which, since the beginning of the century, have continued to sound the alarm on the ravages of pesticides and other harmful products used in mass industry. Their warnings have finally been heard. Neighbors Economic crisis, ecological crisis and, more recently, a crisis of values that is pushing many to rediscover the meaning of sharing and authenticity have therefore brought back into fashion practices that we thought had been forgotten, such as the pooling of goods and services. It is not yet the dominant way of life but the phenomenon is gaining ground every year. "Sharing is a solution and a symptom," explains Anne-Sophie Novel, a doctor of economics, specializing in ecology and author of the blog "De moins en mieux". Some do it because it's trendy, others because they want to give meaning to their lives, and many because they have no choice." "Gleaning" is thus spreading more and more, a practice that consists of recovering uncollected food in the fields, at the end of markets, in shopkeepers' trash cans or in supermarket containers. It would concern more than 20% of French people, according to a recent study by the Observatory of Emerging Consumer Practices (Obsoco), which also shows that more than one in two French people have switched to buying organic or fair trade products, as well as buying directly from producers. It should be noted that these alternative consumption practices have really taken off with the Internet, particularly among young people. From sites designed to make daily life easier, such as Sharevoisins.fr, which connects neighbors for free so that they can borrow and share objects, to those aimed at reducing the cost of transportation by organizing carpooling, they all aim to match conviviality and low prices. Culture is not left out, with a site, Billetgratuit.com, designed to introduce theater and live performance to those who would not otherwise be able to afford it by offering two tickets per week depending on the number of seats available. Do it yourself Our relationship with waste has undoubtedly changed a lot with the crisis. Hence the rise of "repair cafés" and other associative garages (see pages 3-4) which provide advice and tools to repair objects or cars yourself. This is one of the consequences of this phenomenon, "do it yourself" is booming, boosted by the development of 3D printers which even allow you to make an articulated hand (see page 5). Another practice which has definitely entered into daily life: resale (on the Internet in particular), which concerns 80% of French people, starting with young people who often include this possibility from the moment they buy. Of course, the system has its excesses, such as Airbnb which, from a site intended to get around overpriced hotels, has become ultra-commercial. "That's why I believe in territorial approaches to the sharing economy," continues Anne-Sophie Novel. Local or regional public policies should support this type of solution." Soon we will no longer be in utopia, that's the good news of this end of the year, we need some. Change your gearbox yourself Open hoods and dismembered vehicles, silhouettes buried up to their elbows in engines: there is no idleness at the Rennes-Villejean associative garage, on the outskirts of the city. While his budding mechanics are busy, Jean-Paul Serrand, the facilitator of the structure, in overalls zipped up to his neck and glasses, is busy from one to the other to give advice, put his finger on a shock absorber spring, warn a bad move or recommend a tool. "We are not here to compete with professional garages," warns this former mechanic. We do not sell anything, we do not supply any parts and we have relatively limited equipment. Our goal is simply to give people who have little means or who are interested in mechanics access to car maintenance." In fact, at the mechanics workshop of the Trois Regards association, which manages this place (as well as music, martial arts and dance workshops), the prices are unbeatable: 7 euros per hour for a vehicle placed on one of the two lifting bridges in the hangar that serves as a garage, and 5 euros for a space on the ground, outside. To take advantage of the workshop, however, you must be a member of the association (18 euros per year) and above all have signed a regulation aimed at preventing any commercial use of its services. "A lot of people come here for economic reasons, times are hard," notes Jean-Paul Serrand. But they also come to discover mechanics. We offer training courses to do small mechanics yourself and become independent with your car." On the menu: oil changes, brake pad or shock absorber changes, but also distribution circuit or clutch system repairs. More rarely, some tackle the gearbox or engine block. Due to the crisis, the formula is enjoying growing success. The online directory selfgarage.org has listed 135 workshops in France. In Rennes, out of the 1,100 members of the association, 460 took advantage of the mechanical workshop last season, 20% more than the previous year. Created in 1983, this structure has few equivalents in France. It owes its longevity to the support of the city, which provides the premises free of charge. "There are many private "self-garages" where you rent a space and tools but for a higher price. And there are also solidarity garages reserved for people in precarious situations," explains Maxime Rohan, coordinator of the association. Here, the associative garage is open to everyone, without conditions, for very attractive prices." That day, the eve of Christmas Eve, half a dozen members are busy around their cars. Most of them are vintage cars, such as this 1986 Renault 11, whose carburetor Emmanuel, an unemployed forty-something, is diligently changing. "I broke down the other day and I hesitated to call a garage," he says. "Here, they gave me a free tow bar to tow the car and I found a used part for 30 euros that I can install myself, it's a great saving, and you feel active." Samy, 32, an employee, has discovered a taste for mechanics. He would probably have parted with his old Mercedes if he hadn't been able to maintain it at a lower cost. From one vehicle to another, advice is exchanged, while notes of saxophone escape from the neighboring music workshop. The apprentice mechanics who work under the watchful eye of Jean-Paul Serrand are not exclusively male: the workshop welcomed 55 women this year. Pierre-Henri Allain (Correspondent in Rennes) Drawings Rocco The bionic prosthesis printed at home Nicolas Huchet, alias Bionicohand, does not aim for free, but low cost. And above all, "doing instead of buying" thanks to open source, the collaborative spirit and the "do it yourself" philosophy. The thirty-year-old has already tried this recipe by making his own robot hand. Having had his right arm amputated after a work accident in 2002, he was fitted with a myoelectric prosthesis, capable of detecting muscle signals using sensors. "It was the most basic one there was, reimbursed by Social Security," says the man from Rennes. Ten years later, in 2012, he discovered that new, much more sophisticated models were available on the market. Except that they were inaccessible because they were too expensive. The same year, he met a geek at an innovation fair. They talked about open source, free plans for prostheses to download, and FabLab in Rennes, a collaborative manufacturing lab. That's where they met to start creating a bionic prosthesis. "Nobody knew if it was possible, but we said we'd try," Huchet summed up. The 3D printer spit out the first parts, the sensors arrived from the United States. A Brazilian working on the same project participated, remotely, in the thinking. In June 2013, a prototype "in a DIY way, made with the means at hand" was born. Cost: barely 300 euros, instead of the 10,000 to 100,000 euros for commercial models. "Be careful, we're not talking about the same thing," the tinkerer qualifies. "Our prosthesis is very promising, but we're still a long way from a real model." Although it's only a first step, this connected piece of plastic still takes him to the four corners of the globe, from Europe to Russia via New York. Each time, the enthusiasm is there. In April 2015, Nicolas Huchet received an innovation prize from the Massachusetts Institute of Technology (MIT). He is also a finalist, with his association, My Human Kit, of the Google Impact Challenge, an innovation support fund. Enough to push him to continue the adventure. Next step: to open a FabLab in Rennes by 2017, dedicated to "self-repair" and thus allow disabled people to "make, personalize and repair" their prostheses themselves. A sort of "human lab" on the border of medicine, engineering and the philosophy of "makers". Other bionic hands will be designed there, as well as hearing aids, sonar gloves for the blind and musical sensation tools for the hearing impaired. "Our philosophy is 'handicap powerment'," says Huchet. Getting involved and looking at your disability differently, no longer being just a customer of a company, but being independent, an actor and an integral part of the solution." Amandine Cailhol Donating rather than throwing away A wardrobe of second-hand clothes, mismatched plates, a baby scale, a book area, a child's bow with suction cup arrows... and no prices. At Siga Siga ("gently gently" in Greek), a counter set up in the old Reuilly train station in Paris, everything is free. Created in June by the association Boutique sans argent, Siga Siga is a place for donations where those who drop off objects they no longer use and others who come to help themselves meet. Here, there is no talk of charity or alms. No proof to present or name to write in a register. "We only ask one thing: what you take, you use." No stock, only flow, such could be the motto of the place. The association wants to get the objects kept in the cupboards out so that they can find their use again - "we pile them up at home to use them later, just in case. But the 'just in case' never happens," says Debora Fischkandl, president of the association. The aim is to extend to the neighborhood the exchanges usually restricted to the family circle. There is no question of selling the goods, even at a symbolic price: "For some families with very low incomes, a few euros quickly weigh on a limited budget," she explains. Without income from its sales, the Siga Siga is graciously hosted by the town hall of the 12th arrondissement and the association survives mainly thanks to the support of the regional council. The shop only accepts items in good condition - "we don't repair" - and "no larger than a microwave". Its members don't travel either, it's up to donors to come: "That's part of the donation process." The shop (closed during the holidays) receives an average of 1,000 visitors per week. "In September, we even had to stop donations, we had no more space." Even today, deposits are more important than withdrawals. While these shops are very present in Germany, the phenomenon remains confidential in France where only 6 to 8 counters have been identified by the Parisian association. Richard Poirot Repair café, a useful den They don't like to throw things away, can't stand a breakdown that resists them or don't have 500 euros to spend every three years on a new computer. Some of them are born handymen, ready to provide their expertise on a voluntary basis. Visitors in trouble for others, who come with their broken objects in their arms, hoping to save them from the dump. Meeting place: the "repair cafés", a free repair network that provides an alternative to disposable items and which, for six years, has continued to grow throughout the world. "We mainly see electrical equipment, computers, telephones, printers. And also small household appliances: hair dryers, coffee makers..." explains Koffi Hukportie. This former "refrigeration and air conditioning" technician is the soul of the repair café in Vauréal, in Val-d'Oise. Along with those in Paris and Nice, it was the first to open in France. It was on April 6, 2013, during sustainable development week, in the town hall exhibition hall. 400 people answered the call. Opposite, 25 volunteers ready to give their time, to share their know-how. Since then, Koffi Hukportie has been spreading repair cafés in his department, in Saint-Prix, Villiers-le-Bel and Taverny. In his town, between 20 and 30 people come to the workshop on Saturday mornings. "The volunteers told me that there was too much demand. After the holidays, we will open all day, and on Wednesdays too." The first repair café was born in Amsterdam. Martine Postma, then a journalist and municipal councilor, organized a first meeting in her neighborhood. Immediate success. "It was the right idea at the right time," says Gertrud Maes, one of the three employees of the Repair café foundation. Six years later, 953 participatory repair places have emerged, mainly in Europe, open on a more or less regular basis. The Netherlands has the largest number (325), while France has 54. "It's not a bobo audience at all," assures Thibault Lescuyer, manager of the Parisian repair café, which operates in several locations. "We say we welcome people from 7 to 77 years old, but that's really it. Grandmas and children come to see us." Founding principle: repairing together. "We don't drop off our object and come and get it later," explains Koffi Hukportie. "We show, we explain. If the person has never touched a screwdriver, they can pick up the screwdriver, or they can just watch. But there is no discrimination against resourcefulness." Visitors stay with the repairman, if only to hold the two ends of the wire or keep the screws, explains Frédéric Vignaux, vice-president of the very active French-speaking Belgian network: 68 repair cafés to date, 550 sessions in 2015 and 7,000 successful repairs out of 10,000 interventions. According to him, this success can be explained by three reasons: the desire to stop wasting, to reduce expenses, and to learn in order to "no longer be subject to the dictates of brands or distribution." People need to regain control of everyday objects, explains Frédéric Vignaux, who hates "not being able to decide what [they] should change or not change." Ri.P. The pooling of intelligences "An intelligence distributed everywhere, constantly valued, coordinated in real time": this is how the French philosopher Pierre Lévy defined, in 1994, "collective intelligence", seen as the ideal social end of communicating computing... An old dream of a "digital hypercortex" carried by many pioneers of the Internet and the Web (1), which combines the "power to act", offered to individuals by the personal computer, and the collaborative construction of knowledge by the free circulation of knowledge on the network. From the mid-80s, in contrast to the development of proprietary software, the American computer scientist Richard Stallman initiated the movement of so-called "free" software, which promotes the freedom to copy, study and modify the source code. But "it is the rise of the Web that has really allowed it to develop", confirms Hugo Roy, member of the board of directors of the FreeSoftwareFoundation Europe (FSFE). Although it is still struggling to break through to the general public, despite some successes such as the Firefox browser, it has, however, largely established itself among hosting providers. And Google has clearly understood the interest in working with open communities of developers: Android, its mobile operating system, is partially free. Even Microsoft, in recent years, has moved closer to the world of open source to a certain extent. The online code-sharing platform GitHub has some 10 million registered users. Beyond the arguments long put forward by its promoters - ethical values or code quality - transparency also increasingly appears as a response to the excesses of "closed" software: from the cheating scandal to pollution at Volkswagen to the "back doors" in Juniper's network equipment. Sharing has extended to hardware (or open hardware), as evidenced by the success of 3D printers, which have become a staple of FabLabs (see opposite), or that of printed circuits from the Italian manufacturer Arduino, used by electronics and robotics "tinkerers" around the world. And, of course, to knowledge and culture: from Wikipedia, with nearly 2 million contributors, to Creative Commons licenses, which allow a creator to define in advance the conditions for reusing their work and have this year exceeded one billion works concerned (texts, photos, videos, etc.). So many "digital common goods" whose development reflects a growing aspiration for new modes of production, exchange and governance. (1) The Web, created in 1989, corresponds to the main application of the Internet network. Amaelle Guiton Non-pretentious binges Freeganism: this portmanteau word (contraction of free and veganism) has brought together a tight-knit community for sixteen years around the same idea: finding alternatives to avoid food waste and reduce the pollution generated by waste. Freegan Pony is one of the countless variations of the movement. This clandestine restaurant opened this fall in a neglected area, under the Paris ring road, near the Porte de la Villette (20th arrondissement). From Monday to Friday, it offers very low-cost vegan meals, produced from unsold goods and ugly fruits and vegetables recovered from Rungis that very morning. The 500 m2 warehouse, open to all (even bobos in search of meaning), aims to show solidarity with the migrants, homeless people and prostitutes in the area. Around fifty meals are served there by volunteers. Threatened with eviction (the place, squatted, belongs to the City of Paris), Freegan Pony should reopen on January 8. Another initiative, every last Thursday of the month, Nathalie Baschet organizes, with the means at hand, a dinner to arouse "the taste for the other". A French teacher to undocumented immigrants, she quickly understood that they needed to socialize, to "come out of their shadow life". The day after the occupation of the Saint-Bernard church, in 1996, she had the idea, with the Réseau chrétiens immigrés (RCI) and some of her friends, of these dinners that mix French and foreign dishes in order to encourage meetings between people who do not naturally mix. The participation is not high, 6 euros. All you have to do is register in advance (1) and, on the day, the improvised cooks go to Château-Rouge (18th arrondissement) to buy what they need, with some shopkeepers offering “facilities”. The twenty or so guests are welcomed by the town hall of the 4th arrondissement, which has supported the project from the start. The operation, which was developed in Lyon, could grow in Paris. It has just given rise to a book, Plats d'existence (éditions de l'Atelier), which brings together 54 recipes from 16 countries. The profits will go to RCI to help with the regularization requests of undocumented immigrants. (1) legoutdelautre@yahoo.fr MO and ASDessins Rocco

## ###ARTICLE\_START### ID:2370

"An intelligence distributed everywhere, constantly valued, coordinated in real time": this is how the French philosopher Pierre Lévy defined, in 1994, "collective intelligence", seen as the ideal social end of communicating computing... An old dream of a "digital hypercortex" carried by many pioneers of the Internet and the Web (1), which combines the "power to act", offered to individuals by the personal computer, and the collaborative construction of knowledge by the free circulation of knowledge on the network. From the mid-80s, in contrast to the development of proprietary software, the American computer scientist Richard Stallman initiated the movement of so-called "free" software, which promotes the freedom to copy, study and modify the source code. But "it is the rise of the Web that has really allowed it to develop", confirms Hugo Roy, member of the board of directors of the FreeSoftwareFoundation Europe (FSFE). Although it is still struggling to break through to the general public, despite some successes such as the Firefox browser, it has, however, largely established itself among hosting providers. And Google has clearly understood the interest in working with open communities of developers: Android, its mobile operating system, is partially free. Even Microsoft, in recent years, has moved closer to the world of open source to a certain extent. The online code-sharing platform GitHub has some 10 million registered users. Beyond the arguments long put forward by its promoters - ethical values or code quality - transparency also increasingly appears as a response to the excesses of "closed" software: from the cheating scandal to pollution at Volkswagen to the "back doors" in Juniper's network equipment. Sharing has extended to hardware (or open hardware), as evidenced by the success of 3D printers, which have become a staple of FabLabs (see opposite), or that of printed circuits from the Italian manufacturer Arduino, used by electronics and robotics "tinkerers" around the world. And, of course, to knowledge and culture: from Wikipedia, with nearly 2 million contributors, to Creative Commons licenses, which allow a creator to define in advance the conditions for reusing their work and have this year exceeded one billion works concerned (texts, photos, videos, etc.). So many "digital common goods" whose development reflects a growing aspiration for new modes of production, exchange and governance. (1) The Web, created in 1989, corresponds to the main application of the Internet network.

## ###ARTICLE\_START### ID:2371

Nicolas Huchet, aka Bionicohand, is not aiming for free, but for low cost. And especially for "making instead of buying" thanks to open source, the collaborative spirit and the "do it yourself" philosophy. The thirty-year-old has already tried this recipe by making his own robot hand. Having had his right arm amputated after a work accident in 2002, he was fitted with a myoelectric prosthesis, capable of detecting muscle signals using sensors. "It was the most basic one there was, reimbursed by Social Security," says the Rennes native. Ten years later, in 2012, he discovered that new, much more sophisticated models were available on the market. Except that they were inaccessible because they were too expensive. The same year, he met a geek at an innovation fair. They talked about open source, free plans for prostheses to download and FabLab de Rennes, a collaborative manufacturing lab. This is where they meet to start creating a bionic prosthesis. "Nobody knew if it was possible, but we said we would try," Huchet sums up. The 3D printer spits out the first parts, the sensors arrive from the United States. A Brazilian working on the same project participates, remotely, in the thinking. In June 2013, a prototype "in a tinker's way, made with the means at hand" sees the light of day. Cost: barely 300 euros, instead of the 10,000 to 100,000 euros for commercial models. "Be careful, we are not talking about the same thing," the tinkerer qualifies. Our prosthesis is very promising, but we are still far from a real model." Although it is only a first step, this piece of connected plastic still takes him to the four corners of the globe, from Europe to Russia via New York. Each time, enthusiasm is there. In April 2015, Nicolas Huchet received an innovation prize from the Massachusetts Institute of Technology (MIT). He was also a finalist, with his association, My Human Kit, in the Google Impact Challenge, an innovation support fund. Enough to push him to continue the adventure. Next step: to open a FabLab in Rennes by 2017 dedicated to "self-repair" and thus allow disabled people to "make, personalize and repair" their prostheses themselves. A sort of "human lab" on the border of medicine, engineering and the philosophy of "makers". Other bionic hands will be designed there, but also hearing aids, sonar gloves for the blind or musical sensation tools for the hearing impaired. "Our philosophy is "handicap powerment", says Huchet. Getting involved and looking at your disability differently, no longer being just a customer of a company, but being independent, an actor and an integral part of the solution.”

## ###ARTICLE\_START### ID:2372

From free software to Creative Commons licenses, including car sharing and self-managed daycare centers, the commons appear to be so many solutions, found or in gestation. Professor of economics at the University of Paris-XIII, Benjamin Coriat coordinated the book The Return of the Commons and the Crisis of Proprietary Ideology (published by Les Liens qui libèrent). You say that we are living in a moment marked by the return of the commons. What does this notion cover? The commons are forms of social organizations around a natural resource with open access, such as a pasture, a grain mill or a fishing ground... These are the commons that come to us from the past. Today, most commons have a digital base. They are characterized by three elements: a resource, a distribution of rights around this resource, and rules of governance that aim to preserve this resource and ensure the reproduction of the community of rights holders. Wikipedia is the very example of the modern commons. It operates by respecting the three elements that I have just mentioned. Behind the notion of the commons, there is the idea that shared ownership can be a very effective way to manage and enrich resources. But be careful, Google and Facebook are anything but commons. Of course, access is shared, but the governance structure is closed and sets its own rules. These are companies whose business is based on the extortion of private data collected by tracking Internet users and reselling this data to merchants or advertisers. How can we make the connection between the world of the commons and the aspiration to exchange goods and services without using currency? It is the Internet that has completely changed the situation by creating the possibility of "peer-to-peer" places. And this in an almost unlimited way by allowing, through open access platforms, a sharing of information resources, such as music, photography, scientific knowledge, etc. It is precisely on this basis - that of open platforms - that the economy of small services has multiplied. It is the economy of services of the type "I am going to Toulouse, is anyone interested in this trip by paying part of the costs?" Or, "I have a piece of furniture to assemble but I don't have a drill". Or "I am a single woman with a child and am looking for someone to look after him while I have a medical visit". The examples are endless. It is also on this basis that a collaborative economy has subsequently developed, which brings together commercial activities. Example: "I have a car - or a spare room in my apartment - I would like to rent it out." This is commercial collaboration but not professional, at least for the service provider, because real companies have been set up to take advantage of it. Is this economy what you call "predation"? Yes, this is the case for platforms like Uber or Airbnb. This is about “collaborative mercantile” and predation because these companies shape the supply (they “label” and select potential suppliers, for example drivers for Uber) and the demand (by requiring payment in advance on their platform) and even go so far as to set prices. They are real multinationals that pay themselves by taking a percentage of the transaction. They have become competitors of companies that do the same job but which are regulated, subject to all sorts of obligations and pay taxes. These new platform companies operate through a disguised wage relationship that has, in reality, all the characteristics of a relationship of authority but without the most basic counterparts such as salary and social benefits. This is why they are predatory companies. You argue that this is the end of the dogma of the proprietary ideology... Property still has a bright future ahead of it. But the proprietary ideology, that is to say the assertion of the necessity that property be absolute and exclusive and therefore attached to a single person, has reached its limits. It is important to understand that there was a concomitance between the proprietary ideology and the rise of neoliberalism. This ideology was based on the thesis that markets are efficient but on condition that property rights on goods are full, entire and entirely guaranteed. It is this false postulate that told us that the best way to achieve maximum well-being for the greatest number was to let the markets do their thing... It is always these same assumptions that are at the origin of the explosion of intellectual property rights, the patentability of living things, therapeutic molecules or mathematical and software algorithms, all to transform them into marketable products. Scientists were the first to undermine this ideology of exclusive property and recreated the first commons in the form of open platforms for exchanging information. They are the ones who showed that this proprietary ideology was a hindrance to the circulation of knowledge. We are far from the cooperative garage or local currencies... Yes, today's commons mainly concern informational goods. But all sorts of them are constantly being created, such as shared gardens or collaborative garages. These initiatives can work very well by being managed and operated by what we call "commoners". With the commons, what happens to the State? It is not the local commons that can decide in place of the State, which remains legitimate to guarantee equal treatment of citizens. But it could help to consolidate the commons by creating legal resources (new forms of businesses, protection of shared resources, etc.). The partner State can also provide physical resources (buildings, industrial wastelands transferred to commoners), financial resources (preferred forms of financing) or even intellectual resources. For example, it could make its research centers available to commoners wishing to fight against climate change by transforming their building into a positive energy building.

## ###ARTICLE\_START### ID:2373

This is very bad news on the computer security front. On Thursday evening, the American Juniper Networks, the main competitor of its compatriot Cisco in the router and network security solutions market, announced two major flaws affecting equipment used by many companies around the world, as well as government services. Flaws due to the presence of "unauthorized code" in the operating system installed on the equipment concerned: the formula used by the company leaves little doubt about the intentional nature of the operation. In all probability, these are "backdoors", unknown to users but likely to have been used by a cyber attacker. Also read Tech-words: "Backdoor", "VPN", "patch", "firewall" and "log" What happened? Before the security warnings published by Juniper, Gilles Massen, security engineer at the Restena Foundation in Luxembourg, had reported a problem. "Around mid-November, we did a routine update, after which we could no longer connect to our Juniper firewalls," he explained to Libération. "Apart from a few back-and-forths, there was nothing concrete. The real scope only became apparent to us with the two warnings." Was it following this report that the American company conducted the "internal code review" that led to the detection of the flaws? "If our Luxembourg colleagues are right, that means they were discovered by accident," emphasizes French network engineer Stéphane Bortzmeyer. The flaws affect ScreenOS, the operating system that equips the firewall routers of the NetScreen, ISG and SSG ranges. The first allows remote connection, in "administrator mode" (i.e. with maximum permissions), to a firewall under ScreenOS, which could lead to the "complete compromise" of the network it is supposed to protect, Juniper warned. The second concerns the VPN functionality - a technology that allows secure remote communication (see glossary, opposite) - of routers: an attacker capable of monitoring VPN traffic could "decrypt this traffic". According to the publication dates of the technical documentation concerning the affected versions of ScreenOS, the flaw allowing decryption of VPN traffic dates back to August 2012. The one allowing access to the firewall dates back to April 2014. Who could have introduced "backdoors"? "So far, there is no evidence of malicious intent," tempers a senior French official responsible for cybersecurity. At this stage, it is only a flaw." But to many experts, this "unauthorized code" looks like anything but a bug. "To me, it smells like 'nobus,' 'nobody but us,' a key strategy of the NSA and other attackers like it," wrote American researcher Adam Caudill on his blog. "Attacks that require knowing a secret that can't be easily discovered, in order to gain an advantage by minimizing the risk that others will exploit it." In the hours following the announcement, Twitter was abuzz with references to one of the documents revealed by Edward Snowden, published in December 2013 by Der Spiegel. It concerned a "tool" called "Feedtrough," described by the American agency as a spyware implantation technique - used against "many platforms," including Juniper's NetScreen firewalls... Still, since the company's announcement, the American authorities have clearly been on a hundred shots. CNN reported that the FBI was investigating the case, citing unnamed "officials" who said the "sophisticated hackers" who compromised the equipment could have broken into the networks of "any company or government agency that uses [them]." The NSA, it is true, is not the only one who specializes in backdoors or malware. "To be clear, we do not work with governments or anyone else to introduce vulnerabilities into our products," Juniper assured Forbes. And there is no evidence that the two flaws come from the same source. But experts agree on one point: the flaw that allows communications to be decrypted would be of particular interest to an attacker capable of monitoring VPN traffic. The suspicions fall first on the states. Is this serious? "It is critical for all organizations that use Juniper equipment," says Raphaël Vinot, a security researcher at CIRCL (Computer Incident Response Center Luxembourg, the Luxembourg computer attack alert and response center). The company is "the world's number 2 after Cisco," recalls Stéphane Bortzmeyer. Its clients include major private players - telecommunications companies, Internet access providers, hosting providers, banks, energy companies, etc. - and government structures. Including, in the United States, the Departments of Justice, Defense, Treasury, and the FBI. In France, Juniper also has many users. Including, the senior French official acknowledges, "operators of vital importance" (OIV), companies deemed strategic (in energy, transport, etc.). And ministries. In September 2015, a public procurement announcement for the Ministries of Ecology and Housing concerned the maintenance of "Juniper and ISG2000 firewalls". More critical: another announcement, issued in November 2013 by the Joint Directorate of Infrastructure Networks and Defense Information Systems (Dirisi), concerned the provision of "training services", in particular for the "supervision/administration of Juniper ISG1000 firewalls". There is also evidence of NetScreen equipment at the Ministry of Labor in 2010. For the senior French official, "this is all the more inexcusable since French, certified alternatives exist". For the time being, the General Staff of the Armed Forces has not yet responded to our questions. The National Agency for Information Systems Security (ANSSI), which oversees the security of government networks and OIVs, reported that it had posted an alert bulletin online on Friday, but also that it had "sent it to all ministries for application", given the importance of the subject. And the agency is "ready to update the alert according to developments". According to the American "officials" interviewed by CNN, Juniper equipment is "so widely used that assessing the damage caused could take time". But that still has to be possible. Decrypting VPN traffic leaves no trace. And remote access to a firewall is, in theory, recorded in a file, a "connection log"... unless the attacker takes care to erase his tracks, which a seasoned hacker would not have failed to do. So when Juniper's CIO announces that he has received "no reports that these vulnerabilities have been exploited," that doesn't mean, far from it, that they haven't been. And now? At the same time as the security warnings, Juniper has published patches. It is all the more urgent to apply them since the vulnerable firewalls are now at the mercy of attackers who are much less experienced than those who could have acted until now. As its director, Ronald Prins, indicated on Twitter, it took the Dutch IT security consultant Fox-IT only six hours to, on Friday, deduce from the patch the password that allows malicious access to the equipment. And which has been circulating since Sunday evening on the social network. However, according to searches carried out on Shodan, a specialized search engine, by an American researcher, 26,000 NetScreen firewalls are accessible on the Internet. "Most companies do not protect their code enough and do not read it enough," sighs Stéphane Bortzmeyer. "However, since it is not public, it cannot be audited by independent researchers." In this case, supporters of open source software (those whose code is freely accessible) have something to find a new argument. And an additional reason to be wary of the "black boxes" marketed by major manufacturers.

## ###ARTICLE\_START### ID:2374

Pierre Asselin raises some interesting questions in his editorial. However, it seems to me that there is a major blind spot: who said that it would not be safer and more economical to take back IT contracts internally by relying on solutions based on free software rather than proprietary ones? Isn't that what France has done? It seems to me that the large private companies in this field are bottomless pits and that by continuing to use them we are perpetuating a vicious circle that makes us more and more dependent. Nicolas Phébus Quebec

## ###ARTICLE\_START### ID:2375

The massification of the Internet has been accompanied by multiple promises: freedom of expression, creation and innovation, free circulation of knowledge... So many ideals that seem to be undermined by the domination of large Silicon Valley companies and by Edward Snowden's revelations on the mass surveillance of communications. Is the network an instrument of freedom or control? Both, answers Benjamin Loveluck, researcher at the Center for Studies and Research in Administrative and Political Sciences (Cersa, CNRS and Paris-II University). In Networks, Freedoms and Control (Armand Colin), he offers, in 350 dense pages, a "political genealogy of the Internet" that explores the persistence of this tension. And places the advent of "informational liberalism" in the long history of political liberalism. After the attacks of November 13, the place of the Internet in the processes of radicalization is once again questioned. Does this seem relevant to you? As is often the case, we focus on one link in the chain. In the case of radicalization processes, it is quite complex. There is propaganda circulating, that is undeniable; however, if we "cut off" the Internet, jihadism would not disappear... We must also admit that it is inherent to the environment in which we are immersed, and intervene judiciously. For a long time, we thought that everything that circulates online could self-regulate. The big private players and social media have finally realized that they were operating in specific jurisdictions, that the rules of law applied, and have changed their moderation policies. We would like these private players to intervene more, but in doing so, we delegate decisions to them. The idea of self-regulation is written, well before the birth of the Internet, in the theories of cybernetics... Cybernetics is the science of control and communication, it conceptualizes the circulation of information as a system capable of self-regulation. Some will interpret it as a means of setting up a more efficient "piloting" of societies. Others, on the contrary, will see it as the capacity to get rid of coercive entities, structures of domination, starting with the State. In the libertarian phase of the 60s, the view of the computer changes: from an immense machine for the benefit of bureaucracy and technocracy, it becomes an instrument that everyone can put at their service by increasing their "power to act". Cybernetics will be explicitly reappropriated by a branch of hippie communities, for whom the computer becomes a key instrument in the transformation of the individual and the reestablishment of the social bond. But it will also be used by totalitarian regimes: the USSR had made it, for a time, one of the axes of its official science. This paradox can be found in the history of the network itself... The Internet, like cybernetics, is a product of the military-scientific complex, and the links have never been completely severed. Darpa, the American Defense Research Agency, is still an important source of innovation and funding, and there are many bridges. For example, one of the directors of Darpa, Regina Dugan, joined Google in 2012. In the context of Edward Snowden's revelations, we see that the main products of communicating computing maintain close links with this complex born during the Second World War. In the mythology of the Internet, what has prevailed is the idea that we were going to build a freer society. But, at each stage, we are caught up by the reverse side of freedom, which is control. Freedom is exercised within a framework of legal rules and social norms. Technology, with its protocols, algorithms, and calculators, introduces new rules. The tension between freedoms and control has always been present. How was this very libertarian mythology of the Internet constructed? Internet actors and theorists have maintained a dialogue, implicit or explicit, with certain thinkers of the liberal tradition: John Locke, Adam Smith, Thomas Jefferson, Friedrich Hayek, etc. They have taken up some of their presuppositions, while making them evolve. There have been several phases, but in the 1990s, with the rise of the Web, the Internet truly constitutes itself as a political economy. From this point of view, I identify three different "veins." The first is the neoclassical vein embodied by Bill Gates: information goods are like any other and, with a few adaptations of the law, we will be able to bring them into the classic rules of the economy. Hence the sharp rise, in those years, of the question of intellectual property. The libertarian vein, it says that we are dealing with something radically new, which functions like a living organism, with its own laws to which we must adapt. This is cyberculture, associated with the magazine Wiredou with a character like John Perry Barlow, the author of the Declaration of the Independence of Cyberspace. This discourse will resonate with a social context of long-term changes. In this libertarian-libertarian current, there is a hacker component that will have a very acute awareness of the problems posed by these new infrastructures in terms of private life. And then there is a third vein, which I call "liberal constitutionalist": these are lawyers who take hold of the subject and explicitly enter into dialogue with the libertarians. They explain that this universe is not self-regulated, but that it must be evaluated against higher values, and that a balance must be struck between different forms of regulation: law, the market, technology, social norms. When Lawrence Lessig [American lawyer in constitutional law and intellectual property law, renowned defender of freedom on the Internet, editor's note] writes that "code is law", he is saying both that computer code produces standards and that this code must be evaluated against the principles of the Constitution. In the Declaration of the Independence of Cyberspace, there is another paradox: it is about seceding, but also about spreading "across the planet"... It is a recurring motive, that of the "multitude" or "collective intelligence". We find it in Anonymous, with the slogan "We are legion", but also in Google: the multitude is then what happens on the Web, of which Google wants to be the mirror. It is a "floating signifier", which designates a source of collective legitimacy - like the "people" - but behind which there can be very contradictory things. In Barlow, secession is carried out by appealing to very classic categories: he invokes the American Constitution, John Stuart Mill... He thus replays the great myth of American democracy: cyberspace is a colony of the real world, which must free itself in order to experience a new freedom, as the United States freed itself from old Europe. Above all, it must get rid of the State, considered an unsuitable and illegitimate "old thing". And today, what are the great political visions of the Internet, the ways of thinking about the network and the circulation of information? The idea of achieving a form of self-organization, and therefore of doing without any political authority, is still very present. But within this framework, there are very different options. I wanted to emphasize three terms: capture, dissemination, and self-institution. Capture relies on data collection and algorithms that guide our choices, or even anticipate them: it is at work at Google, among others. Dissemination, on the other hand, works to "flatten" the network through radical decentralization: we find it in "peer-to-peer" networks or at WikiLeaks. Self-institution, finally, tries to accompany technology with procedures, operating rules that allow actors to take hold of the circulation of information and the formation of the collective: this is Wikipedia, or free software projects. There are of course hybridizations, but these are, for me, the major options that present themselves today in the digital context. It remains to articulate them with representative politics. This is what the Pirate Party is trying to do, by relying on self-institution and possibly on dissemination to counter the excessive power of capture. Does the emergence of the question of "digital commons" in recent years reflect an "update" of political software? The question of "commons" refers to the sharing of social, cultural or economic goods, often created and managed collaboratively. It is closely linked to self-institution: with Wikipedia or free software, the actors are directly involved in the maintenance of the good as a common. It is particularly frustrating that Article 8 of the digital bill, which took up this notion, has finally disappeared. Because with the question of the commons, we find a third option between monopoly and radical competition, the excesses of which are clearly visible. But initiatives related to the commons continue to flourish, and the notion of "sharing economy" has not been totally devalued. It is therefore certain that this debate will return. Drawing Christelle Enault

## ###ARTICLE\_START### ID:2376

At the end of December, Adidas France's five-year plan "Route 2015" will end with the new strategic plan "Creating the new". "In France, we are finishing this plan beyond the objectives set, we are in an excellent dynamic with double-digit growth", underlines Guillaume de Monplanet, group CEO for almost a year. With "Creating the new", the sports equipment manufacturer aims to build the new Adidas from 2016 to 2020. "The objective is to turn Adidas towards novelty, innovation and its consumer." This plan will be broken down into three points: "speed, key cities, open-source". Adidas wants to become the fastest sports company "by accelerating our production, with products that are always renewed as close as possible to trends", indicates the manager. The German group is also banking on the power of attraction of large cities to influence consumers. Six have been identified: including Paris and London in Europe, New York and Los Angeles in the United States, Shanghai and Tokyo in Asia. Additional pressure for the French subsidiary, which will have to make Adidas "the best visible sports brand in Paris". The group also wants to turn outwards in its ability to influence, in its creation, in order to better understand the consumer. Adidas will therefore partner with external creators, but also form partnerships with artists and companies. To meet these challenges, Guillaume de Monplanet has formed a reduced management committee, going from ten to eight members with total parity. "I kept the functions directly linked to the business to have a faster body in decision-making. It is a fighting team with varied profiles. What brings them together is passion, for sport and our brands. It is also values, such as authenticity, with their loyalty to the brand, courage and humility. This codir is focused on action, but also on requirement. » Within this group of forty-somethings, Kathy Geneste has been the financial director since 2010. A 42-year-old ESC Pau graduate, she joined Adidas in 2007. Before that, she worked in internal audit and finance at Alcatel, Brasseries Kronenbourg, Danone and Fleury Michon. Sandrine Scheer, 44, has been the human resources director since 2008. With a double master's degree in sports management and human resources management (IAE Strasbourg), she has spent her entire career at Adidas. A former basketball player (N1), she is passionate about the mountains. For her part, Sandrine Retailleau-Vallet has been the strategic projects director since last October. A 49-year-old ESCP graduate, she worked at La Redoute, Citadium, Timberland and Tommy Hilfiger. In 2008, she took over the reins of Adidas' Sport Style division. Matthieu Hansmaennel, 45, has been the sales director, also since October. With a master's degree in sports management, he started at Intersport and then Decathlon, before joining Adidas in 1998. As for Mathias Forlini, 46, he is a retail director. With a degree in economics and an EMBA from MIP, he has worked in retail, notably at Gap, Decathlon, Bata Suisse, Cortefiel, Bally and Hennes & Mauritz. Passionate about athletics, he runs the 800m. Nicolas Favre, 44, has been Adidas marketing director since January 2015. This 44-year-old Essca is a former Nestlé and Valeo graduate. He has worked at Adidas for seventeen years. Finally, Cécile Montmasson, 45, has been Reebok marketing director since October. A graduate of Sup de Co Amiens, she started at Dim and joined the group in 1998. CC

## ###ARTICLE\_START### ID:2377

They are young, engineers, scientists, designers or activists, and they do not want to wait for the greats of this world to sit down at the table to save the Earth. They are nicknamed "hackers" or "makers", but they are in fact the eco-tinkerers of a generation that wants to give as many people as possible the keys to change the planet in a sustainable way. Well before the heads of state converged on Paris, they created the POC21 event this summer, a mocking nod to the international conference, but also the acronym for "Proof of Concept", which means the second process leading to the creation of a prototype. In a castle in the suburbs of Paris, transformed for the occasion into a sustainable and waste-free "coworking" space, a hundred young people, surrounded by high-ranking mentors, worked for five weeks on innovative projects intended to fight against global warming or facilitate the transition to greener energies. Solar concentrator and bicitractor These computer whizzes have warmed up their neurons to create, in particular, prototypes in the fields of urban agriculture, energy, transport or food. Out of 100 projects, 12 were selected, including a $30 wind turbine to make yourself from a bicycle wheel, a 3D printable water filter, a pedal-powered "bicitractor" designed to plow without oil, a loop shower (Showerloop) that recycles its water, as well as a generator (Sunzilla) powered by solar panels. After being presented at the COY11 (Youth Conference) last weekend, these prototypes will be exhibited until mid-December in various "maker" forums, including the Global Village of Alternatives and the Paris of the Future exhibition. "We wanted to show that alternative solutions could come from below, that we don't have to wait for the public authorities to react. These solutions are within everyone's reach," says Benjamin Tincq, co-organizer of POC21 and co-founder of OuiShare, a French organization dedicated to the collaborative economy. Driven by the philosophy of "OpenSource," all the projects promoted focus on the economy of means and, above all, the free sharing of manufacturing processes so that anyone can appropriate these ecological "do-it-yourself" objects. "Everyone can freely use, improve and re-share these codes. There are no patents," explains Benjamin Tincq. An all-purpose bike Yannick Schandené, from Vélom2, explains how POC21 enabled the development of a variable geometry cargo bike. "VéloM2 has become a platform of modules for tricycles that can be used for various purposes: multimedia, workshop, IT, cooking, gardening. The goal is to share our information so that more people use cargo bikes in the city for their projects," Yannick Schandené explained to Le Devoir. Ultimately, VéloM2 will generate its own energy (by pedaling) to power a mobile cinema, a 3D printer, a mobile radio, a neighborhood kitchen, and so on. "POC21 was a great way for us to anchor ourselves in the makers philosophy. Our idea has evolved. Our project has put us in contact with international partners that we would never have been able to meet otherwise." For those who want to follow in their footsteps and create their own wind turbine, solar energy concentrator or homemade greenhouse controlled by smartphone, all the tutorials and plans for the winning projects are available on the POC21 website.

## ###ARTICLE\_START### ID:2378

Also known as the "Davos of the social and solidarity economy", the Mont-Blanc Meetings are celebrating their tenth anniversary this year. From November 26 to 28, several hundred advocates of sustainable development as a solution to liberal capitalism will meet in Chamonix, France, to reflect, exchange ideas and launch international projects. The theme of this seventh edition: the human and sustainable development of cities and territories. Interview with Thierry Jeantet, president of these Meetings. Why this theme of cities and territories for this seventh edition of the Mont-Blanc Meetings? The social and solidarity economy (SSE) is deeply rooted in the territories. The SSE, ultimately, is civil society organizing itself by adopting democratic principles. It is a system of private property, of private, but at the same time collective, indivisible companies, which develops for the good of the community. In essence, this economy cannot be relocated. It therefore provides stability locally. This is why elected officials are increasingly interested in it. Through its principles of solidarity, respect for people and environments, it intersects with the notion of general interest, and its property system requires it to stay where it is, which does not mean that it is immobile. Concretely, what are we going to talk about? What will we have learned after these three days in Chamonix? The problem is to understand how the social economy, that is to say mutual societies, cooperatives, associations, foundations, social enterprises or even free systems such as free software, can help territories to develop themselves. How cities can win a certain number of battles against global warming for better social integration, better health, and lower unemployment. For a long time, a certain number of sectors have been the subject of partnerships between cities, territories and the social economy. The social sector, health, culture, sport... but there are many other areas that the social economy could penetrate. When we talk about the social economy, we often use the term "social", rather than "economy"... In your opinion, is the SSE a real option to capitalism, on all levels? French President François Hollande, speaking in New York last September, said that the social economy is at the heart of everything. It is at the heart of the issues that occupy COP21, the international climate conference that will be held in Paris next month, at the heart of the necessary application of the post-2015 sustainable development goals, which have just been adopted by the UN, at the heart of a new type of growth. Yes, I believe that the SSE is an option other than capitalism and liberalism, which the crisis we are going through today calls into question. This crisis is not only economic and financial, it is also social, ecological, climatic, and food. It proves that capitalism is sick and that it is devouring itself. By putting Man back at the heart of concerns, the social and solidarity economy comes with a new proposal. Be careful, I am not saying that the SSE is there to replace capitalism. But it would be good if several paths coexisted, were in competition. The single model never gives anything good. How do we explain that despite the crisis, proof of the failure of the capitalist system, this option that is the social and solidarity economy is not managing to make more room for itself? Its place has been growing for five or six years. It is more visible, it is developing from North to South, on all continents. For a long time, it was considered a solution for developing countries. There was a lot of talk about women's groups to lift their territory - and therefore their children - out of poverty. But we did not make the connection with what has existed for a long time in the West, the mutualist system, cooperatives, associations, etc. All of this is part of the same spirit. We must now work hand in hand, and that is what the Mont Blanc Meetings are for. Thanks to this type of event, sustainable development stakeholders from all over the world meet, support each other, and set up joint projects. It is a global phenomenon that until now was unaware of its global scope. This is no longer the case. Concretely, what does it represent on a global scale? If we only take the cooperative world, without counting mutual societies and associations, it is today a billion people in the world. The three hundred largest cooperatives in the world have a turnover much higher than the budget of Brazil, for example. In Europe, the social and solidarity economy represents around 12% of jobs, and roughly the same for GDP. Several studies also show that the companies that have best resisted the 2007 crisis are to be found in the solidarity economy sector. This no longer goes unnoticed. Everyone is obliged to take it into account. There is still a lot of denial... In the traditional world, there are indeed two attitudes. Some, quite unrealistically, think that we will have to return to the old, pure capitalist system, that that's all that matters. They steer by looking in the rearview mirror rather than looking ahead. But there are also companies that are changing their attitude, that are integrating social and environmental dimensions into their operations. The ESS is starting to pollinate the traditional sector. It's a long process. We're taking it one stone at a time. Have you set yourself any goals? Generalization. We can already see that the ESS is playing a key role in countries in the South. States like Morocco, Costa Rica and Ecuador, which are concerned with creating a new type of society, are strongly committed to it. There is also some very good news, which is more surprising. The mayor of Seoul, in South Korea, is interested in the social economy. He said that his city could not continue on the path of unbridled capitalism that has been taken in recent decades. He said he wanted to set social and environmental goals. This brings us back to our theme of cities and territories. Little by little, everyone will come to the same conclusion as the mayor of Seoul. We will be ready to accompany the movement.

## ###ARTICLE\_START### ID:2379

Last Saturday morning, on the asphalt separating the Petit Cambodge restaurant from the Carillon bar, on the white stripes of the pedestrian crossing, Edouard Caupeil takes a photo of these sneaker prints. People in panic walked in a pool of blood the day before, when the terrorist attack took place. The police have spread sawdust on the scene of the tragedy, onlookers are already hanging around, some bringing flowers, lighting candles. Later, very quickly in fact, everything will have to be washed, with a brush and a Kärcher, to erase the traces. The image is striking because it documents in the heat of the moment a devastating event filled with noise, fire and corpses, by a marginal, biological and graphic vestige, a cave painting on the ground, at the very moment, which will soon disappear and beckon us, like the hands with red pigments on the walls of the Chauvet cave. For a long time, Robert Bresson dreamed of making a film about Genesis, and he had started shooting it, in particular the sequence of Noah's Ark, never including the living creatures forced to flee under the flood, but simply framing their traces on the ground, their soaked footprints. The power of the off-screen is to catch the eye on a lingering detail to evoke the scale of what is difficult to conceive. This week, the Ministry of the Interior asked Twitter and Facebook, by judicial requisition, to remove any photo showing the interior of the Bataclan strewn with bodies after the tragedy, speaking of a "serious attack on human dignity" and the "secret of the investigation". This ban recalls the one that prevailed during the attacks of September 11, 2001 in New York, with its 2,977 victims protected by the sacred union of a spectacular blackout, swaddling the dead in a shroud of invisibility. "The photo is literally an emanation of the referent," wrote Roland Barthes, but here the referent is the imprint, which is itself the emanation of abolished bodies without it being possible to know whether, in the wake of these relics, their "authors" took refuge in a shelter and are today safe and sound, whether they were injured or whether they are dead, suddenly swallowed up in the gaping hole of this moment when everything explodes. The tension between what we show and what we hide is constantly being actualized these days in aesthetic, moral, and civic dilemmas, all the more striking because we live in a kind of panoptic illusion where everything is not only permanently scrutinized, recorded, and recorded in the immense memory of the Web, but also accessible. Boundaries are broken when, for example, the sometimes Jesuitical caution of newspapers is matched by the open source possibility of accessing with a single click an Islamic State video where a man in a cage is carbonized alive. It is not simply that these images are taken and broadcast that is new, it is the way in which they revive in the private sphere that old "lust of the eyes" formulated by Saint Augustine. We want to see and we do not always know why. We forget to look, and then reality leaps upon us by surprise. The sad silence, the anxious immobility that surrounds this photo - no more face, no more body, not even the debris and disorder of a crime scene, no more city - leads us, since the eyes blur, to the edge of an abstract Milky Way haunted by an indecipherable scarlet constellation.

## ###ARTICLE\_START### ID:2380

Last Saturday morning, on the asphalt separating the Petit Cambodge restaurant from the Carillon bar, on the white stripes of the pedestrian crossing, Edouard Caupeil takes a photo of these sneaker prints. People in panic walked in a pool of blood the day before, when the terrorist attack took place. The police have spread sawdust on the scene of the tragedy, onlookers are already hanging around, some bringing flowers, lighting candles. Later, very quickly in fact, everything will have to be washed, with a brush and a Kärcher, to erase the traces. The image is striking because it documents in the heat of the moment a devastating event filled with noise, fire and corpses, by a marginal, biological and graphic vestige, a cave painting on the ground, at the very moment, which will soon disappear and beckon us, like the hands with red pigments on the walls of the Chauvet cave. For a long time, Robert Bresson dreamed of making a film about Genesis, and he had started shooting it, in particular the sequence of Noah's Ark, never including the living creatures forced to flee under the flood, but simply framing their traces on the ground, their soaked footprints. The power of the off-screen is to catch the eye on a lingering detail to evoke the scale of what is difficult to conceive. This week, the Ministry of the Interior asked Twitter and Facebook, by judicial requisition, to remove any photo showing the interior of the Bataclan strewn with bodies after the tragedy, speaking of a "serious attack on human dignity" and the "secret of the investigation." This ban recalls the one that prevailed during the attacks of September 11, 2001 in New York, with its 2,977 victims protected by the sacred union of a spectacular blackout, wrapping the dead in a shroud of invisibility. "The photo is literally an emanation of the referent," wrote Roland Barthes, but here the referent is the imprint, which is itself the emanation of abolished bodies without it being possible to know whether, in the wake of these relics, their "authors" took refuge in a shelter and are today safe and sound, whether they were injured or whether they are dead, suddenly swallowed up in the gaping hole of this moment when everything explodes. The tension between what we show and what we hide is constantly being actualized these days in aesthetic, moral, and civic dilemmas, all the more striking because we live in a kind of panoptic illusion where everything is not only permanently scrutinized, recorded, and recorded in the immense memory of the Web, but also accessible. Boundaries are broken when, for example, the sometimes Jesuitical caution of newspapers is matched by the open source possibility of accessing with a single click an Islamic State video where a man in a cage is carbonized alive. It is not simply that these images are taken and broadcast that is new, it is the way in which they revive in the private sphere that old "lust of the eyes" formulated by Saint Augustine. We want to see and we do not always know why. We forget to look, and then reality leaps upon us by surprise. The sad silence, the anxious immobility that surrounds this photo - no more face, no more body, not even the debris and disorder of a crime scene, no more city - leads us, since the eyes blur, to the edge of an abstract Milky Way haunted by an indecipherable scarlet constellation.

## ###ARTICLE\_START### ID:2381

The rules of the game for winning an IT contract in Quebec have just changed. The government will announce today its measures to break the model that traps it in dependence on the same private firms. Quebec will officially publish its draft regulation on IT contracts, a copy of which our Investigation Bureau obtained. The regulation is likely to be adopted this winter. Last September, UPAC pointed out that the "majority of IT contracts in Quebec are distributed among only a few firms." In June, the President of the Treasury Board, Martin Coiteux, announced the broad outlines of a reform, deploring the lack of competition in the awarding of the $1.2 billion in IT contracts each year. Amendments to the law are part of the answer. But it's a feeling of déjà vu. In 2011, the Liberal government also initiated a reform with legislative changes and the adoption of a new law for IT management. Quebec wanted to save $200 million per year. Instead, he spent $170 million more. Nevertheless, Martin Coiteux has never hidden the fact that his government's efforts in the past have been "insufficient." His new regulation actually goes further (see table). \*\*\*\*\* the Projet e Fini le Plus Bas sOUmissiOnnaire Québec responds to a major concern in the industry by no longer considering only the criterion of the lowest bidder to award contracts. In IT, choosing the cheapest has often been the cradle of many messes. Contrary to what was done, the government will now consider a host of factors other than the acquisition cost. The regulation therefore plans to include another criterion, namely "conditional costs": maintenance, development, license renewals and interoperability. These costs often became "extras" not provided for in contracts. Quebec, for example, no longer wants to be imprisoned by software for which it must continually pay for updates and renewals not provided for in the contract. These costs will have to be taken into account. Surprisingly, they were not always. The free software industry is therefore helped by this measure. eSTRATEGY IN CLOUD COMPUTING Quebec is finally joining the major organizations around the world that are diving into cloud computing. A common implementation strategy is launched by this regulation in order to prevent each department from doing as it pleases. e No more ARMOURED CONTRACTS Quebec no longer wants to be chained by its IT contracts, an area in which costs can quickly vary downward. For example, for a five-year contract, if the costs of a product are lower on the market after two years, Quebec will be able to revise the contract downward. The financial risk therefore passes to the private sector. eAUDITOR FOR EACH MAJOR CONTRACT Quebec is taking inspiration from other countries by now mandating an independent auditor for each major acquisition. This auditor will produce a report that will be made public each time.

## ###ARTICLE\_START### ID:2382

QUEBEC | The event was once again a success, but the Journée de l'informatique du Québec (JIQ) presented yesterday at the Convention Centre took place with an elephant in the room: the economic difficulties shaking the Quebec IT industry. More than 1,500 players in the IT field were gathered for this 37th JIQ, the largest gathering in information technology in the eastern part of the country. The president of the organizing committee, Guy Lanteigne, did not try to hide that the field was going through a "difficult" period. "There is probably a storm that we are in the middle of," he said in an interview. BECAUSE OF WHOM? Private sector players who are short of work attribute these difficult times to the government's measures in the field. Martin Coiteux also said, at the opening conference, in front of hundreds of private sector IT consultants, that the government had "dependency problems" with private consultants. But Mr. Lanteigne does not attribute the problems to the government's measures. "They are implementing solutions," he explains. "How, with the means they have, they can be more effective. That's simply what the government is doing right now, as in any organization," says Mr. Lanteigne. A popular event like the JIQ nevertheless demonstrates the excitement attributable to the good moves that deserve to be highlighted, in his opinion. The JIQ also opened its day with a presentation by the City of Quebec on the great success of the Copilote urban transport application developed in particular with open data and free software.

## ###ARTICLE\_START### ID:2383

See you at the summit, Monday, November 9, at the Elysée. François Hollande receives Satya Nadella during a one-on-one meeting. For his first meeting with the French head of state, the boss of Microsoft brought 83 million euros of investments in his bag. The world's leading software publisher will kick off a new aid program for "French Tech" start-ups. In partnership with around ten accelerators in France, these start-up nests including Numa in Paris and Euratechnologies in Lille, Microsoft will provide young shoots with "cloud" services - cloud computing - and big data tools. In the first year, 300 start-ups should benefit. Amount of the investment: 70 million euros. The software giant will also enter into a 13 million euro partnership with the national education system aimed at helping to deploy digital technology in schools. Under study, the use of the Minecraft game for learning to code. If big bosses are used to visiting the tenant of the Elysée, whatever his political color, the trend has accelerated under the mandate of François Hollande, and the checks have multiplied. This year, the head of state received the boss of the software publisher SAP, Bill McDermott, and twice the boss of Cisco, John Chambers. The first promised to invest 100 million euros in French start-ups, the second 200 million. At the same time, Facebook, Intel, Samsung and Salesforce have opened new research centers in Paris. Announcements that the Minister of the Economy, Emmanuel Macron, who attended several inaugurations, was delighted with. At Microsoft, they are trying to stand out, by recalling that the software publisher, over the course of ten years, has helped 1,500 start-ups, including Criteo, and created 7,000 jobs in France. How can we explain this sudden craze? "There is a global war for talent, developers are being fought over. We benefit from the combination of training in engineering schools and research tax credits. It is very attractive," analyzes Guy Mamou-Mani, president of Syntec numérique, the union of IT services companies. "American companies have, for the most part, understood that digital cannot exempt them from adopting very localized strategies and long-term investments. Europe is neither a country nor a single market...", says Loïc Rivière, general delegate of Afdel, which defends software publishers. Cisco has come a long way But, if these giants invest, it is in the hope of finding their way there. First of all, they take limited risks. Facebook's French R&D center employs only 25 engineers, and Samsung's should have around ten people by the end of the year. Then, they have everything to gain by buying start-ups, in which they will find a technology they lack. Adobe did not need to meet François Hollande to get its hands on the French Neolane for 600 million euros. Often, these giants use their investments as a lever to solve the problems they encounter. In a delicate situation with the press, Google launched a fund of 60 million euros intended for it. Received with great fanfare at the Elysée, Cisco, whose clients include the State and the Ministry of Defense, has come a long way. A few years ago, the company, which sells telecoms equipment, was persona non grata within the National Agency for the Security of Information Systems, which has a say in the equipment used by the State. By dint of showing its credentials, the American giant, recently shaken by the Snowden affair, is now acceptable. The surge in investments is part of an increasingly delicate regulatory context. At the national level, the bill put forward by the Secretary of State for Digital Affairs, Axelle Lemaire, includes anti-American giants measures, such as the regulation of platforms or the portability of data, making it easier for Internet users to retrieve them. A line that does not have consensus within the government. Emmanuel Macron, for his part, is promoting provisions intended to strengthen the attractiveness of France and attract foreign capital. By supporting him, the American giants hope that the Minister of the Economy will prevail against his Secretary of State. "Asymmetrical" forces In the meantime, many observers have noted that the final version of this text, presented on Friday after public consultation, did not include any of the provisions favored by Internet users in favor of free software. Measures that would have disadvantaged Microsoft two days before Satya Nadella's visit to Paris. Without seeing a cause-and-effect link, Frédéric Couchet, general delegate of April, a software defense association, laments this. "The forces are asymmetrical. For ten years I have been proposing a meeting with Richard Stallman [the initiator of the free software movement], in vain. He certainly doesn't come with his checkbook." But the biggest issue is within the European Commission, which is trying to create a single digital market. France has joined forces with Germany to defend a certain number of measures, such as the regulation of platforms or a European cloud label, favoring local companies to the detriment of non-European groups. By banking in particular on France, foreign groups want to change the situation.

## ###ARTICLE\_START### ID:2384

To rediscover the virtues of France, perhaps you have to distance yourself from it for a while... As with family! Nothing beats a subtle distance and an intense immersion in a foreign universe to adjust the focus, get rid of a burden of determinisms or preconceived ideas and cross cultures. "The important thing," says an old African proverb, "is the journey." That of Jean-Baptiste Rudelle is captivating: how will an "agitated" student, affected by "mild social autism", but saved by a tropism for maths, make a French start-up triumph in the United States? And why did this young entrepreneur, who has been living in Silicon Valley for six years, feel the most pressing need to respond to French bashing, practiced with a zeal unequaled by the Anglo-Saxon elites - or sometimes even by "masochistic" French people? Don't expect this millionaire boss to sing the well-known refrain of "too many taxes", vilify "French laziness", stigmatize our "Kafkaesque State" or chop up our famous labor code. The boss of Criteo, the world leader in online advertising, admits it without hesitation: tax exile is not his cup of tea and Rudelle even claims that the rich should be taxed more in the face of the dizzying increase in inequalities. Although he lives and manages his 1,600 employees spread across 15 countries on the other side of the Atlantic, Rudelle insisted on keeping Criteo's headquarters and research and development teams in France out of "economic pragmatism": "It costs us less and allows us to be much more competitive than our competitors." Quite simply. Cultural transplant This entrepreneur like no other dreams of applying to France the recipe that made Criteo successful: a cultural transplant, a subtle mix, mixing the best from both sides of the Atlantic - on one side, French mathematical excellence, resourcefulness and creativity, on the other, marketing genius, a taste for risk and a collaborative culture developed on a large scale. This is the winning cocktail of a 21st century dominated by the digital revolution. At the origin of Criteo, there are two 26-year-olds that Rudelle met by chance in an incubator in the Bastille district of Paris. Trained in a school system that still selects through maths, Franck Le Ouay and Romain Niccoli already have initial experience in the United States at Microsoft. Back in France, they live on the RMI instead of taking refuge in the comfort of a large group: Franck and Romain prefer to tighten their belts and devote themselves to a start-up project. They cross paths with Jean-Baptiste Rudelle, who immediately understands how these two math whizzes complement his own. They will be the designers and developers of Criteo's super-powerful algorithms. When they set out to attack the American market, they will come up against another culture, other codes, just as powerful. It is there that Rudelle discovers "the culture of Co": "The Valley has a participatory culture that is unique in the world. The opposite of the autocratic culture that still dominates the world of French companies." Coworking, shared accommodation, carpooling, "Co" is everywhere. Rudelle believes that this ability to team up with strangers, to join forces, to share skills for a common project goes back to the culture of pioneers who could not survive or get by alone. The Internet and networks have reawakened this old collective culture and taken it to a whole new level, particularly through the open source movement: this process of sharing and co-construction of sophisticated software. France's greatest handicap is not its tax passion or its regulatory frenzy, but its monarchical culture, its obsession with the leader and vertical power, which still dominates politics, the education system and business management. When it comes to mechanically applying or indefinitely duplicating the same things, it's still OK. But when the difference is made on a capacity for creativity, inventiveness, innovation, then "the trouble begins", as Rudelle says. "The Co culture assumes that we trust each other a priori, and not a posteriori", without obsession with the diploma or the grande école. This is not really the strong point of our national culture... "At Criteo, there is no X-Mines or X-Télécoms mafia that co-opts each other. We look at what people have done and are doing. Not an old parchment that shows that they worked hard fifteen years ago in preparatory class..." In the digital age, the countries that are doing well are those where the participatory culture is strongest. With Skype or Spotify, Sweden has developed two world-class start-ups and others are in the making. For Rudelle, there is no inevitability that would prevent France from also becoming a "start-up nation."

## ###ARTICLE\_START### ID:2385

With their square and deliberately techno design, Samsung's smartwatches could only appeal to a handful of high-tech enthusiasts. The Korean giant has changed course with its new model, the Gear S2, which is more refined and has a round dial like its competitors from LG or Motorola. Rather elegant, it comes in a stainless steel case and, depending on the version, has a plastic or, more stylish, leather sports strap. However, to stand out, Samsung has abandoned Google's Android Wear system software. In its place, we find the open-source Tizen platform, created in collaboration with Intel and other manufacturers. The result: a different interface, more ergonomic and easier to use. Especially since, in addition to the touchscreen, you just have to turn the crown of the dial to move through the menus, select applications or zoom in on a map. In use, this little innovation proves to be very practical. Three-day battery life For the rest, the Gear S2 takes on the main functions of smartwatches: you can easily change the appearance of the dial, check notifications, the calendar and the weather and use voice commands to program an alarm or launch an application. Voice recognition also works to dictate the response to a message, with excellent results. If necessary, you can choose an automatic response or use the virtual mini-keyboard, which is quite effective given its size. A natural complement to the smartphone in everyday life, the Gear S2 can be used occasionally during sports activities. It is indeed equipped with different sensors, including a pedometer and a heart rate monitor, which measure physical activity with fairly consistent results. It can also be used without problem in the rain or in the shower since its case resists immersion for 30 minutes at a depth of 1 meter. Another good point for the battery life, which easily reaches three days. We still regret a few small flaws: it is impossible to add appointments by voice or to take a phone call, as you can on the Apple Watch. As for the customization options, they are quite limited. Finally, its compatibility leaves something to be desired. Samsung claims that it works with any Android smartphone, but it was impossible to connect it to a Motorola G. Despite everything, the Gear S2 remains a rather pleasant connected watch to use and quite aesthetic. Its price is reasonable: 349 euros for the Sport version and 379 euros for the Classic version. It will still have to evolve a little to clearly stand out from the crowd. DS

## ###ARTICLE\_START### ID:2386

The Coalition avenir Québec (CAQ) wants to punish the culture of incompetence in the public service. CAQ MNA Éric Caire believes that civil servants and their superiors must be subject to performance evaluation mechanisms. "[For] a manager or deputy minister who does not achieve their objectives, who does not respect their deadlines, what are the current consequences? There are none, there are none, and this culture, it goes down to all levels in the public administration," he said. Mr. Caire said Monday that legislative amendments would allow for the dismissal of incompetent managers. As for civil servants who do not meet expectations, Mr. Caire believes that existing laws allow for dismissal or demotion in cases of dissatisfaction. At a press conference, Mr. Caire noted that these provisions are never used, unlike in the private sector. "There is more laxity in relation to incompetence," he said. "In fact, it is not even laxity anymore, it is downright total amnesty. It is an amnesty, there are no consequences." Partisan appointments increase cases of incompetence in the senior civil service where they are concentrated, noted the MNA. "It is clear because political appointments, we do not have the guarantee that they are made on the basis of competence," he said. "They are made on the basis of political allegiance, which does not exclude, by a happy coincidence, competence." Mr. Caire produced a document of about fifty pages on Monday that sets out recommendations to avoid the waste of public funds. The CAQ believes that the Centre de services partagés du Québec (CSPQ) and the position of chief IT officer should be abolished in order to improve the management of IT projects. "In the vast majority of cases, he does not understand his own needs, he is incapable of expressing them clearly, and so all of this results in so many IT projects that are fiascos, wastes, both in terms of funds and deadlines," he said. Mr. Caire proposes replacing the CSPQ with another organization, the Centre of Excellence in Information Technology. "That is to say, an IT company dedicated to all management, planning, auditing, implementation, verification and even external partnership processes, because we are not talking here about the end of the use of consultants," he said. Be competitive According to the CAQ, negotiating working conditions on a sector-by-sector basis would ensure competitive compensation in more popular sectors, such as engineering or IT. "There are sectors where we are losing our expertise because we are not competitive with the main markets with which we must compete," he said. "And so we must stop this kind of uniform policy, and we must ensure that we have this capacity to negotiate according to our needs." The CAQ also sees savings by grouping the 450 information processing centres in three locations, namely Quebec City, Drummondville and Montreal. "There is no reason for our information processing centres to be dispersed, as we are currently seeing in the country. Increasing the share of free software use to 19% would also help reduce government spending by $260 million," said the CAQ member. "Every year, we renew, in a stupid and mean way, the user licenses for proprietary software under various pretexts that are more or less valid," he said. Mr. Caire wants to centralize each citizen's data in the same place, in a digital file, unlike the current practice, where each department and agency collects this information on its own. Without being able to quantify the cost of such an operation, the CAQ member was not concerned about the consequences of a possible security breach of a system where all of an individual's information could be stolen. "We are capable of having significant security measures that will make it extremely difficult for hackers to go seek information, he said. It's not something that worries me too much."

## ###ARTICLE\_START### ID:2387

Although 86% of police forces use social media in police investigations, a criminology professor at the Université de Montréal believes that police officers are "behind" certain technologies that are nevertheless available for free. Google, Apple and Facebook collect millions of pieces of information on their users every day, particularly through searches carried out by them on the Internet or through geolocation. This data is precise enough to allow one to "recreate one's life" if it were put together, illustrated criminology professor Francis Fortin, during a conference presented at the Société des criminologues du Québec. Mr. Fortin also gives the example of Google, which records all voice requests from cell phones. "And we have access to it," he assures. If, as revealed by a 2013 study by the association of chiefs of police, 86% of police forces use Facebook, Twitter or LinkedIn in their criminal investigations, Mr. Fortin believes that police officers should make greater use of this open-source data. A large number of free software programs allow the pooling of data accessible in social media and the circumscription of the behavior of individuals, suspects for example, even if they are extremely discreet on their page. "Our friends become our enemies," certifies Mr. Fortin. LIMITS However, this type of monitoring has its limits, qualifies the professor. "To what extent can we prevent attacks?" he asks. While social media analysis allows us to "track the threat," for example in the case of demonstrations or terrorist attacks, potentially dangerous lone wolves are difficult to detect. "We realize that there are many candidates," indicates Mr. Fortin. The police are also trying to do open outsourcing (crowdsourcing) through hashtags, which allows citizens to denounce individuals who commit crimes. This was the case in Vancouver in 2011, during the riot surrounding the Canucks' presence in the Stanley Cup final. While the police asked to obtain photos taken by citizens showing rioters at work, it turns out that the response, sometimes too large, slows down investigations due to the need to validate the information.

## ###ARTICLE\_START### ID:2388

Treasury Board President Martin Coiteux cannot be criticized for thinking big. Last week, during an exchange with the opposition on the management of IT contracts, Mr. Coiteux defended the measures taken since he took office. "There are problems in IT, but the good news is that we are in the process of resolving them. Our ambition is to become the reference administration in Canada, if not in North America, in terms of information technology." We are not asking that much of him. Quebec does not lack resources in the field of information technology. Where their absence is cruelly felt, however, is within the state. The provincial government is starting from so far behind in this sector that a statement like that cannot be taken seriously. The exchange between Mr. Coiteux and the CAQ MNA for La Peltrie, Éric Caire, did not tell us anything that announces major changes. Mr. Caire can be criticized for his fixation on "fraudsters" who steal taxpayers' money, but the UPAC report on the management of IT contracts, released earlier this year, left us wanting more. This report, which should have been the beginning of a more in-depth examination, was instead the end of it. It contained several recommendations to improve government practices, which Mr. Coiteux assures us he followed, but what about the serious irregularities noted by the investigators? How can we know if the collusion networks have been dismantled or if they have survived? The impression that remains is that the first thing we are trying to do is put the lid back on this pot. Mr. Coiteux certainly has the best intentions, but the Treasury Board has only limited expertise in information technology. Putting order in this sector goes far beyond billing methods or the management of billed hours. We must also be able to question the relevance of technological choices, platforms, tools, and solution development processes. Unfortunately, these questions are beyond the remit of the Treasury Board. For example, the British government has just announced a partnership agreement for the use of Collabora GovOffice, a variant of LibreOffice intended for public administrations. This partnership is part of a broader strategy by the United Kingdom, which has adopted the ODF (Open Document Format) format for sharing government and public institution documents. The interesting thing about this news is that the Collabora GovOffice suite was developed by a Quebec company headquartered in Montreal. The question is: how is it that London can enter into this type of partnership with a Quebec company, but that it is not even a question here in Quebec? Why don't we work with our own entrepreneurs? And why is the government in the process of gutting the Centre for Expertise in Free Software? Because whatever Mr. Coiteux says, that is exactly what is happening. The answer is that beyond the administrative problems, Quebec does not have a handle on this issue. If we want to become the benchmark, we will have to do better than that.

## ###ARTICLE\_START### ID:2389

While the dominant discourse is one of fear, marketing consultant Michelle Blanc dropped a bombshell in the Devoir debate on the sharing economy Wednesday night. According to her, Quebecers should first try to catch up in terms of innovation. "I'm angry. We're playing the victim when Uber, Airbnb, they could have been invented here!" she said during the event held at the Musée de l'Amérique francophone in Quebec City. "Uber won't exist in five years because we'll have cars that drive themselves!" Host Antoine Robitaille then challenged her, asking what the government should do about it. However, on this question, Ms. Blanc did not have a clear answer, other than to include more computer coding in schoolchildren's training. Usurpation PQ MNA Martine Ouellet (transportation critic) then stated that it was not just a question of technology. "We can't accept UberX and force taxi drivers to apply the rules that others don't apply," she said. More than once, she said that companies like Uber don't pay taxes and "usurp" the discourse on the sharing economy to circumvent the laws. For design professor Guillaume Blum, the sharing economy is based first and foremost on "sharing resources," "meeting others." Free software was one of the first manifestations of this, he said, before suggesting that companies like Uber are more into "hypercapitalism." "Capitalism is a beast that doesn't want to die and takes over pretty much everything," economist Ianik Marcil later added. In his eyes, these platforms are beautiful projects whose "use is perverted." At least two guests have admitted to using Airbnb during their vacations. However, they distinguish between the person who rents out their apartment during their vacation and the people for whom it has become a daily livelihood. However, no one seemed able to say where the line should be drawn. As luck would have it, the Quebec government is due to table a bill this Thursday on the phenomenon of illegal hotels. The debate will be broadcast on November 30 on Canal Savoir. The two previous ones (on car-bike cohabitation and on the place of technology in education) will be broadcast the weeks of the 16th and 23rd.

## ###ARTICLE\_START### ID:2390

Legend has it that it was while trying to modify the driver of a recalcitrant Xerox printer and discovering that he did not have access to the source code that the American computer scientist Richard Stallman had, in 1980, the idea that would push him to initiate the "free software" movement: software that anyone can freely use, study, modify and share - which implies opening up the code. "It was about reversing the trend that wanted a user to have no rights over the software", explains Hugo Roy, member of the legal team of the Free Software Foundation Europe (FSFE). An approach that, he says, "resonates today, when everything has been transformed into a computer: we have the perfect example with connected mobiles or Volkswagen cars". Unlike programs designed as "black boxes", free software ensures sharing, transparency and cooperation. The Firefox browser, the LibreOffice office suite, the VLC multimedia player are just a few examples. Contrary to popular belief, the "free" ecosystem does not live on collaboration and fresh water alone: when the code is a common good, business models are based on services (particularly for companies). The model has been extended to databases - for example, the Paris City Hall distributes them under a free license on the ParisData site - and to "open" hardware: electronics "tinkerers" have adopted printed circuits manufactured by the Italian Arduino, whose plans are freely available.

## ###ARTICLE\_START### ID:2391

It's a long, intermittent story that runs from the communal woods of the Middle Ages to Wikipedia. For several years, a movement in favor of "common goods" has been working to revive a space that is neither subject to the State nor to exclusive individual property. In France, the issue is at the heart of the debates on the bill "for a digital Republic," submitted to Internet users until midnight this Sunday. A "common," explains Valérie Peugeot, a researcher at Orange Labs and vice-president of the National Digital Council, is "a shared resource, neither private nor public, tangible or intangible, managed by a community that establishes rules of governance." And which "is characterized by a different arrangement of the attributes of property," continues computer scientist Philippe Aigrain, co-founder of the association la Quadrature du Net and author of Cause commune (Fayard, 2005). Contours. This "return of the commons" - the title of a collective work published in May, under the direction of the economist Benjamin Coriat - is taking place in the dual light of a global ecological crisis and a globalized network. The pioneering work of the American Elinor Ostrom initially focused on physical common goods, through the study of the management of natural resources by local communities. The digital revolution has changed its contours. "The Internet and the Web were thought of as 'commons', with open protocols and shared resources", underlines Valérie Peugeot. But digital common goods are "non-rival" - their use by one person does not deprive another -, extensible, replicable. And the community of users is universal. In this matter, argues Valérie Peugeot, "the law has an essential role to play: when there is a pure and simple abandonment of rights, it is the strongest who make the best use of the resource". The issues are multiple. Several reports have recommended defining the public domain in law to prevent abusive appropriations - a debate revived by the controversy surrounding the Diary of Anne Frank (see Libération of October 9) - and to encourage more open access to public research work. For promoters of common goods, it is also a question of securing the "voluntary commons" that exist via licenses (software, Creative Commons, etc.). It is some of these issues that the bill put forward by Axelle Lemaire, the Secretary of State for Digital Affairs, is tackling. But the issue is far from reaching consensus. Thus, the National Publishing Union (SNE) is requesting, via the consultation platform, the withdrawal of the article that defines the public domain under the heading "common information domain." For François Gèze, former head of La Découverte publishing house and president of the portal of human and social sciences journals Cairn.info, the notion "certainly opens up interesting perspectives" since "with digital technology, new balances must be found and guaranteed by law, between commercial and non-commercial activities". But as it stands, he argues, "the wording of this article of law is so imprecise that it would open the way to a multiplication of legal disputes". For his part, Philippe Aigrain bitterly regrets that the possibility of instituting "voluntary cultural commons", the wording of which had made several copyright management companies jump (see Libération of September 28), has been abandoned until now. It is high time, he says, to "define a new status for commons" and to recognize them "as a voluntary political construction". Beyond that, he advocates for better consideration of fundamental cultural rights, which cover both "the right of authors, in the broad sense, to see their material and moral interests protected" and "the right of everyone to participate in the cultural life of the city", which non-commercial practices of sharing and remixing in networks are reconfiguring. Dichotomy. For François Gèze, it is necessary to "open a real debate between all stakeholders, including authors and publishers, in order to see what would be relevant to take from the paradigm of the commons for good regulation of the Web". There is no doubt that this debate will continue to broaden as the law progresses - especially since the proposals for the deepening of common goods are among the most supported on the consultation platform. By promoting use value rather than exchange value, by moving away from the State-market dichotomy, the "commons" movement not only raises the question of the perimeters of the market and the non-market: it pushes us to move away from a vision of property through the sole prism of exclusive rights. From Wikipedia to open access, from free software to Creative Commons, the vitality of digital commons bears witness to this. \* The use of this illustration is authorized for non-commercial uses (NC), provided that the author is credited (BY) and derivative works are shared under the same conditions (SA). Illustration Vincent Poinas. CC BY-NC-SA 3.0 License\*

## ###ARTICLE\_START### ID:2392

Most data and analytical power is concentrated in the hands of a few companies, giving them the means to eliminate competition in entire sectors of the economy. A handful of companies control all of our personal data, determine what information is presented to us, and drive most of our decisions, potentially infringing on our privacy and freedoms. With big data analytics, these companies have enormous power. To mitigate the business and ethical risks this poses, it is imperative that data collection and analysis become “responsible.” To do this, we mean that data collection and analysis must become impartial, transparent, and equally accessible to all. Impartiality, in terms of data analytics, is first and foremost the absence of bias. Bias can come from an algorithm that reflects the commercial interests, political preferences, or other interests of its designers. As an example of commercial bias, consider the recent European Union lawsuit against Google, which has been accused of hidden advertising. When questioned about the bias in its search engine results in favor of its own products, Google justified itself by explaining that it was more about personalizing the results in the interest of the user than increasing the company’s profits. For example, an algorithm can reconstruct the values of hidden variables, such as race, and then make decisions based on these values. But these biases can be unethical or even illegal, such as when it comes to offering less advantageous financial products to members of minority groups, a practice known as steering. However, we cannot prohibit the reconstruction of the values of hidden variables, which is at the heart of effective machine learning methods. Yet the mere fact that these algorithms are effective and that it is difficult to understand how a particular result is obtained cannot be used as a justification for authorizing the violation of moral principles of our society. Transparency is another aspect of responsible data analysis. For example, Facebook has been criticized for the lack of transparency in its handling of personal data, which led the company to change its privacy policy. Users want to control what is recorded about them and how this information is used. Transparency in data analysis is essential, beyond the simple context of private data. It facilitates the possibility of verifying that a service behaves as it should, as it promises. It also allows a data provider to verify that the data is used as it has specified. The last aspect of responsible data analysis is equal accessibility for all. The current model of data collection and analysis leads, in fact, to the formation of oligopolies. This could be considered as the natural result of commercial competition. On the contrary, we believe that it is necessary to make data and analysis tools as accessible as possible to everyone in order to control the prices of services based on data analysis in the long term, and also to guarantee freedom of choice for the user. Moving towards greater responsibility in data analysis requires a coordinated effort in several directions: education, user organization, public policy and technology. EducationBecause of our society's increasing dependence on IT, it has become essential that everyone acquires a minimum of skills in this area. In particular, an individual should be able to understand and critically evaluate data collection and analysis processes, and make informed decisions about the consequences of disclosing specific information to an application. Users Users must better organize themselves to engage in dialogue with companies, specify best practices, and prevent those that are unfair or opaque. The Instagram controversy in 2012 illustrates their power. The company had changed its privacy policy to target image-based advertising without clearly informing its more than 100 million users. An outcry from them managed to force Instagram to back down. Public policy Big data technology is complex and rapidly evolving, which makes it difficult to regulate. Regulators themselves often lack the necessary skills. It remains essential that governments are aware of the problems of data analysis responsibility, that they participate in the definition of broad principles and general guidelines, and that they contribute to making responsible data analysis a reality. The question of regulating these oligopolies also arises. Technology Finally, technological progress is needed to develop two types of tools: the first will help design responsible data collection and analysis, the second will be intended to verify that analyses have been carried out responsibly. Designing responsible analysis is not simple; it becomes more achievable if responsibility is taken into account as early as possible, responsibility by design. To check the behavior of a program, we can either analyze its code or analyze its effects. Code analysis requires that we have this code (for example, it is free software). Code analysis is directly linked to the proof of theorems in mathematics, while the analysis of effects is more similar to the study of physical or biological phenomena such as the climate or the human heart. The four directions we have mentioned are not independent. They are found, for example, combined in PIMS (personal information management systems). It is by coordinating efforts in these four directions that we will be able to avoid the immense risks of big data destabilizing the economy and reducing our freedoms and our privacy, while realizing its incredible promises of improving everyone's life, accelerating scientific research and innovation.

## ###ARTICLE\_START### ID:2393

COMPUTING While some people are put off by the mere idea of a simple addition, Qarnot Computing, a Parisian start-up, has come up with the idea of heating entire buildings using the heat emitted by computers. The company has in fact created radiators in which motherboards are housed, the real heart of computing power. These high-tech radiators are connected by fiber optic networks capable of distributing these computing efforts. "The heat they give off is 100% free," says Hélène Legay, marketing director of the company created in 2013. "The tenants, who have no idea what is happening in their radiators, benefit from free heating. We earn money by reselling our computing power to companies such as BNP, Air Liquide and Disneyland." The electricity consumed by the Q.Rad is reimbursed by Qarnot. The company employs 23 people and announces a turnover of one million euros. This heating solution, imagined by Paul Benoît, the company's founder, is already in use in a social housing building in Paris City Hall (15th arrondissement). Currently, 350 devices are in operation; in addition to the 110 social housing units, they heat the premises of Paritech, the start-up incubator that houses the company Qarnot Computing. Computing power offered The idea of recovering this heat from computers came to Paul Benoît in 2003. At the time, he was responsible for research and development in the IT branch of a bank and noticed (him too) that several computers in the same room heated up as much as a good big radiator. Since then, he has continued to try to recover the energy created by microprocessors. This is not insignificant: a recent study shows that the heat emitted by data centers spread across France is equivalent to 8% of French energy consumption. But what would happen if computing needs were to drop in the middle of winter? Qarnot Computing has planned for this eventuality: the start-up will distribute the necessary heat obtained by "running" the motherboards for its own account. This computing power will then be offered to companies or 3D film studios. This has already been the case for the production of a film by the Blender Foundation, a non-profit organization responsible for the development of Blender, open source software for 3D modeling. At the beginning of its commercial exploitation, Qarnot is cultivating secrecy. The investments necessary to install all these radiators in buildings are not revealed. "Currently, it is only B to B for the moment," explains Paul Benoît. A new offer for individuals should appear very soon." A future version that is even more "intelligent", capable of providing new information such as measuring air quality, will soon be available. Controllable by smartphone, it should find its place in “smart” buildings where home automation makes it possible to closely monitor the consumption habits of their inhabitants. CHG

## ###ARTICLE\_START### ID:2394

Unless you work in the field, no one in France has heard of EMC. And yet, this heavyweight in the high-tech sector in the United States could be behind the largest acquisition operation in the history of computing. According to the Wall Street Journal, the company, a world leader in data storage equipment, huge cabinets filled with hard drives, could be bought by Dell for the tidy sum of 50 billion dollars (around 44 billion euros). Known for its PCs, Dell was bought in 2013 by its founder, Michael Dell, with the help of a Californian fund for 25 billion dollars "only. Explanation: Dell is considered a company in decline, while EMC hides within it a gem, the company VMware, which alone represents nearly two thirds of the valuation of its parent company. The negotiations may not go to their conclusion. But they reflect a fundamental change in the entire gigantic IT sector in the United States: the killing off of hardware manufacturers. Three reasons are driving this disappearance. First, today's digital kings are no longer those of yesterday. The analysis firm Gartner recently caused a sensation by presenting a graph showing the winners and losers of the current wave. At the top of the ranking, far ahead, are three players: Google, Amazon and Salesforce.com. At the back, Oracle, Dell, HP and IBM. The first are the champions of the new IT paradigm. Computers are leaving companies to be grouped together in large warehouses that form the backbone of cloud computing. Google and Amazon are the champions of this new deal. Escaping the trap IT is thus following the path of electricity, first produced locally on each site before being grouped together in large thermal or nuclear power plants. And the EDF of digital is called Google. Hence the anxiety of the last "old-school" IT companies, such as Dell, HP, EMC and IBM. The latter was the first to take the measure of the shift by selling its PCs and then its servers to the Chinese Lenovo. HP reacted too late and is trying to escape the trap by selling off its PCs. Dell preferred to exit the stock market to restructure discreetly. EMC is no longer growing. As in any declining activity, two phenomena then occur. The arrival of activist shareholders and a wave of mergers intended to reduce competition and share costs. But the hurricane will not abate. Soon, it will be the software that manages these machines, HP's great specialty, that will be in the crosshairs under the pressure of new service players such as Salesforce.com and faced with the rise of free software, supported by new players. Tough business.

## ###ARTICLE\_START### ID:2395

And three... After Facebook and Apple, Google announced an initiative on Wednesday, October 7, to boost the mobile Web. The group is launching Accelerated Mobile Pages (AMP), a format that any publisher can use to publish pages that will be read much more quickly when viewed from a phone or tablet. It is a response to the slow loading of content on mobile devices, almost unanimously denounced by its partners, Google explained to the press on Wednesday. A subject already highlighted by Facebook and Apple when they launched their own initiatives, Instant Articles and News respectively. Concretely, the AMP format lightens the weight of a page by simplifying it technically, Google explained. And it uses Google's "cache": the search engine will store pages in AMP format on its servers as it already stores pages in classic format. But when an Internet user using a smartphone or tablet clicks on the link of content available in AMP format, the file "hidden" by Google will be displayed, quickly. For now, Google is communicating the specifics of its format, which should allow publishers to publish AMP pages. And Google robots to start storing them in cache. Then, "in 2016", the group will start to integrate these pages into its search engine results. Important point: the web and advertising giant has partnerships with other powerful platforms such as the social networks Twitter, Pinterest and LinkedIn. On the latter, the links will redirect to the AMP formats of the pages, when they are available. The blog publisher Wordpress will also offer a plugin (extension module) for AMP publication. Reaching a younger readership Google says it already has thirty partner media, including Les Echos, the English The Guardian, the American The New York Times, the Buzzfeed site or The Washington Post... A list that recalls the titles highlighted by Apple and Facebook during their mobile solution launches. “Traditional media need to reach their audience outside their own website, go find them where they are,” says Mario Calabresi, editor of the Italian daily La Stampa, a proponent of AMP. How is Google’s solution different from those of Facebook and Apple? “We have an open approach to the Web and even open source,” argued on Wednesday a Google product manager, Danny Bernstein, referring to free software whose code is publicly available. For Google, this speech is a way of distancing itself from Facebook and Apple, which have been implicitly accused of offering proprietary solutions and of being the proponents of a more “closed” Web. Google’s announcement is a response to the initiatives of its rivals. These new services have in common that they offer major media outlets the opportunity to publish articles and videos directly on the platforms, in exchange for the hope of reaching a new, younger readership. Google and its competitors are aware that content publishers are afraid to publish on a platform other than their own site or application, because they fear losing part of their power in the value chain. And also a part of control over advertising and data about their readers. Google has therefore decided not to take any percentage of the advertising that will be shown on AMP pages. And assures that ad management systems will be accepted, although it is questionable whether all types of banners will be usable in AMP, which is a lightweight format. Furthermore, Google promises that these pages "will be like your site"; that clicks will be counted in the publishers' audience. At Apple and Facebook, publishers can keep their advertising revenue, if they have marketed their content. But if the advertiser was found by Apple or Facebook, the platform keeps 30% of the revenue. On the data side, these two companies allow publishers to track the statistics of their articles. "Google offers all the monetization possibilities for articles published on AMP: advertisements but also paywalls" so payment per act or subscription, rejoices Frédéric Filloux, digital specialist and editor of the Monday Note. A specificity highlighted by Naomi Ramirez, digital manager of El Pais. "AMP has the potential to become a standard," she says. This is also Google's hope, in the battle it is waging against Facebook and Apple, particularly fierce in mobile, where audiences are becoming essential. To attract site publishers, the three platforms compete by offering rather advantageous solutions. Their competition is one of the antidotes against the dependence that publishing on these large platforms can create for the media. Which will always be able, possibly, to change the conditions they offer later.

## ###ARTICLE\_START### ID:2396

PRESS After Facebook and Instant Articles, and Apple with its Apple News service, Google is now also taking the offensive on mobile news. On Wednesday, it presented Accelerated Mobile Pages Project (AMP), a tool that greatly improves the display speed of news articles. According to data from the Soasta Institute, mobile users start to get annoyed after waiting for more than three seconds, and have a one in two chance of closing the loading window after eight seconds. This is a problem for the media, which lose audiences as well as value for their advertising space. But it is an opportunity for the major players in Silicon Valley, who are taking control of the distribution of news content. Apple, Facebook and Google have each positioned themselves to provide their solutions to the media. But while the goal is the same, the method is radically different. Apple and Facebook have opted for a proprietary approach. Articles from partner media are displayed optimally for mobile screens, but only within Facebook or Apple applications. Google, for its part, is responding with a technical approach. Rather than launching a service, it has developed a new way of coding web pages on the mobile Internet. The latter are lightened, without losing any of their content or appearance. Social networks, instant discussions, or simple search on Google: no matter where the Internet user clicks, the article will immediately appear before their eyes. The publisher keeps control AMP is the first project born from the Digital News Initiative, a place of reflection between Google and several European media in order to build useful tools for the entire industry. AMP, which is still in its infancy, is open source: it can be used and improved today by any press publisher or content platform, such as Twitter or WordPress. Google estimates that the technology will be widely deployed from the end of the year. The New York Times, The Guardian, Les Échos, BuzzFeed, La Stampa and Condé Nast are among the first publishers to integrate AMP. Google has no shortage of arguments to convince others. Its project is the perfect counterpoint to those of Facebook and Apple. The publisher keeps control over everything: its content, which remains on its site, the advertising inventory and all the revenues that come from it, and its audience. Google is working with traffic measurement institutes so that they count AMP pages like the others. Facebook and Apple have decided to host content under their banner, which worries some publishers, who are anxious not to be disintermediated on their content and their advertising revenues. After years of conflict, Google wants to be the new friend of the media. It also has everything to gain with AMP. Google's economic model, which is based on consulting websites enhanced with the ads it sells, is being undermined by the increasing use of applications and the new power of Facebook. The social network has indeed become a significant source of traffic for news sites, ahead of Google and Google News. The media find themselves at the heart of the battle between the Silicon Valley giants.

## ###ARTICLE\_START### ID:2397

Free software is taking hold in major banks, governments and even the White House. The use of free software in the French Department of Homeland Security has generated annual savings of $75 million. But Quebec is missing out on economies of scale, as the free software industry is almost never able to qualify for a call for tenders. Our Investigation Bureau met with three important leaders in this industry. This issue will be part of the discussions today, at the Salon du logiciellibre du Québec in Montreal. \*\*\*\*\* WHAT IS FREE SOFTWARE? Software whose use and modification are freely permitted. Often free or less expensive, free software is the antonym of proprietary software, which prevents users from transforming it. Firefox, OpenOffice and VLC are three well-known examples of free software. Although the cost of free software is zero or minimal, the costs of adapting to changes for users, in training on the new tool, can be higher. \*\*\*\*\* ALEXANDRE ZAPOLSKY CEO LINAGORA He founded his company 15 years ago in France. President of the National Federation of the Free Software Industry, he is also a member of a working group on digital technology chaired by French Prime Minister Manuel Valls. While Linagora does business all over the world, in Quebec, it is rather difficult. Mr. Zapolsky believes that there has never been a call for tenders that his company would have had a chance of winning at the Shared Services Center. "Quebec is one of the places in the world where there is the most waste and unnecessary spending in public IT [...]. It's terrible, what is happening," he laments. "Quebecers are no more stupid than the French or the Americans," he says. "We French overestimate ourselves, but you Quebecers underestimate yourselves!" According to him, however, it is "urgent that Quebec questions itself," he explains. "One of the big problems you have in Quebec is that you always choose the cheapest company. But the cheapest is not always the right one," he explains, saying that this model is found "only in developing countries." France, which ranks better than Canada in its IT management, according to UN statistics, devotes more than 20% of its IT budgets to free software. In Quebec, investments are minimal and free software is used only for "cosmetic" purposes, according to Mr. Zapolsky. \*\*\*\*\* CYRILLE BÉRAUD PRESIDENT SAVOIR-FAIRE LINUX He founded his company, based in Montreal, 15 years ago. President of the Fédération québécoise des communautés du libre, Mr. Béraud has been one of the most important voices for free software in Quebec for years. Savoir-faire Linux serves the Canadian Forces, the Caisses Desjardins and the International Organization of La Francophonie. Its president has denounced the absence of free software in government IT for several years. He was part of Martin Coiteux's working committee for his IT reform, but he slammed the door, deploring the lack of will for free software. "Large organizations trust us. But, in Quebec, we are denigrated. It is not easy to create jobs when you are fighting against your own government," he complains. According to him, the current model means that Quebec helps large companies and harms smaller ones. “Look at what’s happening in the United States with open government. Here, it’s so archaic, it’s tiring. But it’s the truth.” \*\*\*\*\* TOM ERICKSON CEO ACQUIA This American company does business in 20 countries and has been named one of the fastest-growing IT companies in North America. But in Quebec, “it’s almost impossible to get in,” he told us. “The tendering process in Quebec hasn’t evolved to take into account new technologies and new ways of buying. We still buy software the way we did 10 years ago,” he explains. “It’s incredible [...], Quebec is going against the grain.” “When you read a call for tenders, you’re not in a position to respond [...], the die is already cast,” he adds regretfully. "It's obvious to me that Quebec is not a government that is ready to do the things that I see elsewhere, where there is interest in innovations," he continues. "The frustration is real. The reality is that when we look at what is being done outside Quebec, we see that things work better," says Mr. Erickson, who hopes that the situation will change. "Free software is not invited to the big table in Quebec," according to him.

## ###ARTICLE\_START### ID:2398

La Presse gives the floor to Quebec's top executives. Every Friday, a boss answers five questions asked by the business leader interviewed the previous week. And so on. Luc Tremblay, CEO of the Société de transport de Montréal (STM), answers questions today from Claude Tessier, President of Sobeys Québec. Q How does the STM see its involvement and role in the smart city project in Montreal and how does it plan to contribute to its development/deployment? A Because of its privileged role in mobility, the STM is a partner in the smart city project. The iBus, which will be implemented from this fall to next spring, will, for example, provide users with real-time information on the bus network. We have also deployed the cellular network in the metro and offered OPUS online, which allows you to recharge your OPUS card at home. Not to mention that we have open data and use free software. Q Since customer satisfaction is an important aspect for you, what are the greatest customer expectations that the STM is working on and how is it aligning itself to meet them? A The customer experience is important to us. We conduct surveys and hire mystery shoppers to measure customer satisfaction. A panel conducted in the spring with customers allowed us to highlight three important themes for them: waiting for the bus, purchasing tickets and the customer experience on the bus. The iBus should solve the first, by allowing you to adjust your trip and reduce the wait. OPUS en ligne, even if it is a temporary solution, makes it easier to buy tickets. To improve the third point, we have rolled out our universal accessibility program on almost all 22 bus lines. The new Azur metro cars will also be more spacious. We also provide more information on social networks and our subscribers have increased by 85% in the last year. Q Since sound management of our environmental impact is essential as a business leader, what is your vision over 5 and 10 years for integrating the aspect of energy efficiency into the management of your fleet of vehicles and real estate? A Reducing environmental impact is our reason for being. We will be testing three electric buses on the 36-Monk line in 2016. That's the future. There are other initiatives. Our Stinson transport centre, which can hold 300 buses, has received LEED Gold certification for its green measures, such as its green roof and rainwater recovery. We won an award this year for our responsible procurement approach. We are also continuing to electrify the network. By 2025, we will no longer purchase non-electric buses. Q For you, what are the means by which the efficiency of a transport network should be increased? What are your challenges and opportunities for arriving at solutions that will satisfy customers? R Right now, 65% of our bus lines are affected by construction sites. To increase efficiency, the reserved lane is unbeatable. In 2015, there were 228 km of reserved lanes. There will be 375 km in 2017. We will also increase our capacity by 8% with Azur cars. We must also work to reduce the asset transfer deficit. Our infrastructure must be renovated across the entire network to maintain service and the customer experience. Q If you could have the transportation system of your dreams, without any restrictions, how and with whom would you build it? Like any other city in the world, a single vision, a combination of the two? R We benchmark ourselves a lot at the STM. Benchmarking is useful. I believe that the best system would combine the profitability of Asian networks, which allows them to reinvest in their infrastructure, with European planning. As for who I would like to build it with, that's a good question. We feel in Quebec at the moment a rare listening on the part of the government towards our requests. I am optimistic.

## ###ARTICLE\_START### ID:2399

We already knew that the government had lost control of its IT spending. We now know that this weakness has allowed collusion and corruption to take root. Last week, the commissioner of the Unité permanente anticorruption (UPAC), Robert Lafrenière, released a report that should have resounded like a clap of thunder in our political sky. "The hypothesis of the presence of collusion and corruption in information technology, like in the construction industry, is now validated..." he wrote. This text confirms a damning report that Radio-Canada had broadcast in 2010, reporting the same system of sharing contracts in IT as in construction. But this verdict is greeted with a shrug in Quebec, on both sides of the House. The findings are nevertheless scathing. It reads, in black and white, that "certain representatives of firms [resellers] are prepared to offer bribes to public office holders." Government employees "maintain privileged ties with representatives of IT firms" without informing their employer. Firms bid below the evaluations in calls for tenders to win a contract. "We then see an explosion of prices" by these firms "with overflowing imaginations," writes the Commissioner. The report mentions the IT lobbies that "try to influence the government to modify the contractual clauses so that their liability is limited." UPAC does not identify any individuals or firms, but the most active lobby in this area is the Regroupement des partenaires du gouvernement en technologies de l'information (RPGTI). One of its mandates is precisely "the limitation of professional liability." Close ties have been forged between this lobby and senior civil servants over time. It is this network that pulls the strings and dictates policies to the government. Last week, the Association professionnelle des entreprises en logiciel libre (APELL) slammed the door on the Conseil consultatif québécois des technologies de l'information, set up by the secretariat of the Conseil du trésor. This committee was created to help the Conseil du trésor "enhance the expertise of the public service and improve governance in the field of information technology," but you will not find any representatives of the public service there. The Syndicat des professionnels du gouvernement du Québec was kept out of the exercise. The RPGTI, on the other hand, occupies a prominent place and even chairs the meetings, noted APELL representative Cyrille Béraud. Most of the UPAC recommendations will undoubtedly be followed, but it will not be enough to get the State out of this catastrophic quagmire. The Treasury Board is about to adopt a regulation on public procurement that could, on its own, short-circuit the measures recommended by UPAC and protect the private hunting grounds responsible for collusion between suppliers and managers. The regulation would be adopted even before the law to which it relates is tabled, Mr. Béraud revealed. It will allow managers to conclude contracts without a call for tenders, and without being accountable. Before going any further, this text must be made public and examined in detail. And if we really want to burst this abscess, this issue cannot be confined to the Treasury Board offices alone.

## ###ARTICLE\_START### ID:2400

Delayed for three years already, the digital bill prepared by Axelle Lemaire's services at the Ministry of the Economy is finally reaching the end of its government development process. It will soon be submitted to the Assemblies, after a public consultation phase. This text is about to introduce at least two major innovations into French law: an opening by default of public data produced by administrations (Open Data) and a positive definition of the common information domain. These principles are likely to profoundly change our relationship with information and to promote innovation and creativity, by taking advantage of the best of digital technologies. France was already one of the countries in Europe to have made the most significant efforts to make the information produced by its administrations reusable. With the digital bill, a new step will be taken: public data will be placed by default under open licenses and formats allowing their free reuse by citizens and companies, including in a commercial context. Administrations will even be required to proactively publish their data, without waiting for them to be requested. The possibility of setting fees will become only an exception, to be duly justified by specific circumstances. This reversal of perspective is likely to renew the relationships between citizens and administrations. It gives civil society more means to control and evaluate the action of public authorities. The availability of data will also allow a co-production of services in a synergy between administrations, citizens and businesses, each of these actors having a role to play in the production of value and meaning from the data. But Open Data also has a deeper meaning. We too often deplore a drift of the Internet and digital technology, caused in particular by the establishment of enormous silos of information controlled by platforms that have managed to reintroduce an extremely powerful hierarchical logic "on top" of the open network of the Internet. The opening of public data by default creates the conditions for the possibility of a new scenario for the evolution of digital technology. As the free software sector has already shown, when resources are open and freely reusable, collaboration prevails over competition, and real value is once again produced by companies, based on the provision of services. Through the generalization of Open Data, the public actor counterbalances the tendencies towards centralization and predation that are currently at work on the Internet and promotes a return to the original promises of digital technology. With Open Data, the State renounces considering the data it produces as an intangible "heritage" or "asset". The property right that it could claim over this information is erased in favor of a right of use that the public authority guarantees to all actors. This approach establishes public information as an informational common good: a resource shared by a community of users gathered to define sustainable management rules. Even more than the liberation of public data, the digital law is preparing to give a solid legal basis in French law to this notion of "informational common goods". For the moment, it is civil society movements all over the world that have worked to promote this renewal of the commons. Some states, such as Italy, have already sought to enshrine the commons at the constitutional or legislative level, but France could be the first to achieve this feat through digital law. The idea is to recognize that information, facts and data in themselves cannot be appropriated by anyone, by tying in with the old definition of common things contained in article 714 of the civil code: "There are things that belong to no one and whose use is common to all." By attaching the status of information to this definition, we preserve this essential resource from attempts at abusive reappropriation and we guarantee at the finest level of granularity the openness of the entire system. "Information wants to be free!" This slogan served as a watchword for the early developments of the Internet, but it found its limits with the monopolization of our digital lives by the "walled gardens" of platforms. Against these new enclosures, it is the definition of information as a common good that we need. The digital law could be the first step in this direction.

## ###ARTICLE\_START### ID:2401

In 2015, we no longer drive cars, but computers. There are more lines of computer code in a car that comes onto the market today than in the particle accelerator at the European Laboratory for Particle Physics (CERN), the entirety of Facebook or an F-35 fighter jet. A car, a few sheets of sheet metal and four wheels around a computer? The comparison is of course simplistic, but it shows the importance that computing has taken on in the automobile industry. Without a computer, the contemporary car can no longer brake, turn, or be parked. And soon drive itself. The autonomous vehicles that software giants Google and Apple are making or will be making on American roads - and soon on ours - are further proof of the conquest of the automobile industry by computing. The scandal affecting Volkswagen (VW) tends to confirm this. Because the deception that is shaking the German brand has its source in the heart of the programs that equip its vehicles. The manufacturer had hidden a device in it to make the American Environmental Protection Agency (EPA) believe that the vehicles complied with anti-pollution standards. Using software to manipulate anti-pollution tests is common practice among manufacturers, who take advantage of the growing powerlessness of public authorities, whose power increasingly stops where the computer code begins. The EPA could have foiled VW's maneuver. But to do so, it should have focused not on the particles emitted, but on the way in which the program equipping the cars could modulate them. So it is no longer just chemical experts that the administration needs, but computer scientists. What the VW affair also shows is that software, written by men and women, can be rigged, bugged, manipulated, and hacked. However advanced it may be, the errors and mistakes of computers are in fact those of the humans who build them. But it is extraordinarily complicated to know how a software works from the finished product. It can only be understood by inspecting its lines of code, its DNA. Even if the EPA had been given the necessary means and skills, it is a safe bet that it would have in fact come up against the opacity of the German manufacturer's product. Today, the majority of computer programs obey the implacable laws of intellectual property: lines of code are as many industrial secrets and they are as many competitive advantages that must remain secret. What room for maneuver then is the public authorities in a world where more and more decisions are made by computer programs whose composition is secret? The answer can be found in the fight led for a long time by academics and computer security experts, who campaign to make software more transparent. The actors of this movement, that of free software, never cease to repeat that only an open computer code is controllable and therefore likely to respect the rights of its users. "Code is law" This highly modern fight began in the 1980s. It will become crucial as computers and the software that equips them invest in transport, energy, and everyday objects. Tomorrow, autonomous cars will populate our roads, our illnesses will be diagnosed by machines, and even our governments will use algorithms to make their decisions. Who will be able to ensure that this software respects the rules of the democratic game? "Code is law", "code is the law", professed American academic Lawrence Lessig in the 1990s. Algorithms must be more transparent, argued in 2014, in a different vein, the Council of State in its annual report on digital technology. The automation of our environment can, of course, compensate for the shortcomings of humans. Will an autonomous car be, ultimately, more dangerous than a flesh-and-blood driver? Probably not. But if governments want to retain some semblance of their democratic power, they will have to outwit the obscurity of algorithms no matter what.

## ###ARTICLE\_START### ID:2402

Services Economy and Pixel - Is the Web on the verge of a new revolution? Some think so, as the phenomenon of "adblocks", or advertising blockers, is gaining momentum. On Wednesday, September 16, Apple authorized their presence in its online store and allowed users to install them on their iPhones and other iPads. This decision, not without ulterior motives - its rivals Facebook and Google are the champions of mobile advertising - has intensified the debate that crosses the media and advertising sectors. The arrival of adblocks on Apple devices signals a tipping point: initially limited to the most agile users, the use of this software would gradually become common practice. According to studies, the number of fans would be around 150 million worldwide. The result of word of mouth reinforced by the ease of their installation - a simple extension added to the browser. But also, the consequence of the insufficiently regulated development of advertising on sites. The Web has grown with the presence of advertising, the revenues of which ensure the financing of most sites. This is the model that has imposed itself at this stage, in coexistence with paid access to content, which is in the minority. But the developments in online advertising, against a backdrop of stagnant revenues, tend to make it more visible. On the surface: advertising formats that cover content without being able to easily close them, videos that start spontaneously, screens that are inserted between pages. In an invisible state: trackers that intervene between sites and their users to collect data. This exploitation of browsing data is the new advertising Holy Grail, which makes possible contextual and individualized ads. All of this slows down and degrades browsing. Irritation sets in among users, as in the days when pop-ups - small advertising windows - disrupted reading, before most browsers banned this overly intrusive format. The first designers of ad blockers were, for the most part, libertarians who claimed a conception of the Web free from the intervention of States and large companies. Advocates of working together, of free software, viscerally opposed to digital surveillance, they saw in online advertising and its excesses the sign that the Web, one of the most beautiful projects carried out by humanity, was falling under the control of private interests. But this approach has now been supplanted by another, which makes ad blocking a genuine "business". An evolution that recalls that taken by the world of illegal music downloading. First there was Napster, the free precursor, created in his bedroom by a teenager. Then MegaUpload, a commercial platform that brought in a lot of money to its creator, Kim Dotcom. And finally Spotify, a solution that is certainly imperfect but legal, and adapted to uses and at a reasonable price. The adblock sector is at a stage that recalls MegaUpload. The blockers launched in recent days on Apple's iOS are paid applications. Above all, Adblock Plus, the leading ad blocker on computers, is the product of a German company, Eyeo, which finances itself by asking for "technical fees" - the amount of which is secret - from ad distributors wishing to join its list of "acceptable ads." This is what some publishers call pure and simple extortion. A DIFFICULT WAVE TO STOP This "privatization" of ad blockers has not been to the taste of Internet libertarians, whose ideals do not sit well with companies that are prepared to negotiate, for a fee, the presence of ads that are certainly less visually intrusive, but that still collect personal data. But the wave seems difficult to stop: on computers, the rate of blockers installed increases, year after year, to reach 20%, or even 40% in some countries. This trivialization of adblocks is likely to have major consequences for the Web ecosystem. According to a study by the company PageFair, the advertising industry could lose up to 22 billion dollars in 2015. Fragile, the economies of sites could see their development possibilities reduced. Paradox: the blocking of advertising, which is sometimes intended as a militant act for the preservation of the Web, could reduce its wealth. Faced with this expansion, the risk is to see the advertising sector react by rushing forward: the fewer ads are displayed, the more publishers may be tempted to multiply them, making the feeling of a permanent invasion even more significant... which encourages users to install blockers. With the risk, major for information sites, of seeing the development of advertorial formats in the hope of deceiving adblocks. Getting out of this spiral will require self-regulation of the advertising sector, which is not easy in a universe partially managed in an automated way. The advertising world has already implemented codes of good conduct with moderate success. But it has, for example, refused to support the Do Not Track project, which proposed a simple way for Internet users to refuse to have their browsing targeted by trackers. On this subject, as on that of formats, a new phase of reflection seems to be necessary for advertisers or site publishers.

## ###ARTICLE\_START### ID:2403

Tuesday, September 22, 7:00 p.m. - 8:30 p.m. At the dawn of a collaborative economy society? Collaborative consumption, contributory production, open source, participatory finance, coworking spaces, the sharing society is taking off. Is the collaborative economy the future of the traditional liberal economy? Have we entered fully into a sharing economy? With Marc-Arthur Gauthey co-founder of the think tank OuiShare. Mathieu Maire du Poset deputy general manager of Ulule. Gary Cigé co-founder of Usine IO, a collaborative prototyping workshop in Paris. Vincent Thiery regional director of BNP Paribas for the southwest network. Yann Moulier-Boutang economist. Wednesday, September 23, 7:00 p.m. - 8:30 p.m. New technologies and innovations, is the future of social entrepreneurship only digital? Today, the vast majority of companies or associations that are launching into the social and solidarity economy are doing so through the digital vector. Is the development of new technologies in social entrepreneurship inevitable? Is there still a place for less innovative development models? With Frédéric Bardeau, co-founder of the Simplon.co school. Jean-Marc Gancille, co-founder of Darwin Eco-Système in Bordeaux. Ismaël Le Mouël, co-founder of HelloAsso. Maha Keramane, specialist in microfinance and social entrepreneurship at BNP Paribas. Thursday, September 24, 7 p.m. - 8:30 p.m. Social entrepreneurship, a model for young people? Social entrepreneurship, a concept of work that is attracting more and more young people wishing to combine economic performance and social impact. Militant choice or opportunism? Has the social and solidarity economy become an alternative model for young entrepreneurs disappointed with the current economic system? With Elise Depecker, president of the Association Territoires et Innovation sociale (ATIS). Jules Rivet, co-founder of La Recharge, the first grocery store without disposable packaging in Bordeaux. Timothée Duverger, doctor of contemporary history, specialist in the social and solidarity economy. Marc Christiaen, director of the BNP Paribas business center and innovation center in Bordeaux. Debates moderated by Sibylle Vincendon, deputy editor-in-chief in charge of supplements. Debates and contributions to be found and followed on Libération.fr.

## ###ARTICLE\_START### ID:2404

Tinkering against global warming. Since August 15, a hundred "makers", these tinkerers of electronic and digital devices whose movement was launched in 2005 in California, have been gathered in Yvelines. The objective? To finalize twelve projects related to the ecological transition and the fight against global warming. To meet this challenge, the creators of POC 21 are banking on sharing experiences and open source. A snub to COP 21? Not quite, "POC" is the acronym for proof of contest, a scientific expression that refers to the second stage of the process of developing a prototype. Report on Libe.fr.

## ###ARTICLE\_START### ID:2405

(Yvelines) - The downpours did not discourage them. Dressed in construction goggles, ear defenders and overalls, Joscha Winzer and Leonie Gildein saw the last pieces of aluminum before starting to assemble their prototype. The open boxes form an installation of nine solar panels with a capacity of 540 watts. "This portable photovoltaic module can replace polluting diesel generators," says Vivien Barnier, a 27-year-old Franco-German who initiated the project with his four friends, engineers in Berlin. This prototype is one of 12 projects selected by an "innovation camp" called POC21 ("proof of concept"), an acronym chosen to echo COP21, the Paris climate conference. Gathered for five weeks in the Château de Millemont (Yvelines), a hundred people, engineers, designers and self-taught creatives of twelve nationalities are inventing concrete solutions to combat climate change. A single watchword: open source, that is to say, royalty-free software, the source code of which is made available to all. "By sharing plans, tutorials and instructions, we create a more efficient and sustainable production model: the greatest number can manufacture, repair and improve objects at affordable costs and on a local scale, explains Benjamin Tincq, 31, co-founder of the collaborative economy association Ouishare, which launched the POC21 project with the German collective Open State. During the COP, we will talk a lot about the commitments of States for the planet, but our future also depends on collaborative innovation that comes from below. » The twelve teams participating in this event, at the crossroads of hackathons - computer programming marathons - and FabLabs ("fabrication laboratories") - these collaborative workshops oriented towards digital manufacturing - were selected in April from 190 candidate projects. The objects and machines selected cover all areas of sustainable development, from energy to housing, including food and mobility. That morning, there was excitement in the former stables of the castle, transformed into wood, metal, electronics, computer-aided design and manufacturing workshops, which the organizers call the "factory", in an English jargon fashionable in the collaborative economy environment. Daniel Connell welds a part for his 10 euro wind turbine (SolarFlower), made from recycled materials and mounted on a bicycle wheel, while Jason Selvarajan tests the pipes of his "perpetual" ShowerLoop shower which cleans the water in real time and reinjects it into the shower head, reducing its consumption by tenfold. Participatory logic Glued to her laptop, Audrey Bigot is refining the design of System B, a kitchen unit that combines energy-free food preservation in damp sand, growing aromatic plants in water (bioponics), composting waste using a worm composter and a mechanical robot (with pedals). On the neighboring workbench, François Veynandt and Hugo Frederich are studying the plans for their SolarOse thermal concentrator which, thanks to a system of 20 mirrors, captures the sun's rays to heat water and produce steam between 100°C and 250°C. "It's a technology that can enable many industrial applications, such as baking bread, sterilizing jars or producing essential oils," explain the two doctoral students, who say they have already found an outlet: the market gardeners of the Bicitractor project team, a pedal-powered, electrically assisted agricultural tractor. This is the spirit of the camp: mutual aid, sharing and networking. "It took us five weeks to complete a project that would have taken us a year without it," enthuses François Veynandt. Because eco-hackers can also count on the support of experts and volunteers invited by POC21, as well as the provision of many tools. Saws, drills and grinders are shared and lent, as well as 3D printers, digital milling machines and laser cutters. A participatory logic that the POC21 residence claims even in its daily operation in the Millemont countryside. Everywhere, in this castle used to film shoots, large signs display the rules of community life: walk in socks so as not to damage the parquet floor of the majestic lounge renamed the "coworking" space, collect and sort waste. On the sofas or pouffes, under the 18th-century moldings and paintings, we talk about design and printed circuits while sipping a Club-Maté, the drink of trendy Berliners. The three meals of the day prepared by a vegan chef are taken in the canteen, installed in the old orangery. Everyone does their own dishes in a system of tubs that saves water. "As a volunteer, we have missions: prepare vegetables, clean or drive people to the station. All participants have to carry out daily tasks," explains Amandine, who came to lend a hand for a few days, before starting a master's degree in design. In the 600-hectare park, the campsite is powered by a solar panel, not far from dry toilets. "The castle, with the exception of the workshop, consumes 70 kWh per day, the equivalent of seven houses or seventeen people," assures the British Trystan Lea, showing live the curve of the building's energy consumption on the screen of his OpenEnergyMonitor project, already sold 9,000 copies. Projects exhibited Even if sobriety is the rule, the event has a cost: nearly 900,000 euros, financed by companies (such as Castorama), a Danish foundation, public funds (particularly the Ile-de-France region) and donations. At the end of the experiment, the projects will be exhibited on September 19 and 20 in the wooden geodesic domes built on the castle site, then in different locations in Paris, before and during COP21. "Opensource does not necessarily mean free," warns Benjamin Tincq. For the future, everyone is wondering about the economic model to adopt in order to pay for their objects. Some opt for training courses to share their know-how, while others are preparing to launch crowdfunding campaigns or form partnerships to sell their products or concepts. The challenge: to get away from a public of converts. "Not everyone is going to start making everything and I don't know if my mother will use our mechanical robot," admits Valentin Martineau, co-creator of the System B project. But our aim is to make people aware that there are other choices."

## ###ARTICLE\_START### ID:2406

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## ###ARTICLE\_START### ID:2407

At first contact, the handshake seems a little stiff. Normal, under the plastic glove hides an articulated clamp that reproduces only the movements of the thumb and index finger. The bionic hand, itself, is stored in separate parts in a small canvas bag that Nicolas Huchet opens carefully. Inside, a bright orange plastic hand, a motor, an electronic card and sensors, to detect at the elbow the muscular contractions that control the opening and closing of the five fingers. "It's only a prototype, still far from the performance of commercial prostheses," he specifies. But we'll get there, we just need a little time." Having lost his hand in 2002 following a work accident in the factory where he worked as a worker on a machine chain, this 35-year-old from Rennes has been involved in the in-house manufacture of a new generation, articulated and programmable prosthesis for two years. A handful of manufacturers in the world share the marketing of these high-end prostheses, developed thanks to the acceleration of digital technologies, but they remain inaccessible to the majority of disabled people. It costs more than 20,000 euros for an articulated hand like the Touch Bionics, designed in Scotland, one of the most advanced: thanks to a mobile application, the movements of the five fingers can be programmed directly on a smartphone. The idea of making his own hand came to Nicolas in October 2012, when he pushed open the door of the first "fab lab" in Rennes, the LabFab, a digital manufacturing workshop open to all and dedicated to collaborative projects. "When I entered, I saw tinkerers around their machine," he says, "it was a 3D printer. I asked: "Can we make a hand with that?" Usually, people say to me: "Sorry", with a sympathetic air. There, the guy seemed interested. " The "guy" is called Hughes Aubin, he is the Mr. Digital of the city of Rennes. With him, Nicolas Huchet discovers the world of "makers" of free software and sites for sharing plans and 3D designs such as Thinginverse.com, a goldmine for DIY enthusiasts. The two men spot several plans of hands, including one designed with Arduino, a free and inexpensive electronic device. Named "In Moov", this creation is due to the Parisian sculptor Gaël Langevin, a fan of free software, who creates objects for major brands. But it is still necessary to connect this robot hand to the intact elbow muscles, capable of moving it. The "Bionico Hand" project was launched in February 2013. The first materials are rudimentary: nylon fishing line for the hand, a box of chocolate powder cut in two to connect it to the arm. Nicolas learns how to use a 3D printer to make the components. It is the Rennes fab lab team that designs the first interface between the arm muscles and the prosthesis. Relayed by social networks, the project attracts the support of a large community, in Brittany and elsewhere, and is part of a global movement of sharing skills and "open source" plans, accessible to all. Two other projects, one launched by a British student, Joël Gibbard, the other by a community of Japanese researchers, Exii, circulate on the Internet. Their cost price does not exceed 500 euros. The Breton team is inspired by them to improve the Bionico Hand. "Thanks to the sharing of data and plans, everyone can enrich the innovations of others, and research advances more quickly", summarizes Hughes Aubin. The instructions for the articulated hand made in Brittany are available on a wiki, a shared document, open to all improvements. Nicolas Huchet sees further. To manufacture bionic prostheses at a lower cost, he is now looking to develop a network of "handilabs", based on the fab lab model, which would work in partnership with functional rehabilitation centres, as close as possible to patients. In May, the Kerpape centre (Morbihan), which accommodates 400 disabled people, invited the Rennais to sponsor a first "hackathon" dedicated to disability. Developers worked together for two days, among other things on the Bionico Hand. "The idea of a handilab is interesting even if it is not aimed at all our patients, and remains complementary to a commercial approach," explains Jean-Paul Departe, one of the centre's engineers. Digital technology and 3D printing are changing the rules in the field of prosthetics. They make it possible to produce custom-made and cheaper equipment, and to meet needs that are of no interest to commercial companies. In addition, they help to restore self-esteem, which is often damaged by disability. » For disability professionals, innovation is also social. By participating in the manufacture of their prosthesis, the disabled person goes from being a victim to being a care provider. An initiative launched in the United States by Hugh Herr, a young mountaineer who had both legs amputated at the age of 17 after a mountain accident. Later becoming a research director at the Massachusetts Institute of Technology, he designed an innovative prosthetic leg, equipped with sensors and a motor that produces an impulse. "Acting on your disability gives you new life and energy," confirms Nicolas Huchet. At the fab lab, they took me seriously without asking me about the qualifications I didn't have. I was no longer "the one who has one hand missing", but "the one who wants to make his hand". From the Maker Faire in Rome in 2014 to the Fab 11 in Boston this summer, the Rennes native never misses any of the major international "maker" events, carrying with him everywhere the canvas bag containing the spare parts for the Bionico Hand. At the head of the association he created, My Human Kit, he is looking for an economic model for his handilab project. "I don't want to turn an amputee into a customer by creating a company," says Nicolas Huchet, who is now seeking funding from partner associations or foundations. In the fall, the Bionico Hand, submitted to public votes as part of Google's innovation competition, should make its debut at the museum. "The project reflects a collective and ethical approach that represents a strong trend today," says Lucile Lignon, museographer at the Musée de l'Homme in Paris, which will host a prototype of the bionic hand in a display case dedicated to human evolution in October when it reopens to the public.

## ###ARTICLE\_START### ID:2408

Series - All connected, yes, but to what end? "The implicit question of whether technology brings us closer together or pushes us apart is at the heart of this second season," explains Christopher C. Rogers, co-creator of "Halt and Catch Fire," which Canal+ Séries is continuing to broadcast starting Wednesday, September 16. This dilemma that we are all still grappling with in 2015 inhabits each of our main characters who are looking for human connection." For viewers who missed the beginning, this series produced by the American cable channel AMC is set in the 1980s, when personal computers were bursting into homes, when the pioneers of generation 2.0 were inventing horizontal communication and promoting a business system close to the cooperative. In a few years, the vision of guys planted in front of their computer screens has become telegenic, problematized by emotional and moral issues. Technology is no longer shown in the form of gadgets and accessories like "24" but at the source, when decisions that today influence the daily lives of billions of human beings have been made. This is evidenced, for example, by the HBO series - two seasons for the moment - "Silicon Valley" (programmed in France on OCS City), as well as the English sitcom "IT crowd", broadcast between 2006 and 2013 on Channel 4. In the office of the IT maintenance workers, collector computers (Atari 8-bit, Amstrad CPC 464, Commodore 64, etc.) are enthroned. The same ones that are used by the programmers of "Halt and Catch Fire" seeking to increase their bandwidth to multiply the subscribers of Community. Can we continue to obey the same collective values when takeover or recapitalization offers loom? This question, already at the heart of "Silicon Valley", where the invention of a compression algorithm arouses the covetousness of investors, also haunts this second season of "Halt and Catch Fire", more focused on online video games and discussion forums. "How to remain free, independent, always revolutionary, even punk, and, at the same time, transform yourself into a business leader? Isn't this tug of war between loyalty to your own ideals and market pressure a metaphor for adulthood, a universal theme?" asks Christopher C. Rogers. Half a century ago Another fascinating discovery in light of current debates: the vagueness surrounding, at the time, the notion of intellectual property. "In the new technology sector, the person who had an idea was rarely the same person who crossed the finish line with the product," recalls Christopher C. Rogers. On the positive side, there was an industry-wide desire to innovate and share ideas in open source. In reality, the line between innovation and piracy was thin. Companies like Apple and Microsoft were openly accused of stealing from Xerox. "Halt and Catch Fire" is in line with those historical series ("Mad Men," "The Hours," "The Americans") that don't go back more than half a century. "It's a lens that provides a comfortable distance and allows you to answer the question that's been nagging us: How did we get here?" says Christopher C. Rogers. The value of this perspective explains the craze for biopics related to the history of computing or the Internet. After Social Network (2010), dedicated to the founder of Facebook, Mark Zuckerberg, Danny Boyle's film about Steve Jobs, the former CEO of Apple, was announced in January 2016. The role given to women But what makes "Halt and Catch Fire" original is the main role given to women, Cameron, a genius designer and business leader, and Donna, her sales manager. "In the 1980s, many women worked in new technologies in the United States. The situation changed with the marketing of PCs, positioned as "boys' toys". The idea that mathematics and hard sciences were reserved for boys and soft sciences and artistic disciplines for girls was imposed. Without being activists, Christopher C. Rogers and his co-writer wanted, in "Halt and Catch Fire", to correct this dichotomy, conveyed by the media and, beyond that, to better represent women on the small screen. In Hollywood, they are, in fact, confronted with a double difficulty, "in hiring (in number of directors, screenwriters, etc.) and in the entertainment industry and the kind of stories in which they are staged. Too often, on television, female characters function as accessories or as obstacles to the objectives and desires of their male counterparts. Our ambition here was to go beyond the Bechdel test, namely to present two women in a show, whose conversation is about something other than a man. It is more than successful.

## ###ARTICLE\_START### ID:2409

Your employees share information and they need tools to do so better. As a manager, however, you are concerned about the cost of software, because often only a tiny fraction of the features are used. Furthermore, you do not want to put your company at risk with just any free tool. Bertrand Milot, IT security specialist, presents three recommendations for open source tools that are both free and secure, provided they are used in a protected, up-to-date and well-configured infrastructure. FengOffice Regardless of the type of company, it allows you to manage files and access their different versions, manage favorites on the web, shared calendars, tasks, create memos, etc. "What is particularly practical is that you can link different elements together, such as a file, a memo and a web page," says Mr. Milot. You can also see the history of each element: who viewed it, downloaded it, etc. The tool also allows you to calculate the time spent working on each project, with the option to "pause" and resume later. Mr. Milot specifies that FengOffice adapts to the needs of companies. "We can even integrate clients and partners," he adds. They can connect and access different elements that we share with them. It is also adapted to collaborations abroad with an indication of the time zones in which colleagues are located. Visually, the environment resembles Outlook." Cyn.in This tool works like a social media, but in the company. A wall is created for each employee, then for each project. "Cyn.in also integrates document management, calendar management, project and task management in an environment that resembles Facebook, with news that scrolls," explains the specialist. It is particularly good for a company oriented towards employees under 30 years old. OwnCloud To work in the cloud without having your data scattered all over the world, you use OwnCloud and host your company's data on your own server. "This tool imitates the behavior of Google Drive or Dropbox, but you know where your data is physically and you don't have to accept the terms of use of these companies," says Bertrand Milot. Open source tools are developed by the community, for the community, so they are often less subject to budgetary constraints and market imperatives." http://www.fengoffice.com/ http://cynapse.com/cyn-in/ https://owncloud.org/

## ###ARTICLE\_START### ID:2410

It looks like a cooking recipe, or even a magic trick. Take a round of cellulose, soak it in a suitable environment, wait a few days, and the disc turns blue. Add acid, it turns red. Immerse it in a basic environment, and the ink turns green. However, magic has no place in this miniature biotechnology factory. The ink is made by an armada of hard-working bacteria, streptomyces, commonly used in the pharmaceutical industry to produce antibiotics. In their natural state, immersed in a suitable environment, they produce a blue pigment in seven days and can be handled outside a secure laboratory because they are neither pathogenic nor genetically modified. Making ink “grow”: the project took shape at La Paillasse, an unclassifiable place on rue Saint-Denis in Paris, dedicated to community innovation and knowledge sharing. Its founder, Thomas Landrain, a young biologist from the École Normale Supérieure, opened it in 2011 to break away from academic scientific culture and promote "garage biology". "Opensource", "Citizen science": the association's watchwords are displayed on the walls. A pure product of this collaborative culture, ecological ink is also its manifesto, a demonstration that tinkering can give rise to new, potentially virtuous ideas. It is completely biodegradable unlike the majority of synthetic pigments and remains inexpensive compared to vegetable inks. The project is starting to interest the industry and attract investors. This summer, the team was welcomed by Indie Bio, one of the main American start-up accelerators in biology, to test the process in a printer. They also "grew" ink on fabric, with the bacteria drawing patterns themselves. All machine washable. Next step: the manufacture of a pen equipped with a miniature bioreactor, capable of producing its ink autonomously. "Going further" To find a business model, the team decided to become professional, thereby giving up part of its community DIY approach. Winner of the Coup de coeur prize at the Génopole competition in December 2014, Thomas Landrain created the start-up Pili Biotech with an associate, which will move into the Génopole premises in the fall. "If we want to have a global, systemic ecological impact, we have to go further than our cool home production protocols and produce in large quantities," he believes. "Not everyone wants to make their own jam at home." Part of the project should remain free of industrial property, to preserve the open values of La Paillasse, and so that everyone can make their own bottle of ink in their kitchen. A guide and production kits for family or school use are currently being produced. "We are aware that Pili will be a model for the future, we want it to have an ecological but also social impact, while preserving the educational aspect of the project," assures Marie-Sarah Adenis, artistic director of the start-up which organizes ink-making workshops within the association Pousse ton encre. She will be at the Monde Festival on Saturday 26 and Sunday 27 September to show "that biotechnologies are not reserved for scientists and that you can make your own ink like you make your own bread."

## ###ARTICLE\_START### ID:2411

The minibus is dented all over, as if it had accidentally crossed paths with a rhinoceros, and its engine is coughing: welcome to Africa. Yet it is this improbable vehicle, resurrected a thousand times by expert hands, that takes me from Nairobi airport to the heart of the "Silicon Savannah", the melting pot of digital innovation in Kenya, where every day start-ups find, through mobile applications, solutions to all sorts of problems: political governance, insecurity, health, the banking system, agriculture, transport, education. It is the end of November 2014. For seven months, with the #TECHAfrique project, I have been traveling the Africa of innovation to meet and introduce these young Africans who break the codes and take risks to undertake. Changing their lives and improving those of their community through digital technology, such is the credo of these new heroes. In Senegal, my first stop, I discovered a bubbling ecosystem, catalyzed by technological entrepreneurship driven by incubation spaces, such as CTIC Dakar, or coworking spaces, such as Jokkolabs. In Ghana, I spent entire days in the MEST incubator, where young developers produce applications such as Saya, an instant messaging service bought by an Indian group based in the United States, or KudoBuzz, a technology that helps sites develop their audience and which has joined the Californian fund 500 startups. In Benin, I discovered TEKXL, an accelerator that trains around thirty young IT developers in coding. Its co-founder, Ulrich Sossou, aged around twenty, recounted the journey he had taken since his first start-up, which he had to create in an internet café in Porto-Novo due to lack of resources. Even Mali, despite an uncertain security situation, will welcome its first incubator and its first computer coding school in Bamako in 2016. All this is surprising, encouraging, but a trip to African "tech" necessarily passes through Nairobi, a pioneering city, the origin of innovations that are spread throughout the continent. We are still driving. In Europe, this minibus would have been sent to the scrapyard a long time ago. But on the continent of resilience and resourcefulness, nothing is lost. When Western and Asian industrial powers get rid of their electronic waste through obscure channels, battalions of African handymen go on the offensive. They transform these mountains of waste into digital gold and build, around these dumps that sometimes bury entire neighborhoods like Agbogbloshie, in Ghana, ecosystems based on recycling. Computers come back to life in cans and are used to train schoolchildren in computer science. In Togo, it is a 3D printer that was built from scratch from computer scraps, in a "FabLab" in Lomé where I spent several weeks, fascinated by the frugal outline of a future industrial revolution. Africa is indeed the continent of "Do It Yourself" and slogans like "If you want to change the game, get up and do it yourself", "For and with the community", "Become an entrepreneur of your life, to hack the system". The minibus finally arrives at the Bishop Magua Centre, on Ngong Road. It is there, on the fourth floor of a modern building, that a technological space flourishes whose name is on everyone's lips: iHub, the lions' den of the "Silicon Savannah". Innovative start-ups by the dozen, passionate discussions, electricity in the air and very few empty chairs, it is a little piece of California on African soil. That day, entrepreneurs share their advice with about twenty students, designers, and freelancers. There I meet Kenneth, the Kenyan partner of a Cameroonian friend living in Marseille. Together, they are setting up a start-up with a promising concept: group sales inspired by the Asian concept of tontine but with an African twist. Kenneth comes to work every day at iHub, where he gives “Lean start-up” training. Listening to him, I realize that at iHub, start-ups are all about disruption. Or “disruption,” to use an anglicism. But what on earth could anyone possibly want to “disrupt” in Nairobi in 2015? I am given a few examples: eliminating millions of polluting and dangerous kerosene lamps in favor of solar energy paid by the hour via SMS with the M-Kopa application. Or delivering parcels by GPS-guided motorbike in streets not listed on maps and dilapidated by the rainy season, a project by the start-up Sendy. Or offering postal addressing to millions of Kenyans who have never had an address, with the young company OkHi. Problems of this type have slowed down Africa's development for decades. To overcome them, you need a lion's appetite. Of all the African technological spaces, iHub is the one with the most symbolic history. At the end of 2007, the country fractured after the presidential election. A report in February 2008 reported 1,500 dead and 300,000 displaced. To curb the rise in violence, a handful of Kenyan developers and activists responded by creating Ushaidi, an open-source platform where incidents are listed and reported in real time. The international community got involved, and the massacre behind closed doors was avoided. Ushaidi ("to bear witness" in Swahili) would inspire hundreds of similar experiments around the world and its founders would create iHub, which today brings together several thousand geeks. But it was in 2007 that Kenya made its first burst onto the innovation scene with the birth of the mobile payment service M-Pesa. Pesa, in Swahili, means "money." Having it on you, when you walk around the suburbs of Nairobi, can cost you your life. M-Pesa, with its millions of users, made it possible to "hack" the problem: these are SMS messages that will securely transfer money in a few milliseconds, to a merchant, to your family. In fact, the concept was first developed in the offices of Vodafone, in the United Kingdom. Nevertheless, the transition to a cashless economy, the gradual erasure of banking discrimination, the normalization of the informal economy, all this is underway in Africa and has even spread beyond the continent, to Afghanistan, India and even Eastern Europe. I ask Kenneth and his friend Sam Wakoba, who runs a well-known tech magazine in Kenya. How many tech start-ups have been founded in Kenya? They hesitate. "At least 500, probably many more... It's hard to say because many entrepreneurs give up along the way, due to lack of funding." The lack of money to help risk-taking comes up in all my discussions with start-ups on the continent. English-speaking or French-speaking Africa, same struggle. The first to be pointed out: the States, penniless, poorly governed or simply deaf and blind when it comes to supporting their entrepreneurs. In Senegal, perseverance finally paid off with the birth of the first seed fund for local start-ups, Teranga Capital, bringing together public and private partners. It is the dream of hundreds of Senegalese entrepreneurs, eternally rejected by banks. In fact, in West Africa, the Maghreb and elsewhere, two, maybe three iHubs are about to hatch, with their own ecosystems and specificities. How long before African digital innovations, put together, have a tangible impact on job creation and the gross domestic product of African countries? Impossible to say. But if there is one thing I have learned during these trips, it is that from now on, everything is moving faster in Africa than we could have imagined.

## ###ARTICLE\_START### ID:2412

On each shelf, dishes, small household appliances, children's toys, a big label indicates the price. "Zero euros." Yet it never fails. New customers ask the question, as if their brains cannot process the information: "And how much is that?" It's free, Debora Fischkandl has to answer all day long. Free and confusing. At the beginning of the summer, the cashless store opened on Avenue Daumesnil in Paris. Anyone can come and take what they want. No need to brandish proof of unemployment or even to drop off an item in exchange. "Generosity is contagious," says Ms. Fischkandl, the creator of this space for donations between individuals, with a smile. Clearly endowed with a confidence in humanity as solid as her institutional support (the Ile-de-France region, the town halls of Paris and the 12th arrondissement, which is lending the venue), the former communications officer in the association has not observed "any raids" since the inauguration. A zero-euro wedding In front of the rack of adult clothes, Béatrice Lanouar hesitates, blouse held out at arm's length, as if it were going to cost her a fortune. The fifty-year-old seems to be playing the customer, which she hardly has the leisure to be anymore with her subsidized job at 570 euros per month. "I take what I like, it's a joy! No one has ever given me anything. But if I don't wear it, I don't keep it, you shouldn't abuse people's generosity." When she arrived, she quickly put a bra on the counter that she bought for a few euros on sale. Too big, another will benefit. It was in Mulhouse (Haut-Rhin), in 2010, that the first associative Magasin pour rien was created, of German inspiration. Paris and Rennes followed suit. An indication, among many others that it is not possible to list, of the current flowering of initiatives based on the principle of free. One day, the eye is drawn to an enigmatic slate hanging on the wall of a bistro: "3 suspended coffees." And the waiter explains this very recent system in France: pay double the price for your coffee, you will offer one to the next customer, who cannot afford it. Fred Machado, the owner of Chez Fred, in Bordeaux, is convinced. "It's not the tramps who benefit from it, they want beers. More students and retirees at the end of the month. It's not abuse, once in a while. And my customers love it. They do a good deed for 1.50 euros." After the cafés, solidarity traders all over France have started to "hang" baguettes, meals and even haircuts. CoffeeFunders, the Internet platform that lists them, reports a constant increase. "However, it is complicated for people to accept something for free. The exchange process is much more rooted in customs," says Madeline Da Silva. For a year, she has been working to make Les Lilas (Seine-Saint-Denis), a town where she is a municipal councilor, the first "hanging town". Seven businesses have already played the game, at least for a while. The thirty-something mother of two children is exhausted from organizing her collaborative wedding - florist, DJ, stylist and photographer have agreed that the future spouses will not pay them in money, but by working on their communication strategy. Proof by champagne that "free is possible everywhere, even in this area of spending at all costs. "We can no longer ignore this circular economy, the expectation is too great, continues Madeline Da Silva. Everyone now buys second-hand clothes, it is no longer reserved for the poor, it is no longer redneck. It is the one who buys full price who is! The same thing will happen with free." Next step, this fall: installation of a donation box in a public park. Imagine a sort of large telephone booth made of recycled materials. Small shelves, coat hooks hold everything that clutters up urban apartments. Everyone is free to help themselves and bring. Nantes, Roubaix, Besançon, Le Havre, Lyon have already adopted the concept invented in 2011 in trendy Berlin neighborhoods. In a more modest version, book boxes installed here by individuals, there by neighborhood associations (Circul'Livre) or booksellers (Decitre) have popularized the principle over the past few years. Cafes, boxes, cupboards, and now markets, it's a snowball effect: "free zones" (or "gratiferias"), these all-free garage sales, are appearing, as in Sarlat-la-Canéda (Dordogne), at the beginning of July. The organizer, Nacira El Manouzi, a Pôle emploi agent, is well placed to know that money is lacking. "But some people want to give, too. They are paid with a smile, a chat. Their objects have a second life instead of ending up in the dump." The planet thanks them. Giving without dominating We share seeds and plants in seed libraries, and even composters at the foot of buildings, we lend tools to neighbors, sofas to travelers, we cook a giant soup of recovered vegetables for everyone... Before the imminent arrival of collective street refrigerators, in which to put our surplus. For the generation accustomed to free Wi-Fi at every doorstep, streaming movies, free software and Wikipedia, free is an obvious path opened up by the Internet and the economic and ecological crisis. At the Gratiferia in Sarlat, which also offers meals and shows, the atmosphere is not exactly gloomy, says Nacira El Manouzi. Because whoever comes changes their vision of the other, suddenly perceived as disinterested. "We need that, something more human, kindness, to remain optimistic by seeing that there is another way to get by, through mutual aid." "And resales on Leboncoin? ", they ask. Not major, and not serious, she assures us. The donation boxes are not emptied in one go. Nor are the fruits and vegetables grown communally in urban interstices (through the Incredible Edibles movement). Self-regulation is being established. A doctor of economics, Anne-Sophie Novel sees, in the crisis, the rise in inequalities and the easily reproducible nature of these initiatives, the reason for their current success. "Added to this is a growing criticism of the sharing economy, which pushes towards the commodification of non-market practices, to sell the smallest part of one's privacy." Better. For social entrepreneur Nathan Stern, although it involves compensation (whether monetized or not), the sharing economy "has gratuity in its DNA: it is the trademark of individuals, that little extra detour made by the BlaBlaCar driver who has befriended his passenger, that gift upon arrival at the house exchanged by HomeExchange or rented through Airbnb.... The rise of giving also comes from a loss of confidence in "vertical solidarity, coming from the State", according to Sophie Dubuisson-Quellier, sociologist and researcher at the National Center for Scientific Research: "It is therefore up to everyone to help, to take back control. Furthermore, new forms of giving make it possible to avoid the counter-gift described by Marcel Mauss and Pierre Bourdieu. Giving is a form of domination since one takes the upper hand over a person indebted. Here, it is anonymous, disconnected in time, one gets rid of this debt. » Anarchist, far-left and/or eco-degrowth activists fighting against the tyranny of money, and garbage collectors on a "wastewater diet" are joined by the 24 million annual visitors to the responsible consumption site ConsoGlobe, whose most popular service is donations between individuals - an Ali Baba's cave for lovers of kittens, roller skates, cookers, fuel tanks and Seat Ibizas. Also by the 53,000 French members of the global network (with 7 million members) Freecycle. "Donation after donation, we are changing the world," he promises. Local elected officials, for their part, are still struggling to integrate this change. When, at the end of 2014, Amélie Allioux, 29, an architect by trade, voluntarily installed the first donation box in a working-class district of Nantes, the most worried person was one of them. "And if someone steals, what do we do?"

## ###ARTICLE\_START### ID:2413

Distractions, intellectual laziness, deterioration of social ties, trivialization of plagiarism, reduction of memorization capacities and possible dependence on certain restrictive technologies: the introduction of digital tools in Quebec schools is not without risks, believes a group of young ethicists who are therefore calling for a reasoned introduction of technology into the education system, with caution and critical thinking. In a thirty-page opinion entitled Ethics and ICT [information and communications technologies] at school: a look at young people and unveiled at the beginning of the week, the youth section of the Commission on Ethics in Science and Technology (CEST-Jeunesse) recognizes that technology is now anchored in the daily lives of young people in Quebec and that it is therefore imposing its presence in the world of education. These tools should not see their educational use banned, write the authors, since they would bring young people closer to school and offer new ways to fight against dropping out of school. But their entry into classrooms must be done with caution, they add, in order to avoid the many "undesirable effects" that can come with them. Many pitfalls There is no shortage of pitfalls, according to this group of young ethicists who fear, among other things, that the large quantity of information to which ICT gives students access will in the long run encourage a "certain intellectual laziness". "Simply easy, rapid and effortless access to information could lead to accepting this information as is, to retransmitting it without seeking to understand it", we can read in the opinion. As a result, "the student must learn more than ever to exercise his critical thinking to go beyond the information and acquire real knowledge". CEST-Jeunesse is also concerned about the dehumanization of social relationships induced by digital technology, which, in the long run, could have a "negative effect on the social development of students" while contributing to "a deterioration of the human bond between students and their teachers." These tools and the social networks they support could also cause the loss of a "necessary distance in the relationship between teachers and students" and a "decline in the authority of the teacher," fear the authors of the document. "This reflection on the place of technology in the world of education is very interesting," comments Patrick Plante, educational technology researcher and CEST-Jeunesse expert consultant for the development of this opinion, on the other end of the line. "One might think that young people have a blind and limitless openness to technology applied to education. Here, they are rather capable of criticism and even a certain conservatism by worrying about the values implanted in the school environment by these tools, which are not neutral, the effects of this technology on the mission of educational institutions and the consequences that this can have on society." Recommendations In its opinion, the Commission de l'éthique en science et en technologie jeunesse -- chaired by Charbel Abi-Saad, a student at Collège Jean-de-Brébeuf --, on which twelve students from Quebec sat, also recommends that the Minister of Education share the same kind of concern by ordering, for example, "rigorous studies to demonstrate the educational effectiveness [of a technology] before proceeding with [its] implementation", but also by allowing tools to enter the world of education that do not respond to fads and market imperatives, but rather offer real "added value" for students and their access to knowledge. The group also encourages Quebec and decision-makers in the education sector to opt for open technologies, supported among other things by free software, but also to promote the sharing of these technologies between schools to "reduce inequalities" and stimulate equitable access to new educational tools for all students in the province. Made public discreetly on Monday, this opinion is the sixth from the youth section of the CEST, which, in the past, has looked into the ethical issues related to electronic plagiarism, neuromarketing, advertising, cyberbullying and personalized health care. In her introductory message, the President of the Commission, Edith Deleury, hopes that this perspective from a group of young ethicists will "enrich the debate currently taking place on the place of technologies in the schools of tomorrow."

## ###ARTICLE\_START### ID:2414

Paris -- The virtual currency bitcoin has just experienced its first "fork," or split version, with the creation of Bitcoin XT, launched by two of the currency's main developers, following a disagreement over its future, Bloomberg reported Tuesday. According to the news agency, Gavin Adresen, the chief scientist of the Bitcoin Foundation, and Mike Hearn, one of the virtual currency's best-known developers, launched an alternative version of bitcoin on August 15, causing the first "fork," a term designating a split version of an open program in the "open-source" community, of the currency. Three days after its launch, Bitcoin XT would represent 8.4% of computers with a bitcoin program in the world, according to the agency, a rapid start that has not been without consequences on the price of the virtual currency, which was trading Tuesday at $253.17 compared to $265.08 Saturday, according to the CoinDesk index, which averages the prices on the main exchange platforms. In an article published during the launch of Bitcoin XT on the Medium site, Mike Hearn, explains this decision by the desire to "return to the roots of bitcoin" as envisaged by its creator, Satoshi Nakamoto. "Over the last few months, it has become apparent that a small group of people have a radically different vision of the future of bitcoin," regretted Mr. Hearn in his article, citing in no particular order the appearance of payment centers, an increase in commissions and "many other things that were not part of the founding documents of the project." "This is not the first time that we have seen an attempt to make a better bitcoin emerge, but I think that the currency has reached such a critical mass in terms of resources allocated to it that there is little chance of seeing anyone abandon it in favor of an incremental improvement," said Gil Luria, an analyst at Wedbush Securities, quoted by Bloomberg. Regularly criticized for its lack of transparency, the virtual currency had again been shaken by the arrest on August 3 of the Frenchman Mark Kapelès, former boss of the MtGox platform, accused of having manipulated bitcoin account data on at least 30 occasions between 2011 and 2013. His platform had filed for bankruptcy after the loss of 850,000 bitcoins, which represented a total value of 355 million euros, following, according to Mr. Karpelès, a massive computer attack.

## ###ARTICLE\_START### ID:2415

"I came for the first time in 2007, it was great. It was easier back then, there were five of us in a car... Now, there are 32 of us, we brought a lot of equipment, the journey was not at all relaxing", smiles Crafty, the president of the Electrolab of Nanterre, the largest "hackerspace" in the Paris region - one of those places of collaborative technological "tinkering" that are proliferating all over the planet. But to hell with the fatigue of the journey: since Thursday, under a large hard tent stamped "French Embassy", the Parisians have been multiplying workshops and demonstrations - aluminum foundry, learning to weld, tracking amateur radio satellites... - and especially meetings. "By coming to show our projects here, it allows others to get involved", enthuses Crafty. At least 4,500 people have made the trip to the Ziegeleipark in Mildenberg, a large park-museum on the banks of the river, some 80 kilometres north of Berlin, for the fifth edition of the large open-air gathering organised every four years by the German Chaos Computer Club (CCC), the oldest and largest hacker group in the world. For this Chaos Communication Camp - or "CCCamp" - people come from Germany, of course, but also from Austria, France, Italy, Canada, the United States... And they meet up with regulars from hackerspaces, promoters of free software (software that can be freely copied, distributed and modified), associative Internet access providers, computer security specialists and activists for freedom on the network (from the French of La Quadrature du Net to the Americans of the Electronic Frontier Foundation). Screwer. The "galaxy" of hackers and hacktivists is multifaceted. From the opening conference, welcoming "all forms of life", the tone is set: hacking here is not limited to computers, but extends to the kind of creativity that consists of mounting a pair of scissors on a screwdriver to replace, at the drop of a hat, an absent electric mixer. A common motto: "Knowledge must be free, open and shared." "You can hack language, society, sewing machines, music," insists Dirk Engling, alias Erdgeist, one of the CCC's spokespersons. You can also find flaws in networks, but the club has always cultivated an ethic of general interest in this area, far removed from the image of the computer hacker that is still often current among the general public. It was the Dutch hacker community that first had the idea of "putting nerds in the wild", explains Erdgeist. The first CCCamp was held in Germany in 1999, two years after an outdoor gathering in the Netherlands called Hacking in Progress. Since then, the two European outdoor events have taken place every two years, like the Winter and Summer Olympics. Unlike the annual CCC congress, which is held every winter between Christmas and New Year and now attracts over 10,000 people, the camp's programme is relatively light: some 80 conferences, on topics as varied as email encryption, mobile network security, DIY electric guitars, web archiving and the basics of hydroponics. "We set up the infrastructure, and it's up to the participants to fill in the blanks," Erdgeist continues. In fact, self-organisation is the rule, and so no fewer than 260 sessions, conferences or workshops have been added to the official programme. Thus, on the side of the very militant "village" run by Quadrature du Net, the NGO Tactical Tech, which trains human rights activists in digital technologies, and the foundation supporting whistleblowers Courage, the transatlantic free trade agreement Tafta was dissected, academic research on hacker culture was discussed with the American Gabriella Coleman, an Anonymous specialist, or source protection was discussed with Sarah Harrison, the other public figure of WikiLeaks. Elsewhere, computer coding initiations were organized for the youngest, the difficulties of refugees were discussed, the future of Bitcoin (the new electronic currency) or the fermentation of soybeans were explored... 260 self-managed sessions were added to the official program, already rich in conferences and workshops. (Photo Stephanie Steinkopf. Ostkreuz) "Treasure hunt". Participants also have plenty of time to wander around, noses in the wind, to discover, around a tent, the 3D crepe maker of Metalab, the Vienna hackerspace, or, on the wall of a disused tile factory, a large sheet imitating a stained glass window in the center of which stands out the number pi. They can also take a dip in the nearby lake or stop in an aisle when a ukulele player, sitting on a bench, sings Teenage Idol by Ricky Nelson. Others will prefer to take part in a "treasure hunt" based on computer challenges, one of the stages of which consists of "hacking Hacking Team", the infamous transalpine company specializing in interception technologies, explains, hilariously, Fabio Pietrosanti, one of the developers of GlobaLeaks, a secure transmission tool dedicated to whistleblowers. "It's a mix of networking and vacation," smiles Christopher Soghoian, a communications security specialist and analyst for the American Civil Liberties Union. A little too much, in fact, for the taste of hacker MEP Julia Reda, who pointed out on Twitter on Friday the "gentrification" of hacker culture and saw in this edition of the CCCamp "more of an atmosphere of well-being than subversive projects." The fact remains that for the participants, this somewhat suspended time is experienced as a necessary moment. "Physical meetings are extremely important," judges Adrienne Charmet-Alix, in charge of campaigns for the Quadrature du Net. The Italian Pietrosanti adds: "We discover people who were until now just a Twitter account or a software name on GitHub," a platform for publishing and sharing computer code. In short, for five days, we exchange, we share, we build links. And politics is often there in the "background" as the CCC has become, within the hacker communities, a nerve center of the hacktivist movement in general, and of the fight against surveillance in particular. "We have the understanding of technology, the ability to develop critical thinking, and to communicate," says the editor-in-chief of the Netzpolitik site, Markus Beckedahl, recently targeted by an investigation for "high treason" - abandoned at the beginning of last week - after revelations about German domestic intelligence. "This community identifies problems, creates alternative solutions, it is capable of putting pressure on, believes Christophe Soghoian. In two years, we have succeeded in making mass surveillance more costly." As the opening conference said, again: "This is not a matter of revolution. But it could be." "WhiskyLeaks". With its lights of all colors, the camp takes on the air of a futuristic village once evening falls. We stroll between food stalls, bars, collaborative canteens provided by the Food Hacking Base or the Milliways “village” - named after the “last restaurant before the end of the world” invented by the writer Douglas Adams in his Hitchhiker’s Guide to the Galaxy. Milliways also offers participatory whisky tastings - logically called “WhiskyLeaks” - while the “Italian embassy” offers grappa every evening from 11 p.m. The music, salsa here, hardcore electro elsewhere, resonates until late at night, as do the echoes of conversations. “We’re going to come out of this tired,” agrees Adrienne Charmet-Alix with a smile. This Monday, there are still a few conferences, a few workshops, a few more hours to chat with old acquaintances or discover the face of someone you’ve been chatting with online for months. Then, the tents will have to be folded, the cables put away, the generators disconnected and the whole place will start to scatter again. Then projects will move forward, which we will hear about in a few months or years. In December 2007, at a CCC conference, a certain Julian Assange came to present a project for an "uncensorable" site to publish confidential documents in a workshop. In the summer of 2009, when his site had just been awarded by Amnesty International, he gave a lecture at the Dutch summer camp. Less than a year later, WikiLeaks published "Collateral Murder", a video showing an Apache helicopter from the American army opening fire on a group of civilians in Iraq. Under the blazing sun of Mildenberg, over a cup of tea or a glass of grappa, we met those who are contributing, in various corners of the network and in many ways, to changing the situation.

## ###ARTICLE\_START### ID:2416

Among the countless activities launched by Google, Android was the first major diversification. Named after a start-up bought in 2005, this free operating system based on the Linux free software kernel was launched in 2007 so as not to give Apple a free hand in the mobile market. Designed for smartphone and tablet manufacturers who can add their software bricks to it in order to personalize their products, Android has allowed Google in return to place its services (search, Gmail, etc.) in hundreds of millions of smartphones relaying its advertisements. Bingo! Android is the most used system in the world with 1 billion users and 81% market share compared to 15% for iOS, Apple's system. This ecosystem has spread to all connected objects with a version for TVs (Android TV) or cars (Android Auto). C.Al.

## ###ARTICLE\_START### ID:2417

Don't be fooled by his shy smile: at Google, Sundar Pichai is a real rock star. Vice president in charge of products for the American company, he is due to become CEO before the end of the year. "Sundar is an extremely talented person," said Larry Page on Monday, who will hand over his place at the head of Google. "We are absolutely delighted with his progress and his loyalty to our company." His tone is almost reminiscent of that of a satisfied teacher in front of a student who is about to replace his master. Sundar Pichai, 43, is no longer old enough to go to school, but has indeed had a flawless career. He was born in Madras (Chennai), India, into a modest family. After graduating from the Indian Institute of Technology Kharagpur, he won a scholarship to study at Stanford. His father sacrificed a year's salary to send him to the United States. After Stanford, Sundar Pichai studied at the Wharton School of the University of Pennsylvania, then entered the job market. He was first employed at Applied Materials, a specialist in semiconductors, then at the consulting firm McKinsey. Sundar Pichai finally joined Google in 2004. Head of Android His first mission was to develop the Google search bar used by Internet Explorer (Microsoft) and Firefox. At the time, the American company did not have an Internet browser. Sundar Pichai, for his part, did not view this dependence on Microsoft very favorably. He feared that the rival company would end up preventing its users from using this famous search bar, which was then an important source of revenue. The young manager ended up convincing Google's management to work on their own Internet browser. This was the birth of Google Chrome. Little by little, Sundar Pichai made himself indispensable. In 2011, he was entrusted with the management of Gmail and Google Docs. Then, two years later, he became the head of Android, Google's mobile operating system and one of its most iconic products. It now powers almost 80% of smartphones worldwide. In May, Google claimed to have more than a billion Android users worldwide. The numbers are impressive, but the work is backbreaking. Android's unique feature is that it is free software, which can be used and adapted for free by smartphone manufacturers. Sundar Pichai is applying his diplomatic skills, which he has long honed through his work with Internet Explorer and Microsoft. He is also working on making Android light enough to be installed on low-end smartphones, and thus reach emerging countries. Other projects aim to transform Android into universal software: on phones, tablets, watches or connected objects. In 2014, Larry Page made Sundar Pichai head of other major Google products, including search and advertising. Officially, the CEO wanted to "take a step back". Unofficially, he was preparing his succession. As if by omen, Sundar Pichai was the king of the last edition of Google I/O, its annual developer conference, which was held in May. Faced with the screams of the crowd and the smartphones held in the air to take his picture, he barely allowed himself to say hello. Before returning to work. LR

## ###ARTICLE\_START### ID:2418

Google is swapping numbers (the word Googl means 10100) for letters with Alphabet: the Mountain View (California) giant has announced the overhaul of its structure, to separate its traditional activities, focused on online search, from its many futuristic projects. The search engine, which generates almost all of the revenue, will become the subsidiary of a larger group, a conglomerate reproducing the model of the Berkshire Hathaway firm, headed by billionaire Warren Buffett. A "collection of companies", according to the expression of its CEO, Larry Page, which will, officially, allow each entity to innovate better. According to analysts, this organization could help Google increase its profitability, by separating itself from sometimes crazy projects, called moonshots (driverless cars or contact lenses for diabetics, etc.), financed by venture capital and which may never generate profits. Unless it is a clever strategy to prevent a break-up and counter the antitrust authorities in the United States, and especially in Europe where Google is the subject of proceedings for abuse of dominant position, currently underway in Brussels. Alphabet A's activities like AdWords Google has made the invention of the future its trademark, but the billions of dollars it invests in increasingly diversified fields would not exist without its core business: that of the leading advertising agency on the Web which sells, via its search engine, billions of advertisements on behalf of millions of advertisers. Free, Google's services are profitable thanks to the AdWords system - literally "advertising words" - developed in 2000 and accessible from a few euros per month. Marketed on its sites and via millions of partners (AdSense), these sponsored links and contextualized according to the requests of Internet users have allowed this giant, which is not even 20 years old yet - it was created in 1998 - to monetize human curiosity. A 100% "algorithmic" and secret model, formidable, which largely explains its 462 billion dollars (more than 417 billion euros) of market capitalization. Beware those who try to compete with it: sent back to the oblivion of the search engine, in other words a death sentence that earns Google the procedure for abuse of dominant position initiated by the European Commission L like Loon Google is always looking higher to extend its services. After Fiber, its fiber optic internet network deployed in several cities in the United States, the multinational unveiled its Loon project in 2013 ("crazy" in English). The idea: send a cloud of helium-filled balloons to an altitude of 20 km to connect some of the 4 billion humans who don't have Internet. Crazy? The project is holding up after two years of testing. While Facebook is considering drones and Elon Musk (the boss of Tesla and Space X) satellites to achieve more or less the same result, Google is leaning towards balloons. A single one of these 15 m diameter aircraft can deliver connectivity equivalent to 4G over a diameter of 40 km on the ground. The initial connection comes from a ground station and is relayed by Wi-Fi from balloon to balloon over hundreds of kilometers. The nacelles move with the wind, and can reach a neglected area by a favorable air current. No launch date has been announced, but deals have been made with local access providers. The system could be chargeable. An employee of the Internet giant recently told us: "What is good for the Internet is good for Google." P for Page In 1996, a Stanford University student wrote his thesis on the referencing of pages on the Internet. Originally from Michigan, Larry Page then developed with his sidekick Sergueï Brin a search engine that allows sites to be classified according to their popularity based on an algorithm, PageRank. Two years later and after raising a million dollars, the two partners founded Google. A jack-of-all-trades, Larry Page held the role of co-president. He is described by his colleagues as a capricious, uncompromising character devoid of good manners. Initially convinced that he could run Google without anyone's help, he agreed in 2001 to give up his position as operational boss to manager Eric Schmidt. Only to return ten years later to the same position. In 2004, at the age of 31, he became a multi-billionaire when Google went public. Forbes estimates his fortune at $33.7 billion, ranking him among the top 20 fortunes in the world. The strongman of the trio he forms with Sergei Brin and Eric Schmidt, Larry Page will be the CEO of the "collection of companies" formed by Alphabet. H for Hydra A true digital hub of an ecosystem that continues to expand and branch out, the Google octopus is a hydra whose heads multiply. The more services Google creates and links them together, the more value it creates in the branches of its sprawling networks and makes its advertisers' advertising investments grow, ranging from individuals to multinationals. First, there are the content and information services (search, mapping, YouTube, etc.) over which it reigns supreme. Then there are the social networks (Google +, calendar, Gmail) in which it has had varying fortunes. "Monetized" services, thanks to online purchasing tools (Google Shopping) or mobile versions (Google Play) and systems (Android, Chrome, etc.) linked to its advertising networks. A profusion whose complexity serves as a bulwark against attempts to regulate this unique company in the world. A for Android Among the countless activities launched by Google, Android was the first major diversification. Named after a start-up bought in 2005, this free operating system based on the Linux free software kernel was launched in 2007 so as not to give Apple a free hand in the mobile market. Designed for smartphone and tablet manufacturers who can add their software bricks to it in order to personalize their products, Android has allowed Google in return to place its services (search, Gmail, etc.) in hundreds of millions of smartphones relaying its advertisements. Bingo! Android is the most widely used system in the world with 1 billion users and 81% market share compared to 15% for iOS, Apple's system. This ecosystem has spread to all connected objects with a version for TVs (Android TV) or cars (Android Auto). B like Brin Google has been a two-headed company since its creation in 1998 by Larry Page and Sergei Brin and until the restructuring that propelled them to the head of Alphabet. Brin is its president. Born in 1973 in Moscow, he emigrated to the United States at the age of 6 with his parents, fleeing anti-Semitism in the USSR. His mother became a researcher at NASA; his father, like his grandfather, a mathematics teacher. Not original, Sergei Brin therefore began studying mathematics. Technological research and a love of science motivated his career. Since 2010, he has been working on the development of autonomous vehicles, the future Google Car. Then he launched the Google Glass smart glasses in 2012. "I spend my time on marginal projects that I hope will become key activities in the future," Brin said at the time. Since then, he has coordinated the work of the Google X laboratory: contact lenses monitoring diabetes rates, the Loon project (read opposite), drone transport... Everything revolves around robotics and artificial intelligence. So that one day, as Brin sums it up, Google will become "the third hemisphere of your brain." Will E for Evil Alphabet be malevolent, mean, diabolical? Google claimed the opposite: "Don't be evil," claims the Mountain View firm. A polysemic motto. The slogan appeared during Google's IPO in 2004. Profits yes, but by respecting moral standards. The phrase has become the house moral, applied to all areas. In their book How Google Works, Eric Schmidt and Jonathan Rosenberg recount how employees have sometimes criticized the directions management has taken. "You can't do that, it would be malicious." The anecdote has the smack of legend. Google is above all a gigantic reservoir of personal data, exploited for advertising purposes. Its quasi-monopoly position on Internet searches gives it considerable power of influence. But Google holds on to its reputation as a yes-man. After Larry Page's ambiguous remarks in October 2014, the Internet giant was quick to make it known that its motto had not been abandoned, that it remained a gentle giant tracking Internet users and collaborating, as part of the Prism program revealed by Snowden, with the NSA. T for Television Google has been the king of online video since its acquisition of YouTube for $1.65 billion in 2006, which has become the third most visited site in the world. But for several years now, the web giant has been trying to get a foothold in the world of TV, if only for the object, this comfortable HD screen that viewers continue to favor to watch their series. In 2010, Google bet on Google TV, a screen that zapped both traditional channels and content from the Internet, from YouTube to VOD and any third-party video application. The channels freaked out. Many refused to partner with Google TV, which flopped across the Atlantic and had to settle for a box format in France. New offensive with Chromecast (a USB key that is not even expensive and that brings videos from the Web to the TV), and soon Android TV. But beyond the content, it is TV as a formidable reservoir of ads that titillates Google. The company is already experimenting in Kansas City (where it provides its own optical fiber) with the advertising targeting techniques that it has mastered to perfection: the spots will soon adapt to the viewer according to their gender, age, tastes, and viewing history.

## ###ARTICLE\_START### ID:2419

On August 6, 1945, the first atomic bomb exploded over Hiroshima - the ultimate manifestation of the power of scientific and technical knowledge when implemented by the economic and military worlds. Wars and their preparations are moments of intense innovation, this is well known, but technical development is obviously not limited to these moments. The scale, variety and renewal of our knowledge, technologies and productions in recent times is clear proof of this. Techno-industrial development affects societies in depth. It transforms ways of life (work and economic activities), it offers new possibilities to individuals (who can now "augment" themselves), it transforms life and facilitates many aspects of it. But it also has consequences that can be costly. They can be costly for some (poisoning of workers' bodies by toxic emissions, chronic diseases of populations living near production sites - these problems have been largely displaced to countries in the South for several decades); or for populations in general (air or water pollution, global warming). In all cases, these new developments arouse fears, criticism, and demands for change. Health and environmental effects often only appear over time - and this difference in temporality is crucial: it explains the essentially reactive dimension of regulations. Certainly, forms of anticipation are deployed in certain fields (think of marketing authorizations for drugs), but this is in no way the rule. The mass of products is only put on the market with a minimum of precaution and the effects of most molecules created by chemistry are, for example, not or barely studied. Once denounced, these attacks on places and people are the subject of studies - think of the epidemiological work launched two centuries ago by social reformers in working-class neighborhoods of cities or, today, toxicology work on nanotechnologies. They are also the subject of lively debates on the solutions to be promoted, on the responsibilities or sanctions to be taken - creating decontamination facilities, closing sites, financially compensating for the damage caused. It is never easy to scientifically determine the often multiple and tangled causalities that are at the source of these negative effects; it is also, and above all, that there are major interests at stake and that these are fiercely defended. One thing is certain, however: it is those who suffer the negative consequences of progress who are the first to sound the alarm. And it is most often in response that experts, companies, administrations and governments negotiate solutions. The phenomenon is now well documented and historians have described it amply, from the 19th century to the present day. Case-by-case solutions Solutions are most often ad hoc and case-by-case; they aim to reduce the most dangerous effects and rarely envisage fundamental changes. The ban on toxic plant protection products is, for example, rare if there is no replacement product - which has been the case for over a century. Politics is often the space where negotiations take place, but it is very sensitive to the demands of economic players. Competition between countries often leads to not wanting to "hinder" growth with overly strict protection rules; industrialists often prefer to increase their "negative externalities" - their discharges into the environment, for example - in order not to lose competitiveness; and politicians rarely dare to oppose these practices, in the name of the geopolitical and higher interest of the nation. The techno-industrial trajectories that "we" take are therefore not defined through debates and overall reflections conducted jointly by all citizens. Rather, they are shaped by specific groups, according to circumstances and times. This does not imply that everyone weighs in the same way. Deep asymmetries organize social worlds - and in this area, as Habermas says, it is the economic, production and innovation systems, as well as the established order of politics and regulation, that have the upper hand. Through public space and protest, systemic logics can be contested, and this undeniably produces major effects. But, let us insist again, in a reactive and rather "local" way. Narrow views The phenomenon is clear if we consider the phase of innovation and development of products and processes, a time when it is mainly scientists and engineers, economic circles and political circles (through public research policies for example) that count. There are certainly fields in which innovation mobilizes more diverse actors - think of free software, which constitutes the paradigmatic example. These spaces of "shared innovation" tend, however, to be reintegrated fairly quickly into new economic models - that of Google for example, which is based on the mobilization and enthusiasm of these same communities of open source developers. It is also certain that uses are often redefined by users, that they "reinvent" products and thus contribute to innovation. Nevertheless, for the heart of modernity of the last two centuries - for transport and energy, electronic materials and technologies, chemistry and pharmacy, as for human, plant and animal biotechnologies, it is indeed from the economic world, its decision-making centers, laboratories and production units that new products and processes emerge. And the logics at work are then those of opportunities to be seized, markets to be conquered, profitability - and not centrally those of a common health or environmental good. Not that it can be ignored, brand image is often a precious asset for the industrialist. But it only intervenes punctually, "tactically" one should say. One could object that this image is too dark and rather characterizes the past. Today we would have gone beyond these narrow views and would be attentive to the damage we cause. "Civil society" is now organized - think of conservation NGOs and their power; patient associations number in the tens of thousands and their expertise, like that of NGOs, is no longer ignored; at the global level, the Organization for Economic Cooperation and Development (OECD), the United Nations or the World Bank deploy standards, parameters and loan conditions for "sustainable" development; industrial life is framed by a number of rules (far too many, some say), and economic circles defend the environment. The social and environmental responsibility of States and companies is on everyone's lips and participation mechanisms allow the involvement of populations. The social sciences speak of a "risk society" and "technical democracy", thereby signaling the change that we have experienced over the past half-century. Perhaps. Perhaps this is partly true - but these speeches need to be seriously qualified. First, our ancestors were not the somewhat simple beings that we like to invent - perhaps to demonstrate, a contrario, our exceptional greatness. They were aware of the negative effects of progress, they debated them, they took measures - in the 19th century by massively reforesting since scientists were (already) attributing the deterioration of climates to our modes of development. real choices will be necessary Symmetrically, one can doubt that all our enlightened declarations are followed by effects; one can doubt the real effectiveness of the thousands of decisions taken over the past five decades in matters of the environment and climate; and one can question the nature of the means proposed, for example the effectiveness of the "economic instruments" (taxes and markets for pollution rights) promoted for fifty years by the OECD and liberal think tanks, and which are supposed to optimize growth and environmental protection. Moreover, the data gathered by those who developed the Anthropocene hypothesis are unequivocal: most of the curves they draw (CO2 emissions, energy consumption, etc.) continue to grow exponentially to this day, without any break in the slope. In reality, whether we like it or not, we have done little. What does that mean? That we have no options? No, that is not the case. But being effective will involve getting out of the comfortable ideology of win-win, recognizing that real choices will be necessary, that they cannot fail to be painful - and that the question of cost distribution will be the most difficult. Which will require another awareness, an understanding of the logics that, despite ourselves, always lead us back to the same inefficiencies, and other geopolitical arrangements. No one is saying that this will be easy to do. But there is no other alternative, unfortunately.

## ###ARTICLE\_START### ID:2420

START-UP Like any written text, computer code can be full of imperfections. Proofreading is always less effective when done by its author, no matter how meticulous. GitHub offers developers a way to remedy this by pooling their work. Created in 2008, this "Wikipedia of code" is used by ten million people worldwide. The company behind this phenomenon has just raised $250 million and is valued at two billion dollars. Its investors include the prestigious Sequoia Capital and Andreessen-Horowitz funds. An unusual success for a professional product, which owes part of its heritage to Linus Torvalds, founder of the Linux operating system, whose principles are the polar opposite of those of Silicon Valley. On GitHub, developers and companies come to submit their computer code to the developer community. Each modification made gives rise to a new version. There is, however, a difference with Wikipedia: the original author retains a right to review the changes submitted. By encouraging developers to work with free licenses (also called "open source"), GitHub nourishes and popularizes a culture of transparency in IT. The platform has attracted all the big names in new technologies, including the oldest such as IBM, Apple and Microsoft. These companies publish fragments of their production there, especially to facilitate collaboration with their customers and partners. Among the tens of millions of projects published on the social network, there are software for medicine, music, video games or IT development itself. GitHub does not only host computer code and Matignon has published all French legislation there. GitHub also supports the explosion of new technologies in certain countries. The platform is very popular in India and China. "Freemium" model This "Wikipedia of code" is nonetheless a for-profit company. Its economic model may seem paradoxical. While it advocates for transparency and exchange in the context of software development, it makes money by authorizing the use of its tool privately, against a paid subscription. The "freemium" model, chosen since the founding of the start-up, was at the time a gamble. Young developers attracted by the tool and its values use GitHub for free. Once hired by a company that has sometimes spotted them on the social network itself, they want to use GitHub's tools. Companies and universities therefore pay thousands of dollars to be able to use them privately. Time will tell if this minority of paying users allows GitHub to make a profit without showing any advertising to other users. With the funds raised this week, GitHub wants to "expand internationally and invest in new products", announced GitHub co-founder Chris Wanstrath. The developers' Tower of Babel has not finished growing.

## ###ARTICLE\_START### ID:2421

Everyone has their own dreams: France wants very high speed broadband throughout France by 2020, Silicon Valley promises the Internet from the sky to all of humanity! The idea is not entirely new since access to the network via geostationary satellites has been developing since the mid-90s. But the Silicon Valley giants are making it the new frontier of the network by betting billions of dollars on projects worthy of NASA: Google, Facebook and other Space X have launched themselves into a speed race aimed at connecting the 4 billion humans who still do not have Internet. Or how to open up new gigantic markets in Africa, India, Asia or South America... The "anywhere, anytime" Web on planet Earth? It's for tomorrow. Google plays with balloons The idea came from a "googler" - a Google employee in the multinational's jargon: what if we made the Internet accessible to everyone by broadcasting it via a cloud of helium-filled balloons? Two years after the launch of the Loon project ("crazy" in English), the Internet giant is persisting and signing. Tests conducted along the 40th parallel have shown its feasibility. The principle is as follows: send balloons of about 15 m in diameter to an altitude of 20 km (in the atmosphere), each capable of delivering connectivity equivalent to 4G over a diameter of 40 km on the ground. They get their connection from a ground station communicating by Wi-Fi with a balloon which will itself transmit it to its neighbor, and so on over an area of several thousand square kilometers. This flying network has another particularity: the balloons move with the winds. A real stratospheric challenge. "As soon as a pod leaves its zone, another one replaces it," Google explains. How? Each flying machine integrates a GPS and solar panels. Thanks to algorithms that take into account, among other things, the position and the weather, some balloons receive the instruction to increase or decrease the air they contain to descend or ascend. And thus join an air current capable of moving them from point A to point B. A balloon launched in New Zealand thus traveled 9,000 km; Google recovered it in South America. Its counterparts stay on average one hundred days in the air. "Low temperatures, strong winds and the UV rays of the sun weaken them. So we bring them down to repair them," Google explains. None have been lost. The group has not yet set the launch date of Loon, which may be chargeable: "We are working with access providers who will decide." "Loon will probably not connect all territories at first," they explain. But Google sees further: "What is good for the Internet is good for Google." Facebook unleashes drones At Facebook, they see things on a grand scale. Launched in August 2013, the Internet.org project aims to "make the Internet accessible to the two-thirds of the population who do not have access to it" - nothing less. To achieve this ambition, which we suspect is not purely philanthropic, the Menlo Park firm has set up a dedicated research laboratory, the Connectivity Lab. It includes experts from NASA and the National Optical Astronomy Observatory, as well as employees of Ascenta, a British company that Facebook bought last year. The company participated in the design of the Zephyr, a solar-powered drone that holds the world record for flight duration (two weeks). Because it is drones that, according to Mark Zuckerberg, will at least make it possible to "affordably cover the 10% of the world's population who live in remote communities without existing telecommunications infrastructure." In March, the social network unveiled the first images of its prototype, called Aquila ("eagle" in Latin), and announced that a first test flight had already taken place over Great Britain. In its final version, Aquila will have "a wingspan greater than that of a Boeing 737" but will weigh "less than a car," explained the CEO of Facebook. The giant drone should be able to stay 18 kilometers above the ground for three months. As for the connection itself, it will be provided by "a laser communication system that can send network via its rays, from the sky to the ground," and will allow drones to communicate with each other, Zuckerberg specified in early July on his Facebook page. Although the company has announced new test flights this summer, the actual deployment of the fleet is still expected to take a few years. Satellites, the war of the billionaires On one side, Elon Musk, co-founder of PayPal, boss of Tesla Motors and Space X; on the other, Greg Wyler, founder in 2007 of the satellite operator O3b Networks - in which Google invested more than a billion dollars (920 million euros) in 2010 - then, last year, of OneWeb. At the end of 2014, they were said to be ready to join forces to attack the "Internet of space"; a "fundamental disagreement on the architecture" of the system, according to Musk, finally separated them. Wyler has since obtained the support of Virgin Galactic, Richard Branson's space company, and the semiconductor manufacturer Qualcomm. Musk, for his part, is embarking on the Google adventure, which, decidedly everywhere, bought a stake in Space X in January. In both cases, the goal is to set up a network of microsatellites in low orbit (1,200 kilometers in altitude) to "bring affordable broadband connection to rural or underdeveloped areas," according to OneWeb. And it's serious. In June, at the Paris Air Show, Wyler announced that he had selected Airbus Defence and Space to produce 900 satellites, including nearly 700 intended for orbit by 2019 - a contract that could amount to some $1.4 billion. Musk, for his part, is thinking even bigger: in January, he said he was ready to invest up to $10 billion to launch a constellation of 4,000 satellites within five years! Some sixty engineers have already been recruited for this colossal objective. In May, Space X asked the Federal Communications Commission for permission to test six to eight satellites next year, which should be deployed at an altitude of 625 km. "Outernet", the "best of the Web" offline Do we need to be connected to the Web to access information and knowledge? This is the counter-current idea of Syed Karim, the energetic boss of the company Outernet. His goal: to offer all the inhabitants of the globe not paid access to the entire Web but free access to its "best content". In "white zones", not connected, few people can afford satellite access. "Being able to consult the news and a selection of videos, podcasts, courses, Wikipedia pages and free software is better than nothing, right?" argues Karim. Hence Outernet, the Web outside the Internet. The system is already operational: its creator assures that anywhere in the world, if you have the right receiver (a small object that the company sells while encouraging you to make it yourself) and a computer or any other terminal with Wi-Fi, you can already receive content. How does it work? Outernet starts by recording offline copies of the content - mostly selected by user requests via SMS, the rest by the company. It encodes the data then broadcasts it into space using a transmitting antenna. It is then reflected back to Earth by geostationary satellites. "Today we rent the capacity of existing satellites to cover America, sub-Saharan Africa and South Asia. But we are building our own in parallel. They are CubeSats: they are small and light [a few centimeters for 20 kilos, editor's note]. "We will cover the globe with 24 of them positioned at an altitude of 500 km," says Karim. The company is working with the British Space Agency and hopes to launch its first CubeSats in early 2016. To make money, it plans to charge for the distribution of sponsored content, like Facebook and Twitter. And the risk that users will vote for "bad" content? "Sorting will mainly be based on a community of moderators, a bit like Wikipedia," explains Karim. "And I am convinced that it will be very effective in bringing out what is interesting." Hackers' Internet of Space "Hackers want to launch satellites to combat censorship," proclaimed the BBC website in March 2012. After checking, we understood that the project of a handful of hackers from Stuttgart, called "Hackerspace Global Grid," aimed more modestly to build hardware and software capable of communicating with satellites in low orbit and to set up a "distributed network of ground stations." All in open source - in other words, "open" code and hardware that can be freely used by anyone who wants it. Three years later, the project is moving forward "in small steps," admits the young aeronautical engineer Andreas Hornig. Within the AerospaceResearch.net group, which brings together young professionals and students, he has participated in several summer programs organized by Google and the European Space Agency, in various conferences, such as the International Astronautical Congress, and in several "hackathons," coding marathons. Recently, his group developed BigWhoop, a low-cost system capable of detecting any signal in the electromagnetic spectrum - including signals emitted by aircraft - with the idea that it could be deployed in a network as widely as possible by researchers and "tinkerers" around the world. Eventually, the team hopes to improve it to be able, among other things, to track nanosatellites in orbit and then communicate with them. "Both will be necessary for the Internet of space," explains Hornig. A less flamboyant project than those of the Silicon Valley giants, but one whose watchword is the sharing of skills and the reappropriation of this Internet from the sky.

## ###ARTICLE\_START### ID:2422

A cloud of utopia, a hint of activism and a desire to share their skills, going faster than the market... This is undoubtedly what is pushing more and more young graduates to embark on the adventure of collaborative design. The same one that allowed Nicolas Huchet to develop, with the LabFab in Rennes, his own articulated hand prosthesis for 300 euros, a hundred times less than the market price. "I'm not interested in designing yet another chair, because we already have something to sit on!" explains Léo Marius who, at 26, designed a "real" film camera (excluding the lens) with a 3D printer, and made his plans downloadable by everyone (on Opendesk). "I like co-creation, because everyone can contribute their little brick to the building," says this graduate of a master's degree from the Ecole supérieure d'art et design de Saint-Etienne. In addition, we no longer need to achieve the perfect curve right away, since we can perfect the object over time and as needs arise." Advent of the 3D printer Thus, it was other users of his plans who developed the rings that allowed him to mount lenses from brands sold in stores on his device. All this information is available free of charge on the Web. It did not occur to Léo, born with the Internet, to do otherwise. Nor did his friends from generation 2.0... Without doubt, without knowing it, these young designers are following in the footsteps of the Italian Enzo Mari, 83, who was made an honorary doctor and academician of fine arts by the Brera Academy in Milan on June 17. This famous creator, inspired by the Marxist currents of the time, had seceded in 1974 by publishing "Proposta per un' autoprogettazione", a manifesto against consumer society. In it, he gave access to plans for building furniture pieces, easily made using planks, a hammer and a few nails. According to him, anyone should be able to furnish their apartment in two days with tables, chairs, benches, wardrobes, bookcases, desks and beds. Enzo Mari even encouraged anyone who modified his original plan to send him comments and photos of the furniture thus personalized. It is not far from the current system. The difference is that today cooperative workshops (or FabLab) allow the non-DIYer to take advantage of the machines and advice of others. Not to mention the advent of the 3D printer - starting at 899 euros at Leroy Merlin, for a precision of 200 microns - which also allows us to free ourselves from the hammer and nails! "Direct contact with people, the idea of creating an object based on a specific need and not for an undifferentiated offer, the feeling of being useful...": these are the reasons that led Léo Virieu to co-found, in Saint-Etienne, Captain Ludd - named after a legendary English activist who, at the end of the 18th century, destroyed weaving machines that were replacing textile workers. "It's not about making money, but about creating a neighborhood workshop and offering our know-how as an alternative to industrialists or big publishing houses. This does not prevent everyone from continuing their life alone, as a freelance designer or graphic designer," says Léo Virieu, who has since left the collective and would like to create a quality label to bring together similar initiatives. And there are many in France. In Lille, Faubourg 132 strives to give new life to discarded furniture, including that collected by Emmaüs. Entropie, in Grenoble, designs desks, solar ovens and beehives... simple enough to be reproduced by everyone. The architects of ETC, in Marseille, propose to rehabilitate urban wastelands. "This is a generation that is concerned with enjoying its work and changing the world a little, by being part of the local area," says Vincent Guimas, co-founder of La Nouvelle Fabrique in Paris, who designs open-source furniture and runs workshops at the Gaîté-Lyrique for the exhibition "Oracles of Design. Third Industrial Revolution." Every Sunday during the exhibition, the public is invited to produce ceramic plates using a 3D printer, which will be used for an upcoming brunch. "Not everyone will be an artist or designer," acknowledges Jérôme Delormas, director of the Gaîté-Lyrique, "but it is a means of expression and appropriation of tools and, therefore, a form of autonomy regained for our contemporaries relegated - in our digital societies - to the role of consumer users." The third industrial revolution is underway, predicted Chris Anderson in 2012 in his book Makers. The new industrial revolution (Pearson ed.), since making objects at home could become as common as retouching photos or composing a playlist on the computer. With their collaborative workshops, the young generation of designers has already set foot in the future. "We are designer-transmitters," summarizes Léa Barbier, from Faubourg 132, "transmitters of manufacturing processes and innovative ideas!" But what will the designer do when thousands of proposals are issued on the planet to improve the original proposal? "He will ensure that the addition of many contributions results in a relevant proposal in terms of use, processes, and even regulations," assure Antoine Fenoglio and Frédéric Lecourt, curators of the exhibition "Invention/Design. Regards croisés" at the Conservatoire national des arts et métiers in Paris. He will be "director, conductor.

## ###ARTICLE\_START### ID:2423

On June 16, 1980, in a decision known as the "Chakrabarty ruling," the American Supreme Court made living things patentable. The proprietary ideology had just taken a gigantic leap forward. Three decades of hardening and extension of this ideology to new objects (living things, software, seeds, molecules, mathematical algorithms, etc.) followed. Professor of economics at the University of Paris-XIII and member of the steering committee of the collective Economistes Atterrés, Benjamin Coriat directed the book Le Retour des communs. He revisits the theoretical underpinnings of the proprietary ideology and shows how it has become a self-destructive force. Based on surveys and academic research spanning more than three years, the book shows how this ideology is in crisis today. According to Benjamin Coriat, the commons, which consist of forms of sharing and distributing the attributes of property rights, are experiencing a tremendous resurgence today. And, above all, the hope of a transmutation of capitalism into a collaborative economy. You support the thesis that there would be a return of the commons, but can you clarify what this notion covers? Traditionally, the commons are forms of social organizations around a resource, such as a pasture, a grain mill or a lake, in which there is access and rights of use and exploitation shared by a community. For it to be sustainable, this shared form of access to the resource requires a set of rights distributed between the different users. The commons are ultimately characterized by three elements: a resource, a distribution of rights around this resource, and rules of governance to resolve, if necessary, conflicts. The fishery is a typical case of the traditional commons: there is a lake containing fish and, around it, rights holders, the commoners, who are generally riparians. Together, they set the rules that allow the exploitation and ensure the sustainability of the resource in the long term. These are examples from the past... What are the commons of today? An example of a modern common is Wikipedia. Unlike a fishery, the informational database that is Wikipedia concerns a universal community that can take as much information as it wants. Unlike the lake, which requires rules to ensure the simple preservation of the resource, the Wikipedia commons is managed according to rules aimed at enriching the stock of shared data. These are two different types of commons. Behind them, there is the idea that shared property can be a very effective way to manage and enrich resources. In this, these practices open a breach in the dominant priority ideology today. What should we understand by "proprietary ideology"? It is the ideology according to which the form of property that must always prevail is that based on exclusivity, entirety, the plenitude of rights attributed to a single individual. In 1804, the Napoleonic Code devoted hundreds of articles to the defense and illustration of property in this exclusive form. However, forms of communal property already existed at that time, such as forests, lakes, paths or water tables. But the code says nothing about it. It protects the sole right of private and exclusive property and remains silent on all forms of "communal" property, which were then legion... By what mechanisms has this dogma of property been reinforced in the sphere of the economy? The affirmation of the proprietary ideology is concomitant with that of neoliberalism. It is based on the thesis that markets are self-regulating and efficient, but on condition that property rights on goods are full and complete, "exclusive". Then we would achieve maximum well-being! It is such presuppositions that are at the origin of the explosion of intellectual property rights, the patentability of living things, therapeutic molecules or mathematical and software algorithms, all to transform them into marketable products. It is this same ideology that supports the idea that we could contain the rise in temperatures and control the climate by establishing pollution permits... Would you use the term "commodification of the world"? The link between proprietary ideology and the commodification of the world is intimate. The proponents of proprietary ideology have developed a new theory of the company according to which the efficiency of the company is only achieved if it is managed in such a way as to maximize shareholder satisfaction, through multiplied markets. The translation of this theory has been the establishment of management principles entirely focused on the famous "creation of shareholder value" [editor's note: shareholder value]. It is this transformation of corporate governance that has led to a gigantic kidnapping of the value created by companies by owner-shareholders, with which senior executives have been associated, with the procession of catastrophic consequences that we know about on both the social and ecological levels. How did this proprietary ideology become established? To establish itself, this theory of property rights has battled with an approach to the rival company, which has long been dominant. In this vision (theory of "stakeholders" or stakeholders), the company is conceived as the result of compromises between its different actors, essentially shareholders, managers and employees. It is then presented as a "community of destinies". This discourse has disappeared. In the name of the proprietary ideology, shareholders and a few senior executives now appropriate almost all of the wealth created and justify it by saying: "We are monopolizing the value because we are the ones who created it!" This proprietary ideology is also found in the conduct of economic policies. Think of Thatcher at the end of the 1970s. Or of the IMF's structural adjustment programs aimed at endlessly extending privatizations. How is the proprietary ideology being called into question by the crisis? The starting point and the heart of the current crisis are subprimes. This crisis puts us at the center of the ideology of ownership and its bankruptcy. To increase their profits, the banks imagined transforming totally insolvent poor Americans into owners of their homes. To do this, they manufactured financial products corresponding to credits that they knew would never be repaid. This did not worry them, because they resold the debts to others... Finally, everything exploded, and the ideology of ownership with it! Then comes the logic of the commons... By taking control, thanks to the tightening of intellectual property, of new areas such as living things, software, intellectual productions, CO2, etc., the proprietary logic has finally developed multiple obstacles: a brake on the circulation of knowledge, innovation restricted by patents... In this context, there was the work of Elinor Ostrom, winner of the 2009 Nobel Prize in Economics. She was the one who showed that goods such as water or genetic resources, but also new types of commons such as those being invented today in the world of free software, could be managed sustainably and effectively as commons. And in the wake of her thinking, we want to say: "Commoners of all countries, unite!" On the eve of the major climate conference to be held in Paris in December, how should we consider the management of global warming? Regarding the climate, the terms used are misleading. We speak of "a global public good". And it is true that the atmosphere belongs to everyone. It is a "common good", but for all that it is not (yet) a common. Because, despite the few regulations put in place, there is no governance to manage greenhouse effects and CO2 emissions. The climate, although a common good, is for the moment managed according to the logic of the proprietary ideology. Think of pollution permits. We are still largely in the mystification that the market would be capable of managing this resource. If the common is, as you affirm, a "social construct", its user or its manager, called commoners, does politics? Yes, it is obvious. I do not know if the commons, as is sometimes said, announce a "postcapitalism". What is certain is that they force us to rethink our ways of living and governing ourselves. Is the common a neocommunism, a neosocialism or a third way? Commonly managed resources are neither resources managed by private owners nor resources managed by public authorities and their delegates. The common is a hybrid characterized by the direct involvement of the stakeholders concerned. The Neapolitans refused the privatization of water. They held a referendum and won. They took over the management of water. But it was not the simple delegated power of the town hall that took over its management. Communities of users have become stakeholders and exercise control over an entity conceived as a common good. In this sense, there is progress in democracy. This example shows how, around the commons, a real social movement is underway. Basically, this movement is the answer finally found to the dead ends of communism. To the excesses and failings of state exclusivism, the commons and the commoners provide solutions.

## ###ARTICLE\_START### ID:2424

FRANCE At 31, Nicolas Huchet still displays the relaxed style of a teenager. But he deserves to be taken seriously: this young sound engineer has just been elected by the prestigious American research center MIT as the 2015 French "Social Innovator" under 35. His project? BionicoHand, a robotic hand prosthesis, which can be made at low cost using accessible tools, such as a 3D printer, and whose manufacturing plans will be made available online to everyone. Nicolas Huchet lost his right hand at 18 in a work accident. "As soon as I saw the prosthesis that Social Security offered me, I knew that I would never like it, even if it allows me to do quite a few things," he remembers, looking at the stylized flesh-colored silicone hand resting on his knees. However, it would take the young man ten years before embarking on the project that is now changing his life. "For years, I repressed my disability, I had little interest in it. It was only in 2012 that I started to get involved when I saw new polydigital prostheses coming onto the market, which allowed you to tie shoelaces, for example, because your fingers move independently. I really wanted them." The model covered by Social Security offers autonomy, but works like pliers. Problem: it's impossible to afford one of the ultra-sophisticated innovations. "My disability has taken on meaning" A visit to the fablab (fabrication workshop open to the public) in Rennes would be the trigger. "While passing a 3D printer, I wondered if it was possible to make a robotic hand for which I had found the open source plans on the Internet." The designer of this robot hand (InMoov), Gaël Langevin, then agreed to advise him on how to adapt it into a prosthesis. In five months, a first prototype was assembled, at a cost of 300 euros, with the help of around twenty volunteers from the fablab. Sensors placed on the muscles of the forearm transform the energy of the contraction into an electrical signal that controls the movements of the fingers. The BionicoHand was born. But when we met him at the premises of the Atelier BNP Paribas in Paris on the occasion of the MIT awards ceremony, there was a slight disappointment: Nicolas Huchet was not wearing his robot hand. "The current prototype is not sufficiently developed for daily use," he explains. "It is mainly a proof of concept. We are working to improve it by taking into account the needs of users: a light, fast, robust, functional and aesthetic device." With unprecedented difficulties to be encountered. "Usually, the manufacture of robotic prostheses is high-tech. We are in the "low-tech" category, seeking to replace the elements with cheaper substitutes found in DIY stores. "We're tinkering," explains Nicolas Huchet. He is delighted with the turn his life has taken with this project. "My disability has taken on meaning, I have regained confidence in myself. I was coming out of a long difficult period, both professionally and personally. This project is a medicine. It made me want to change things for people with disabilities." The enthusiasm generated by BionicoHand opens up new perspectives for the association "My Human Kit", created for the occasion, which is considering commercial development in the medium term. It will broaden its scope to disability in general with five projects, including a wheelchair, a hearing aid and bionic lips. All will be feasible in open source, but completed models will also be marketed. The BionicoHand in its final version will thus be sold for between 1,000 and 1,500 euros, compared to 11,000 euros on average for entry-level models. A "Handilab", a research and development center dedicated to disability, will be created. It will not be open to the public at first. "We want to develop expertise first," explains Nicolas Huchet. And this in conjunction with an international community of fablabs and researchers. When the inventor strives to reduce costs, he thinks in particular of the disabled in emerging countries. To carry out this project, the association, which plans to hire an engineer, is raising funds. Indeed, the MIT prize did not include a financial reward. However, the needs are estimated at between 160,000 and 200,000 euros per year. - PAULINE FRÉOUR (Le Figaro)

## ###ARTICLE\_START### ID:2425

This morning, Quebec will announce its major clean-up to tackle the "computer mess" after years marked by billions of dollars wasted, corruption among senior officials and the loss of control of projects to the private sector. Among the 36 measures presented, Quebec plans to dismiss several senior IT officials and wants to make those who remain more accountable. There will be no more hiding places. Departments will have to provide an inventory of their actions. The government does not want to let things go any further and wants to regain control to know everything about what is happening in its departments and agencies. The President of the Treasury Board, Martin Coiteux, will present his plan this morning. Our Investigation Bureau has obtained the broad outlines of this change of direction, which should correct a host of problems raised by hundreds of reports on the subject in recent years. THE MODEL MUST CHANGE The plan is to break the current model, which often favours a few large firms to the detriment of competition and smaller players. Each use of a private consultant will have to be justified and Quebec wants to stop paying them by the hour, but rather by the task. "The concerns and the indignation [...] are totally justified," Mr. Coiteux, who has often been exasperated by the problem since he took office, has already said. Several measures already existed, or are simply good management practices. But others risk having a big impact if, of course, they come to fruition. NO MORE SILO WORK Quebec is responding to the major problem of the too many IT bosses throughout the public service and the resulting lack of cohesion. Several will jump and the others will sit on a new committee that will centralize decisions so that we stop doing the same tasks in silos. Instead of letting all departments and agencies spend at their own pace, a "central envelope" of expenses will be established to better coordinate the billion-dollar tap that has been flowing for years. The government will also create a "monitoring committee" for major projects. The computerization of health care, whose estimated costs have climbed from $540 million to $1.6 billion, and the SAGIR project, which has gone from $83 million to $1 billion, will certainly benefit from this monitoring. In his plan, Martin Coiteux is also in favour of the unions' grievances. Admitting that resorting to the private sector has been expensive and risks putting the government in a situation of dependency, he promises to enhance internal expertise and hire staff. Late in this area, Quebec wants to adopt the "open and transparent government" approach, in particular by releasing data. - - - GOVERNANCE REVIEWED THE BIG IT BOSS WILL HAVE MORE POWER REDUCE THE NUMBER OF IT EXECUTIVES DEVELOP A FRAMEWORK FOR GOVERNMENT MANAGEMENT OF IT EXPENDITURES DEVELOP A COMPLETE PICTURE OF IT ASSETS IMPROVE THE BEST PRACTICES DASHBOARD OPEN UP GOVERNMENT PROCUREMENT TO SMEs GIVE MORE CONSIDERATION TO OPEN SOFTWARE MAKE THE MOST OF CLOUD COMPUTING PROMOTE FIXED-FEE CONTRACTS AND NOT HOURLY-FOR-A-GOOD GOVERNMENT CREATE A COMPLETE PICTURE OF THE WORKFORCE MAXIMIZE THE USE OF INTERNAL EXPERTISE ADD STAFF - - - Annual IT budget $3.5 billion 11% = acquisition equipment 30% = civil servants' compensation 42% = consulting services from private firms Quebec will unveil its "Renovating Quebec through Information Technology" plan today. The measures will also be reflected in a bill in the fall. - - - MEASURES ALREADY TAKEN SPECIAL MANDATE TO UPAC AND THE AUDITOR GENERAL ON IT CONTRACTS AUDIT ON THE SAGIR PROJECT 30% REDUCTION IN PRIVATE CONSULTANTS IN THE ORGANIZATION RESPONSIBLE FOR MAJOR IT PROJECTS VERIFICATION OF THE $30 MILLION AWARD WITHOUT COMPETITION IN COMPLIANCE WITH CGI FOR RADARS PHOTO THE LONG-AWAITED PROJECT Like most governments, Quebec is finally officially committing to consolidating its data centers. These days, it is possible to store much more data in less space. This urgent but little-known situation will save $100 million per year in the medium term. Ontario, which had 300 centres, now has only seven. Quebec still has 457 centres and is wasting millions of dollars on avoidable maintenance, our Investigation Bureau revealed last winter.

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This morning, Quebec will announce its major clean-up to tackle the "computer mess" after years marked by billions of dollars wasted, corruption among senior officials and the loss of control of projects to the private sector. Among the 36 measures presented, Quebec plans to dismiss several senior IT officials and wants to make those who remain more accountable. There will be no more hiding places. Departments will have to provide an inventory of their actions. The government does not want to let things go any further and wants to regain control to know everything about what is happening in its departments and agencies. The President of the Treasury Board, Martin Coiteux, will present his plan this morning. Our Investigation Bureau has obtained the broad outlines of this change of direction, which should correct a host of problems raised by hundreds of reports on the subject in recent years. THE MODEL MUST CHANGE The plan is to break the current model, which often favours a few large firms to the detriment of competition and smaller players. Each use of a private consultant will have to be justified and Quebec wants to no longer pay them by the hour, but rather by the task. "The concerns and the indignation [...] are totally justified," Mr. Coiteux, who has often been exasperated by the problem since he took office, has already said. Several measures already existed, or are simply good management practices. But others risk having a big impact if, of course, they come to fruition. NO MORE SILO WORK Quebec is responding to the major problem of the too many IT bosses throughout the public service and the resulting lack of cohesion. Several will jump and the others will sit on a new committee that will centralize decisions so that we stop doing the same tasks in silos. Instead of letting all departments and agencies spend at their own pace, a "central envelope" of expenses will be established to better coordinate the billion-dollar tap that has been flowing for years. The government will also create a "monitoring committee" for major projects. The computerization of health care, whose estimated costs have climbed from $540 million to $1.6 billion, and the SAGIR project, which has gone from $83 million to $1 billion, will certainly benefit from this monitoring. In his plan, Martin Coiteux is also in favour of the unions' grievances. Admitting that resorting to the private sector has been expensive and risks putting the government in a situation of dependency, he promises to enhance internal expertise and hire staff. Late in this area, Quebec wants to adopt the "open and transparent government" approach, in particular by releasing data. \* \* \* GOVERNANCE REVIEWED THE BIG IT BOSS WILL HAVE MORE POWER REDUCE THE NUMBER OF IT EXECUTIVES DEVELOP A FRAMEWORK FOR GOVERNMENT MANAGEMENT OF IT EXPENDITURES DEVELOP A COMPLETE PICTURE OF IT ASSETS IMPROVE THE BEST PRACTICES DASHBOARD OPEN UP GOVERNMENT PROCUREMENT TO SMEs GIVE MORE CONSIDERATION TO OPEN SOFTWARE MAKE THE MOST OF CLOUD COMPUTING PROMOTE FIXED-FEE CONTRACTS AND NOT HOURLY-FOR-EMPLOYED GOVERNMENT CREATE A COMPLETE PICTURE OF THE WORKFORCE MAXIMIZE THE USE OF INTERNAL EXPERTISE ADD STAFF \* \* \* Annual IT budget $3.5 billion 11% = acquisition equipment 30% = civil servants' compensation 42% = consulting services from private firms Quebec will unveil its "Renovating Quebec through Information Technology" plan today. The measures will also be reflected in a bill in the fall. \* \* \* MEASURES ALREADY TAKEN SPECIAL MANDATE TO UPAC AND THE AUDITOR GENERAL ON IT CONTRACTS AUDIT ON THE SAGIR PROJECT 30% REDUCTION IN PRIVATE CONSULTANTS IN THE ORGANIZATION RESPONSIBLE FOR MAJOR IT PROJECTS VERIFICATION OF THE $30 MILLION AWARD WITHOUT COMPETITION IN COMPLIANCE WITH CGI FOR RADARS PHOTO THE LONG-AWAITED PROJECT Like most governments, Quebec is finally officially committing to consolidating its data centers. These days, it is possible to store much more data in less space. This urgent but little-known situation will save $100 million per year in the medium term. Ontario, which had 300 centres, now has only seven. Quebec still has 457 centres and is wasting millions of dollars on avoidable maintenance, our Investigation Bureau revealed last winter.

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The government has become vulnerable and has no overall vision to get out of the IT mess, argue four leading figures in Quebec IT. They sent the government a hard-hitting presentation, a copy of which was obtained by our Investigation Bureau, in which they present significant savings avenues for managing IT files. One of them is registered as a lobbyist. They are seeking a mandate to help the government. Among these four experts are two former vice-presidents of the firm CGI, Marc Allaire and Denis Godcharles, who also founded and managed a consulting firm for over 12 years. Pierre Shedleur, who was notably senior vice-president at Bell Canada and president of the CSST, is also part of the group. After a more difficult stint at the head of the defunct Société générale de financement du Québec, from 2004 to 2010, he joined the private sector. The other expert, Pierre Rhéaume, has 40 years of experience in the public service. He was, among other things, vice-president of the Régie des rentes. Here are some highlights of their diagnosis: The method of remunerating consultants must be changed to link them directly to results. The model only allows a few firms to carry out major projects. Quebec must give more consideration to open source software, cloud computing and remote development. The government must establish a better partnership with universities to improve expertise. There is a lack of strategic supervision, because ministers are not committed and are not sufficiently interested in projects. They must be more involved and not just authorize projects. A senior government management team could be created to become an overall manager for all departments and agencies. For his part, the President of the Treasury Board, Martin Coiteux, said he is attentive to the opinions submitted to him. \* \* \* WHAT THEY WROTE "The management model for major IT projects is 25 years old, it is no longer adapted to the scope of the current situation." "Risk management is weak." "[...] systems are made "to measure", "ready-to-wear" is not or hardly considered." In Quebec, "approximately 58 vice-presidencies and IT departments exist; they make their own decisions and manage their own projects; the result is an impossibility of cohesion." "20% of government IT professionals will retire in the next five years." "Free/open" and "cloud" technologies are very little or not used, which increases the cost of basic software and its support for years.

## ###ARTICLE\_START### ID:2428

The government has become vulnerable and has no overall vision to get out of the IT mess, argue four leading figures in Quebec IT. They sent the government a hard-hitting presentation, a copy of which was obtained by our Investigation Bureau, in which they present significant savings avenues for managing IT files. One of them is registered as a lobbyist. They are seeking a mandate to help the government. Among these four experts are two former vice-presidents of the firm CGI, Marc Allaire and Denis Godcharles, who also founded and each ran a consulting firm for over 12 years. Pierre Shedleur, who was notably senior vice-president at Bell Canada and president of the CSST, is also part of the group. After a more difficult stint at the head of the defunct Société générale de financement du Québec, from 2004 to 2010, he joined the private sector. The other expert, Pierre Rhéaume, has 40 years of experience in the public service. Among other things, he was vice-president of the Régie des rentes. Here are some highlights of their diagnosis: The method of remunerating consultants must be changed to link them directly to results. The model only allows a few firms to carry out major projects. Quebec must give greater consideration to open source software, cloud computing and remote development. The government must establish a better partnership with universities to improve expertise. There is a lack of strategic supervision, because ministers are not committed and do not take enough interest in projects. A government senior management team could be created to become an overall manager for all departments and agencies.

## ###ARTICLE\_START### ID:2429

Best known for its smartphones, Huawei plans to take full advantage of the Internet of Things. But not necessarily by distributing sports or health accessories. Rather, by establishing itself as a key player in the communication technologies that enable them to be connected. For the Chinese telecoms equipment manufacturer, the equation is simple: the more connected objects multiply, the more operators will need bandwidth, and therefore the brand's products. Huawei is one of the world's leading suppliers of communication systems. Number 2 in the sector after Cisco, it generates 67% of its turnover from its network equipment intended for telecoms operators. Its consumer business (smartphones, tablets, 3G keys) currently only accounts for a quarter of its revenue. However, this share is expected to double within three years. An Android watch Huawei is therefore fully committed to very high-speed mobile broadband: it has invested more than $600 million in 5G, strengthened its research and development teams and is participating in the standardization groups that will define the future mobile communication standard by 2020. For Thomas Li Li, director of Huawei's industry and standards division, the arrival of 5G is inextricably linked to the take-off of connected objects. "The challenge is not only to offer ultra-fast speeds," he explains. "It is also about reducing latency times to transmit information more quickly, which is crucial in the case of connected cars or robotics." These performances are less of a concern for fans of video downloading than for companies that need to approach real time for their critical applications. "It is estimated that out of 100 billion connected objects in 2025, 90% will be used by companies," says Thomas Li Li. However, for industrial uses, they need a quality of service that is more expensive. In fact, the Internet of Things will be much more profitable than the mobile Internet." Aimed at the general public, Huawei already markets a connected bracelet that can be used as a Bluetooth headset. It is preparing to launch an Android watch. The Chinese group plans to accelerate the development of connected objects by making its ultra-light and open-source operating system called LiteOS available to manufacturers. "This software can be installed on any camera, intrusion sensor or smoke detector: it takes up little space and works with inexpensive components," emphasizes Thomas Li Li. Huawei, which claims 5% of the global smartphone market, has not abandoned its goal of seizing the world's number one spot. It is competing with Apple to become the number one smartphone manufacturer in China. Its strategy is to gradually move away from low-cost mobile phones to sell more high-end models. In 2014, its phone sales increased by 45%, reaching 75 million units. Next year, the company plans to distribute 100 million smartphones. To accelerate this development, a new brand, Honor, was launched at the end of 2014 to attract young, ultra-connected professionals. Of the 100 billion connected objects in 2025, 90% will be used by companiesTHOMAS LI LI, DIRECTOR OF HUAWEI'S INDUSTRY AND STANDARDS DIVISION

## ###ARTICLE\_START### ID:2430

IRON This is a diagnosis that doctors do not think about enough. Because the symptoms of the disease, which are commonplace, can have many other causes, and because it is still poorly understood. However, people with hemochromatosis have everything to gain from early diagnosis of their disease, which is responsible for an iron overload in the body with potentially serious consequences. In more than 95% of cases, classic genetic hemochromatosis, or type 1, is due to a mutation of the HFE gene, on chromosome 6, which causes a deficiency in hepcidin, a true "iron hormone", hence the harmful accumulation of iron in the tissues. Appearing 4,000 years ago among the Celts, it only affects people of European type. The first signs of hemochromatosis most often appear after the age of 40. The disease first manifests itself through persistent fatigue and chronic pain affecting various joints, often those of the fingers: this is the sign of the painful handshake. "It can be osteoarthritis, often in the hands and ankles, but also a lot in the knees and hips, chondrocalcinosis - crystal deposits in the joints, especially the hands and knees - or osteoporosis," explains Professor Pascal Richette, rheumatologist (CHU Lariboisière, Paris). "It often takes more than five years for these first symptoms to be linked to their real cause, hemochromatosis," regrets Professor Pierre Brissot, hepatologist (CHU Rennes), specialist in the disease. "However, the later this diagnosis, the greater the risk of liver, pancreas and, more rarely, heart damage, which can potentially compromise the prognosis, even if serious forms are rarer than before." If left untreated, iron overload causes progressive fibrosis of the liver, which is the breeding ground for cirrhosis and cancer. Why especially these organs? Absorbed or recycled iron is transported in the body by a protein, transferrin, to the bone marrow where new red blood cells are produced. "Hemochromatosis, by lowering hepcidin, increases iron absorption to the point that the capacities of transferrin are overwhelmed and some of the iron remains in the tissues," the doctor explains. It is this unbound iron that damages these organs over time. The disease still needs to be diagnosed. In addition to fatigue and joint pain, certain signs should attract the doctor's attention, such as an increase in liver enzymes, transaminases, or unexplained diabetes without reason. Hemochromatosis is sometimes discovered by chance: fatigue suggests anemia, but the blood test shows, on the contrary, a very high ferritin, reflecting the iron overload in the tissues. The blood level of this iron storage protein can explode in the case of hemochromatosis. Once other causes of elevation have been ruled out (metabolic syndrome, inflammation, alcohol, hepatitis, etc.), if ferritin and plasma iron remain high, a painless genetic test is performed to look for the mutation. "This diagnosis therefore no longer requires an invasive procedure. To quantify iron overload, in addition to ferritin, an examination, MRI-iron, can be performed: free software now makes it possible to correlate very precisely the MRI signal, darkened by iron, with the amount of iron present in the liver," says Professor Brissot. Once the diagnosis of hemochromatosis has been established, the treatment is simple. "It is based on periodic bloodletting, which is remarkably effective. At the beginning, these bloodlettings are weekly, to reduce the iron overload as quickly as possible. Maintenance treatment can then be spaced out a little, but must remain very regular. "Some of the disease's effects are partly reversible: liver fibrosis if it has not yet reached the stage of cirrhosis, diabetes as long as it is not insulin-dependent, sometimes cardiac problems... As for joint complications, "under the effect of bloodletting, a third regress, a third stabilize, but a third continue to progress," says Professor Richette. Screening for hemochromatosis should also be offered to relatives. But if treatment is interrupted, hemochromatosis and its procession of complications resume their course. However, patients are increasingly facing difficulties in continuing to have these bloodlettings performed in hospital departments and French Blood Establishment centers. The future therefore lies in a treatment that would act on the cause of hemochromatosis, not just the iron overload, which is its symptom. This is the challenge of current research: finding a way to mimic hepcidin or stimulate its production... It often takes more than five years for the first symptoms to be linked to their real cause, hemochromatosisProf. PIERRE BRISSOT, HEPATOLOGIST (RENNES University Hospital)

## ###ARTICLE\_START### ID:2431

Berlin - Correspondence - It is a small program that is making an ever-growing hole in the advertising revenue pool of online media: Adblock Plus, published by the German start-up Eyeo, allows any Internet user to remove ads from the pages they visit for free. A disaster for online media, which are only paid when an ad appears on the Internet user's screen. Several German press groups have filed a complaint against Eyeo, without success. After a decision handed down in Hamburg last month, it was the Munich court that ruled on Thursday, May 28, that Adblock was not illegal. The Zeit online website, the business daily Handelsblatt, the television channels ProSieben, Sat. 1 and RTL, all heavyweights in the German media landscape, had pleaded an illegal and harmful infringement of their business model. They were all dismissed by the courts. Ben Williams, Eyeo's spokesperson, wrote on his blog: "We hate to spread boring and obvious news, but we are forced to announce that Adblocking has been declared 100% legal (again). This style is the trademark of the Cologne-based start-up, which is celebrating its fourth anniversary this year. The company was founded by a programmer, Wladimir Palant, who in 2006 wrote an open-source program (accessible source code) that became the most downloaded extension for Firefox. Three hundred million people are said to have downloaded the program and 50 million actively use it each month, according to figures provided by the company. The program is now available on Google Chrome, Safari, Opera, Internet Explorer and Android. In 2011, Wladimir Palant teamed up with a student who had written his thesis on his program, Till Faida, now the director of the company Eyeo, which employs 35 people. Since Wednesday, May 27, the firm has been offering its own browser alongside its famous program. "Acceptable advertising" The company remains true to its original philosophy: "Users will always decide how the Internet works." Eyeo wants an Internet "without annoying ads," but recognizes that "advertising plays a pivotal role in keeping online content free." It therefore claims to work for "a better Internet" for advertisers and users, where only irritating and low-quality ads are filtered. "Our ambition is to make the economic system as a whole more sustainable by encouraging innovation and non-intrusive advertising standards," proclaims the company's website. How can this strategy generate revenue? Part of the site's funding comes from its "whitelist", a white list with advertisements considered "acceptable", which meet a set of specifications defined by the company, in agreement with the user community. A process that many critics consider non-transparent. An "acceptable advertisement" is an advertisement judged by the community to be recognizable, which does not interrupt the content of the page or disrupt it. Sites that wish to appear on the list must comply with these specifications and... pay Eyeo for this service. It is this detail that bothers the start-up's detractors who see it as "brigandage", or even "racket", according to Matthies van Eendenburg, the lawyer for the plaintiffs in the Hamburg trial. According to the business daily Financial Times, Google, Microsoft, Amazon and United Internet are said to have paid considerable sums to appear on Eyeo's famous white list. Sums that will undoubtedly be used by the start-up to prepare for the new trials that await it. The Axel Springer media group has filed a complaint in Cologne, where the judge has already described the white list as "extremely worrying".

## ###ARTICLE\_START### ID:2432

"We are a bit like the Internet in 1993, when the Web was created. The sharing economy has already given birth to a few globalized giants whose consumer services have revolutionized the accommodation sector with Airbnb or the transport sector with Uber or the French Blablacar. But it is a new way of operating the economy that can potentially "disrupt" all sectors of activity or almost, hence the current excitement." Co-founder of the think tank Ouishare, which follows and analyzes the transformations of the economy in the era of "consum'actors" who have become both sellers and consumers of goods and especially services, Antonin Léonard believes that there is still a lot to invent in the sharing economy. Review of the new entrepreneurial but also societal and political trends that will be highlighted and debated during the Ouishare Fest, which begins this Wednesday in Paris. The "hyperlocal" version of collaboration In addition to the large collaborative platforms that offer to exchange very standardized services, many players are thinking about neighborhood social networks where it would be possible to have access to a drill or a lawnmower for a few hours. A sort of Boncoin for rental or loan between individuals. This is the ambition of the site Mon p'ti voisinage, which has brought together more than 4,000 local networks. The opportunity to make contacts or to publicize very local events but also to exchange services, good deals or to barter. By grouping together with her neighbors, one of its users explains how she was able to save money on her fuel delivery. In the United States, the Nextdoor site already brings together 53,000 neighborhood microcommunities on the same principle and allows you to offer or request services in your environment via a messaging system. Other sites like Sharevoisins, Stootie or Ilokyou are riding the same trend of mutual aid and more or less commercial exchanges. "All these sites inspired by Facebook but in a very utilitarian and local way do not yet really have an economic model," explains Antonin Léonard. "But they are betting that if they manage to attract millions of users and make themselves indispensable, they will find a way to monetize their audience." Sharing at the service of businesses How many unused square meters in offices or warehouses, unused machines in factories or even idle construction equipment? After having seduced individuals by offering them both the chance to top up their income and access services at unbeatable prices, the sharing economy has launched an assault on companies and "business to business" activities. "The next wave of online booking and sharing platforms will concern businesses," predicts the American investment bank Piper Jaffray in a recent report on "business sharing." Examples abound: from the rental of offices or storage spaces offered by the American sites LiquidSpace or PivotDesk or the French Bureauxapartager to the rental of underused equipment or materials in construction or healthcare, a host of start-ups have already invested in this new niche. Piper Jaffray even imagines that companies could one day share or exchange their employees. Platforms for providing consultants are already very numerous across the Atlantic, where 40% of executives could, according to a recent report, work as freelancers by 2030. Open source applied to physical goods While lines of code for computer programs have been shared for a long time, the sharing of patents concerning technologies on physical goods (car chassis and engines, batteries, etc.) is still not widespread but is growing. "It's a more productive way to drive innovation and build ecosystems," explains Antonin Léonard, who predicts a radical change in industrial logic in the era of sharing. Presented at the OuiShare Fest, the Poc21 initiative aims to bring out 12 "open source" projects for the climate in the run-up to the next world summit in Paris in December, dedicated to global warming. Sharing the value generated by the platforms This involves making contributors, and not just investors and shareholders, benefit from the valuation of the platforms that they enrich through their activities. The American site Etsy dedicated to home creations (jewelry, crafts) has thus decided to distribute 5% of its shares to its most active users.

## ###ARTICLE\_START### ID:2433

While a new McGill University study shows that Quebec is by far the province that is adapting best to climate change, the Institute of Public Health believes that austerity risks turning everything upside down. "Quebec is a leader in adapting to climate change," says the study on public health adaptation to climate change in Canadian institutions. The document from the renowned Montreal university states that it is thanks to the implementation of concrete solutions, focused on prevention, that Quebec stands out. The other Canadian provinces and territories are not prepared to deal with weather disasters, notes the study. CUTS However, the analysis proves that climate change has been identified by researchers as a major risk to the health of Canadians. However, the cuts could harm the proper functioning of programs, believes Pierre Gosselin, medical advisor and head of the health component of the Climate Change Action Plan at the Institut de la santé publique du Québec. "We may have been too efficient," the doctor says ironically. But the worst, according to him, is the 25% cuts to the regional public health departments, their main partners. "We're doing this so that it can be implemented in the regions. At some point, we can't prevent damage with the few staff we have. It's a problem that's already starting to be felt," says Mr. Gosselin. RESPONSIBLE He believes that the Institute has managed to work miracles with almost nothing. After seven years of research to properly identify the problem, following the deadly heat wave in France in 2003, the group set up alert programs and produced detailed maps of risk areas, allowing Urgence Québec to intervene quickly in the event of extreme weather events, all with a meager budget of $300,000 and using open-source software. "We're the only province to have done a complete assessment of the entire territory. Then, we made guides and training. Then, we created a real-time monitoring system," explains the researcher. - - - what Quebec has done Alert for: Storms Heat Mosquito-borne diseases Food security Air quality Mapping of flood zones and heat islands Consolidation of real-time monitoring networks to warn populations at risk during extreme extreme events Climate monitoring Climate monitoring Resources Water resources Water Groundwater Groundwater Water samplers Water samplers

## ###ARTICLE\_START### ID:2434

What if your company created its own wiki to archive information related to R&D, the sharing of problems and solutions, or any other information that could be used for employee training? Like the open encyclopedia Wikipedia, the most popular example of collaborative creation, a wiki is an effective way to transmit knowledge. And you don't have to be a large company to do it. In 2010, when her company had only about ten employees, Nathalie Ashby, president and founder of Cible Solutions d'affaires, chose to implement a wiki in her Sherbrooke SME. "It's kind of like the company's memory," she says. "It serves as an internal encyclopedia, but also as an activity log. There are talented people who arrive, others who leave. Our wiki aims to keep track of everything that's done in the company. It allows you to find a ton of information with one click." Project log, process documentation, file nomenclature, document structure are all information that the fifteen employees from the various Cible departments display on their wiki, which the SME has affectionately named “Cited Wiki.” Cible Business Solutions does branding and communication for its clients. It has its own studios. Even more interesting, the company designs IT platforms, including Maestria, which allows companies to manage their own transactional sites. The SME is putting the finishing touches on its Donna interactive suite for managing online donations. Wiki guardians But be careful, an internal wiki is not a place where news is posted. And even less a place where employees can give their comments, as Facebook allows. “There must be one or more wiki guardians,” explains Nathalie Ashby. The content must be approved.” At Ellicom, a company specializing in online training, five "guardians" are responsible for validating the information found on the SME's "Ellipédia." President Hugues Foltz is proud to say that more than 50% of his 110 or so employees in Quebec City, Montreal, Toronto and Casablanca know how to create content and other updates on the internal wiki. Ellipédia is hugely successful, he says. Employees refer to it regularly. "We are proactive," explains Mr. Foltz. "We encourage our employees to put information there as often as possible. For it to work, there must be complete will, including from senior management." Ellicom was inspired by Wikipedia's open source software to create its own wiki in 2009. Moreover, maintains Hugues Foltz, licensing or software fees should in no way hinder companies from setting up a collaborative tool. “It’s more a question of time than money,” says the young entrepreneur. “If we converted those minutes or hours of stored information into money, it would represent a fortune.” The Groupement des chefs d’entreprise du Québec is also about to create its own wiki. “We already have a very well-structured and very well-populated intranet,” explains Michel Bundock, the Groupement’s first vice-president and general manager. “But a wiki will allow us to go even further, to be more agile. The reason for this tool is to preserve our knowledge base and share it. We want to professionalize the coaching profession.” In the tradition of wikis (which means “fast” in Hawaiian), more and more companies are setting up an internal social network. Biscuits Leclerc created one from scratch. This initiative even gave birth to a start-up called Poka. Conceived by Alexandre Leclerc, son of Denis Leclerc, CEO of Biscuits Leclerc, Poka is aimed at manufacturing companies and aims to enable employees to transmit and share their knowledge systematically.

## ###ARTICLE\_START### ID:2435

E-book: it's the tax fight The European Commission will consider a review of the taxation of digital books in 2016, announced its president, Jean-Claude Juncker. E-books could then benefit from the reduced VAT rate of 5.5%, like paper books. Minister Fleur Pellerin welcomed this, but defenders of free software, such as the April association in France, are not for it: the DRM that protects e-books against copying and restricts their compatibility "greatly reduces the rights of readers and means that an electronic book is not equivalent to a printed book." Cuarón will have the reins of the Mostra Mexican director Alfonso Cuarón (to whom we owe Gravity) will preside over the jury of the Venice Mostra, from September 2 to 12. The rest of the jury and the official selection of films will be revealed this summer. Rottiers caught for throwing from balcony Twice nominated for the César for best male newcomer in 2007 and 2010, Vincent Rottiers, 28, was filming a thriller called Money in Le Havre when he was taken into police custody on the night of Sunday to Monday. This regular in roles of teenagers who have lost his bearings unsealed the railing of the balcony of his hotel room and dropped a piece of cement on a car in the street, clearly in a state of drunkenness.

## ###ARTICLE\_START### ID:2436

Crowdsourcing is a generous idea: the crowd produces, voluntarily, for the crowd. Wikipedia is the flagship example, with more than 30 million articles in 241 languages (1) and more than 800,000 views per hour for its French version. Even better, 11,095 extracts of declarations of interests of our parliamentarians were entered in the summer of 2014 in less than a week by nearly 8,000 people via an interface provided by Regards citoyens (2)! Of course, the productions of the crowd are not always perfect, whether through malice or incompetence, so these applications include verification strategies, always by the crowd, to limit abuse and obtain the best possible quality. The fundamental principle is that of "do-ocracy", of the "power to do": if you are not happy with the result, contribute and change it! Once a month, Libération publishes an original scientific analysis in partnership with the organization's online magazine (https://lejournal.cnrs.fr). Although it has taken off with the advent of Web 2.0, which allows Internet users to interact with the pages they visit, crowdsourcing is not a recent invention. For a long time, everyone has been called upon, particularly to help with research. My colleagues at the National Museum of Natural History have thus found "instructions for travelers and employees of the colonies" so that they "[make] known the results of their own experiments, in order to benefit from them and to make the scientific world benefit from them" (3), the first edition of which dates back to 1824! This is what is called "participatory or citizen science", which can take various forms. You can go and observe the small animals around you and transmit your data to scientists on Vigie-Nature (4), or pretend to be a zombie and annotate corpora for automatic language processing on Zombilingo (5). For us, researchers, this is an opportunity to break down certain barriers between research and the public and to challenge the sacrosanct expertise: the participant gradually becomes an expert, not in the field of research, but in the task assigned to him. It is above all a way of collecting data that we could not obtain otherwise, due to lack of resources. Another form of crowdsourcing has recently appeared, microworking crowdsourcing, or "multiple-partitioned work": participants carry out small tasks for an even smaller remuneration. The first and largest of the part-partitioned work platforms belongs, not surprisingly, to Amazon, an employer not known for its respect for workers or tax rules. The web giant had the idea of creating a platform for parceled work for its own data production needs and opened it to other requesters in 2005, for a fee of 10% of the transactions made. Amazon Mechanical Turk (AMT) was born. In this borderless universe, requesters propose microtasks (HIT or Human Intelligence Tasks!) to workers (turkers) in exchange for micro-remuneration. This is artificial intelligence. The myth is taking shape: AMT would allow tasks to be carried out quickly and very cheaply, with good quality results, by people for whom it is a hobby. The reality, described by several research studies, is closer to a coal mine than a gold mine. While the platform allows data to be produced relatively quickly and very cheaply, the quality is only satisfactory for very simple tasks (transcribing speech, etc.) and deteriorates significantly for more complex tasks, such as summarization. Added to this is the fact that there is no sure way to verify that Turkers have a good command of the language they claim to have mastered. Above all, AMT is, for the vast majority of Turkers, a means of subsistence, not a hobby. With tasks paid between $0 and $0.25 (on average around $0.05), the average hourly wage is less than $2. Beyond the indecency of the wages, there is no link between the requester and the Turkers. The latter have no social security coverage, no rights, not even the assurance of being paid: requesters have the right not to pay a Turker if they feel that he has done his job badly, without having to justify it: the Medef dream finally realized! AMT, on the other hand, does not provide any means for Turkers to evaluate a requester or ban them. Their relationship is therefore totally unbalanced. Turkers must preserve their reputation at all costs, which leads to a significant amount of hidden work: to train themselves, they do tasks without being "declared", therefore without being paid. They are on the lookout for "good" HITs (somewhat remunerative and interesting), sometimes taking turns with their family, and have the same problems as all involuntary part-time employees: it is very difficult for them to find the time to look for another job, although most of them want one. Finally, Turkers are considered independent workers by Amazon, so the States see them escape the social security contributions that are due to them. A drop in the ocean of what escapes them. Until now, France was somewhat protected from AMT, but now a French company (which I will not name so as not to give it publicity) has just been born that is taking up its broad outlines, playing with the limits of what remains of French labor law. From a generous idea at the service of the greatest number, they have only retained the profits to be made. Conviviality, exchange, sharing are not outdated values. They are at the heart of crowdsourcing, free software, fablabs (open manufacturing workshops where 3D printers have been developed). They are bearers of innovation and freedom. The websites of AMT, like its French equivalent, are attractive, but they hide generators of social misery. Should it be recalled: the exploitation of the weakest is anything but an innovation! (1) Figures from December 2014 (source: Wikipedia). (2) http://regardscitoyens.org/interets-des-elus/ (3) https://archive-org.acces.bibl.ulaval.ca/details/instructions pou00frangoog (4) http://vigienature.mnhn.fr/page/vigie-nature (5) http://zombilingo.org/

## ###ARTICLE\_START### ID:2437

Ustwo, a company specializing in the design of digital interfaces and whose clients include Google, Sony and Nokia, recently published a video presenting what dashboards could become in the near future. The Australian company proposes to rethink the way a vehicle's information is presented to its driver. The video mentions that when the vehicle is parked, it is not necessary to see information about the speed, but rather about the transmission and the amount of fuel. On the other hand, when the car is moving, the priority is given to the speed of the vehicle. Ustwo's designers thought of integrating indications on the speed limit of the zone in which the driver is located. When the latter exceeds the speed limit, the indicator changes from blue to orange, then to red. The dashboard could even indicate to motorists if they are in an area where road conditions are slippery and at what speed it is recommended to drive to drive safely. In addition, when the car is put into reverse, the image captured by the rearview camera could be broadcast on the dashboard. Ustwo's project is currently in its embryonic stage. The company also allows Internet users to work on its program since it is open source. Now all that remains is to see if there will be interest from car manufacturers.

## ###ARTICLE\_START### ID:2438

At a time when anyone can create a website and dad can open his PC by himself to change the graphics card, it is no longer technical knowledge that makes a geek, but political commitment. Those who know how to do it do not buy an iPhone so as not to give their fingerprint to Apple. Those who know also boycott Google, the best friend of American intelligence, to use instead free software, with transparent source code that can be redistributed as desired. They sue Microsoft for "tied selling" Windows on new computers. They share their photos in creative commons, campaign for a relaxation of copyright and dream of eradicating DRM, these anti-copy devices on downloaded DVDs and albums. They defend Net neutrality, denounce mass surveillance and put the Web on half-mast to alert public opinion to the dangers of this or that bill threatening individual freedoms. While we're hanging out on Facebook, they're making the Internet a better place.

## ###ARTICLE\_START### ID:2439

By trying to reduce the issue of IT solely to questions of accounting, costs, return on investment, economy, efficiency and good governance, we are forgetting the essential: in 2015, what does IT mean to the State? How has it become a political issue that concerns us all? ADVISORY COMMITTEE Last Wednesday, Minister Coiteux announced the creation of a Quebec information technology advisory committee. Some people regret the absence of public service unions on this committee. I am one of them. They are one of the keys to any change. I note, for my part, that the major players in free software in Quebec were carefully excluded from the consultation. Let's move on. That is not the real issue. In 1990, buying a computer was like buying a super typewriter. It allowed you to work faster and more efficiently. In 1990, computing allowed us to automate production processes and improve our productivity. In 2015, computing allows us to communicate. This networking offers new gains in efficiency, new possibilities for each of us and for each organization. By digitizing all of our knowledge, it allows us to educate ourselves, to inform ourselves, to entertain ourselves. It allows us to see and hear the world. It allows us to share our knowledge and our questions. At the level of our State, by collecting all of the data on each of us, on our territory and its wealth, on our economy and our businesses, on our health and our life, networked, this set of data now constitutes the backbone, the nervous system and the memory of the State. DIGITAL HERITAGE In 2015, the State is invested with a new responsibility: to enrich, develop and protect what constitutes not the State's information assets, but what I prefer to call, for my part, the digital heritage of the State of Quebec. This digital heritage is a public good that belongs to every Quebecer. It has already become the source of the creation of immense wealth and it will be even more so tomorrow. It is through this digital heritage that we will develop the economy of the regions and metropolises in the 21st century. It is through it that we will control and grow our immense territory. It is through it that we will build a more efficient State that is closer to its citizens. It is through it that we will renew our democracy and give the younger generations the tools to enable them to face the challenges of our century. AN ECONOMIC NECESSITY How can we build this heritage and demarcate its boundaries? How can we organize it? How can we develop it? How to protect it? What information management policy? Who will benefit from this extraordinary collective capital? These are the questions we must answer collectively, and these are the real issues behind the decisions that Minister Coiteux is about to make. I am far from having the answers to all these questions, but I nevertheless affirm that it is impossible to build a digital heritage, designed to last for decades and decades - or even more, without owning the software, its sources and the data that constitute it - which only free software allows. Free software has the advantage of organizing the IT market in the form of an open, free and competitive market. It is also an economic, technological, legal and political necessity to build and maintain this common digital heritage. As Wikileaks announces the public release of all of Sony's private data, I also affirm that it is impossible to guarantee the security of the most intimate information that we have entrusted to our State using proprietary software. Ensuring the security of our information is the first responsibility and obligation of Minister Coiteux. He has remained silent on this issue.

## ###ARTICLE\_START### ID:2440

"We have been acquired by Netflix for $11.5 million," announced the Popcorn Time blog two weeks ago. The acquisition was predictable, as the two companies have been stepping on each other's toes for a long time in the video-on-demand sector. With both Netflix and Popcorn Time, you can access a catalog of films and series in high definition via a polished interface. Both are intuitive, efficient, fluid, and fast. Except that... one is paid, with a subscription starting at 8 euros per month, while the other is free. In short: one is legal, the other not at all. And this acquisition announcement published on April 1, which smelled of fish, must have made regular Popcorn Time users snigger. Since its launch in 2014, the software has already experienced the eventful life of all pirate ships - chased by rights holders, sunk once but returned to the surface, abandoned by its crew and reinvested by other cabin boys... But it sails, the joy of stingy Internet users and the nightmare of the cultural industry. The Order of the Phoenix It was February 28, 2014 when one of the earliest discoverers, blogger Korben, introduced Popcorn Time to his thousands of readers by making them fantasize: "You are comfortably installed on your sofa, a bowl of popcorn on your knees, ready for a little movie session at home..." A week later, it was the Torrentfreak blog, a quasi-official provider of news on piracy, which looked at the software. A few more days, and all the general media outlets were writing an article about it. We can say that the birth of Popcorn Time was media-friendly... and its fall was meteoric. Under pressure from Hollywood and threats from lawyers, the team of hackers became discouraged in record time. On March 14, 2014, they already threw in the towel: "We learned a lot, and in particular that opposing an archaic industry has a cost." The death warrant for the software? Certainly not. On a stroke of genius, they had opted for open source development, allowing anyone to recover the program code to create a clone. This is how Popcorn Time became a multi-headed phoenix, immortal and indestructible. The Fellowship of the Ring The names of the founders of Popcorn Time have never leaked - we only know that there is a "band of geeks" from Argentina behind their mascot Pochoclín, a smiling bucket of popcorn. They are helped by "a community" that has notably helped translate the software into 32 languages. On their blog, they explained that they were responding to a need of Internet users: "Piracy is not a people problem. It's a service problem. A problem created by an industry that sees innovation as a threat to their antiquated business model. It seems like no one cares. But not Internet users. We've shown that people are willing to risk a fine and prosecution just to be able to watch a recent movie." Confident, they also claimed that Popcorn Time is perfectly "legal": "We checked. Four times." The question is complex. Technically, Popcorn Time does not itself host the films and series in its catalog. It simply connects Internet users-viewers who have the file on their computer. Legally, they are indeed the ones most at fault. It's like Hadopi: you don't get caught for downloading a film, but for leaving it "shared" in peer-to-peer software, allowing other Internet users to retrieve it. The "Game of Thrones" series page on Popcorn Time Belle de jour No need to take a geek option baccalaureate to use Popcorn Time, unlike traditional peer-to-peer download software, whose jargon and interface can put off more than one beginner. This software is aimed at the general public. As soon as you open it for the first time, a long list of film and series posters unfolds before your eyes. Each one has a page with a summary, year, duration, rating out of 5 stars, little flags to choose the language of the subtitles and a big blue button, the only one that matters: "Watch it now". A small loading bar makes you wait a few seconds and, boom, credits. It's amazing. Especially since, like on Netflix, only high definition videos are offered. The risk of coming across a slobbery old Divx is almost zero. As for the catalog, we mainly find recent films. Ideal for gorging on Disney, getting drunk on superheroes and devouring five seasons of a series like Breaking Bad. If you dig a little, however, you can find a few independent American titles, even art house, and some surprises - Paris brûle-t-il, Pas son genre, the two biopics on Saint Laurent and The Voices, which we didn't expect there. The Illusionist Trick question. Usually, when the video launches immediately after clicking on the "Watch" button, we call it streaming. This term defines the continuous playback mode of a video file hosted somewhere on the Internet, on a well-hidden server on the other side of the world. Popcorn Time gives the illusion of streaming, but it is in reality sequential downloading: the software connects peer-to-peer to other Internet users to download the desired file in small pieces. To connect these people, it uses a tracker (a catalog of files) like Yify - but the user can choose another one. The information and covers of the films and series come directly from Omdb, a free community database. As for the subtitles, the software will draw them from the world reference OpenSubtitles. The file for the film "Song of the Sea" on Popcorn Time The whole story The apprentice pirate who types "Popcorn Time" into his search engine risks being confused. There is no longer a single site where to download the software since its fall in March 2014. Two of its offspring remain in the running: popcorntime.io and popcorn-time.se. They have minor differences (one has a tab dedicated to Japanese cartoons, the other an option to watch videos offline...) but it is mainly at the level of the media that the competition is played out. In addition to PCs, Macs and Linux computers, both versions now work with Android devices, with only popcorn-time.se being compatible with iOS. An undeniable comfort for pirates who prefer to watch Game of Thrones in bed, with their tablet on their pillow. Obviously, the app is not available on the official AppStore... You have to jailbreak your iPad, which voids the warranty. But the popcorn-time.se team was very proud to announce last week a new technique for conquering iPads without jailbreaking them. And its ambitions don't stop there: for the coming months, it promises compatibility with Windows Phones and a free VPN (Virtual Private Network) system to anonymize connections and never get caught by Hadopi again. Mission impossible In the Netherlands, interest in Popcorn Time is such that Netflix CEO Reed Hasting expressed concern in his quarterly letter to shareholders. Few rights holders risk an official comment on their state of panic over the software, but they continue the hunt as best they can. The Motion Picture Association of America obtained a blockade of web pages last year that offered to download the software. In October, the address time4popcorn.eu was closed down... but the site immediately found a new server in Sweden. Like The Pirate Bay, it is likely that Popcorn Time regularly changes its URL address over the years without this slowing it down: Google will index its moves. The most effective technique remains to attack users directly: since last year, some American rights holders have been monitoring peer-to-peer networks themselves for fraudulent IP addresses, then requesting their identification from Internet service providers in order to send a fine to the pirates' mailboxes, threatening them with legal action if they do not respond with a check - 2,000 crowns (268 euros) per film in Denmark and several thousand dollars in the United States... Similar avenues are being explored in Australia and Sweden. In France, Popcorn Time is rather well-armored against legal attacks. It has "no funds and no business model", reports a certain Robert English, a self-proclaimed spokesperson interviewed by a Quartz journalist. The new anti-piracy strategy presented by the Ministry of Culture, which consists of cutting off funding to illegal sites, cannot therefore affect Popcorn Time. It does not display advertising, does not ask for any contributions from Internet users, and does not depend on any technical or financial intermediary. The only sustainable way to minimize its influence is to continually improve video-on-demand services, by offering more, better, more recent videos, and inventing services good enough to make people forget that the legal offer will never be free.

## ###ARTICLE\_START### ID:2441

As a global Internet giant as it is, Google has just learned to its cost that competition rules are not to be trifled with in Europe. After having condemned Microsoft in 2012, which had to pay a total of more than 2 billion euros in fines (for having favoured its Explorer browser over Windows), the European Commission has decided this time to attack Google head-on. At the end of four years of a procedure that Brussels initially tried for a long time to settle amicably, the Competition Commissioner, Margrethe Vestager, sent a "notification of objections" to the Californian firm. In other words, a formal indictment. "I fear that the company has unfairly favoured its own price comparison service [Google Shopping Service, editor's note] in violation of EU rules on antitrust and abuse of a dominant position," said the Danish woman, who took up her post at the beginning of November 2014, very curtly. Google, which today reigns almost unchallenged over Internet search in Europe (92.26% market share in the first quarter) risks a fine of up to 10% of its 2014 turnover, or 6.6 billion dollars (6.2 billion euros). Analysis of a battle that promises to be very long, with, in the background, an exacerbating rivalry between Europe and the United States in the field of new technologies. What does the European Commission accuse Google of? She is concerned, in the words of Margrethe Vestager, about the fact that the hundreds of millions of Google users on the Old Continent "do not necessarily see the most relevant results in response to their queries". In total, around thirty complainants, including Microsoft, have testified since the start of the investigation in 2010 about the way in which Google has highlighted its services rather than theirs in the search results of Internet users on its engine. These practices, which harm innovation and restrict consumer choice, do not only concern online shopping tools. "Vertical" search engines (specializing in a single field such as the legal site eJustice.fr) or geolocation services have also complained about the way in which Google has relegated them to oblivion in the display of its engine results pages. Although it does not rule out extending its accusations to other sectors, the Commission has limited its grievances to targeting the price comparison site Google Shopping. "If it had wanted to cast its net wider, it would have taken at least another six months," explains a Brussels lobbyist who advises complainants. "The advantage with online shopping is that it generates hard cash that is easier to quantify than in the case of other services that may have experienced a sudden drop in their audience following a change in Google's algorithm." Brussels has also opened a new front by launching a formal investigation into possible violations of antitrust law concerning Android, the mobile operating system developed by Google. The dominant software (70% market share in Europe) and available free of charge in open source for smartphone manufacturers, Android is suspected of having been used by Google to force or encourage Samsung, HTC and others to exclusively pre-install its mobile applications and services. Google would also prevent these manufacturers from developing and marketing "Android forks", these modified and potentially competing versions of its operating system. "We are still at the beginning of the investigation, but Google is clearly suspected of using Android as a Trojan horse," explains an expert. "The contracts that it makes manufacturers sign are filled with exclusivity clauses and conditions that contravene competition rules." What is Google's response? As is often the case, Google has chosen to retaliate on its blog. Amit Singhal, Google's vice-president, said he "firmly disagrees" with this procedure and "looks forward" to being able to defend his case in the coming weeks. In its defense, the search engine presents a long argument, with examples to support it, intended to prove that it has in no way hindered the development of competition and innovation in recent years. On the contrary. While Google admits to being the most widely used search engine today, this does not prevent Internet users, according to Amit Singhal, from "finding and accessing information in many different ways." And he goes on to list the other engines - Bing, Yahoo!, etc. - and the fact that there are "a ton of specialized services" and a ton of competition" in online shopping sites, including Amazon and eBay, two other heavyweights in the sector with a strong presence in Europe. Finally, Google boasts about the very open nature of Android (competing applications for its services such as Facebook or Microsoft are pre-installed on the Galaxy S6, it argues) and claims that the evolution of the audience for online shopping tools competing with its own shows that it has not restricted competition in e-commerce. What will happen now? Google has ten weeks - which can be extended by one month at its request - to prepare its defense and respond to the accusations. A hearing (not public) should then be scheduled by the Commission. Its decision should finally be made at the end of 2015. An amicable solution is still possible: "Everything is open, we must not close any doors," insisted the European Commissioner. And if Google can always appeal the decision and postpone its final conviction by several years, these appeals do not have suspensive effect. In other words, it will be necessary to pay and above all implement the remedies that the Commission will impose. This will lead Google to "change the way it conducts its activities in Europe," specified Margrethe Vestager. "Beyond the fine, this is the most important and the most difficult point to enforce, as shown by the shortcomings in the application of the decision concerning Microsoft," concluded a lawyer based in Brussels. In these very technical cases, monitoring implementation is very complicated."

## ###ARTICLE\_START### ID:2442

Martin Coiteux and his deputy ministers do not want to sort out the IT mess alone. Our Investigation Bureau has learned that the President of the Treasury Board and elected official responsible for IT issues will announce today the creation of an advisory board made up of public and private sector stakeholders. This group will meet this afternoon to begin a major reflection on the future of information technology in Quebec. They will be called upon to meet sporadically over the coming months and will have to formulate recommendations to Martin Coiteux. FOR A LONG-TERM VISION If the IT ship has drifted many times in recent years, this committee will have to help the government get back on course in the long term. The mandate is to "support the government and guide policies in developing an overall vision and an IT strategy," a member of Mr. Coiteux's office confirmed to us. The enhancement of internal expertise, the dissemination of contractual information and the improvement of governance practices are the priorities targeted by this team. No fewer than 16 organizations will be represented. Among the professional associations, the free software industry will be represented. As will the AQT, which represents the majority of SMEs in information technology. The Mouvement Desjardins, recognized for its good management in the field, will also be part of the group. The health and education networks will be present, such as the CSST and Revenu Québec, in particular. The formation of such a committee was part of the grievances of several industry players who denounce the fact that Québec has not undertaken or followed a long-term strategy to overcome IT slippages.

## ###ARTICLE\_START### ID:2443

Martin Coiteux and his deputy ministers don't want to sort out the IT mess alone. Our Investigation Bureau has learned that the President of the Treasury Board will announce today the creation of an advisory board made up of public and private sector stakeholders. They will meet this afternoon to begin a major reflection on the future of information technology in Quebec. They will be called to meet in the coming months and will have to formulate recommendations to Martin Coiteux. The mandate is to "support the government and guide policies in developing a long-term global vision and an IT strategy," a member of Mr. Coiteux's office confirmed to us. Increasing internal expertise, disseminating information on contractual matters and improving governance practices are the priorities targeted by this team. Sixteen organizations will be represented, including the free software industry, the AQT (which represents the majority of IT SMEs), Desjardins (recognized for its good management in the field), the health and education networks, the CSST and Revenu Québec.

## ###ARTICLE\_START### ID:2444

While the Couillard government prides itself on acting for the sound management of public finances, the Association of Economics Students at the Université de Montréal (AÉÉSÉUM) would like to remind it that it does not hold a monopoly on economic reason. Indeed, a majority of the Association's members, at the general meeting, wanted to denounce the disinvestment in the Quebec university network, as well as support the associations and movements that are legitimately demanding the restoration of funding. First, disinvestment affects us all directly and indirectly. The cuts in the last budget, not yet quantified, are in addition to the cuts of more than $200 million in 2014 for the entire network, including $27 million at the Université de Montréal. For our department, they translate into a reduction in professor hiring, mandatory courses offered exclusively online and a reduction in the overall course offering. Considering that the transmission of knowledge is fostered by the proximity between students and professors, we can conclude from the previous example that the sum of these measures across the entire university network considerably reduces the quality of Quebec education. Furthermore, while the government claims to defend future generations by balancing the budget, the chosen cuts actually worsen their situation. In the long term, the financial restrictions made in scientific and research programs jeopardize their ability to deal with various problems, such as climate change and public health issues. For the artistic and cultural fields, the measures reduce the diversity and richness of the collective heritage, a source of entertainment and reflection. Other solutions are possible Without imposing such cuts, viable and effective alternatives exist to restore budgetary balance. For example: stepping up the fight against tax evasion and corruption; promoting eco-taxation, which makes it possible to capture the true cost-benefits of certain behaviors (taking into account the effects on the environment); reassess the plethora of tax credits offered to businesses; tax certain luxury products; truly consider free software in IT calls for tender; follow the recommendations of the latest report of the Health Commissioner, which reiterates the urgent need to reduce drug costs. For reference, some of these measures are defended and supported in the Godbout Report. At the same time, the government does not seem to be concerned about the state costs associated with police repression of movements legitimately demonstrating their opposition to the cuts. How can so many cuts be justified while sending a disproportionate number of police officers to the demonstrations compared to the number of demonstrators, not to mention the subsequent legal and medical costs? We must not forget that demonstrating is a fundamental right. Ultimately, is it not inconsistent that in barely three years, a government that decried underfunding in universities is now allowing itself to make cuts there? Is it not just as absurd, as the government is doing, to claim that the budgetary problems are structural, and then to implement cuts that do not target the said spending structure? Is the government not jeopardizing the well-being of society in order to maximize its chances of re-election by pushing back economic stimulus measures for 2017-2018?

## ###ARTICLE\_START### ID:2445

Sherbrooke - Sherbrooke will host a local chapter of the Space Apps Challenge International competition for the first time, from April 10 to 12, in the new Espace-INC incubator. This global competition, organized by NASA, among others, consists of solving "challenges" in four main categories: Earth, space, human beings and robotics. "We work on global challenges, with data provided by NASA. The idea is to succeed in creating something for humanity," explains Vincent Gagnon, member of the organizing committee for the Sherbrooke section. To advance each challenge, collaborative problem solving is put forward. The aim is to develop open-source solutions, which can therefore be taken up and improved by others, to solve problems that affect entire populations. An example of a challenge? Developing an application that allows users to collect data on changes in forest cover in their location. With the in situ data that would be collected, it would be possible to improve and clarify the information that exists about the main sources of deforestation (human activity, forest fires, etc.). Registration is open to everyone. However, it is particularly students and workers in the fields of computer science, astronomy, physics, even chemistry, biology or science popularizers. On Friday, once everyone is on site, the teams will be formed and will choose their challenges. The complete list of challenges is available on the official website of the event, at https://2015.spaceappschallenge.org/. In Sherbrooke, meals will be provided throughout the weekend by NGC Aerospace. Mentors will also be on site to provide assistance to participants. Three other cities in Canada (Toronto, Montreal and Edmonton) also host a chapter of the competition. Around the world, there are 137 locations that offer this possibility. You can register for the Sherbrooke edition by visiting www.sherbrooke.io/.

## ###ARTICLE\_START### ID:2446

COMMUNICATION The strong growth in France in recent years of the two French leaders in media buying, Havas Media and ZenithOptimedia (Publicis Groupe), is pushing them to create new networks. ZenithOptimedia has just launched a new brand, Blue 449, presented as both a "collaborative" network and a portal providing "open source" access to the resources of the VivaKi and Publicis groups. Havas has reactivated its Arena Media network, which has existed since 2000 - but which was a dormant structure without a real boss - and which Havas presents as an "alternative offer" very focused on innovation. In both cases, the first reason for creating a new network, particularly in France, is the management of conflicts of interest between competing budgets. It is the same logic that led the holding companies of the giants of communication to have separate creative networks coexist within them, as Publicis Groupe does with Publicis, Leo Burnett and Saatchi & Saatchi. To avoid any risk of permeability between budgets, when it comes to issues as strategic as communication, without however prohibiting themselves from continuing to grow, the creation of secondary networks appears to be the best solution. Publicis and Havas still want to take advantage of this to develop their collaborative model. "Arena's culture is that of an agile, very responsive structure, which was notably built by supporting Carrefour or LG Electronics", underlines Stéphane Guerry, CEO of Arena Media since the summer of 2014. The network, which was mainly active on the Spanish and South American markets, has won large budgets in France. In addition to Carrefour and LG Electronics, which are historic clients, Arena is notably responsible for Afflelou and, since January, for the Crédit Mutuel-CIC group. The network should also soon secure the media purchase of the new Numericable-SFR group, knowing that it was already in charge of Numericable before the acquisition of SFR. In total, this should represent one billion euros of gross advertising investments this year. Panels of experts In France, Arena has 67 employees and should recruit around ten new employees in consulting and purchasing as well as in data. Its management could be further strengthened with the arrival of a president in a few months. Based in London on the basis of the activities of the Walker Media agency acquired by Publicis last year, Blue 449 also wants to innovate by adopting advanced collaborative working methods, with a platform for each major client and a panel of experts, internal or external, from which the account manager can draw. With a global workforce of 300 people (including 50 in France), Publicis' new media network will be headed by Sébastien Danet, already head of ZenithOptimedia, and, in France, by Pascal Crifo, a transfer from Fred & Farid. Blue 449 wants to reach a gross margin of 100 million euros within three years. Its roadmap includes around fifteen locations by the end of 2015.

## ###ARTICLE\_START### ID:2447

The media sphere is not short of statements concerning the "computer mess" in the Quebec government, with some - such as the Coalition avenir Québec and the Parti québécois - even calling for a commission of inquiry. In the absence of the legitimacy that would authorize me to provide advice, I would like to express what I believe to be a strong citizen opinion: in this context of austerity and generalized economic precariousness, it is high time that Quebec adopts a sustainable IT policy. This is addressed first to the political class, but also to all decision-makers on the ground, these school principals and other public bodies. And it can be summed up as follows: how is it possible, in the current economic context, not to consider the savings linked to the pooling of IT resources in public services? Software is to the 21st century what the environment was to the 20th: a fundamental subject, but largely underestimated. Software is the intelligence of just about everything that makes up our modern lives: our computers and phones, of course, but also all the services that our societies have equipped themselves with. Software can be considered a simple convenience, a black box that allows us to accomplish our tasks. Few people know what is hidden behind these black boxes -- the source code -- and for good reason: it belongs to organizations that do not share it since it constitutes their "intellectual property". The users of this software, called "proprietary", are at the mercy of the suppliers. Proprietary computing is the domain of the consumer. Software can also be considered as knowledge, a common good. In the world of free computing, the source code is accessible. The user who wants it can understand it and even modify it. As a common good, it becomes a tool rather than a dependency. Free computing gives the user the possibility of transcending the consumer state in which proprietary computing confines him to become a stakeholder. It therefore falls within the domain of the producer and this is where the interest lies for our public organizations, those whose development we finance from our taxes and duties. A change in behavior Traditionally, the acquisition of an IT system begins with a call for tenders. The lowest bidder obtains the contract to deploy its system -- most often proprietary -- and the client very often has no other influence on the process than to manage its implementation. Open source IT allows the client to minimize certain risks, in particular those linked to a dependence on an exclusive supplier. Operational risks can be reduced by pooling skills: a school board that decides to migrate to the Libre Office office suite, for example, could count on the skills or experience of another school board that has already done the exercise or is planning to do so. Open source IT is not, however, a panacea. Without a logic of sharing and collaboration, it can even create operational silos, and hence a dependency that is just as troublesome as that created by proprietary software. Organizations that successfully migrate to free software have previously accepted a change in behavior, a real reengineering of their business processes. Sustainable computing Sustainable development is said to be based on a long-term vision that takes into account the inseparable nature of the environmental, social and economic dimensions of development activities. The logic of the software common good that underlies free computing is based on a long-term partnership. When several clients and producers pool their expertise and contribute to the software common good, a form of sustainable computing, focused on a community that acts collaboratively, becomes possible. How can we instill a logic of sustainable computing in Quebec? First, we must require the use of open and standardized data formats. For documents, the International Organization for Standardization (ISO) has published the ".odf" format. This is a concrete action that you, ladies and gentlemen politicians, can take. A prerequisite for the adoption of open formats is of course that organizations agree to change their business processes that depend on proprietary data formats. The city of Munich is a good example of this. After 10 years of work, consultations, trial and error, the city completed last year the migration of the vast majority of its approximately 15,000 workstations to open source software. Highlights of the exercise: savings of 11 million euros and more than 55% of the total budget of 34 million euros remained in the local economy. Next, a sustainable IT policy based on open source software should be adopted, as Scotland did in 2007. At a time when we are wondering how to attract young people to the civil service, what could be better than asking them to create the IT of tomorrow? The precariousness of our societies requires a change in behavior. Whatever one thinks, a sustainable IT policy based on open data formats and the software common good is part of the solution to the great ills of our time, with, as a key, savings, but above all technological independence.

## ###ARTICLE\_START### ID:2448

Quebec City has officially launched its free mobile application for smartphones that allows you to pay for parking meters remotely. Called COPILOTE, the application, unlike Montreal, is completely free. Presented by Rémi Normand, the head of transportation on the executive council, and Quebec City Mayor Régis Labeaume yesterday, it is used to pay for parking meters remotely, but it is also possible to find free parking spaces using the application's geolocation system. In addition to paid spaces, free spaces are accessible on the virtual map. FREE "It exists elsewhere in the world and near us in Montreal. The only difference is that ours is completely free," said Quebec City Mayor Régis Labeaume, proudly. "We integrated it into our terminal system, so it doesn't cost us a cent." Created at a cost of $190,000, the application was mainly designed using open source software, which made it easier to design and allowed students to join the project. By creating your own account and entering your credit card number, you can now pay the fees on your cell phone right away, without going through the terminal. UPCOMING ADDITIONS Then, an alert and a text message will be sent to you a few minutes before the parking time expires. This makes it possible to add time to our terminal remotely. The application also keeps track of all transactions that users make. Mayor Labeaume also mentioned that the application will evolve and that it will soon indicate to motorists any obstacles that will be found live on the region's roads. In short, there will be added features.

## ###ARTICLE\_START### ID:2449

The king of microelectronics is Arduino. Not only because it takes its name from an 11th century Italian sovereign from the current Piedmont region, but because in just ten years it has invaded the trendy places for tinkering and DIY, the "fablabs" and other "hackerspaces". Arduino is in fact the name of the company that develops, manufactures and markets electronic cards or microcontrollers, particularly simple and inexpensive (around 20 euros) and which are the essential "brains" for many DIY projects. Microcontrollers are omnipresent in everyday life. Without them, there is no programming of a washing machine, an oven, a coffee maker, a thermostat... They are small electronic brains, much less powerful than a computer but which execute the orders received wonderfully and without consuming too much power. "Arduino brings objects to life," summarizes Emmanuelle Roux, co-director of Zbis, a sort of fablab in La Roche-sur-Yon (Vendée), which offers introductory courses on this little machine. There is no shortage of examples of these births: more or less humanoid robots, drones, surveillance cameras, intelligent lighting, 3D printers, special effects for musicians, indoor vegetable gardens, prosthetic hands, table football that tweets the results of the games... On March 28, more than 200 events around the world will celebrate Arduino Day. "It's not complicated, and you can do complex projects," notes Mickaël Postolovic, a computer engineer who will host the day at the Gaillac cyberbase (Tarn). "The crowdfunding company Kickstarter estimated that a hundred projects based on Arduino had raised around 7 million dollars," says Massimo Banzi, the most famous of the five founders of this initiative that began in a bar in Irvée (Italy). "In this city, many places are named after King Arduino. Including the café where we were when we came up with this concept," says the design teacher, who now teaches at the Supsi University in Lugano (Switzerland). It was for his students that he designed the first Arduino card, in order to facilitate the initiation to "physical programming", that is to say the interaction between the user and objects. Since then, 1.5 million of these cards have been marketed. This success comes in part from the fact that they are one of the first free or open source hardware, a well-known concept in the software field. The plans and technical details are public, unlike classic microcontrollers. They can therefore be improved, distributed and copied without scruples (which is the case). "It was obvious to me that we had to opt for an open system. To teach, we need to understand how things work," recalls Massimo Banzi. "There is potential for economic development for free hardware. As long as we understand that we can be innovative without resorting to patents," believes Frédéric Jourdan, co-founder of Snootlab, a Toulouse company that markets and develops various open source electronic products. Another particularity of Arduino cards is that they are easily connectable to their environment. About fifteen connections allow you to connect a set of sensors (temperature, light, sound, movement, GPS signal, etc.) and decide which actions to take, such as activating a motor, lighting, a screen, etc. Several manufacturers, such as Sparkfun, Adafruit, Snootlab (in Toulouse) or Arduino itself, are also developing other cards that connect to the microcontroller to add more complex functions, GSM connections, Wi-Fi, radio, etc. The future is in connected objects. In addition, Arduino is not just hardware, it is also a simple programming language, inspired by C++, which allows you to write programs on any computer (Windows, Mac OSX, GNU/Linux) and then "upload" them to the card to be executed. "The real power of Arduino is its community," adds Emmanuelle Roux, who emphasizes the importance of forums, blogs, and various places where users share their ideas and help each other. For now, no other system has all of these features. The price of success is that in late 2014, the core of founders has cracked and two intellectual property lawsuits are underway. There are now two companies with the same name, as well as two websites (Arduino.cc, the original, and Arduino.org, the newcomer), and perhaps soon two versions of the programs and future boards...

## ###ARTICLE\_START### ID:2450

The home page of the LCR website was hacked yesterday, so that snowmobile suits and Big Bill pants were replaced by Arabic writing. This is the second time in three weeks that the company has had to deal with this situation. Several companies in the region have reportedly suffered the same fate in recent months. "The people who did this didn't necessarily want to attack LCR," says Emmanuel Tremblay, web strategist and owner of the company Itremma affaires web. "They are often young people who go and get small software programs that do the work for them. They are not high-level hackers. The real ones, they send a clear message. They attack the Pentagon site, for example." The LCR site was possibly programmed with WordPerfect, a free software that must be updated to be effective. "It's very good software, but it needs to be updated. Otherwise, hackers send a 'robot' that looks at all the sites hosted by the same program and finds the flaw and exploits it. It's likely that other sites had the same problem at the same time." According to Mr. Tremblay, it's all common. "The absolute trick to prevent this from happening is to update the site's operating program. Otherwise, it's like telling yourself that you're building a house, but that you'll never repair your roof. It's going to end up leaking." LCR CEO Pierre Delisle admits that the situation is surprising. "It's very annoying, that's for sure," notes LCR general manager Pierre Delisle. "The first time, we were very surprised. We don't know what message they're trying to get across. Today (yesterday), when we saw that the presentation page had been hacked, we immediately called our site's host. We didn't want to click anywhere else so as not to catch a virus. The situation was corrected at the end of the day. It was more complicated this time than the first time." Earlier in March, the Bloc Québécois website was hacked by an Islamist group that redirected Internet users to a United Islamic Cyber Force page.

## ###ARTICLE\_START### ID:2451

For several weeks, a diverse group of associations gathered around the Syndicat des professionnels du gouvernement du Québec (SPGQ) has been demanding the establishment of a commission of inquiry into public procurement in the information technology sector. It is true that the situation is catastrophic: systematic cost overruns, repeated project failures, reserved markets, monopolies, cronyism, collusion, cronyism, small deals at all levels... This is what regulates the IT market in Quebec. Let's be clear: the public service unions - in particular the SPGQ - have a heavy and direct responsibility for this situation. Moreover, they constitute one of the main obstacles to change. The message sent to the population by the unions seems clear: if so many IT projects fail, it is the fault of dishonest people who line their pockets. A simple commission of inquiry would solve all the problems. However, that is not the case. Even if everyone is honest, government IT projects will continue to fail and cost a little more each time. There are several reasons for this, which, oddly enough, the unions remain silent on. Locked into a 1990s model, the Quebec government has lost control of its information systems. After 20 years of laissez-faire, the multinationals of the old proprietary software economy and their local representatives are having a field day, dictating their prices and conditions. By putting all its eggs in one basket and organizing the market around a logic of monopoly and clientelism, the government pays a high price and finds itself completely helpless in the face of the dictates of its suppliers. Worse still, by using outdated technologies, completely closed and totally unsuited to the requirements of modern information systems, projects continue to fail, budgets are soaring, and the population pays. Since Minister Courchesne's first steps in 2011 to take advantage of free software, unions have been opposing with all their might the slightest change and have transformed themselves into zealous helots of the proprietary software industry. They believe that their members, trained in these old technologies, would have everything to lose from modernization. However, many of their members, fearing downgrading, do not share this analysis. Nothing works. Barely a year ago, three SPGQ union delegates who were promoting free software on workstations were summoned by management and given a reprimand: three days of suspension without pay. The union management disassociated itself from its own delegates and offered them only minimal assistance. Today, the SPGQ and the sheep unions are playing the frightened virgins and demanding a commission of inquiry. Who are we kidding? What the IT industry in Quebec needs is a real electroshock. Only the establishment of an open, free and competitive market will create the conditions for a way out of this impasse. In IT, this has a name: free software. It was invented for this purpose. Let's be consistent: the State must, through regulations, establish this free and competitive market by gradually banning the purchase of proprietary software within the public administration. Minister Coiteux now has the solution in his hands. Will he have the courage and intellectual integrity to implement it and then confront all forms of conservatism? Will the public service unions have the courage to tell their members the truth and resolutely look to the future? - - - ARE THE REGIONS A BALL AND ROW? In recent weeks, some have been determined to present the regions as a ball and chain on governments. It should be noted that for 45 years, in Quebec, everything has been converging on Montreal. But why is Montreal, our metropolis that we should be so proud of, in such a bad situation? Out of naivety, concern for personal comfort, incompetence? We left the keys to the public treasury in the hands of profiteers, the corrupt, thieves, organized crime. Billions of dollars have disappeared. We even avoided paying taxes on funds diverted to tax havens. During all these years, the regions, including the Gaspé in particular, have not benefited from fair government consideration. Montreal, in addition to being dilapidated, is responsible for Quebec's financial disaster. To resuscitate Montreal, we would now have to close the regions? Who are these brilliant administrators, these distinguished decision-makers? Probably the heirs, the disciples of those who left the keys to the safe in the hands of thieves, bandits. It cannot be otherwise. Gaston Langlais, Gaspé

## ###ARTICLE\_START### ID:2452

Behind the complexity of the Quebec government's IT projects lies a very simple question: do we want a competitive market or not? If we want competition, then we have to question the current system, because it is based on monopolies, those of Cisco, Microsoft, IBM, Oracle and Co. The President of the Treasury Board, Martin Coiteux, announced this week that he was asking the Permanent Anti-Corruption Unit and the Auditor General to further their investigations following the recent arrests. His office is also preparing an in-depth review of the public administration's contractual practices in this area, but this review will be fruitless if it does not go beyond ethics. There are two elements that go straight to the heart of the problem: first, the process by which a solution is chosen, and second, the freedom that the chosen solution offers us. The choice of an IT solution cannot be left to IT specialists alone. Université Laval has sunk a fortune into its study management system (Capsule) because the solution chosen does not allow data to be organized according to programs, which are the basis of the entire service architecture and funding. At the provincial level, the business solutions software for integrated resource management (SAGIR) is an example of a product that complicates users' lives. Data visualization is incomplete, it is difficult to query the system and some prefer to create their own tools with other software to bypass SAGIR. Investigations into embezzlement are necessary, but they risk masking these structural weaknesses that must be corrected. The current review cannot ignore this if we do not want to repeat the same mistakes in the future. You do not buy an information system like you buy a car. Those for whom the system is intended must participate in its choice to ensure that it is in line with practices. And, above all, administrations must be accountable for the decisions made at the end of the process. Then there is the question of free software, which is poorly understood. Software, whether free or proprietary, is code and only code. The question is not to exclude or include free software, but again to ask what the State's needs are in terms of security, flexibility, and costs for this code. This is what the United States Department of Defense did. If the American fleet of nuclear submarines chose Linux, it is for specific reasons: because access to the code allows for detailed analysis, it also allows it to be modified without restriction and quickly to meet needs, and also because the user is not captive to a single supplier. All this is described in a note published by the ministry, which can be easily found on the Web. The document justifies this choice by the accessibility of the code, which allows it to be shared with all other services and even with the public, which then gives it a heritage value. Proprietary software does not have this value, since the buyer cannot appropriate the code or share it. It is a liability, like a leased car. The challenge for the Quebec government is to assume responsibility for our data. And it will not be easy, because the links woven between the Shared Services Centre and the IT monopolies make it a real spider's web that stifles competition.

## ###ARTICLE\_START### ID:2453

This is one of the flagship measures of the anti-terrorism law passed in November 2014. One of the most difficult to apply, and one of the most contested. Since the implementing decree of February 5, 2015, the administrative authority can order the blocking, without going through a judge, of websites "inciting acts of terrorism or advocating them." The stated objective is to limit, if not eradicate, Islamist propaganda in "self-service" on the Web. The list of the first five blocked "jihadist" sites - theoretically inaccessible since Friday - was revealed on Monday, March 16, by the Ministry of the Interior. Place Beauvau had not planned to disclose the first results of this measure now, which is "still in the testing phase," emphasizes those close to Minister Bernard Cazeneuve. But the revelation of the blocking of one of these sites by RFI journalist David Thomson prompted him to communicate. Perhaps a little early. While the five sites mentioned by the ministry are indeed inaccessible from the main Internet service providers (ISPs) - Free, SFR, Orange and Bouygues - four of them were still visible on Tuesday from smaller ISPs, such as Numericable. "This is a radically new measure, difficult to implement," they explained at Place Beauvau to justify these few adjustment problems. "Hinder as much as possible" The disclosure of these first blocked sites nevertheless allows us to understand the spirit of this new administrative censorship system. One of these sites publishes the translation of a speech by Abu Bakr al-Baghdadi, head of the Islamic State. Two other sites allow you to download the Al-Qaeda magazine, Inspire. The fourth, Alhayat Media Center, a site sympathetic to ISIS that rebroadcasts propaganda videos, including executions. The last is a confidential blog, which its author declared inactive at the beginning of March. The most active forums, where the most detailed information is exchanged, constitute a mine of information for the fight against terrorism, and are not targeted. Only relatively static sites accessible to the general public have been blocked. An approach assumed by the government, which intends to promote beyond its borders the principle of a "regulation" of jihadist propaganda on the Internet, without hindering the work of the intelligence services. "We are not trying to block everything, but to hinder as much as possible," explains an advisor to Bernard Cazeneuve. The idea is to target the apology of terrorism in self-service. Circumventions are possible. We know that convinced jihadists will access these sites," thanks in particular to free software like Tor. In concrete terms, the law passed in November 2014 allows the Central Office for Combating Crime Related to Information and Communication Technologies (OCLCTIC) to draw up a list of sites to block, previously validated by the intelligence services. These requests are then sent to publishers or hosts, who have twenty-four hours to comply. After this deadline, the administrative authority is authorized to directly order access providers to divert DNS requests (requests for access to a domain name) to a page of the Ministry of the Interior marked with a red hand. But the law also provides for the possibility of bypassing hosts when they do not appear in the legal notices of the site in order to directly solicit ISPs. This is the solution that was chosen for this "test phase". The authorities targeted five sites whose hosts were not explicitly mentioned and sent their requests on Wednesday to the main ISPs, for an effective blocking on Friday for most of them. The ambitious idea of regulating online jihadist propaganda is one of the hobby horses of the Ministry of the Interior. At the end of February, Bernard Cazeneuve began informal discussions during a visit to Silicon Valley to raise awareness among the main Internet giants (Google, Facebook, Microsoft, Twitter, etc.) of the French concept of "apology" for terrorism and the limits of freedom of expression. A "complicated" dialogue, as the minister's entourage sums it up, which is set to continue. However, the collaboration of the main American operators will be essential: the Facebook page of Islamic-News, one of the sites blocked since Friday by the French authorities, is still active and has more than 40,000 members.

## ###ARTICLE\_START### ID:2454

Ustwo, a company specializing in the development of digital interfaces and whose clients include Google, Sony and Nokia, recently published a video presenting what dashboards could become in the near future. The company from Australia proposes to rethink the way information about a vehicle is presented to its driver. The capsule mentions that when the vehicle is parked, it is not necessary to see information about the speed, but rather about the transmission and the amount of gasoline. On the contrary, when the car is moving, the priority is given to the speed of the vehicle. The designers at Ustwo thought of integrating indicators for the speed limit of the area in which the driver is located. Thus, when the latter exceeds the speed limit, the indicator changes from blue to orange and then to red. The dashboard could even indicate to motorists if they are in an area where road conditions are slippery and at what speed it is recommended to drive in order to drive safely. In addition, when the car is put into reverse, the image captured by the rearview camera could be broadcast on the dashboard. Ustwo's project is currently in its embryonic stage. The company also allows Internet users to work on its program since it is open source. Now it remains to be seen whether there will be interest from car manufacturers.

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## ###ARTICLE\_START### ID:2456

Is France at the forefront of data exploitation? While the fourth Big Data Paris Show is being held on Tuesday 10 and Wednesday 11 March in La Défense (Hauts-de-Seine), this new sector is teeming with projects. From large companies, start-ups and the voluntary sector. But also, and this may come as a surprise, from the State. "The State may have to succeed in its digital revolution for the entire economy to succeed in its own", dares Henri Verdier. For two years at the head of the Etalab mission, responsible for coordinating the opening of public data, also known as open data, this agitator has been working to shake up ministries and administrations. Despite a natural tendency for everyone to jealously guard their information, minds are opening up and things are moving. You can find everything on the Data.gouv.fr website! This ranges from the monthly basis of health insurance reimbursements by type of benefit, to the national file of road accidents, including the list of railway stations operated or not, or the number of people subject to wealth tax (ISF) by municipality with the average contribution and assets. The site offers 14,087 data sets (as of March 9) from ministries, local authorities such as the Paris City Hall or Toulouse Métropole, or official bodies such as Eurostat (the statistical tool of the European Commission). And it's not over. Etalab, this interministerial entity created by Prime Minister François Fillon in February 2011 to set up a website for free access to public data, continues to see its prerogatives expand. A niche subject, the opening of data has become a government strategy. In June 2013, France signed the G8 charter for the opening of public data and then decided in April 2014 to join the Open Government Partnership, which brings together 65 states and NGOs. The objective of what the Anglo-Saxons call "open gov" is twofold: to increase the transparency of public action in order to improve democratic control by citizens and to facilitate their participation in the decision-making process. The results are there. In November 2014, France was ranked third (behind the United Kingdom and Denmark) in the Open Data Index, a global ranking developed by the British association Open Knowledge Foundation. A year earlier, France was sixteenth. According to different criteria, a UN study (the e-government survey) awarded France the fourth best score in 2014, behind South Korea, Australia and Singapore. However, we are only at the beginning of the implementation of an open government policy. France will adopt a national action plan for 2015-2017 with commitments whose implementation must be measurable. Etalab is coordinating the work to develop this plan, which will include, for example, elements on the transparency of data relating to international trade negotiations. This plan will be submitted to the government before being published in May. Without waiting, a new front has been opened. A decree from the Prime Minister created a general data administrator in September. A first in Europe for this function from the United States. Only a handful of large companies and cities, such as New York or San Francisco, have appointed these chief data officers responsible for identifying and organizing non-public data likely to provide decision-making support, improve their operations or lead to new services. Some data do not have to be made public for reasons of privacy (health, taxes, etc.) or because they are sensitive (economy, security, etc.). However, the State could become more efficient if it exploited this grey data a little better or if it facilitated its circulation within it. Sharing its innovations It is the one-man band of Etalab who has been appointed general administrator of data. "My friends tell me: you have escaped superintendent or governor! In addition, administrator is good, it makes you believe that you have an administration behind you..." Mr. Verdier does not like his title. No doubt because of his fear of being old-fashioned with the techno-business population where English terms always sound better. The "data scientists", these data engineers (not to be confused with statisticians) that he recruited within Etalab, are already hard at work with the administrations concerned to see how the State can improve its purchasing policy or better take advantage of its information on the job market. Etalab, attached to the General Secretariat for the Modernization of Public Action (SGMAP), remains an ultra-light structure of fifteen people. At 46, Mr. Verdier, who chaired the Ile-de-France digital competitiveness cluster Cap Digital from 2008 to 2013, is as comfortable with ministers and their administration as he is in the ecosystem of digital start-ups. This mathematician from the École Normale Supérieure, who has worked on creating two start-ups, wants to "bring the agility of the digital world" to the State. He has thus reduced the annual cost of hosting the Data.gouv.fr site from 400,000 euros to 20,000 euros by migrating it from a major service provider to the young Roubaix company OVH. The service is not the same, but the Etalab team, made up of developers, data scientists and consultants, knows how to code and is good at it. Raised on free software, Mr. Verdier is convinced that "sharing data creates value." "Open data is a common good, an infrastructure from which we can innovate, create services and develop the economy," he assures, between two puffs on an electronic cigarette. He cites as proof the dynamism of the ecosystem of start-ups and associations around the Data.gouv.fr platform. No fewer than sixty-three projects for the reuse, for commercial or non-commercial purposes, of public data participated in the fifth Dataconnexions competition organized by Etalab, whose prizes were awarded on February 5. The counterpart of the principle of free and open reuse of data is to share its innovations with the community. "This is what allows us to benefit from the knowledge of the multitude," explains Mr. Verdier, who theorized this in a book with Nicolas Colin (L'Age de la multitude. Entreprendre et gouvernement après la révolution numérique, Armand Colin, 2012). In fact, the multitude is currently more of a community or ecosystem of public data that gravitates around the Etalab platform. Large companies are more discreet, but just as interested. "We use a lot of public data that we cross-reference with our own data to extract value from it," confirms Guillaume Oreckin, deputy general manager of Prédica (Crédit agricole Assurances). This allows us to "better understand the risks or needs of customers," he specifies. Mr. Verdier, who "hesitated for a long time between politics and business," assures Patrick Cocquet, general delegate of Cap Digital, is today a tireless entertainer at the heart of the transformation supposed to benefit both worlds.

## ###ARTICLE\_START### ID:2457

(San Francisco, correspondence) - Succeeding where Microsoft has so far failed is the ambition of new independent players in the mobile operating system (OS) market. Their names are Mozilla, Canonical, CyanogenMod and Jolla. And they hope to challenge the unchallenged dominance of Google and Apple. In 2014, Android and iOS, their respective software, cornered more than 96% of the market, according to estimates by the IDC firm. The task looks complicated. "No platform has yet made the gains necessary to challenge the position of the two leaders," says Melissa Chau, an analyst at IDC. This is particularly the case for Microsoft, despite its investments, its marketing expenses and the acquisition of Nokia's mobile activities. In 2014, less than 3% of smartphones sold worldwide were equipped with Windows Phone. "There is a demand for open systems," however, believes Kirt McMaster, the boss of Cyanogen. These new operating systems thus promise greater freedom for users and application developers. They want to free them from the straitjacket imposed by Android and iOS, "shells for Google and Apple services that penalize consumers and restrict innovation," according to the manager. The young company, located in Palo Alto, California, is the most advanced. It already claims 50 million users worldwide. And it has raised $100 million (89 million euros). According to the Wall Street Journal , Microsoft reportedly invested in its capital in early 2015. Cyanogen offers its own version of Android, free software that anyone can modify at will. It keeps the interface but adds new features and lifts certain restrictions. PC experience Its rivals have chosen a different approach. They do not start from Android but build their entire system. Mozilla and Canonical, which design Firefox OS and Ubuntu respectively, use their experience acquired on PC. For Sailfish OS, Jolla is building on the work done by its founders at Nokia. The three companies are banking on a new user experience to stand out. "We are only in the first phase," acknowledges Cristian Parrino, vice president of mobile at Canonical. "It will take another three to five years before we see a change in the dynamics of the mobile ecosystem." The British company remains ambitious: it dreams of a 10% market share. Cyanogen is counting on 500 million users by 2020. "The number of smartphones will increase from 2 to 5 billion," predicts Mr. McMaster. To succeed in their bet, these companies will first have to convince manufacturers to choose their operating system. This will be all the more difficult since Google is very active in securing their support. And Chinese brands, such as Xiaomi or OnePlus, now prefer to develop their OS internally. Once this stage is completed, they will then have to seduce consumers. What Microsoft never managed to do with Windows Phone...

## ###ARTICLE\_START### ID:2458

QUEBEC - Parti Québécois leadership candidate Alexandre Cloutier believes that a minister should be in charge of the entire digital file in government. According to Mr. Cloutier, we must put an end to the waste of public funds in the IT sector. Better coordination between the IT services of ministries and agencies would save several hundred million dollars each year. Mr. Cloutier proposes the use of open source software in public administration as well as the reconstruction of internal expertise instead of resorting to external consultants. For the candidate and MNA for Lac-Saint-Jean, the appointment of a minister dedicated to digital would improve coherence in this file. Mr. Cloutier believes that the current formula will not work effectively without a minister responsible. "He would have a responsibility to oversee the entire work through general policies," he said. "That does not mean that he would not have budgets given with conditions for calls for tenders." Furthermore, Mr. Cloutier felt that Internet accessibility is hampered by the prohibitive cost demanded by telecommunications companies. According to the candidate, there should be more room for competition. "The cost in Quebec is higher than elsewhere, that is part of the problems and issues that unfortunately fall largely under the federal government's jurisdiction," he said. "But it is obvious that we pay more here than elsewhere. We have to find ways to put an end to it. (...) I would like to detail my vision of the competition that should take place in this area, but unfortunately that falls under the jurisdiction of the Ottawa government and the CRTC."

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Parti Québécois leadership candidate Alexandre Cloutier believes that a minister should be in charge of the entire digital file in government. According to Mr. Cloutier, we must put an end to the waste of public funds in the IT sector. Better coordination between the IT services of ministries and agencies would save several hundred million dollars each year. Mr. Cloutier proposes the use of open source software in public administration as well as the reconstruction of internal expertise instead of resorting to external consultants in IT files. The MNA for Lac-Saint-Jean believes that the current formula will not work effectively without a minister responsible. "He would have a responsibility to oversee the entire work through general policies," he said.

## ###ARTICLE\_START### ID:2460

Dominique Cardon, sociologist at the Orange Labs Usage Laboratory, associate researcher at the CEMS-Ecole des hautes études en sciences sociales (EHESS) Center for Social Movement Studies, is the author of Internet Democracy. Promises and Limits (Seuil, 2010). Are leaderless movements a mirror of the democratic forms experienced on the Internet? The Internet has revived an old cultural and political form that was already present in the social movement, particularly in the anarchist tradition. It is a place of expression that tolerates diversity, without fixed representatives, without delegation of power, with decisions taken by consensus. As in hacker culture, the network is not exempt from a meritocratic hierarchy: those who are most active in the collective find themselves at the center. Wikipedia or free software exist, for example, thanks to a benevolent authority. Those who have contributed a lot owe this authority to the merit that others recognize in them, but they cannot use this role as a pretext to impose decisions on the community. Better, they must minimize it behind a kind of humility. We are thus witnessing an ostentatious erasure of the signs of leadership. The members of the Anonymous collective wear a mask whose essential political function is to indicate that no one among them has more power than the others and that all are worth to everyone. They always say: "We are legion." With Occupy, we observe the same staging of the erasure of leaders. What are they replaced by? There are organizers, but they can never speak on behalf of the collective, otherwise they are called to order. If they have an influence, it is because of their involvement in the community, and not because of their political label, even if most of the time they have one. Legitimacy does not come from the place one occupies in an organization. Among alter-globalization activists, identities still depended on associative and activist affiliations, which could be plural. In assemblies, people introduced themselves as members of Attac, the CGT, etc. Now, in assemblies such as "indignant" or Occupy, they express themselves in their own name. This is not a sign of individualism, but of an individualization of engagement mechanisms. Discussion is at the heart of social networks: what does it lead to? Most Internet collectives set up procedures allowing everyone to discuss. This is the case for forums, for example. What unites them is a horizon: freedom of expression. If the programmatic content were defined by their center, it would alienate individuals. They therefore bring together people who have divergent opinions, while giving themselves procedural tools to resolve their disagreements. Compromise replaces voting. To go as far as possible in discussions, decisions are made by consensus. The International Pirate Party, born of the Internet and a defender of data sharing and political transparency, is moving in this direction. It constantly consults its supporters, with a view to establishing a system of direct democracy with an imperative mandate. This "liquid democracy" bears witness to major transformations in commitments. However, the idealization of such a model has its limits. All Internet communities produce bureaucracy. Consensus is very slow, difficult to find, and poorly adapted to certain types of decisions. What role did the Web play in the emergence of the series of occupations that began in 2011? The Internet should not be given an explanatory role. This instrument has developed a libertarian political culture that is now reacting with Occupy or the "indignant", but also with Anonymous and the Pirate Party. It is not the network as such that creates the forms that social movements take, even if they were able to seize the Internet very early on. Facebook became a place of convergence and coordination for the occupations that began with the "Arab Spring", but the Web was already used by the alter-globalization movement at the end of the 1990s. And Subcomandante Marcos, spokesman in Mexico for the Zapatista Army of National Liberation, was connected as early as 1996! But the Internet is also the tool of mafias and terrorist networks. It can be used for anything and its opposite.

## ###ARTICLE\_START### ID:2461

MOBILITY Will the Freephone see the light of day? A series of clues suggest that Free could launch a smartphone under its own name in a few weeks. First step: last November, Xavier Niel, interviewed on BFM Business, believes that, in the mobile sector, his group "has fallen asleep a bit". After having slashed the prices of packages, added 4G to its offer faster than expected thanks to a partnership with Orange and tried to buy other operators, in France and the United States, Free is looking for a new boost. "Before the end of the first half of 2015, we will have a nice little thing on the mobile", Xavier Niel says in a mischievous tone. That was all it took to revive speculation about the arrival of a mobile signed Free, a scenario that had already been considered for some time but which was relaunched in early February when sources told Le Figaro that Free was working on a smartphone under its brand. Credible or not? "Free has a capacity for innovation and an ability to surprise that make this information necessarily conceivable, estimates Thomas Husson, marketing and strategy analyst at Forrester. The market has evolved well, and Free is looking to control the service from end to end as we see with its boxes." The arrival of a Free-branded smartphone would make sense, agrees Mathieu Drida, CEO of meilleurmobile.com. "Free has real know-how in terms of hardware and software," he observes. This initiative would allow it to increase its revenue per subscriber and promote its own services. And then, having a smartphone will help Free recruit customers. The brand will thus be able to communicate on its mobile to attract new subscribers, as it does today with the Freebox." A cheap mobile? Free would not be the first operator to launch a smartphone under its brand. Orange, Bouygues Télécom and SFR already offer mobile phones under their name, more or less attractive, generally developed by Asian manufacturers. Free's smartphone will inevitably be compared to the Soshphone (manufactured by ZTE), a very good 4G model equipped with a 5-inch HD screen, an 8-megapixel camera, a quad-core processor, and sold for 149 euros. What could the fourth operator do better? For Mathieu Drida, we should expect "a cheap smartphone, not high-end like the iPhone, but still well made, in line with Free's DNA". Thomas Husson also predicts "a rather entry-level or mid-range terminal with a good price". In any case, he specifies, "the product must be very competitive to succeed in this very competitive market. Better than those sold under their name by operators, whose distribution remains marginal". What equipment? If Free sticks to the logic of cheap mobile phones, its terminal will probably be satisfied with the bare minimum: 4.5 or 5-inch screen in 1280 × 720, quad-core processor, 5 or 8 megapixel camera. Naturally, it will have to be compatible with 4G networks. To remain consistent with its brand image, and in line with the software used for the Freebox, the operator should move towards "open source" mobile systems like Firefox OS or Ubuntu. But given their still confidential distribution and the small number of applications in their catalog, there is a good chance that Free will choose Android. Especially if its smartphone is manufactured in Asia. It will then have to face increasingly aggressive competition, led in particular by manufacturers like Xiaomi or OnePlus. "What will decide consumers will first be the brand," emphasizes Mathieu Drida. A Free mobile will reassure beginners more than products from unknown brands. The price will also make the difference. » And why not high-end? However, the operator could adopt the same strategy that it developed with its boxes and offer a model integrating the most recent innovations. From its launch, the Freebox Revolution stood out with its unique equipment: Blu-ray player, integrated hard drive, Internet browser, remote control with gyroscope and accelerometer, compatibility with optical fiber, etc. A high-end smartphone would be a way for Free to stand out from its competitors. As Amazon did by equipping its Fire Phone with impressive features to mark its arrival on the mobile market: screen with 3D display, 13-megapixel camera, quad-core processor, music and image recognition, barcode detection and direct access to the Amazon store. Without being convincing... Should we then expect a phone packed with innovations, integrating a very high-resolution screen like the LG G3, a fingerprint sensor like the latest iPhones, a sophisticated camera, remote control and gateway functions for the Freebox and hundreds of television channels to watch on the go? The idea has undoubtedly made its way into the mind of Xavier Niel, who does not hide the fact that he would have been "very proud to invent the iPhone". "Free is condemned to offer more than a simple smartphone, considers Thomas Husson. An original offer with associated services, for example integration with the Freebox, video on demand, etc. It will have to mark a real break to establish itself. And perhaps take inspiration from new entrants, like Wiko, who have taken significant market shares by positioning themselves on emerging uses." See you in a few weeks, with the official announcement from Free, to find out more.

## ###ARTICLE\_START### ID:2462

QUEBEC CITY - Organized crime could very well be involved in the awarding of IT contracts to the government, suspects a group of 16 organizations, including unions, which denounces waste in IT projects managed by the government. The group is calling for a public inquiry commission to clean up, since billions are "wasted on IT," while cuts are hitting social programs. The government awards no less than $3 billion per year in IT contracts, according to Treasury Board estimates. "Waste in IT really needs to be curbed, we need to take a step back," argued Lucie Martineau, president of the Syndicat de la fonction publique du Québec (SFPQ), at a press conference yesterday in Quebec City. The ingredients for corruption and collusion in IT are the same as those that prevailed in the construction industry: lack of competition, government dependence on private enterprise, lack of internal expertise, cost and schedule overruns, and silence in the public service, she argued. According to the president of the Syndicat des professionnels du gouvernement du Québec (SPGQ), Richard Perron, these similarities suggest that the possible link with organized crime must be examined. "We can't know, but the Charbonneau Commission began with a series of experts who came to tell us that organized crime doesn't make its profits only in crime," he explained. "It invests a lot in the legal economy. And when there's a lot of money, like in construction, it's never very far away. This simple factual element (shows us) that we should examine, go deeper (on this track). "Only a commission of inquiry can verify "possible collusion or corruption" in the awarding and management of public IT contracts, said Fabian Rodriguez, from the FACIL organization for the collective appropriation of free IT, which campaigns for free software. The issue is even broader, since a debate on the regulatory framework and management principles of these IT projects must take place, so that SMEs can also bid, stressed Mr. Rodriguez. Because there must be "reflection on the fair distribution of wealth in the new economy." Furthermore, the law of silence reigns among civil servants who notice anomalies, but who cannot report these reprehensible acts under penalty of being sanctioned or harassed by their employer, the unions denounced. "All the unions have horror stories to tell," said Mr. Perron. According to him, there is no limit to the imagination of employers to make an employee's working conditions "hell." "We have our caseloads full of them," confirmed Ms. Martineau. A public inquiry would allow us to protect witnesses and loosen tongues, Ms. Martineau maintained. All the opposition parties quickly jumped on the bandwagon. The Parti Québécois, the Coalition avenir Québec (CAQ) and Québec solidaire expressed their support for the collective's request for a public inquiry commission. The Coalition avenir Québec has been denouncing waste and management problems in IT contracts for years. Its spokesperson, La Peltrie MNA Éric Caire, shares the same suspicions. "I'm not sure, but I'm asking myself the same question, and I think that the entire population of Quebec is asking themselves this question," he said at a press conference at the National Assembly. And it is precisely to answer these "legitimate" questions that, in his opinion, a public inquiry commission is needed. "Everyone sees that in the IT sector, we are experiencing the same problems. We have the same symptoms, the chances that we have the same disease are still there." The CAQ member is calling on the President of the Treasury Board, Martin Coiteux, to finally take action, because the work of the Auditor General is not enough in his eyes. For his part, Mr. Coiteux told The Canadian Press on Thursday that he had taken back control of IT management by taking a series of actions. In particular, he entrusted the management of IT projects to his own deputy minister, and reduced by 30 per cent between February and December 2014 the use of "external resources" at the Centre des services partagés du Québec (CSPQ), the largest IT contractor in the government. The group described these measures as "cosmetic."

## ###ARTICLE\_START### ID:2463

Quebec - Organized crime could very well be involved in the awarding of IT contracts to the government, suspects a collective of 16 organizations including unions, which denounces waste in IT projects managed by the state and calls for a public inquiry commission. Billions are "wasted on IT", while cuts hit social programs, maintains the collective. The state awards no less than $3 billion per year in IT contracts, according to Treasury Board estimates. "Waste in IT really needs to be curbed, we need to take a step back," argued the president of the Syndicat de la fonction publique du Québec (SFPQ), Lucie Martineau, at a press conference yesterday in Quebec City. Similarities The ingredients for corruption and collusion in IT are the same as those that prevailed in the construction industry: lack of competition, government dependence on private enterprise, lack of internal expertise, cost and schedule overruns, and omerta in the public service, she argued. According to the president of the Syndicat des professionnels du gouvernement du Québec (SPGQ), Richard Perron, these similarities suggest that the possible link with organized crime must be examined. "We can't know, but the Charbonneau Commission began with a series of experts who came to tell us that organized crime doesn't make its profits only in crime," he explained. "It invests a lot in the legal economy. And when there's a lot of money, like in construction, it's never very far away. This simple factual element (shows us) that we should examine, go deeper (on this track). "Only a commission of inquiry can verify "possible collusion or corruption" in the awarding and management of public IT contracts, said Fabian Rodriguez, from the FACIL organization for the collective appropriation of free IT, which campaigns for free software. The issue is even broader, since a debate on the regulatory framework and management principles of these IT projects must take place, so that SMEs can also bid, stressed Mr. Rodriguez. Because there must be "reflection on the fair distribution of wealth in the new economy." Law of silence Furthermore, the law of silence reigns among civil servants who notice anomalies, but who cannot report these reprehensible acts under penalty of being sanctioned or harassed by their employer, the unions denounced. "All unions have horror stories to tell," said Mr. Perron. According to him, there is no limit to the imagination of employers to make an employee's working conditions "hell." "We have our case loads full," confirmed Ms. Martineau. A public inquiry would allow us to protect witnesses and thus loosen tongues, she maintained.

## ###ARTICLE\_START### ID:2464

How Open Source Software Became a $4 Billion-Plus Electronic Transactions Network in Five Years. February 1 - 11, 2009 A computer scientist - or more likely a group - announces under the pseudonym Satoshi Nakamoto that they have developed a "completely decentralized" and anonymous electronic currency, whose reliability is based on open source code and the confirmation of transactions by the entire network. The first 50 bitcoins are generated. February 2 - 10, 2011 Bitcoin reaches parity with the US dollar. July 3 - 1, 2011 The WikiLeaks organization announces that it is accepting donations in bitcoins, propelling the value of the cryptocurrency to $9.57. WikiLeaks had lost 95% of its financial resources six months earlier when major financial institutions blacklisted it. April 4 - 9, 2013 Bitcoin had a crazy start to 2013, with its price rising from $13 to $214 on April 9, before falling back to $65. This increase was attributed in part to the Cypriot financial crisis, which made bitcoin a safe haven. The global market capitalization reached $1 billion. November 5 - 30, 2013 A peak was reached when bitcoin was trading at $1,130, more than an ounce of gold. The common man finally heard about this strange electronic currency, which aroused suspicion. China, in particular, banned its banks from accepting it. March 6 - 6, 2014 The Japanese bitcoin exchange platform Mt. Gox closed its doors after announcing that 800,000 bitcoins had been stolen by hackers, the equivalent of half a billion dollars. In January 2014, during the trial in the Silk Road case, renamed "the eBay of drugs," it was learned that this could be an internal fraud. June 7 - 1, 2014 Online travel agency Expedia announced that it would accept bitcoin - if converted into dollars - as a payment method. It would be imitated the following month by Dell, PayPal and, above all, Microsoft in December. January 8 - 26, 2015 With an investment of $75 million, notably from the New York Stock Exchange, the firm Coinbase became the first bitcoin regulator in 25 American states. The total value of the cryptocurrency exceeded $4 billion. The price has been relatively stable since October 2014, remaining around $300.

## ###ARTICLE\_START### ID:2465

San Francisco, 2169 Mission Street. To the right of the entrance gate of this building in the Hispanic neighborhood, an old public telephone serves as a makeshift video surveillance system. It was cobbled together by the tenants to protect themselves against undesirables, including FBI agents interested in the anonymous Internet browsing network TOR, hosted on the premises. Parked along the curb is a patched-up bus, named “Occubus” in reference to the Occupy Wall Street movement that shook America in 2011. Once through the front door—on which a memo reminds occupants who might have to interact with a federal agent that “law enforcement officers are never your friends, no matter how charming they may seem”—shelves overflowing with tools of all kinds, wires and pipes for a ceiling, a few classrooms, a communal kitchen, mountains of monitors, soldering irons, used oscilloscopes, and state-of-the-art microscopes. On the walls is the slogan: “Shut up and hack!” Welcome to Noisebridge, one of the most active hackerspaces in California. The sociologist Michel Lallement, to whom we owe many books on contemporary developments in work, the sociology of Max Weber or the Familistère de Guise, spent a year there in search of the "concrete utopia" implemented in the communities of hackers gathered here in these places as much by the love of "doing" and tinkering as by the desire to reinvent work and society. His book, L'Age du faire, is based on dozens of interviews and the observation of numerous meetings, "un-conferences" (where the public, not the speaker, decides the agenda) or workshops devoted to reappropriating one's food, one's DNA or one's computer. It will be a landmark in many respects. First, it paints a sociological portrait of the world of hacking, a thousand miles from the persistent clichés to which it is still subject. No, hackers are not computer pirates. Destruction is not the goal of the vast majority of them, who claim above all the conquest of their autonomy and the circulation of knowledge. No, they are not marginalized and left behind by the American dream. Their ideal, as Michel Lallement shows, draws only partly on the counterculture of the 1960s. It is also made up of dominant American values such as a passion for technology and the defense of freedom to undertake. No, finally, they are not all isolated geeks ("enthusiasts") working in teenagers' bedrooms. Hacker culture is deeply rooted in the American notion of "community". The hackerspace is its incarnation, like other more or less similar collaborative spaces - Fab Labs and other Tech Shops for example. Because what we find at Noisebridge are not only human and technical resources to "tinker" (a cooking recipe, a computer program, a remote control, etc.). Michel Lallement brilliantly shows in this book that the hackerspace is above all an instrument of "do-ocracy", the power of "doing". More than an anarchist "bazaar", it is an extremely subtle arrangement of discussion, control and decision procedures. Work in the hackerspace is based on a daily politics whose complexity has nothing to envy of "big" politics: rules of decision-making by consensus, rites of passage when admitting a member, gestures for speaking (two snail horns to ask for an incision; a triangle between thumbs and index fingers to propose clarification...) and even a fine dramaturgy of conflict through emails and exchanges on IRC channels (live dialogue). Michel Lallement does not, however, limit himself to describing the ethics of hackers. He observes it as a "disposition of mind" that guides the behavior of individuals by putting them in a state of permanent inner tension (how could it be otherwise in a space where anarchy and free enterprise, faith in technology and rejection of machines coexist?). He also looks at this ethic in action in the face of criticism (in fact, others are judged a lot at Noisebridge: on the aesthetics of their computer code, the conformity of their attitude to the hacker spirit or the interest of their projects). In short, Michel Lallement reproduces the "program" written by the German sociologist Max Weber (1864-1920) for the study of puritan ethics, this paradoxical mixture, also, of theoretical rejection of the lure of gain and encouragement of accumulation through work. Michel Lallement half-admits, at the beginning of L'Age du faire, his regret at not having been able to participate actively, as a hacker, in activities that required a little more mastery of technology than cooking or German conversation. The most successful hack in this book, however, has nothing to envy the clever and elegant diversions of the computer scientists at Noisebridge. It is that of the Weberian sociology of the social and ethical conditions of the emergence of modern capitalism. A masterstroke that will one day, we hope, call for another: one that will allow us to evaluate, with supporting materials, whether, and to what extent, hackers, like the puritans before them, have contributed to changing the course of capitalism. The future indeed seems still open, as evidenced, in our computers, by the competition that "proprietary" applications and free software still engage in.

## ###ARTICLE\_START### ID:2466

Young Poppy Gardner has secrets. Oh, nothing serious. Her sadness, sometimes. But she has to put on a brave face because her father is running for a very important political office, which makes this teenager a public figure in spite of herself. She has to appear pampered, enthusiastic about her father's promises, and shine on social networks. Thus changing her behavior, disguising her personality to become what is expected of her. Such is the intriguing introduction to the game Nothing to Hide. Playable for free on the Web via any browser (1), it can be tamed in the blink of an eye: just guide Poppy with the arrow keys on the keyboard to help her escape the pressure of society. Wherever she goes, the gaze of the video surveillance cameras follows her. "Smile at the camera," the signs advise her along the way. "It is criminal to hide. Only criminals have something to hide." "Patriot Act." We've heard this before... From the CEO of Google? "If there's something you're doing that no one should know about, maybe you should start by not doing it." Eric Schmidt probably thought he was stating the obvious when he answered a journalist who asked him in 2009 if Google could be trusted. No, you can't, Schmidt explained, because "here in the United States, we're all subject to the Patriot Act" and "search engines like Google store your information in memory so they can pass it on to the authorities." By admitting that Google users are constantly spied on, and their private lives leaked at the government's request, he was still way below the mark. Journalist Edward Snowden did the same in 2013, revealing the secret mass surveillance programs operated by the National Security Agency (NSA). The truth, as we now know, is that every citizen is tracked, listened to, read and recorded every second via their online activities. Trying to escape this is an obstacle course. And why would anyone want to? Honest citizens should feel reassured that they are being well taken care of. All this is to fight against terrorism, pedophiles and crypto-Nazis. It is for their own good. "Only criminals have something to hide." Nothing to Hide takes this sentence literally: it is forbidden to escape the field of vision of a surveillance camera under penalty of being shot without warning. Ironically, we thus find ourselves playing the exact opposite of a stealth game - the genre popularized by the old Metal Gear Solid, where we use a thousand tricks to deceive the vigilance of the guards and bypass the cameras. Often, our heroine Poppy even has to take charge of her own surveillance, by carrying the cameras with her. One keeps an eye on the young girl while she carries a second one under her arm, to put it a little further away and cover all the angles of her poor life. We will look differently at the smartphones that weigh down our pockets... Behind Nothing to Hide hides - no, damn it - the young American developer Nicky Case, who is proudly showing himself, who is chaining together small video game projects with messages. In mid-2014, he released a "coming out simulator" allowing you to experience a semi-fictionalized version of your family drama. A few months later, he designed the Parable of the Polygons, an interactive experiment around racism and segregation. In the meantime, he has imagined a game based on the Ferguson affair and its media coverage. In it, you would play citizen reporters armed with a camera in a demonstration. What angle should you choose? Should you enhance the image of the police officers at the risk of going over to their side? Dramatize the conflict to the point of distorting its peaceful nature? “In Nothing to Hide, I show a world ruined by surveillance,” Nicky Case tells The Atlantic. “In this project, I show a world governed by sousveillance, that is to say a world where it is the citizens who wear the cameras. And while I think sousveillance is a good way to keep the powerful accountable for their actions, we have to make sure that it does not kill privacy.” The subject obsesses him. Nothing to Hide has been in beta for almost a year, but Case has a thousand ideas to enrich and deepen the concept: new game mechanics, additional chapters, and above all a completely rewritten, more oppressive scenario. “Family relationships, friendship, love... You will no longer have any privacy. You will be constantly surrounded and you will feel alone. Without privacy, you burn. You are constantly exposed.” Like a caterpillar that roasts in the sun, writhes, but continues to dream that it will turn into a butterfly..." Public domain. A small success of the independent video game, Nothing to Hide has taken advantage of the license under which it was published. Nicky Case makes a point of offering all his creations to the public domain, which encourages their circulation and has allowed him to raise more than 43,000 dollars (37,600 euros) from Internet users. The source code is accessible on the Github site, well known to developers, so that everyone can put their two cents in, suggest improvements, or even appropriate the work and produce alternative versions. A delicious snub to the Internet giants, who hide behind their opaque computer codes back doors that the NSA keeps a bunch of keys to. In free software, everything is transparent. That's why we can trust them, and them alone. Like Nothing to Hide, they have nothing to hide. (1) www.nothingtohide.cc

## ###ARTICLE\_START### ID:2467

In the room, access to the municipality's wireless Internet networks was not working. However, that's where the Coderre administration unveiled Thursday morning, with great fanfare, its 2014-2017 strategy to make Montreal the smartest and most digital city in the world within two years. Its plan is based in part on the deployment of free wireless Internet throughout the city, fibre optics in every home and an "apolitical release" of open data. $23 million will be devoted to this major transformation over three years. That's five times the amount devoted to filling potholes in 2015. "This is a very big day for Montreal," said Harout Chitilian, head of information technology and the Smart City on the executive committee. "Montreal is already a smart and digital city, but it's going to become even more so." In essence, the strategy aims to increase the quality of bandwidth -- the capacity of the pipe through which digital data circulates -- across the entire island of Montreal. How? By extending access to free Wi-Fi networks, but also by encouraging the multiplication of optical fibre -- the Cadillac for traveling on the Net -- in residential neighbourhoods. The City does not put a figure on this commitment, but says it wants to act as a lever to encourage the community as well as the private sector to take charge of this development. For example, since 2003, the organization Île sans fil has been trying to generalize free Internet access across the territory, with a modest result to say the least. In 13 years, barely 260 access points have been created, covering a tiny part of the city's territory. The Coderre administration is also putting real-time management of citizen mobility at the heart of its strategy for 2017. This includes sharing information on the movement of buses, bikes or shared cars, on the availability of parking spaces, etc. The city is also counting on overhauling its digital architecture -- computers and software -- to promote information sharing and the creation of digital services for citizens. Localized services "Surveys indicate," says Mr. Chitilian, "60% of the population finds that the city does not offer enough online services." The creation of tools offering localized services, such as the INFO-Neige MTL application that allows snow removal to be monitored in almost real time in a handful of boroughs, should be encouraged in the future by the city, which wants to release more open data, but also ensure that this data is relevant and "valued to facilitate visualization, analysis and interpretation" by citizens. Stéphane Goyette, director of the Bureau de la ville intelligente et numérique (BVIN), acknowledges that "a change of culture is important in the public administration" to make this plan a reality, he told Le Devoir. A change that is underway and will continue gradually, he added. This digital ideal is being presented by Montreal a few months after the renewal of several IT contracts that favored the city's acquisition of proprietary and expensive digital systems, such as Windows 7 systems and Microsoft Office suites, at the expense of the open-source software that the Coderre administration says it wants to promote in its smart city, but did not consider when awarding these contracts, noted Marc-André Gadoury, parliamentary leader of the opposition party Projet Montréal, on Thursday. "There is nothing very impressive in this 2014-2017 strategy presented in 2015, one year after its adoption." Proof, according to him, that the City is ultimately behind on modernity.

## ###ARTICLE\_START### ID:2468

You have to stop kittens from exploding by distracting them. That's the rule of Exploding Kittens, a card game that has just raised the astronomical sum of $4.2 million (€3.7 billion) in one week on Kickstarter, the leading online crowdfunding platform. Its creators were asking for $10,000... Still unknown last week, the game has entered the pantheon of success stories of the genre, alongside Neil Young's MP3 player (Pono Music, $6.2 million), the film adaptation of a cult series (Veronica Mars, $5.7 million) and a connected cooler (Coolest Cooler, $13.3 million). How can we imitate these gifted entrepreneurs? We could have written a practical manual, but that's already been tried. And the Crowdfunding: A Guide to What Works and Why book project failed miserably in 2012. Let's launch the "Guide to What Doesn't Work, and Why". A Bar Too High This manual hoped to raise $35,000. Overestimating the potential of your project is an essential step to failing in a big way. Internet users have the great advantage of being numerous, if not all having full pockets, which can lead to stupidly thinking that 10 million geeks putting in a euro is enough to make the meter explode. But no. Taking out your credit card is a commitment, whether it's for one or a hundred euros. Thus, the Ubuntu Edge phone, which could count on the enormous community of defenders of free software, flopped by reaching nearly $13 million. Record to date for the largest amount... not raised. It needed to reach 32 million. Street sex appeal Actress Melissa Joan Hart, known in another life for playing Sabrina, the Teenage Witch , thought she'd be given a red carpet to make a romantic comedy. She dreamed of $2 million; she got $51,000. The actress on the comeback trail probably thought she'd follow in the footsteps of Veronica Mars, who went from the small to the big screen to general enthusiasm, by plagiarizing her strategy. When the project leader is unknown, chatting for ten minutes in a single take, slumped on the couch, without cheerful music in the background, is also a good way to lose the Internet user for good (the biggest crowdfunding successes are capped at four minutes). While a headset with cat-ear-shaped speakers, even invented by a dark anonymous person, easily raises its $3 million through the power of its gadget-geek concept alone. Moldy rewards Melissa Joan Hart promised to send the PDF of her film's script to Internet users who gave $10, a t-shirt for $25, a digital version of the film for $35... when new Blu-rays sell for around $20. Without the Veronica Mars fan base blinded by their love for Kristen Bell, Melissa Joan Hart could not hope to convince anyone. The classic approach of a contributor is to pre-purchase a work or an object, not to co-produce it. It is therefore crucial for a project to correctly estimate the value, both commercial and sentimental, of the promised rewards. Where champions will offer rare and precious rewards (a lunch with the project team, an original signed drawing, the privilege of choosing the name of a character in a fiction), the loser will bet everything on trinkets sold too expensive. A project good for throwing away Getting kicked off the platform is a completely viable solution to screw up. iFind had all the makings of a great gadget. It was a location tag, a thing you attach to your keys or phone to geolocate them via Bluetooth. In a few days, the project raised over $500,000. But this story about a battery that recharges itself using electromagnetic fields is fishy. And WeTag, the company behind the thing, struggles to explain how it works. On several forums, specialists question the technical feasibility of the object, and Kickstarter ends up canceling the project. Same story for this giant and very stylish clock, "Big Time Clock", to mount yourself on your wall. You can pre-order it for $49. The project is slowly taking off when an Internet user notices that the same object is sold for $5 on the Chinese site Alibaba. Project canceled just as well. A success that turns into a fiasco If, by an unfortunate coincidence, the financial objective is reached, there is no need to despair. It is still possible to screw up after you have received the money... The failure will only be more resounding. We can cite the Kreyos smartwatch which was launched in June 2013 with a list of promises as long as your arm: compatible with all phones, seven-day battery life, motion recognition, waterproof, all for $100. And it hit the jackpot with $1.5 million collected. Several months late, the contributors finally received their gadget: no motion recognition, it cannot withstand a shower and its battery barely lasts twenty-four hours. It even seems to have trouble keeping the correct time. It is impossible for the contributors to turn against Kickstarter which, they argue, only plays the role of intermediary. On crowdfunding platforms, as elsewhere, promises mainly bind those who believe in them.

## ###ARTICLE\_START### ID:2469

Four years after the publication of their manifesto, which denounced the "false evidence" of neoliberal economic theory, heterodox economists, now 31 in number, are back with the New Manifesto of the Dismayed Economists. 15 Projects for Another Economy (Les liens qui libèrent, 160 p., 10 euros). Interview with Benjamin Coriat, co-president of the collective of dismayed economists. Why this "New Manifesto"? Was it necessary to correct the first one? On the contrary. The ten "false evidence" that we had denounced ("markets are efficient", for example, or "we must reduce spending to reduce public debt"), and which we feared would continue to inspire economic policies, have indeed played this role. They have been the credo - assumed and admitted or not - of the policies followed since 2008. In some cases to the point of caricature. The signing of the budget pact in Europe, which has weighed down all the policies followed since then - we can still see this today with the disputes between Paris and Brussels - completely ignores the real causes of the crisis. The implicit analysis is that everything is due to the laxity of public policies and the excessive generosity of the European welfare state. This pact makes budgetary balance a constitutional "golden rule", which is nonsense. And it advocates a return to balance in a few years through budget cuts that are sometimes real bloodbaths, as in Greece, Spain or Portugal. This is the worst scenario that we could imagine. No, unfortunately, the manifesto was hardly wrong... However, the idea of the New Manifesto is not only to attack the old or new "false evidence" that guides the actions of politicians. It seemed useful and necessary to us to formulate and propose to the public debate our own convictions, a set of alternative proposals to the neoliberal policies that are dominant today. What is the state of the economic debate seven years after the start of the crisis? It is striking to note that after having kept a low profile - and for good reason - the proponents of deregulation and market efficiency have seriously raised their heads. Based on the figures for public debt and deficits - the widening of which is very largely due to the crisis of the deregulated and financialized accumulation model that they themselves have long advocated -, they are now theorizing the need to reduce the scope of action of the State (and therefore to increase the private sphere) and to proceed with unilateral transfers to companies through a so-called "supply" policy. The neoliberal offensive, temporarily halted by the crisis, has therefore resumed with renewed vigor. The Keynesians, who experienced a resurgence when the consensus was reached on the need to inject massive amounts of liquidity into the economy to prevent its collapse, are once again being accused. As if the deficits and debt were their responsibility, when it was only a matter of repairing the financial misdeeds. The public debate echoes that of "professional" economists. But with a certain lag. One only has to read the recent polls on the generalized distrust that has set in to verify that the public is much less credulous than economists believe. Many citizens have long understood that this policy is leading nowhere. Or better: that it is leading to disaster. Moreover, it must be said that in France, for example, the majority that emerged from the ballot boxes had its vote stolen. François Hollande was elected on a proclaimed program that, on essential points, was the opposite of the one he is implementing. Do you nevertheless feel that the crisis has allowed the terms of the debate to be renewed? For the moment, unfortunately, there is not much new. We could even say that the bad theories have driven out the good ones. Thus, the theories of endogenous growth, which insisted on the need to invest massively in education, research, and in all the "positive externalities", have practically disappeared from the debate, to the benefit of theories that advocate austerity, generalized cuts and a minimal State. There are still some positive points. First of all, the theme of the ecological crisis has made immense progress in public opinion. The idea that we cannot continue on the current path, that we must design cleaner and more resource-efficient modes of consumption, is now widely shared. Similarly, the idea - related to the previous one - that markets cannot do everything and that, left to themselves, they can lead to disasters. We can sense not only the demand for more regulation, but also that of a return to a true "mixed" economy where public action, provided that it is properly controlled and implemented, would have its place. Finally and above all, between State and market, the theme and theory of the commons (i.e. the idea of resources whose ownership and use are shared, instead of being subject to exclusive public or private ownership) are making a real breakthrough. From water thought of as a common good to the multiple economic models of "free" and open source based on different forms of the sharing economy, we are seeing all sorts of "platforms" flourish which are budding businesses, when they are not real businesses. From carpooling to personal services (education, health), this economy of the common and sharing, whether or not it is based on commercial forms, is bringing about a real revolution in our ways of thinking and doing. This is probably where the essential changes will come from. Because this economy of the common is congruent with the "green" imperative of preserving and using resources properly. Do the economic policies pursued today by the world's leading countries, including France, reflect the progress of these new concepts? For the most part, they continue to be inspired by pre-crisis theories. The idea that the return of growth requires "structural reforms" that would allow the return of market efficiency is as old as neoclassical theory itself. And just as hackneyed... In monetary matters, however, we can note some developments, still very timid. Such as the promotion of "unconventional" policies by central banks. Or the idea that they must deal not only with monetary stability, but also with financial stability. Today, the Chairman of the American Federal Reserve would probably not dare - as Alan Greenspan did when he held this position a few years ago - to argue that in the face of the formation of a bubble, we must above all do nothing... What concrete economic policy measures do you recommend in this second manifesto? France and Europe need a new major project, capable of relaunching initiatives and the economy. This must obviously be focused on the ecological transition. Such a policy requires mobilizing companies, regions, research centers and the banking sector in a coordinated and long-term effort. The development of renewable energies, thermal insulation of buildings, urban renovation, the implementation of innovative production processes, the rise of long-life products that consume little energy, are the vectors of the economy of the future. To implement such a policy, a sovereign fund could be created from the assets of the Agence des participations de l'Etat and the Caisse des dépôts. European instruments should be added to this, if the European Union finally undertakes its re-establishment. The European Investment Bank (EIB) could be a formidable lever for financing future activities. What do you think would be needed for these measures to actually be adopted? What is most cruelly lacking is the coalition capable of carrying out such a project. However, in France, one virtually exists. If we put together the Greens, the Left Front, the PS "rebels" and those who are likely to join them, we are not far from a majority. Is such a recomposition possible? For my part, I am pessimistic. The Dutch coalition that dominates the parliamentary game has gone too far in its stubbornness and its errors to turn around. But the situation is such, in France as in Europe, that a window will open at one time or another. We will then have to seize the opportunity. By putting our proposals up for debate, we hope to help prepare for this moment and the choices that will then have to be made. The Great Depression of the 1930s quickly led to radical changes in policies, such as the New Deal in the United States. It also led economists to review their theories to give rise to Keynesianism, the mixed economy, and the welfare state. Today, after seven years of crisis, this does not seem to be the case. Why? I think the obstacles are first of all political. The neoliberal coalition is still very powerful. It has managed, at least until today, to block change. But alternative perspectives exist. The return of the "common" that we are witnessing is proof of this. It will undoubtedly take time. But under the influence of necessity, the ecological transition will take place. And with it we will change our ways of living and thinking.

## ###ARTICLE\_START### ID:2470

It's a geeky idea. From January 16th to January 31st, in Paris, a bunch of lunatics decided to create a Public Domain Festival to celebrate these creators whose works fall, seventy years after their death, into the common pot. "This year, we have a great harvest. All the authors died in 1944. Munch, Kandinsky, Jean Giraudoux, Mondrian, Maillol, Romain Rolland, Glenn Miller... Well, for him, it's more complicated. He's an American...", enthuses Alexis Kauffmann, one of the founders of the festival. So many possible reappropriations, it's worth a party. By dint of rubbing shoulders on the Net with copyright issues, this maths teacher, founder of Framasoft, a network dedicated to free software, ended up becoming passionate about the issue, which he saw as a godsend: "Saint-Exupéry also died in 1944, but he "died for France". The law grants, in this case, a bonus of thirty additional years to the beneficiaries. This complicates things: in Belgium, he obviously did not "died for France"... As a result, we can bring out new editions of The Little Prince there or publish them royalty-free, on the Net." Mr. Kauffmann and his accomplice, Véronique Boukali, wanted to make this legal subject a cultural event. Twenty-seven celebrations in Paris: on January 25, at the Saint-Merri church, a concert by the pianist Kimiko Ishizaka, who put her interpretations of Bach and Chopin into the public domain as soon as they were recorded; On the 31st, at the University of Paris-VIII, a conference on Romain Rolland; on the 29th, at the Ecole Normale de la rue d'Ulm, "public music"... Cinema, including, on January 30, at the Gaîté Lyrique, a colorized version of Fantômas (1913) by Louis Feuillade, which the Orléans artist Shoï Extrasystole provides with his electro samples. "Giving free rein to creativity" A festival "in artisanal mode", in the interstices, with the means at hand. But a festival nonetheless. In the cold, because the works are "liberated" on January 1st following the seventieth anniversary of the author's death. "Beyond the rediscovery of artists, it is first and foremost an opportunity to give free rein to creativity. We are talking to the younger generation, which is the generation of remixes," explains Alexis Kauffmann. The fact remains that the "public domain" has its laws. The United States is governed by copyright: commercial rights linked to the work, not to the author. Films take into account the copyright of the director, producer, screenwriter, composer, etc. As for photos, the right to the image is not erased. And then a work continues to physically belong to its owner. "Institutions must play the game. If, at the Louvre, you can use your camera, the Musée d'Orsay forbids it." Finally, moral rights remain. We can freely publish images of the statues of Maillol that stand in the Jardin du Carrousel, at the Louvre, but we cannot take photos that are too suggestive, at the risk of provoking the ire of the heirs and a lawsuit. All this does not disarm our professor turned festival manager, who must be ruminating somewhere on this phrase from Romain Rolland: "A hero is someone who does what he can. The others don't do it."

## ###ARTICLE\_START### ID:2471

Open data, open source, open access ... Openness is fashionable in the world of data, software and hardware or scientific publications. But what does this term of openness cover - often associated with collaboration, participation, transparency - and which is embodied in well-known examples such as the online encyclopedia Wikipedia, the Firefox browser, massive online courses (Mooc) or the collaborative map Openstreetmap? An atypical collective work, resulting from meetings between some fifty French contributors, aims to answer this question. In its title, Open Models , the important thing is perhaps less the keyword "open" than the plural of "models". Indeed, the landscape is much more varied and abundant than it seems. Much more serious and credible than the somewhat marginal origins of the field, which appeared with free software in the 1980s, might suggest. Since then, the wave has spread to new areas such as finance (donation platforms and direct contributions to projects), banking (cryptocurrencies like bitcoin), health (low-cost prostheses), automobiles, education, research, etc. The book begins with the obvious question: how can we make these open products profitable, which anyone can therefore copy and which are often made available free of charge? There are many answers. A diagram therefore lists several ways of making them available and financing them (foundations, donations, classic commercial models, hybrid models, etc.). A chapter also lists the plethora of legal means for protecting artistic works with different licenses. A map allows us to identify the actors involved in a more open science: publishers, sites, databases, data sharing tools or experimental protocols... The book presents articles, interviews, points of view, examples and diagrams of associative actors, entrepreneurs, philosophers or researchers. The whole is a bit chaotic and does not avoid repetitions (Wikipedia, Linux or Wikispeed, a free automobile, often come up). It is therefore up to the reader to build his or her own vision. The conclusion, in the form of proposals, shows the path to follow and a certain number of them aim to better inform the public and companies, to financially encourage the use of open techniques, to develop indicators to promote actors based on openness... Even if the whole is intended to be concrete and intended to establish economic credibility, the reader will feel the activist side of the pioneers and will discover that these are also models capable of transforming our societies.

## ###ARTICLE\_START### ID:2472

Why all these rumors about BlackBerry? Should we draw a line under the adventure and ask that the patient be finished as soon as possible? What makes BlackBerry interest so many large companies? Microsoft, Levono and, this week, the Korean giant Samsung: many are wondering why these rumors (denied) about a possible acquisition of the Canadian company? After all, no one can deny the almost insurmountable delay that BlackBerry has taken on its competitors, due to the lack of vision of its founders. And although BB has caught up, with a competitive commercial offer, it is far from being able to repeat the feat of Apple which, after suffering a major innovation failure and experiencing the stock market downturn in the 90s, became the number 1 technology company. The fact remains that BlackBerry has enormous value for a company wanting to become a leader in the mobility industry. Let us remember that BB was one of the first to distinguish itself in this field. And who says precursor, says important patents. Indeed, BB holds important patents in the field of mobility that are the envy of many competitors. It is for this reason (among others) that Google bought Motorola's mobile division. But there is also... the new BlackBerry environment that is an issue. As much as we can blame the former leaders for not having seen the mobile revolution coming, we must applaud the acquisition of the QNX operating system (a version of UNIX for embedded systems) which has now become BB10. Solid, secure and, above all, ready for the Internet of Things. Ready for this important market that is expected to expand in the coming years. In short, don't be surprised to hear these kinds of rumors again in the coming months. And even less if the Samsung-BlackBerry rumors were to come true. LINUX AND THE COLUMNIST Many readers have probably read this week the story of our columnist Lise Ravary. One day, without her having done anything, many changes occurred on her Windows computer, the most obvious of which was a change of wallpaper on her desktop with an image of targets to be killed for crimes against Islam. Various sources have confirmed to us that she would not have been the only one. One word: clickjacking. In any case, even if this hack was caused by a malicious script, our Lise decided to adopt a more reassuring solution. Her tower being relatively recent, the Mac solution was to be ruled out. Lise therefore decided to embrace the world of free software and Linux. And the migration will not be so painful, especially with regard to the learning curve, because Lise already used a lot of free software, including the LibreOffice suite, but under Windows. It was also her great surprise to find that many of the software used in her work was free and accessible under Linux. Welcome to the world of the Penguin, Lise.

## ###ARTICLE\_START### ID:2473

There is no reason why the most free works should gather dust in drawers. It is to bring them back into the spotlight that Alexis Kauffmann and Véronique Boukali, teachers by training, founded the website Romaine lubrique in September 2013. They regularly talk about artists who have entered the public domain (and not "fallen" into it, they like to point out, because that is not a disgrace), the legal definition of the latter and its surprisingly hot news: the amendments tabled in the National Assembly to reform copyright, creative Internet users illustrating letters from soldiers, the monkey who took selfies... So many stories and debates that deserve to be known to the general public, so many reasons to transform the Romaine lubrique blog into a Public Domain Festival. Iconoclast. Inaugurated on Friday evening with a "gesticulated conference", the gathering will be structured over two weeks around 26 Parisian events (as well as 3 in the suburbs, and a day outside the walls in Brussels on February 7). A "public domain remix" competition will, for example, offer to take advantage of the entry into the public domain, on January 1, 2015, of famous or confidential artists to appropriate their works and revisit them in every way: what would a Kandinsky painting look like embellished with Edward Johnston's typography in the Art Nouveau style of poster artist Giovanni Mataloni? At Père-Lachaise, next Sunday, photographer Pierre-Yves Beaudouin will invite the curious to accompany him in the gigantic project he has undertaken to enrich Wikipedia: photographing all the graves in the cemetery under a free license. The Saint-Merri church will host a concert by pianist Kimiko Ishizaka, who has donated her recording of Bach's Goldberg Variations to the public domain. "Mondrinsky", an animated composite work by Julien Dorra, remixing the works of Mondrian and Kandinsky, both in the public domain since January 1st. "The idea is to reverse mentalities with regard to creation and copyright," explains Alexis Kauffmann, "it is to remind us that the destiny of all works is to join the public domain, and that copyright is ultimately only a temporary exception." The assertion, legally accurate, is nonetheless iconoclastic at a time when we seem more concerned with protecting rights holders than allowing the public to access culture, more eager to impose restrictions on use than to talk about freedoms in the field of artistic and digital creation. But is it really in the best interests of the work to lock it up behind bars? "The common good only exists if a community appropriates it, defends it, shares it fairly. It is only alive if we use it," summarizes Alexis Kauffmann. "It is a space where we can breathe, far from privatizations and constraints. And, it must be remembered, there is no freedom of expression without free access to culture." Delayed further and further by intellectual property legislation, entry into the public domain (today in France set at seventy years after the death of the author) opens all doors. Distribution, remix, mash-up: almost a new life. Alexis Kauffmann is convinced: "At the moment, we do a lot of very symbolic celebrations around artists, the centenaries of birth or death, for example. It is an opportunity to look at their entire body of work, which is good, but it brings nothing to the public. While the entry of his work into the public domain is a major and decisive event, which completely changes the situation. It is a tipping point." That day, the Wikipedia page for Cride Munch is illustrated with a reproduction of the painting in question, to finally understand what it is about. That day, publishers reprint the complete works of Jean Giraudoux, and the radio plays Carmende Maria Callas without giving a single cent to anyone. In short, it is a party. But no one wants to celebrate it. Lucrative. "The State does not produce a list of artists who enter the public domain on January 1st, there is nothing official, deplores Véronique Boukali. The museums that house the works of great painters who have entered the public domain do not make their high-definition reproductions available to the public either. They are more in a conservation perspective than a promotion, but that should have changed in the age of the Internet." So, if a large majority of institutions are reluctant to advertise their public domain heritage, which is probably not lucrative enough, the Romaine lubrique festival will try to "make up for it" and "put a little pressure on"... But from a "festive rather than activist angle". Although imagined by fervent defenders of free software (Alexis Kauffmann co-founded the Framasoft association), it will be a cultural event above all. "We want to put the works in the spotlight, not just legal and political questions. The works concern communities of artists as well as teachers, or the general public in general. And even if digital technology is fabulous for understanding works, studying them, comparing them, it remains complementary with meetings, physical enhancements and live performance." Four events not to be missed Workshop The best way to bring the public domain to life is undoubtedly to re-appropriate works to create new ones. Throughout the day, various workshops will show you what can be done from films, paintings or short stories. For example, a children's workshop will offer to rework the paintings of Mondrian and Kandinsky while learning to code, and a cinema workshop will reassemble sequences or associate shots from public domain films. The great remix party - Numa, 39 rue du Caire, 75002 Paris. Saturday, January 24 from 10 a.m. to 9 p.m. Fantômas, a criminal in a balaclava and black tights, deserved better than the oblivion of tackiness. Here he is, recolored in yellow, pink, green and purple, more frightening than ever behind his psychedelic superimpositions. Videographer Arnold Boudin has reassembled the five original films by Louis Feuillade (shot in 1913-1914) with electro music in the background. The soundtrack will be performed live by its composer, Shoï Lorillard, at the Gaîté Lyrique. Fantomas Revival - Gaîté Lyrique, 3 bis rue Papin, 75003. Friday, January 30 at 8:30 p.m. Meeting The association La Quadrature du Net has a self-service book scanner. You come with a book, then bzz bzz, and you leave with the PDF. For the festival, a public scanning session of The Little Prince will be an opportunity to appreciate this legal conundrum: Saint-Exupéry entered the public domain on January 1, 2015 in Belgium... but not yet here, because he "died for France." Can a Belgian still scan it? Yes. On French soil? Meh. Share the file? No. Leave with it? Surely not! It will have to be destroyed at the end of the evening. The Little Prince in Hackers' Land - La Quadrature du Net, 19 rue Richard Lenoir, 75011. Monday, January 26 at 8 p.m. Round table In the presence of MP Isabelle Attard, who is very familiar with these issues, and Lionel Maurel, aka Calimaq, member of SavoirCom1 and La Quadrature du Net, this round table will address the political aspects of the public domain, in particular the need to develop a positive definition. The many topics covered will range from the protection of this public domain in the face of new international treaties (Tafta, TPP) to the thorny issue of financing the digitization of works, which must above all make them accessible to all. Political and legal issues in the public domain - ENS, 45 rue d'Ulm, 75005 Paris. Wednesday, January 28 at 8 p.m.

## ###ARTICLE\_START### ID:2474

French tech startups are starting to dream. After Criteo's successful IPO in November 2013 on the Nasdaq, 28 companies raised more than €15 million in 2014, twice as much as in 2012. Last summer, online shoe retailer Sarenza raised €74 million during the summer. Carpooling specialist BlaBlaCar completed a fundraising round of a similar amount a few weeks later to expand into Europe. The next step should be an IPO. Internet hosting provider OVH raised €140 million to ensure its European and international expansion. The year 2014 was also marked by two IPOs, that of Lending Club, the peer-to-peer lending platform founded by Renaud Laplanche, which raised nearly $900 million on the New York Stock Exchange, and DBV Technologies, a biotech company listed on the Nasdaq since October. The year that is beginning once again offers great prospects. Several major fundraisings are being negotiated, while IPOs are being prepared. Sigfox, the telecom operator for connected objects, is preparing to raise €100 million, at a valuation close to €1 billion, as Le Figaro announced in December. The Toulouse start-up plans to double its workforce, to reach around 200 people. Money available Another start-up for connected objects, Cityzen Sciences, is planning a major fundraising, which should not, however, be at the level of Sigfox. Cityzen Sciences develops fabrics that integrate activity, heart rate and GPS sensors. It has signed initial partnerships with Asics and Uniqlo to distribute its technology. Behind these two major operations, a swarm of start-ups are getting ready to raise funds. The peer-to-peer lending platform Prêt d'union, present in the same niche as Lending Club, is also preparing an operation worth several tens of millions of euros. Devialet, which manufactures high-end hi-fi equipment, is also in the running, as is Scality, a company founded by French people and based in San Francisco, which develops cloud storage solutions. Aldebaran Robotics and its humanoid robot NAO are also seeking funding, but with a little more difficulty. Several big names in French high-tech are also expected to make a move. Talend, a specialist in OpenSource software, is aiming for an IPO in the United States by 2016. Withings has just caused a sensation at the Consumer Electronics Show in Las Vegas with its €150 connected watch, the Activité Pop. It is ideally placed in a market that should gain momentum this year with the launch of the Apple Watch. Withings had announced a €23.5 million fundraising during the summer of 2013.

## ###ARTICLE\_START### ID:2475

A film can change your life. It was while watching Howard Hawks' film, Land of the Pharaohs (1955), in the early 1970s, that Michel Michel developed a passion for ancient Egypt and its pyramids. To the point of devoting a large part of his free time to it, alongside his career working the night shift at La Poste. After forty years of investigation, the mystery of the erection of the pyramids seems to hold no more secrets for this 64-year-old Norman retiree. According to this enlightened amateur, the Egyptians would have designed an internal structure with steps (stairs) for their buildings, in order to help them lift their heavy blocks. A structure made with stone ramps then reused to form the smooth covering of the pyramids. A theory developed with the means at hand - an obsolete computer and free 3D software - which has just received the approval of a renowned scientist. Swiss Egyptologist Michael E. Habicht, a researcher at the University of Zurich, invited Michel Michel to contribute to the journal Unter dem Spiegel der Nekropole. Its publication in December is starting to make waves. And other specialists, such as Egyptian Nabil Swelim and Belgian Claude Obsomer, also support Michel Michel's work. "They congratulated me and are interested in it," comments the retired civil servant, delighted that his years of research are finally finding an echo in the scientific community. Power of observation Because the former postal worker did indeed take a long time before seeing his theory published. A "bookworm" before the arrival of the Internet, moderator of an Egyptological forum where he received a lot of support afterwards, it was a trip to Giza in 1986, supported by French Egyptologist Jean-Philippe Lauer, that put him on the trail. On site, he was "impressed by the large pyramids" but also "stunned by the small, very unusual ones". These looked like stepped pyramids, their internal structure being visible in places. His powers of observation, combined with suggestions already made by the architect Gilles Dormion and the Egyptologist Georges Goyon, encouraged him to go further. Two years ago, his hypothesis, "valid for all the large pyramids", came to fruition. He then "signed up on Facebook to spread the information", made a video and "contacted nearly 150 academics", in vain so far. Finally, Michael E. Habicht - a "complete stranger" to him - contacted him last August, after discovering his research on a website where he had published his work. "It was the first time that an Egyptologist spontaneously offered to publish me", says the Norman, who learned English to translate his research. Today, Michel Michel hopes to gather "constructive criticism" from other scientists. In the meantime, he is working on another problem: the erection of obelisks. A model of the one on the Concorde sits in his home.

## ###ARTICLE\_START### ID:2476

Probably the most underrated object in a home network, the router deserves some attention, especially when you know that it manages all the network traffic in the household. It was to be expected. For a month now, the home network had been acting up. A few days before Christmas, we were in trouble. A move was necessary: replace the current beast, bought at a discount, with a new router, solid, sturdy and secure. And capable of juggling nearly twenty devices at a time. MR. ROUTER You should know that our home network hosts many connected devices. Computers? Four or five simultaneously. Tablets? Occasionally, five. Not to mention iPods, cell phones, Internet radios, connected multimedia tools and file servers. Solicited, the network? A little, let's say. And what about when, on top of that, two or three people decide to watch video content on Netflix or via XMBC? In short, this "little problem" has become more and more the norm for many well-connected families. How do you manage all this traffic? Who decides which device and its content will have priority over the others? Yes, Mr. Router himself. Except that too often, the router is hidden by the "home network manager" who has no idea of the possibilities offered by this device. In addition, the home router is very often the one that is supplied as standard by the internet service provider, a basic device with very limited features. THE BEST LINKSYS EVER MARKETED A Google search with the query "best router 2014" and a few readings later, it is obvious that everything points to the new WRT1900AC router from Linksys. Direction consumer electronics store. And, relieved of several greenbacks, return home with the beast. And let it be said, it is quite a beast. Taking the shape and color of the best-selling Linksys router (the WRT54G), this device adopts the latest standards in wireless connectivity. Few devices have them at the moment, but if you are investing for the future, this is the one to buy. With its four antennas and the ability to manage speeds of 1300 Mb/s on the 5 GHz band, the WRT1900AC is a magician when it comes to managing dozens of devices, all as bandwidth-hungry as each other. And after reading all of its technical specifications (we'll leave that pleasure to you), the buyer can rest assured: this is a router that will last for years. Gigabit connectors, USB 3.0 and 2.0, e-SATA, dual-core microprocessor, it's all there. As for the management interface, it's a charm, even for the neophyte. And why this one more than another that adopts the same standards, but sells for less? Unlike other high-end routers on the market, the WRT1900AC, just like the famous WRT54G, will be able to receive open-source firmware from third parties such as OpenWRT and DD-WRT, which will allow the addition of new features. Yes, it is a must when investing for the future.

## ###ARTICLE\_START### ID:2477

Outside, it doesn't stop: barely approaching a shore, it's already drifting, and still. "Where am I?" Inside, it's swimming completely. It's even floundering. "Where am I?" Our relationship with the Internet undermines the helpless swimming fins that are, for a human biped, space and time. To the point of becoming downright mermaids... our intensive computer practices fluidify exteriority, making it difficult to divide up spaces, map them, identify places. "Where am I?" Nowhere and everywhere. And they fragment interiority, making it difficult for oneself to grasp oneself again by oneself "Where am I?" In a "state near Ohio", as in the song, a puzzle that cannot be totalized. Navigating on and through the Internet makes one experience a spatio-temporal blurring without perspective. Can we still talk about space, an instance of differentiation, which separates here and elsewhere, inside and outside? Can we still talk about time, an instance of synthesis, which makes the link between before and after, self-recontainment, putting inside and outside into perspective? Emmanuel Kant had theorized and described this asymmetry, between the time that binds and the space that separates. However, whoever goes to the beach loses his place. In our tribulations as Internet users, everything seems upside down. The user, in his networked activities, is constantly carried by referrals, successive requests that abolish spatial partitions and their distinct apprehension. Confusions between the Web and the Internet, not to mention portals, sites, clouds, places? Separated? Linked? Traveled? What becomes of the reassuring gap between here and elsewhere? Working with several people on the same program, or the same pad (Compatible Time-Sharing System), simultaneously performing several tasks (multi-tasking), and it is the vertigo of ubiquity: finding oneself as if multiplied, fragmented, without being able to operate in oneself the "recollection" that would allow one to find oneself and situate oneself. To be silent, then, and swim? To let the operators do their thing, to delegate one's compass, to let oneself be embarked or disembarked? At least, Cythera, we knew where it was. Swimming, on the surface of the Web, at the dawn of the computer revolution, makes the fragmentation of space disappear in a fluidification that stretches it indefinitely by the play of hypertextual references. And makes the internal elaboration, in oneself, worked, of a duration carrying meaning delicate. Our poor identity, mended, juxtaposed, made of disjointed operations whose logic escapes, is painful to see. Since elsewhere is no longer clearly elsewhere, since with the whole world, I am on the same level, the contours of my being become difficult to draw. Strangeness of elsewhere abolished. Mediations of here fogged. Is the remedy for spatial blurring then in the Commons? The delimitation, on the Internet, of a common human cultural heritage, which would allow everyone to make the link between the history of the world and their own? Hannah Arendt already advocated, in her American period, giving full meaning to external separations, public, private, symbolic. That is, of a public space to receive as an inheritance and to increase. Should we then, on the Web, sanctify, cut up by words and legal devices, a place of the Commons? So that the Internet user remains an inter-user there. That his ship does not become a drunken boat, but remains, without stopping, a ship, interface of the fluid and the firm, as Michel Foucault wrote in his article "Les Espaces autres": "[...]. the boat is a floating piece of space, a place without a place, which lives by itself, which is closed on itself and which is at the same time delivered to the infinity of the sea...". Preserve, of space, a readability. Know what we are heading for. This requires, without doubt, a haven, a sanctuarization of the right to exercise one's free will as an Internet user and computer scientist. Is the remedy for internal fragmentation, for the shipwreck of synthesis, in Free Software? Without doubt. But in a Free Software that would not remain open source, which sails above all on the culture of results, feeds on operational collaborative achievements, by minimizing the ethics of the original Free Software: that of freesoftware. Father of freesoftware, through his GNU project of September 2013, Richard Matthew Stallman, an outstanding mathematician trained at Harvard, programmer at the Massachusetts Institute of Technology (MIT), has built step by step the technical and legal conditions for a use of computing that is not passive navigation. Free software as he initially conceived it allows a community to access the source code of programs, to study it, to copy it to develop applications, to enrich it, to return it to the community by distributing modified copies. It therefore avoids, in its original version of freesoftware, while opensource only retains the operational dimension, the ill winds of a subjugated, myopic swim, whose traces are as many monetizable metadata and bearers of even more subjugation. Free software offers the conditions for access to an exteriority that respects separations, territories for exercising free will. And to a demanding, ethical relationship with oneself. When Linus Torwalds made his kernel, Linux, free, the achievements of the GNU project were able to converge towards GNU/Linux, improperly called Linux. GNU, no more than FreeSoftware does not deserve this eclipse. One swallow does not make a summer. Open source works, of course, a bit like the northern lights. But the humanist adventure of Free Software, which calls for autonomy, which tries to make the areas encountered readable, and to make the Internet user responsible for the tools he chooses and shares, is even warmer and brighter. An Internet user can swim a lot. Take the broth. Without being seen or known, I confuse you. Free Software restores the "Where am I?" and the "Where am I?" It lights up the beach. It moves.

## ###ARTICLE\_START### ID:2478

In the kitchen, he taps away on the long Corian table and, while cutting tomatoes, makes a cooking recipe appear on the worktop via the Internet, then a football match; in the games room, his children play around the coffee table transformed into a giant digital tablet; in the bedroom, with a magic swipe of his smartphone, he makes a TV hidden in the headboard of the bed appear and lights the ethanol fireplace... We are not in a James Bond film, but in a Parisian cellar transformed into a show apartment for geeks, counting on 120 m2 nearly seventy applications "to live better and have fun at home, while saving energy". Welcome to Domo, the house of tomorrow, born under the pencil of the architect Gabriel Kowalski at the request of Pierre-Nicolas Cléré, director of Connecting Technology, designer of home automation systems. At the entrance, the light that comes on thanks to a presence detector, the camera that leers at the visitor... no longer surprises anyone. However, the information is connected via Wi-Fi to the same application, like the lock on the armoured door, activated by a biometric sensor. So, you can open it for the delivery man... or for your cousin, who has turned up unexpectedly, while you are at the office, or even on the other side of the world. Once you have crossed the door, a bluesy tune and a warm light greet you, while a hot and perfumed bath is already running in the bathtub. Everything is done automatically, as soon as your fingerprint has been recognised. "The lighting, the music, the screens... are programmed to respond to different scenarios, as you wish: dynamic in the morning, relaxing in the evening, festive on reception days...", explains Pierre-Nicolas Cléré. "Our tool is a kind of butler: it also automates certain tasks, closes the Velux on the roof when it rains, turns on the hood at the same time as the hob, turns down the heating when you leave...", says our guide, who leads the tour without letting go of his iPad. It goes through the wine cellar, equipped with an automatic weighing system that alerts you when a bottle is missing, and ends with the home cinema, with vibrating armchairs, like Futuroscope at home! Enjoyment "The whole art is to make this place not look like an airplane cockpit, with buttons and wires everywhere", emphasizes the architect of the place, Gabriel Kowalski, who has notably contrived to hide the Tangent speakers in false ceilings and worked with lighting designer Anne Bureau to personalize the lighting. Reasonably, we say to ourselves that, with age, this type of layout will be more than useful. It recognizes you with a finger, informs you of water leaks and repairs to be made, turns off the light under the pan if you have forgotten to do so and intelligently manages the heating. We can also, without waiting for the vicissitudes of age, experience a certain pleasure in running our bath from our car, lighting the fire in the fireplace from our bed and changing the wallpaper on the walls, like changing our shirts. Nine out of ten French people see home automation as a way of improving their well-being in their homes, according to a survey by the specialist website Maisonapart.com, carried out in November among 1,800 people. Their main motivations? Daily comfort (48%), far ahead of energy savings (18%) and security (16%). "No more futuristic gadgets: the smart home is concretely conjugated in the present," summarizes Pauline Polgar, editorial director of Maisonapart.com. Everything contributes to its growth: the development of the Internet, smartphones and other tablets among the French, but also the multiplication of regulatory constraints such as the obligation to install smoke alarms before March 2015, or smart electricity meters in all homes, by 2020. " "Voice" of the home Gone are also the days when you had to "think" about home automation when building or renovating (with an additional cost of at least 30,000 euros). From Darty to the brand-store Lick, created in 2014 and specializing in connected objects, via Fnac: small devices that can be controlled remotely, from a mobile phone, are multiplying, democratizing home automation. In February, Schneider Electric launched its Wiser box designed by designer Mathieu Lehanneur: it controls the radiators, the thermostat and the hot water tank for an "energy" bill reduced, he promises, by a third. Google's Nest connected thermostats, or Netatmo by Starck, also manage the temperature of each room remotely. The LED bulb also becomes a smoke detector (Bell & Wyson), the connected washing machine saves water and detergent (Whirlpool), the HD camera focuses its eyes and microphone on potential burglars while providing information on the air quality in the home (Withings Home), while the Okidokeys connected lock (OpenWays) avoids the nightmare of losing keys. Some 23% of French people, according to the Maisonapart.com survey, already dream of an intelligent central computer that would be the "voice" of the home, with which it would be possible to "dialogue". In Strasbourg, interior designer Jérémy Hérard, founder of Notes de Styles, promises the first homes that talk within two years. He is working with a French start-up, which has developed open-source software. "In 2017, you will set your alarm for 8 o'clock, the alarm will ring, the coffee maker will start and so will your favorite radio station," comments Jérémy Hérard. Then the house will tell you: "You have an appointment in thirty minutes, given the traffic, you have to leave in fifteen minutes; bring your umbrella, because it's raining." This new home automation program is called Gladys. Her voice? That of a woman... synthetic, GPS-style. Not everything is perfect.

## ###ARTICLE\_START### ID:2479

Paris, Grand Palais, this fall, during the International Contemporary Art Fair (Fiac). The four dancers are placed on either side of the room. Each, immersed in their own world, performs a series of mysterious gestures that nevertheless seem familiar. The young girl on the left moves her hands as if she were facing a keyboard that she would barely touch. Then she says in a clear voice: "2009." In the audience, a woman who is filming the choreography with her iPhone lets out an exclamation. She has probably just noticed the disturbing similarity that links the gestures executed by the performers to those she makes with her portable device: "slide to unlock," "zoom in," or "focus." What Shall We Do Next, a video performance by the artist Julien Prévieux, is the result of a residency in California. The work is based on all these gestures that allow functions to be activated on this or that high-tech object. We know the famous slide to unlock that started the Apple-Samsung war. And there are hundreds of similar gestures that the artist has been meticulously cataloguing since 2006, by going to the website of the American industrial property agency, the USPTO. An engineer by training, Prévieux describes the latest trend, the craze for interface clothing: "T-shirts, bracelets, shoes. Wherever you need to trigger a function on a connected object, there will be one or more associated gestures." These upcoming gestures are patented, even though the technology they are supposed to activate does not yet exist... and may never exist. What are they? Who do they belong to? What do they foreshadow for our future? Heart with fingers. "We are still in a period of infancy, of establishing a vocabulary," explains Prévieux. Some gestures are poorly designed, like the one invented to trigger the fire alarm, which was withdrawn from the market in a panic because it went off as soon as you raised your arm. Among all those he has dissected, inventions of car manufacturers, small medical device boxes or the delusions of large Silicon Valley groups, the artist specifies that it is not easy to anticipate. How do you know which of these virtual gestures will find a real existence? "For some, we quickly see that they will not be developed." Thus Apple's subgestures, these "gestures integrated into another gesture" (like a loop or a zig-zag that could follow the slide to unlock). Most of them remain too complicated to perform, and especially to remember. Other failures, that of the gestures linked to the Blackberry touch model or the disappointment of Leap Motion, a computer motion sensor, which according to users would cause a certain muscular fatigue. To exist and hope to become a standard, a gesture must be simple. The success of a technology can also take time, the most famous example being that of the mouse. Designed in the 60s, the invention was not originally intended for the general public but for computer scientists wanting to process data. It was only after twenty years of practice, and the revolution of the home computer, that it became the obvious thing that we know today. The most absurd gesture invented so far? "Those associated with the SmartWig", jokes Prévieux, the "intelligent wig" registered by Sony. The gesture consists, among other things, of rubbing your sideburns to activate certain functions! On the USPTO website, the federal agency sells you the description of the patented gesture that interests you, individually or by subscription. While the practice may be surprising, it keeps the "patent war" that digital multinationals are now waging at full speed. The kickoff was given in 2012 by Apple. The Cupertino company then spends a fortune to defend its slide to unlock patent in order to counter Samsung. But if Apple, which frantically patents the slightest of its inventions, remains in the lead, Google is trying to catch up with its direct competitor in the field. The company has notably bought Flutter, a system integrating a camera capable of controlling media applications by gestures. It is also responsible for patent number 547, filed last year in order to secure "all manual gestures captured by a device, whether a smartphone or Google Glass". Thus this heart made with two hands, which could for example mean "like" in order to signal on a social network something that we like. The same goes for gestures to sort or select, whether in the form of a loop, a square or a rectangle. Patenting a gesture does not mean that you will have to obtain authorization to perform it. On the other hand, technical devices of the same type will not be able to use this same gesture. Farewell to the heart drawn by two hands, for romantics who do not have a Google device authorized to answer it. Until proven otherwise, that is to say, litigation with a competitor. "Grammar of movements". The phenomenon is comparable to Hollywood, where major studios buy as many synopses as possible, even if few scenarios will be adapted in the end, to avoid at all costs that someone else does it in their place. "When you put a patent, you say: I own this thing, reminds Julien Prévieux. But gestures are part of common goods, like language or air." The problem also overlaps with that which opposes the supporters of "copyright" to those of "copyleft". In the other camp, that of open-source, we still have only a few examples of gesture-interfaces invented without a restrictive patent - to share - à la Elon Musk. We remember Dan Saffer's manifesto for the creation of a "grammar of movements for common gestural functions", which did not last long. Or the "Esperanto of gestures" developed by Younghee Jung at Nokia. The goal was to invent a universally understandable gesture to mean "turn off your mobile phone". It is not insignificant that we owe to a video game console, the Wii, the most sophisticated and skillful gestures of the human-machine interface to date, subsequently taken up in multiple non-game applications. A lucrative business, the frenetic patenting of gestures has become one of the nerves of a war in the digital economy. This must be placed in a broader context, that of the "acceleration" that characterizes this new capitalism, according to the sociologist and philosopher Hartmut Rosa. And of the "society of anticipation" as Eric Sadin, philosopher and technology specialist, calls it: the optimization of existence involves mastering what comes. "It's not about ruling us like Big Brother, but about monetizing, at a lower cost and for the lowest risk." Conductor. Reality sometimes surpasses (science) fiction, as in the case of the film Minority Report. We owe Tom Cruise's gestures when, like a conductor, he manipulates several screens at once with his fingertips, to John Underkoffler. Buoyed by the "anticipated" success of this technology in the film, the Oblong firm created it for real. It is now approached by Boeing, General Electric, and the American army is reportedly harassing it to develop its invention. These gestures are in fact part of the long history of human-machine interfaces, and we could go back to the Theremin at the beginning of the century, this strange musical instrument directed by the movements of the composer's hand, without touching anything other than the air. We should not underestimate their potentially beneficial nature. Like any pharmakon(technique), everything depends on the use. Medical applications, for example, are already inspired by it. However, we can easily perceive the alienating nature of its latest avatars. For the philosopher Elie During, who successfully defended Julien Prévieux's work before the jury of the Marcel-Duchamp prize, "What Shall We Do Next? makes it clear that we already perform these gestures of the future at every moment when we submit obediently, and sometimes with feverish excitement, to the gestural protocols planned for the user interfaces that we manipulate daily: iPad and mobile phone, assisted driving and home automation devices." Ataxia, dystonia and other tics: the symptoms are multiple. The latest, the Oculus Rift can create a form of motion sickness, renamed "virtual reality sickness". A small revolution. But why, despite everything, do these gestures continue to exert such fascination? In addition to the immense power of seduction of new technologies, skillfully maintained by genius designers like those at Apple, it is because they precisely outline the contours of our future that these gestures please us so much. "The advent of the touch screen has induced an almost fusional rapprochement between humans and technology: the body has become the major interface of our relationships with machines," explains Eric Sadin. A "haptic relationship" that fluidifies and intensifies our links to information. An almost invisible, silent revolution, much more pernicious than these robots built in our image, in Japan, that we would like to pass off as our future. "Game without a controller means game with the whole body. Kinect responds to each of your movements, suggested the slogan associated with the Xbox 360. The controller is you." Google Glass is the logical continuation, which takes a step further towards total integration. It is your gaze, from now on, that becomes the cursor. This is also the strength of Julien Prévieux's work. By choreographing these gestures that do not (yet) exist, by embodying them through these dancers, the artist makes us realize this small Copernican revolution in our relationship with machines. He concretizes before our eyes what escapes us the most: the fact that the interface, today, is our body. Through a form of voluntary servitude, we submit to these gestures. It is up to us, like the dancers, to reappropriate them.

## ###ARTICLE\_START### ID:2480

To absorb the cuts and balance its budget, UQAM has put its real estate development plan on hold and has undertaken a digital shift, which favours the use of open source software. But it will have difficulty holding out if further cuts are made, it warns, and could have to make "cuts in the payroll." "Will it mean job closures? We are not in a position to say, because we are starting [to look at that]," said Rector Robert Proulx, during a presentation of his 2015-2020 strategic plan to journalists. The situation is "serious" and the exercise to balance the next budget will be "extremely demanding" and "even more perilous if further government cuts are added in the coming months." For now, UQAM is drawing on its reserves, an $8 million it had for IT and its real estate master plan, which it is suspending. But that doesn't stop her from proposing a freeze on professor hiring as part of the negotiations she is currently conducting for the renewal of their collective agreement. The employers' demands do not satisfy the UQAM professors' union at all, which describes them as "considerable setbacks." Mr. Proulx assures us that his proposals have nothing to do with the cuts demanded by Quebec, namely $3.7 million for 2014-2015 on an operating budget of $425 million. The man who, when he took office two years ago, wanted to increase the teaching staff and who recognizes that the professor/student ratio is too high, now fears that hiring new professors will lead to additional costs. "When you hire professors, you have to hire support staff," he says. And there's nothing to stop a university from "thinking about ways to improve [its] efficiency," he says. There is simply a divergence of opinion on how to achieve this. "I want to act responsibly. We are not going to put the university in difficulty." No "brutal closure" of programs is envisaged for the moment. "Programs can disappear because they are not doing as well, because UQAM judges that they are no longer useful," notes the rector. Not because cuts have to be absorbed, at least not for the moment. Allergic to competition In this context of austerity, it will not be easy to implement UQAM's new 2015-2020 strategic plan, which will aim in particular to break down silos and promote interdisciplinarity (between the world of teaching and research, for example), to internationalize the university and to anchor it more in its community, given its clientele with very diverse profiles. "The budgetary context is not favourable to development," he says, recalling that the cuts are not new. "Basically, we're starting with $20 million less and we don't know what will be asked of us for next year." Robert Proulx seems allergic to the idea of universities competing with each other. Like many other rectors, he did not fail to point out that the government's funding formula, which allocates an amount per student, must be completely reviewed. "This puts us in a competitive context. Rather than collaborating with each other, universities are going to look for students [in the university] next door, which is completely unacceptable given their role." Rejecting once again the idea of creating "two university networks," he also said he was satisfied with the withdrawal of the institutions in the Université du Québec (UQ) network from Bill 15. For him, only a network of Quebec universities, all autonomous, has its place. No select club of universities that have medical faculties, no U8 of so-called "chartered" universities that would exclude UQ universities, "only universities." "I am against any form of competition between universities, the population would not benefit from it," insisted Rector Proulx.

## ###ARTICLE\_START### ID:2481

In the realm of digital socialization, something is fading. This was revealed by the Global Web Index last week, when it presented the results of a study that once again highlighted users' disaffection with the social network Facebook. In the United States and Great Britain, nearly half of them say they have reduced their time spent using this sharing and communication tool. The rate reaches 64% among 16 to 19-year-olds, who justify this by a loss of interest in this space that has established voyeurism and exhibitionism as norms, the "like" as a marker of existence and sharing as a vector of distant engagement. Lack of interest or lucidity? The varnish on the floor of these new spaces seems to be cracking for some time, probably due to revelations of passive surveillance, cases of censorship that have come to light, advertising intrusions linked to the exploitation of metadata for commercial purposes, which in the long run also end up revealing the absurdity of this new socialization, of this citizenship in digital format. A socialization that is now unavoidable in this form that has certainly done well to develop in recent years, but which has perhaps not done so in the right place and which would now benefit from moving, from migrating to other places, a little less under the influence of multinationals eager to exploit the dreams, intentions, confidences, and demands that are shared there, less monitored, scrutinized, observed, manipulated with interest and a lack of transparency by some and with suspicion by others. Utopia? Perhaps a little, but digital humanity has perhaps reached this stage of its development by now calling for the creation of a universal network -- transnational, too -- that would allow this socialization, this digital construction of the citizen to continue in a more neutral framework, respecting privacy, leaving fewer traces and protecting them from greed, leaving this venal relationship, this grotesque quest for the monetization of the social, as if to better restore meaning to the project. The spark plug is perhaps about to be activated. Last week, a human rights committee of the United Nations General Assembly adopted a historic resolution calling for better protection of privacy in the digital age and calling on governments to stop the mass surveillance of their citizens. A good start... The rest would benefit from taking the form of a call for international collaboration between these same governments to set up a system for digitally sharing information, photos, videos, social demands, aspirations, social commitments, political ideologies, philosophical questions, cooking recipes and even portraits of cats, free from all commercial influences, hidden and interested glances, malicious surveillance... We could call it "Universalis". It would be the sole responsibility of the public, of States, of the international community. It could be inspired by Diaspora, this decentralized digital social network which, despite all its advantages for protecting one's privacy, is still struggling to find its place on the 2.0 chessboard. Canada would have a lot to offer to ensure the advent of such a network, by delegating a handful of engineers versed in the development of free software and digital infrastructures, by lending web ergonomists, graphic designers from the Plateau or Mile-End to shape this other space of digital socialization. Germany and Brazil would be the first to answer the call. Hochelaga and Villeray, too. The servers necessary for its proper functioning would also find in Gaspésie or on the North Shore a fertile ground for their proper functioning, with low temperatures annually to cool at a lower cost and an almost green energy source for heating. It's an idea. In a recent survey conducted in 24 countries, the Centre for International Governance Innovation (CIGI) has just highlighted the importance of digital technology in the development of democratic societies today. Citizens unanimously believe that the Internet has indeed become a fundamental human right, rather than a vulgar technological infrastructure. Water, air, freedom, the Web. Water, moreover, the Observatory of Multinationals recalled last week, is currently experiencing an astonishing wave of "remunicipalization" in several cities around the world that had succumbed to the call of private aqueducts in the past. Some 180 of them in 35 countries have regained control of this resource essential to life, thus forcing admiration and inspiration for the protection of other resources essential to other forms of life, such as social and democratic life.

## ###ARTICLE\_START### ID:2482

"The fossa is an animal, agile like a feline that lives in Madagascar," explains researcher Stéphane Ribas learnedly. However, the latter is far from being a zoology specialist. He is a computer scientist at Inria Grenoble and the main organizer of a conference that is admittedly quite "wild," which he named fOSSa, for Free OpenSource Software for Academia. "Six years ago, when I launched this idea, I wanted to get a message across. In research, we willingly practice collaboration, sharing and openness. All qualities present in free software. But we were a little forgotten by these communities. We had to give visibility to our activity, he explains. Now, it's won. The principles of openness are everywhere: in software, art, the home, agriculture, journalism...!" » FOSSa, which was held from November 19 to 21 in Rennes, is a bit of a big bazaar mixing technical presentations, hardware demonstrations and debates. It discusses architecture, privacy, communication, economics, education... The common point is that of the four freedoms, posed by free software and which now also apply to hardware. The user can execute, modify, improve or distribute a program (or a plan) protected by one of the multiple free licenses. The European Organization for Nuclear Research (CERN) has even proposed one. This is opposed to closed and proprietary models that cannot be adapted, or even improved, or diverted. Beyond scientific and technical rigor, politics is therefore never far away. One participant recalled a quote from Adrian Bowyer, at the origin of open source 3D printers: "The proletariat must regain ownership of its means of production. » In these times of excessive robotization, the Internet of Things or smart cities, the slogan can hit the mark. And fOSSa researchers want to do their bit. A team from Inria Rennes has presented an educational tool (Amiunique.org) to raise awareness of the traces left on the Internet. Sites identify Internet users by a quasi-unique signature, based on the version of their browser, their operating system, installed extensions and fonts... To scramble this signature without interfering with navigation, researchers are also developing a solution, Blink, available at the end of the year for specialists. Christian Grothoff, also at Inria Rennes, is taking on the financial system. With colleagues, he launched the development of Taler, a payment system that guarantees the anonymity of buyers while allowing authorities to retain the possibility of taxing sales, unlike other systems such as Bitcoin and other derivatives. The team, which benefits from the advice of the father of free software Richard Stallman, should make this technology available by 2016. Biology could also change. Guillaume Collet, from Inria Rennes, has shown how "technical constraints encourage creativity". With colleagues, he created a genome sequence assembler with the smallest computer in the world, the Raspberry Pi, which also has very open characteristics. In 2012, they developed a very efficient algorithm for sequencing that requires much less memory. To promote it, the team put its machine in a shoebox: it finds, in the long genetic sequences, a series of DNA bases entered by the user and prints it on a receipt coming out of the box. Stéphane Ribas is not to be outdone. He also brought his own free hardware: a robot that can be configured to order, whose parts can be manufactured with a 3D printer. Poppy is the result of Matthieu Lapeyre's thesis and is starting to invade the academic world, even schools. It does not yet walk on its own but can imitate any gesture. Researchers can test their models of human-machine, robot-robot interactions, as well as language, vision, etc. On the robotics side, another crazy project was present: Inmoov. A human-sized robot, also entirely achievable "by hand" with 3D printers. It was a sculptor, Gaël Langevin, who launched this project only two years ago. A community has since gathered around it. His hand model has even been perfected to become a future medical prosthesis, Bionicohand. "fOSSa is a laboratory of ideas where different approaches confront each other, combine in the hope of bringing out new models to create value, whether social, economic, cultural, etc.," summarizes Stéphane Ribas, who, with colleagues from Inria, is working on the evolution of scientific publication models. "The current system, in IT, sometimes blocks collaborations and the redistribution of our programs. We should have a more open and collaborative publication system, imagines the researcher. We should become publishers ourselves. We need to take back power!"

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## ###ARTICLE\_START### ID:2485

After the announcement of its acquisition by Facebook in February, WhatsApp was heavily criticized on the privacy front. Nine months later, the world's leading mobile messaging app has just announced a significant - and surprising - strengthening of its confidentiality. In its version for Android, Google's operating system, WhatsApp will now apply message encryption by default, which means that exchanges between users will only be readable by them, even in the event of interception (by a public authority, an intelligence agency or a hacker). Even more surprising: for this innovation, WhatsApp worked with Whisper Systems, a non-profit organization known for developing TextSecure. This application, similar to WhatsApp, is considered by cryptography experts to be one of the most secure messaging applications on the market. Edward Snowden, the former US intelligence subcontractor behind the revelations about the NSA, had recommended using applications developed by Whisper Systems. "These are free programs that are actually better than the ones that are built into your phone, and more secure," he explained at the New Yorker festival on October 11. It is precisely a modified version of the TextSecure computer code, published under an open source license and therefore reusable, that will be used for this new encryption. The latter will even be called "end-to-end", which means that even WhatsApp will not have the key to decrypt users' messages. "Smooth" transition "Ordinary users will not see the difference, it will be done smoothly", rejoiced the creator of Whisper Systems, Moxie Marlinspike, in the columns of Wired magazine. For the moment, this new feature is only available on Android phones and in discussions between two users. The various attachments (photos, sounds, videos, etc.) are not yet affected. The extension of encryption to other platforms (iOS, Windows Phone), for group discussions and attachments will follow, without a specific date having been announced. Apple's messaging system, iMessage, already includes a form of "end-to-end" encryption. But experts have long warned of the weaknesses linked to the implementation of these protections at the giant with the apple. With this new device, WhatsApp is getting closer to applications such as those of the American company Silent Circle or those already developed by Whisper Systems. But none of them have as many users as WhatsApp, which recently claimed more than 600 million active users per month. This mass of users, all of whose messages will eventually be protected by the encryption mechanism, will make WhatsApp the largest encrypted communications tool on the planet. This protection mechanism, developed in the weeks following the acquisition by Facebook, could find its roots in the vision of the company's founder, Jan Koum. “Privacy is coded in our DNA,” he defended himself at the time of his acquisition by Facebook and the criticism that accompanied it. Originally from the former USSR, he had recalled in a blog post one of the “most vivid memories of my childhood,” when his mother, on the phone, said: “This is not a conversation to have on the phone, I will tell you in person.” “I grew up in a society where everything we did was monitored, recorded, spied on. No one should have the right to spy, or it becomes a totalitarian state, the kind of state that I fled as a child to come to this country, where you have democracy and freedom of expression,” he continued in an interview with Wired. This new development – which is enough to worry the authorities of the countries where WhatsApp is used – comes in addition to the various initiatives taken by several large Silicon Valley companies to better protect their users’ communications. Apple and Google recently announced the encryption of data contained on phones equipped with their software, to the great displeasure of the authorities, particularly in the United States.

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Minerals from countries at war, inhumane working conditions, ecological disasters: the manufacture of our smartphones hides unspeakable secrets, as shown by the program "Cash investigation" recently broadcast on France 2. However, there is a company that thinks it is possible to manufacture mobile phones with irreproachable raw materials, respected workers and a real environmental conscience. This company is Fairphone, a Dutch start-up that is committed to producing an "ethical" smartphone. Its credo: support local economies and not armed militias, source from companies that do not violate human rights or the environment, and offer sustainable products that are easy to repair and recycle. The minerals come, like the majority of those used in industry, from mines located in the Democratic Republic of Congo. But those who work for Fairphone are located outside conflict zones. “We could have sourced from Australia, which produces the same minerals, and decided to ignore Africa and its conflicts,” explains Bas van Abel, founder and CEO of Fairphone. “But we wanted to intervene specifically in Africa to improve the lives of miners and ultimately allow them to earn a decent wage.” An engineer and designer, Bas van Abel is first and foremost an ardent activist for “open design,” a concept of industrial design that takes up the principles of free software: transparency, interaction and sharing. “If you can’t open the product, you don’t own it,” he proclaimed in 2012, expressing his indignation at the impossibility of taking apart a Nintendo console or an iPhone. At the time, he was running a community laboratory for manufacturing prototypes. He also launched “open source” restaurants that serve recipes invented by Internet users. An association then contacted him: it was trying to raise awareness among consumers about the disappearance of millions of people in African mines that exploit minerals for industry. Raising awareness among consumers “Originally, my friends and I didn’t want to make a telephone,” says Bas van Abel. “We were looking for what we could do to denounce the trafficking of blood minerals in Central Africa. We first had to understand what was happening there, and we had trouble identifying who the bad guys were: the rebel militias, the regular army, the international community that turns a blind eye, or the big companies that are taking advantage of the situation?” To reach the public, nothing beats a good story, says Bas van Abel. He was inspired by a blog on which amateurs explain step by step how they made a toaster from scratch, by studying the components, the manufacturing processes and looking for suppliers. “We said to ourselves: why not make a telephone and tell our story on the Internet?” The phone is a product that we use every day. It will allow the public to better understand the situation in the mines that supply tin, tantalum, tungsten, etc. "Back from Africa, Bas van Abel wants to go further. "Finding mines that are not involved in the conflict was the first step. We also had to look into working conditions." Not only in Congo, but also with Asian suppliers. How could the Fairphone be produced in factories that employ child labor or do not respect social legislation? In China, Bas van Abel managed to reach an agreement with companies that committed to paying employees properly and setting up a wage support fund. Without falling into naivety, however. "We cannot guarantee that all our suppliers are irreproachable," he admits. "We do not yet have the size or sales volume that allow us to put pressure on our partners. That’s why we first approached small businesses that allowed us to visit their factories and we try to improve everything we can.” The statement that accompanies Fairphone’s list of suppliers on the Internet confirms the CEO’s reservation: “Inclusion on the list does not mean that Fairphone approves these suppliers or manufacturers as being ‘fairer’ than their competitors, and does not imply that Fairphone has a direct relationship with these companies and influences their business practices.” How then can you offer a 100% fair phone? “It’s simply not possible,” laments Bas van Abel. “We try to do our best. But we hope that the rest of the industry will learn from our initiative and that consumers will be sensitive to our approach.” An act of activism Today, more than 50,000 Fairphones have been sold worldwide at a price of 310 euros. Initially thanks to the support of the operator KPN, which agreed to order 1,000 units before they were even manufactured. The clientele, very varied, is more sensitive to the brand's "ethical" arguments than to the product's characteristics. "I was first won over by the concept," explains Bruno, one of the brand's first French customers. "A small start-up with ethical ambitions, which is involved in the choice of its suppliers and whose product can be repaired. I followed the adventure on their website which recounted each stage of manufacturing, factory visits, cost price analysis. All this gave the image of a kind of laboratory." For Bas van Abel, the purchase of the Fairphone is similar to an act of activism: "We are addressing people who believe that we can make progress with initiatives like ours." He thus hopes to "lay the foundations for this movement to grow more and more, counting on the Internet and word of mouth to get others to come and participate. » Next step: the creation of a new model, entirely designed by Fairphone, which should be released in 2015.

## ###ARTICLE\_START### ID:2488

san francisco - correspondence - Frenchman Solomon Hykes readily admits that he can't really explain the dazzling success of Docker, the start-up he founded in 2008. In recent months, the company has become one of the rising stars of Silicon Valley. Its workforce has quadrupled and it has just raised 40 million dollars (32 million euros) from prestigious American investors. Google, Microsoft and Amazon are now vying to be seen alongside it. A partnership with the online commerce company was also made official on Thursday, November 13. We still have trouble realizing what's happening." With its sixty-five employees, Docker, located in San Francisco, is revolutionizing cloud computing ("dematerialized computing"). Its technology breaks with the traditional model, organized around closed and incompatible ecosystems. Like shipping, Docker offers standardized containers that can be easily moved. Above all, they allow the applications they contain to run on all platforms and operating systems. For developers, this represents a considerable time saving. No need to design a multitude of versions so that their programs work correctly everywhere. A single application is now sufficient, explains the young entrepreneur. "The developer community is fed up with siloed systems. We found ourselves in the right place at the right time to meet their expectations." The major cloud players had to align themselves. In June, Google integrated Docker technology into its platform. In October, Microsoft announced upcoming compatibility. This week, it is the turn of Amazon, whose cloud division occupies the market leader, rejoices Mr. Hykes. "In a very short time, almost all the large companies in the sector, which are otherwise in total competition, have started using our technology. This was possible because we are a small start-up. » The young shoot has however grown considerably since its beginnings, six years ago, in the Paris region. Its founder was then only 25 years old and already had the will to change things. remembers this graduate of the Epitech computer science school. "the cellar of the family home in Montrouge" "During my first professional experiences, I found myself faced with the lack of tools to port an application from one system to another, So, I said to myself that I could perhaps create these tools. ", the adventure begins under the name of dotCloud. The scale of the task is gigantic. The technology must be built from scratch. And the financing does not arrive. qualifies Mr. Hykes. To survive, the company provides IT services to companies. "With a small group of friends" "The market was not yet ready, And we were young, without much experience or network. I am not sure that I would have invested myself. " In 2010, the wheel turns. DotCloud was spotted by Y Combinator, the most renowned Silicon Valley incubator, which has also included Airbnb and Dropbox. The start-up crossed the Atlantic. However, its founder refuses to be the symbol of a France that is failing to retain its talent, he assures. And he continues: "We are a special case, where innovation is pushed to the extreme." "I am impressed by everything that is happening in France at the moment in the start-up field." Open source model In the United States, the dotCloud teams are discovering new methods, another way of looking at innovation. says the entrepreneur. The first version of Docker was released in March 2013. The company recruited an American CEO during the following summer. Then changed its name at the end of the year. "We learned the difference between a technology and a product. At Y Combinator, they forced us to think in terms of product, to think about the concrete use of our technology. "The take-off came a few months later," explains Mr. Hykes. Major groups are now using the technology, such as Disney, eBay and Spotify. In France, Société Générale has also joined the boat. Orange is in the experimental phase, predicts Julien Barbier, the company's marketing director. "In June, we had 2.5 million containers transferred. Today, we have exceeded the 50 million mark." "Compatibility with Windows will double the number of potential users." Docker's popularity is also explained by its open-source model: all developers can modify the project to improve it or adapt it to their needs, says Mr. Barbier. More than 700 people are now collaborating on the project, says Mr. Hykes. "This has allowed us to very quickly bring together the community behind our technology," "including engineers from Google, Microsoft and Amazon." The next step for the start-up will be monetization, in particular with paid training and technical support services, he adds. "We want to create a revolution, but we are only at the very beginning, only at 1% of our potential."

## ###ARTICLE\_START### ID:2489

san francisco - correspondence - We still have trouble realizing what's happening." Frenchman Solomon Hykes readily admits: he can't really explain the dazzling success of Docker, the start-up he founded in 2008. In recent months, the company has become one of the rising stars of Silicon Valley. Its workforce has quadrupled and it has just raised 40 million dollars (32 million euros) from prestigious American investors. Google, Microsoft and Amazon are now vying to be seen alongside it. A partnership with the online commerce company was also made official on Thursday, November 13. With its sixty-five employees, Docker, located in San Francisco, is revolutionizing cloud computing. Its technology breaks with the traditional model, organized around closed and incompatible ecosystems. Like shipping, Docker offers standardized containers that can be easily moved. Above all, they allow the applications they contain to run on all platforms and operating systems. For developers, this represents a considerable time saving. No more need to design a multitude of versions so that their programs work correctly everywhere. A single application is now sufficient. "The developer community is fed up with siloed systems," explains the young entrepreneur. "We found ourselves in the right place at the right time to meet their expectations." The major players in the cloud had to fall into line. In June, Google integrated Docker technology into its platform. In October, Microsoft announced upcoming compatibility. This week, it is the turn of Amazon, whose cloud division occupies the market leader. "In a very short time, almost all the large companies in the sector, which are otherwise in total competition, have started using our technology," rejoices Mr. Hykes. "This was possible because we are a small start-up." » The young shoot has nevertheless grown considerably since its beginnings, six years ago, in "the cellar of the family home in Montrouge", in the Paris region. Its founder was then only 25 years old and already wanted to change things. "During my first professional experiences, I found myself faced with the lack of tools to port an application from one system to another, remembers this graduate of the Epitech computer science school. So, I said to myself that I could perhaps create these tools." "With a small group of friends", the adventure began under the name dotCloud. The scale of the task was gigantic. The technology had to be built from scratch. And the funding did not arrive. "The market was not yet ready", qualifies Mr. Hykes. And we were young, without much experience or network. I am not sure that I would have invested myself." To survive, the company provides IT services to companies. In 2010, the wheel turned. DotCloud was spotted by Y Combinator, the most renowned Silicon Valley incubator, which has also included Airbnb and Dropbox. The start-up crossed the Atlantic. However, its founder refuses to be the symbol of a France that is failing to retain its talent. "We are a special case, where innovation is pushed to the extreme," he assures. And he continues: "I am impressed by everything that is happening in France at the moment in the start-up field." Open source model In the United States, the dotCloud teams are discovering new methods, another way of looking at innovation. "We learned the difference between a technology and a product," says the entrepreneur. "At Y Combinator, they forced us to think in terms of product, to think about the concrete use of our technology." The first version of Docker was released in March 2013. The company recruited an American CEO during the following summer. Then changed its name at the end of the year. The takeoff came a few months later. "In June, we were at 2.5 million containers transferred. Today, we have passed the 50 million mark," explains Mr. Hykes. Major groups are now using the technology, such as Disney, eBay and Spotify. In France, Société Générale has also joined the boat. Orange is in the experimental phase. "Compatibility with Windows will double the number of potential users," predicts Julien Barbier, the company's marketing director. Docker's popularity is also explained by its open source model: all developers can modify the project to improve it or adapt it to their needs. "This has allowed us to very quickly gather the community behind our technology," says Mr. Barbier. More than 700 people are now collaborating on the project, "including engineers from Google, Microsoft and Amazon," says Mr. Hykes. The next step for the start-up will be monetization, in particular with paid training and technical support services. "We want to create a revolution," he adds. "But we are only at the very beginning, at only 1% of our potential."

## ###ARTICLE\_START### ID:2490

Do red pandas eat chocolate, or did we have to make a bamboo birthday cake? Because the Firefox browser, whose emblem is the creature (1), is celebrating its 10th birthday. Ten years already that there has been free, open and non-profit software on the Web landscape. November 9, 2004, was a Tuesday. Tristan Nitot is not likely to forget it, he tells Libération: "We launched Firefox 1.0 from my living room, with the neighbor's Wi-Fi because my box had died." A year earlier, Tristan Nitot founded the European branch of the Mozilla Foundation, dedicated to promoting free software to "preserve choice and innovation on the Internet" at a time when Microsoft totally dominated the market with its Internet Explorer browser. An easy position to acquire: it was installed by default on all new computers sold with Windows 95... "Between 90 and 95% of users were using Internet Explorer," recalls Tristan Nitot. And Internet Explorer was literally no longer maintained: Microsoft had dismantled its development team to assign it to more important tasks, things that brought in money." It was on software riddled with security flaws that the vast majority of Internet users in the 2000s surfed: "It was becoming dangerous to go on the Web! Not to mention the problems of invasive pop-ups... The Web, because of that, was becoming an open-air dump because Microsoft did not have the energy to support a good quality browser." Forcing. If the general public did not necessarily realize the decrepitude of Internet Explorer, site developers and computer experts were tearing their hair out. It was from this desperate situation that the impetus to propose an alternative was born; the affair would take eighteen months full-time, and without pay. On a browser that did only what it wanted, like Internet Explorer, it was very difficult at the time to predict how a website would be displayed, and webmasters had to tinker so that their pages worked as expected for Internet users. Firefox, however, still worked as expected because Mozilla chose from the outset to respect the technical standards of the Web established by the World Wide Web Consortium (W3C). And above all - absolute bliss - it automatically blocked the pop-up windows that were springing up like mushrooms on the Web at the time, to sell us dodgy software or make us believe that we had won the great Bill Gates lottery. "There was a lot of anticipation around Firefox, and it was an immediate success," continues Nitot. "From version 0.8, we saw the adoption curve take off. When 1.0 came out, all the geeks got the message across: "That's it, it's a stable version, you can safely install it for mom and dad, uncle, old aunt and cousins." The first funding came in a rather exotic way: "Firefox has become a super cool brand, and Mozilla's first business model was selling T-shirts online." When the coolest people all had their red panda T-shirts, it was a matter of consolidating the income, and an affiliation system with search engines was quickly invented. The principle is simple: at the top right of a window, Firefox displays a small search field. Each keyword entered here launches a query in the selected search engine - by default, it's Google - and if you click on an ad when arriving on the search results page, a share is donated to Mozilla. "A very small part," Nitot explains, "but multiplied by hundreds of thousands of users, it allowed us to develop Firefox, then Firefox OS, our mobile operating system, to pay the foundation's 1,200 employees and to finance the activities of thousands of volunteers." Firefox's market share climbed steadily until around 2010. Then its progression, which seemed unwavering, took a hit, caught up by the development of Chrome, Google's browser launched in 2008 and boosted with a lot of advertising and forcing (we can no longer count the number of Google services that only work properly on its own browser). Internet Explorer, for its part, continued to fall. Firefox has been ahead of it in Europe since 2011. But this is not an inter-software competition. For Tristan Nitot, the mission is accomplished: "Our vocation was to bring down the monopoly. But not to install a duopoly instead - we wanted freedom of choice for users, and it's a success." Button. There remains today a major difference between Firefox and the others: the treatment of privacy. "Mozilla is the only organization that makes a non-profit browser," recalls Nitot, "compared to all those who are there to make as much money as possible. At Apple, they sell devices; others exchange the free browser for the profiling of Internet users. We don't." With a series of new features in the latest version of Firefox, Mozilla wants to reaffirm and strengthen its independence on this point: Firefox 33.1, released this week on computers and Android devices, integrates a privacy assistant to show the Internet user all the options they can activate to better protect themselves. A new "Clear my data" button accompanies it, to empty in one click the browsing history of the last five minutes, the last two hours or an entire day. In the same spirit of the post-Snowden affair, Firefox now integrates the DuckDuckGo search engine, a champion of privacy that promises not to track its users and their searches. Furthermore, Mozilla is launching the Polaris project, in collaboration with Tor, a technology that allows anonymous surfing, and the Center for Democracy and Technology, and this, says Nitot, "to see how to work together to better protect privacy, freedom of speech, avoid censorship, snooping and mass surveillance." (1) Because no, it's not a fox.

## ###ARTICLE\_START### ID:2491

A PS MP for Nièvre since 1997 and former Secretary of State for Overseas Territories under Jospin, Christian Paul has participated in all the debates on the Internet, as a defender of free software and the collaborative economy. Close to Martine Aubry, he chaired the PS think tank and contributed to the socialist program of 2012. A member of the Social Affairs Committee in the Assembly, he is one of the "rebels", critics of the economic policy of the executive.

## ###ARTICLE\_START### ID:2492

A wind of piracy is blowing on Petri dishes, pipettes and other test tubes. Born in the United States in 2008, with the emergence of open and collaborative communities that erect do it yourself and open source as a manifesto for freedom, and encouraged by the fall in the cost of genetic sequencing and equipment, the "biohacker" movement is spreading across Europe and all continents. Around fifty alternative laboratories have been created by tinkering biological engineers and their number continues to grow. Not to mention the clubs that tinker in garages. These are real scientific breeding grounds, where the curious from all walks of life, simple amateurs, researchers, inventors, students, artists and entrepreneurs experiment with biology with salvaged equipment. "Hacking is diversion, we take apart doors to make tables! Here, we are building a space of freedom so that everyone can re-appropriate knowledge, open up opportunities, work on other, more open models," explains Marc Fournier, co-founder of La Paillasse, the first bio hackerspace in France, which squatted in Vitry-sur-Seine before moving more legally to the heart of Paris in September. When Ellen Jorgensen, a molecular biology researcher, created Genspace, the very first autonomous lab, in Brooklyn (New York), "the goal was to show transparently that genetics is not necessarily dangerous or complicated, to democratize access to biotechnology and also to promote innovation." Experimental biology. Supervised by volunteers, often graduates of the best universities, hacklabs are a place of popular science where neophytes are welcomed to learn how to sequence the DNA of garden plants and look for an intruder hiding in lasagna or corn. But participatory biology labs are above all a crossroads of ideas and skills for doing experimental biology that is the opposite of academic research. Self-managed, financed by members' subscriptions, these independent research spaces release creative energy and projects multiply, with the ambition of innovation in the service of citizens, humanitarians and ecology: biological ink, green batteries, microproteins, biodegradable electronics, low-cost pregnancy tests, pathology or pollutant indicator in water... Biohackers market DNA analysis kits, manufacture tools themselves such as low-cost centrifuges or, as at Biocurious in San Francisco, transform an inkjet printer into a 3D printer for growing living cells. The activities carried out are classified by biosecurity level. And, in case of doubt, specialists in the prevention of professional biotechnological risks answer questions from garage biologists for free on the diybio.org website. In Europe, the genetic modification of organisms is subject to prior authorization from the High Council of Biotechnologies or reserved for academic laboratories. But in American hacklabs, it is possible to do synthetic biology, this emerging science that allows the creation of living things artificially or the manipulation of an organism's DNA and introduction into the biological system of a cell in order to give it new properties. It inspires a lot of research, using for example the gene producing natural bioluminescence from jellyfish to study fly neurons or to make plants glow in the dark, a poetic public lighting dear to bio artists. So in hacklabs, everyone is invited to "unleash their potential as a... mad scientist". Mad scientist? A worrying mix! But then, could a mutant virus escape from the incubators? What evil creature is this unbridled research likely to engender? "Amateur science has a long history," points out Morgan Meyer, a researcher in the sociology of science. "Biology is becoming accessible today because it is less expensive, the community makes miniaturized tools, publishes documentation. 4,000 amateurs exchange on a Google group. Only four independent biologists are authorized to handle GMOs in their personal labs, but it is difficult to estimate the number of individuals who tinker at home." In addition, some reagents are found on the Internet that are prohibited for sale. The risks of possible abuses raise questions of bio-safety and some concerned observers are calling for regulation. "peaceful purposes". A parliamentary report on the "Challenges of Synthetic Biology" produced in 2012 and submitted to the government examines the risks: "The concerns raised by these activities result from the increased ease of doing synthetic biology" but "scientific and financial obstacles prevent garage biologists from carrying out work that would have malicious purposes". In order not to hinder innovation, it was therefore decided to accompany the emergence of the phenomenon with vigilance. Authorizing alternative laboratories is ultimately a good way to manage to supervise tinkering scientists. Ellen Jorgensen is ironic when we talk to her about bioterrorism: "Terrorists do not come to train in biohackerspaces. They go to American universities instead!" In the United States, the American Presidential Commission on Bioethics has tasked the FBI with developing a culture of responsibility in partnership with global players in participatory biology. The international collective DIYBio.org drafted a charter in 2011, to clearly state that "biotechnology must be used only for peaceful purposes, in compliance with the rules of transparency, safety, respect for life and responsibility, to promote citizen science". It is in this spirit and to stimulate innovation in synthetic biology that the prestigious Massachusetts Institute of Technology (MIT) launched nine years ago the international genetic engineering competition (IGem) intended for students from all fields and open to hacklabs since this year. Multidisciplinary teams combine their skills for six months to design a project of public interest. The challenge: from a series of DNA sequences (biobricks, introduced into bacteria such as Escherichia coli) to succeed in creating new living organisms such as biodiesels, photovoltaic bacteria, probiotics against atherosclerosis or cement yeasts capable of repairing a wall or absorbing air pollution. The study on the synchronization of cell cycles carried out by the team from the University of Aix-Marseille, awarded a gold medal on November 3, could one day help cancer research. To apply for the competition, students only have to provide a demonstration of the feasibility of their project. And the idea sometimes becomes reality. In 2013, the Paris Bettencourt team, hosted by the Interdisciplinary Research Center (CRI) of the University of Paris-Descartes, was crowned world champion for its project aimed at fighting tuberculosis: a genetically modified bacterium to kill the pathogen and a bacterial virus to inactivate resistance to antibiotics. In addition, it discovered new molecules that could prove effective against this disease, which still affects nearly 10 million people each year. "If the project obtains the funding it hopes for from the National Research Agency and the European Research Council, plus a collaboration with OpenSource Drug Discovery, which is responsible for accelerating the development of drugs against tropical diseases, a new antibiotic could be available within five to ten years," hopes Ariel Lindner, co-founder of the CRI and research director at Inserm. The discoveries of the IGem competition remain in the public domain, the best way to promote the sharing of skills. "Start-up incubator." And it is this quest for a new open-source scientific paradigm that motivates hacktivists in participatory biology labs. It is also a proactive response to research in crisis and against the patent system, considered a brake on innovation. "No monopoly for great ideas!" We are a place for experimentation and debate on citizen science, but we also want to be a start-up incubator in residence and a support for fundraising," says Thomas Landrain, co-founder and president of La Paillasse. "Professionals watch us with benevolence doing experiments in areas where no one wants to commit money without a guarantee of results. They are curious to see what emerges..." confides Jorgensen. In fact, laboratories donate equipment to DIY labs, sponsor IGem candidates, and support start-ups. For its part, La Paillasse is establishing partnerships with Roche against breast cancer, with Suez to work on bioremediation, and with Pierre Fabre for a low-cost ultrasound project connected to a smartphone. "It will be interesting to observe the meeting between the ethics of DIY free sharing and commercial logic," notes Morgan Meyer. Photos Christophe Maout

## ###ARTICLE\_START### ID:2493

"Biohacker": at the mere mention of this disturbing Anglo-Saxon neologism, the average person who is ill-informed or fed up with slightly dark US series will mentally see images straight out of Walking Dead or Homeland: anonymous silhouettes in masks and "biohazard" suits busy cultivating anthrax or Ebola in a lab-bunker for some military-terrorist company... Failed! Like most of their computer cousins, our biohackers would rather be nice pirates, followers of the open-source philosophy. In fact, a bearded Doctor Mengele or Gargamel plotting a pathogenic plot, their credo would rather be "science without sharing is only the ruin of the soul", to paraphrase Rabelais. Far from the "P4" classified laboratories, these researchers, students or simple amateurs passionate about pipettes and test tubes would rather find themselves in garages converted into "biohackerspaces" open to all the curious and all good wills. At La Paillasse, which is discussed in our investigation, we thus claim "a curiosity for biology and biotechnologies and a desire to learn and create projects together around the life sciences by injecting each person's personal skills". Funny, playful and poetic experiences can be born from these tinkerings between biogeeks like this "bioreactor pen" whose ink is produced by bacteria or these luminescent plants that would replace our street lamps. But this nascent movement of participatory biology is not only an instrument for democratizing the life sciences. For many researchers, engineers and doctoral students, it is about opening a breach in the bureaucratic monolith of public research and the commercial monopoly of powerful private laboratories. Their dream? To develop more quickly molecules or therapies of the future to serve all. "Science has no homeland," said Pasteur. A biohacker from the very beginning.

## ###ARTICLE\_START### ID:2494

The Hague -- Police in the United States and 16 European countries have shut down hundreds of websites that have become black markets for drugs and weapons, hidden behind the Tor network. Seventeen people were arrested in the large-scale international operation launched Thursday by police from the United States and 16 European countries, the European police agency Europol said Friday. A total of 414 sites were shut down, the organization said, declining to say how police managed to identify the sellers and administrators of the sites. "It is clear that criminals use cutting-edge technology to commit their crimes and hide evidence, and they hide behind international borders to evade law enforcement," said Assistant Attorney General Leslie Caldwell. The large-scale joint operation targeted these black markets "operating as hidden services on the Tor network," Europol said. Tor, a free and open source software, is a platform that guarantees anonymity on the Internet. "The Onion Router", its original name from which the acronym Tor is taken, allows you to superimpose layers of protection in order not to be discovered.

## ###ARTICLE\_START### ID:2495

Miguel Ross was very happy, he had landed a great job. He was going to help the government save money by finding free software to replace the software that costs the government a small fortune. He is a programmer analyst, his mandate was to find computer programs designed for people with disabilities, so that they can depend less on government services. Miguel Ross is blind, he knows what he is talking about. In 2011, when Liberal Minister Michelle Courchesne unanimously passed Bill 133 so that the government could benefit from free software, he thought there would be a job for him. "I immediately told myself that I was going to take charge of myself, that I was going to organize myself to have my place there." The Centre d'expertise en logiciellibres was created in June 2013. The government had changed in the meantime, but the goal remained the same: to reduce the astronomical cost of government software. Miguel wrote to the head of the centre, who told him to register for the competition. He did so, passed. On April 23, Miguel was called for an interview, and it was in the bag. He fit the profile of the job exactly, a one-year internship created to address the needs of people with disabilities. To be hired, he had to leave Montreal, move to Quebec City, and deduct a $200 allowance from his $1,100 income. No problem, he would soon have a real job, with a decent salary, and experience that could allow him to apply for other public service jobs. Just before moving, he found this message on the answering machine. "Hello, Mr. Ross, we have some budgetary issues, which means we've delayed a little. There's no question of cancelling, but we're going to delay a little..." It's just a matter of time. Miguel settles into his new apartment in Beauport. It's summer. He expects to hear from him any day now. No news is bad news. Due to the hiring freeze, Miguel won't be hired. Miguel is back to his old self. That's even though we've already paid to have his office set up. To justify his about-face, the IT director explained that he was afraid it would look bad to hire an intern in these times of austerity. He also admitted, barely catching his breath, that it wouldn't cost a cent to hire Miguel, since his salary was covered by an existing program. He explained this to Cyrille Béraud, the director of the Fédération québécoise des communautés et industries du libre. At the same time, the government didn't hold back from creating a tailor-made job for Marie Claire Ouellet, a civil servant for whom they've created the position of "strategic advisor in the office of the deputy minister" of Tourism, with a salary of $190,000. That’s $5,000 more than Philippe Couillard. I called the Shared Services Centre to get the facts. No one called me back. Miguel, meanwhile, is broke, without a job, on $927 a month. “With that money, I pay my rent, Hydro, my bills, my bus pass... I can’t stay cooped up in four walls! I may be blind, but I’m active! When I’ve finished paying for my things, I have $20 a month left to eat...” Miguel is lucky to live near one of his aunts, who owns a retirement home. “I eat there all the time. Without it, I don’t know what I would do. Lucky she’s here...” He would like to see things clearly. Will he return to Montreal, where he has lived for several years? Where were his friends? Will he try his luck in Quebec? Will he have to reapply for the $200 allowance to make ends meet? Miguel doesn't know what to do. He's angry - and disappointed - at having been taken for a ride, he doesn't understand how the government can dispose of people like that, as if they were old socks. I call that governing blindly.

## ###ARTICLE\_START### ID:2496

Note to readers: no, it's not April Fool's Day. Also, while the following report may seem like science fiction, it's nonetheless true. It's the story of amputee children who can play tennis or baseball like everyone else because they were able to have a prosthesis printed in 3D to replace the hand they were missing. For about $50. Sebastian Chavarria has just turned six. The little boy is something of a medical celebrity in Ottawa because serious complications at birth forced him to spend the first year of his life in hospital. Among his health problems, he was born missing his left hand. When he was three, his mother consulted an orthopedist to find out what options were available to her child. "The doctor told us there was nothing to do. That a prosthesis would cost between $25,000 and $30,000 and because he would grow, it wouldn't last long," Leticia Chavarria told Le Devoir. All that was left was to wait about ten years for the boy to grow up. And that's when Jon Schull's non-profit network E-nabling the Future came into their lives. E-nabling the Future provides those who need it with the open-source pattern of a mechanical hand that can be printed in rigid plastic using new 3D printers. Half-jokingly, Jon Schull introduces himself as a "scientific researcher in MAGIC," the acronym for "Media, Arts, Games, Interaction and Creativity." The researcher is affiliated with the Rochester Institute of Technology, located on the American shores of Lake Ontario. He says that in 2011, a South African cabinetmaker named Richard Van As lost four fingers to a circular saw, and an American puppeteer who read his story online offered to help him. Together, they designed the pattern for the mechanical hand. “There was an 18th-century sea captain who had a hand like that carved out of ivory. The design for the mechanical structure has been around for a long time,” Schull says. “What these two men did was figure out how to make an affordable, three-dimensional printable version using these 3-D printers that are becoming more common. And what our community has done since then is improve on that design to make it substantially more durable and sophisticated.” The hand is entirely mechanical and works like a puppet. The user presses inside with their wrist to activate the strings, which cause the fingers to close. There are a few different designs, and the recipient is free to choose the colour, depending on the printer plastic available. On September 29, little Sebastian became the first in Canada to receive a printed hand from E-nabling the Future. He opted for the red Raptor model. "Choosing the colour of his hand was one of the hardest decisions Sebastian has ever made in his life," laughs his mother. "He said he didn't really know. He wanted it green like Hulk, or red like Iron Man." Iron Man won out. The second -- and only other to date -- E-nabling hand created in Canada was created two weeks ago for Abigail Capannelli, 14, of Waterdown, Ontario. This one was printed by Claude Gagné, a volunteer from Ottawa. "3D printers have been used since the beginning to print prosthetics," says the woman who is hopping around in the world of "makers" and "FabLabs" with the tone of an insider who has seen it all. "The originality of the E-nabling the Future network is to create a geographic map on which we invite people to identify themselves: people who need a prosthesis, those who have access to a 3D printer and those who design prosthetics." The network allows users to get in touch with each other based on their location. A hand can take about ten hours to print. Claude Gagné, who describes herself as an ecosystem developer, had Abigail's hand printed on the University of Ottawa's printers using plastic donated free of charge by the company Envirolaser, which believed in the project. She then assembled it with the help of Sebastian's father, who had already been there. Abigail says the hand is "very easy" to use. From different to stars The E-nabling the Future hands have allowed Sebastian to play baseball, Abigail to serve in volleyball and tennis, and to play the flute and guitar. But they also serve another purpose: to change their image. "I was afraid that when Sebastian started school, he would be bullied," his mother says. The children notice the difference... "The first day, we went to school and I stayed to see how it was going. During the teacher's presentation, Sebastian kept his red hand hidden in the desk to show it off at the end. All the kids said, 'Cool!'" Abigail tells the same story. "All my friends think it's really cool and want me to wear it every time I go out with them," she tells Le Devoir. "When I'm in public, people come up to me and say, 'Wow! That's really cool!'" " " Abigail says she's never really been bothered by the way people stare. But she adds, "I feel like now when people look at me, they think, 'That's really cool,' rather than, 'She's different.' " " Jon Schull agrees. Printed hands, he says, make kids feel like "superheroes." They also help keep their arm muscles active while they wait for a permanent prosthesis when they're adults. As for the hands themselves, in true open-source fashion, they evolve based on the needs and ideas of their users. For example, Schull says, one dad discovered that his son would be better at gripping objects if his hand had two thumbs. "Another kid," he continues, "asked for his to glow in the dark. And there's Derek, who needed an arm. When he was making it, he asked us if he couldn't have it longer, so he could pick things up off the floor or things off high shelves. And you know what? Why not!"

## ###ARTICLE\_START### ID:2497

In no hurry, Pierre-Yves Oudeyer goes down the stairs to the basement of the brand new building of the National Institute for Research in Computer Science and Automation (Inria) in Bordeaux. Vast, bright spaces, green walls, the modern design of the building contrasts with that of the buildings on the Talence university campus. In a voice animated by the same bubbling energy as his steps, the roboticist describes how the 3D printer works, next to which drags a leg of Poppy, the laboratory's newborn. "It's a robot that is both open source and 3D printable," he explains with infectious enthusiasm. "We designed it to make it accessible to everyone, not only to roboticists, but also to anyone who wants to take ownership of it and contribute to its development." Assembled, Poppy has the fragile appearance of a puppet. But this new robotic platform aims to become a cutting-edge research tool in artificial curiosity, a field in which Pierre-Yves Oudeyer has built a reputation. At the age of 36, he is at the head of the team called "Flowers" that gave birth to Poppy, involving some 25 researchers, engineers and doctoral students spread between Inria in Bordeaux and Ensta ParisTech in Paris. "He is a rising star. He was one of the first to obtain a grant from the European Research Council in the field of developmental robotics, which is an indication of the quality of his work," underlines Angelo Cangelosi, from the University of Plymouth in the United Kingdom. This prestigious grant from the European Union is intended for researchers considered to be pioneers in their field. "He is someone who has a very original approach. He has managed to gain recognition from the community by giving importance to a major issue, that of artificial curiosity," adds Olivier Sigaud, from the Institute of Intelligent Systems and Robotics (ISIR), in Paris. In his book Aux sources de la parole. Auto-organisation et évolution (Odile Jacob, 2013), Pierre-Yves Oudeyer places his approach in the continuity of the work on self-organisation of mathematicians such as Alan Turing, the father of artificial intelligence. According to this principle, the interaction between the different elements of the same system is sufficient to lead to complex organisations. For Pierre-Yves Oudeyer, it is a question of understanding to what extent this principle can explain the origin of language or curiosity in children. From the beginning of his career, he was interested in the work of Luc Steels, a roboticist from Sony's computer science laboratory who had developed the so-called "talking heads" experiment. According to this experiment, it is possible, thanks to a computer program focused on communication, to induce in robots a draft of communication made of rudimentary sounds. After joining Luc Steels' team in 1999, Pierre-Yves Oudeyer designed with roboticist Frédéric Kaplan an experiment inspired by that of the "talking heads", the "play mat": taking two robot dogs equipped with an artificial curiosity program, the researchers instructed them to explore their environment and concentrate on the actions in which they progressed the fastest. Thanks to this program, the robots' behavior gradually became organized. They began by babbling randomly, then played with certain parts of their body before starting to emit vocalizations in the direction of another robot. Pierre-Yves Oudeyer joined Inria in 2007 and continued his research. He works on several robotic platforms, is interested in the different disciplines that revolve around cognitive sciences, and begins collaborations with psychology researchers to test his results. For him, it is not enough to model the functioning of the brain. It is necessary to take into account an entire system that also includes the body and its interaction with its environment. Hence the birth of Poppy, whose body, conceived as an experimental variable, can be modified and printed at will in 3D. "Pierre-Yves Oudeyer has identified fundamental scientific problems that roboticists and computer scientists had previously stumbled upon. This has opened up new fields of thought in artificial intelligence and produced unexpected progress in robotics," insists the Franco-Russian mathematician Mikhaïl Gromov, who invited him to participate in the exhibition "Mathématiques, un dépaysement subit", organized in 2011 by the Fondation Cartier pour l'art contemporain in Paris. Pierre-Yves Oudeyer's work does not always arouse enthusiasm and some researchers did not wish to answer our questions. While recognizing the usefulness of models for studying the learning process, roboticist Mark Bishop, from Goldsmiths College, London, questions the very term artificial curiosity, which he considers an epistemological shortcut. "We must be wary of the analogies we can make when we imagine that robots are curious," he emphasizes. "It is the roboticist who determines the robot's behavior. Robots do not experience sensation, an essential component of curiosity, and it is illusory to believe that a computer can mimic such a complex process." "When I say the word "curiosity," it must always be put in quotation marks," replies Pierre-Yves Oudeyer. For me, these are robotic models, intended to ask new questions about the nature of this thing called curiosity and to create a dialogue between the different disciplines involved in its study." Always seeking exploration, Pierre-Yves Oudeyer does not hesitate to seize opportunities to show his work from an unexpected angle. For the Fondation Cartier exhibition, he let director David Lynch transpose the playmat experience into his fantasy universe. This is how a giant egg was created, inside which robot larvae turned towards each other, emitting sounds and engaging in curious gesticulations. Catherine Mary

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"It's 2014 AD and the entire Web is occupied by centralized services... All of it? No! A community populated by die-hard free software advocates is still resisting the invader." In the role of the evil Roman invaders, we have Google, Microsoft, Facebook and other American companies at the head of their digital empire, whose citizens number in the billions of Internet users. And in the costume of Gallic rebels slip the free software activists, represented here by the French association Framasoft. Not belligerent in the least, this community of "free software advocates" has left its swords in the closet to fight on equal terms with the enemy: with software. The American invader is bombarding us with Google Drive, Google Calendar and Google Books, services that manage the documents, calendar and digital library of Internet users respectively? Free software enthusiasts respond with Framapad, Framagenda and Framabook, three alternative sites developed for exactly the same purpose. The invader hits us with Dropbox, this very practical software that allows you to synchronize your files between several computers? Not even scared: free software enthusiasts have OwnCloud and Seacloud in stock - and it works the same. Deceit. The idea of Framasoft, at the origin of the funny project "Dégooglisons Internet", is to draw up an inventory of all the possible alternatives to centralized Web services. YouTube, Twitter, Skype and the like - represented by small Roman camps on a map of Gaul parodying Asterix - seem essential in the digital landscape in 2014, but experience has shown that they are not the friends of Internet users. "Users of these services no longer control their digital lives," deplores Framasoft. Their behavior is constantly dissected in order to be better targeted by advertising and their data - although private (sites visited, emails exchanged, videos watched, etc.) - can be analyzed by government services." We know thanks to Edward Snowden that American intelligence services happily dig up millions of personal data from their servers... Furthermore, not content with being opaque about their operation and ultra-concentrated ("YouTube belongs to Google, WhatsApp to Facebook, Skype to Microsoft, etc."), centralized services handcuff their users: "Once you have started using them, it is very difficult to separate yourself from them, because these companies do everything to keep you captive by preventing you, for example, from migrating your data elsewhere," writes Framasoft. Faced with them, computer freedom activists are betting everything on free software. By definition, these programs are transparent because their source code can be freely consulted by anyone - so there is no risk of any deceit hiding there. But free software is above all modifiable and redistributable at will. If the software no longer inspires confidence, we just have to develop an alternative version that better meets our needs. Ambition. For each star site, the map of die-hard free software enthusiasts lists the competition. If we click on the Roman camp of the image host Imgur, we are suggested to use the very confidential Lut.im instead. Similarly, instead of a Google Doc, we can create a Framapad: this collaborative text editor is already very pleasant to use today and a recent fundraising will allow it to become even more relevant. But existing solutions are not enough and Framasoft has the impressive ambition of developing its own solution for each of the online services listed on the map. Before the end of the year, Framabin will be released, to copy-paste and share texts like on Pastebin, and Framashort, to shorten hypertext links like on Bit.ly. In 2015, we will have Framadrive to counter Dropbox, Framatalk against Skype for video chat and Framaslides for PowerPoint-type presentations. In the following years, we will aim even higher with a blogging platform, a competitor to Twitter and another to the YouTube behemoth. Of course, this overloaded schedule can only be followed with financial help - 70,000 euros for 2015, much more for the future. But Framasoft puts things into perspective. It is "the cost of 21 meters of highway, or 0.0002% of Google's annual turnover". In addition to one-off donations, the initiative is counting heavily on the registration of regular donors. The donation form allows the possibility of choosing an amount as free as the software.

## ###ARTICLE\_START### ID:2500

The IT problem has become so vast that we have to look to the stars to understand it. It is a black hole that now sucks up nearly three billion dollars per year, and the recent game of musical chairs will not be enough to solve the problem. Last week, the Chief Information Officer (CIO), Jean-Guy Lemieux, had to "resign" because of a conflict of interest. He had neglected to mention that his brother was vice-president of CGI, a major recipient of public contracts. Mr. Lemieux had been appointed only a month ago. He is being replaced on an interim basis by senior civil servant Yves Ouellet. No matter who is the boss, cleaning out the stables will be difficult. The structural problem is immense, as the Auditor General demonstrated in a devastating report in 2012. Quebec subcontracts the majority of its contracts to the private sector (55%), without properly defining its needs, assessing costs or ensuring minimal competition. The firm that defines the needs sometimes even gets the contract. The bill is therefore exploding. For example, the SAGIR project (Business Solutions for Integrated Resource Management) is likely to cost more than $1 billion, 10 times more than the initial estimate. And it is not yet finished... This loss of control is also aggravated by project management, unfortunately preferred to results-based management. When the bill is not linked to the achievement of the result, the hours worked tend to increase tenfold. Two major causes explain this slippage: the design of the network and the lack of government expertise. To develop software and programs, it is normal to turn to the private sector, which specializes in innovation. But the government should provide more strategic management of the network, as well as its maintenance. However, it is incapable of doing so. The expertise of the public sector has never been up to the technological revolution that has been taking place for two decades. According to the Syndicat des professionnels du gouvernement du Québec (SPGQ), 1,500 jobs would need to be created. It is difficult to assess this figure, because the problem is not limited to the number of employees. It is also the result of the chaotic decentralization of the network. Each department or organization can choose its digital tools. Quebec cannot therefore negotiate group purchase prices. And the more software the network has, the more people are needed to maintain it. This shambles wastes both money and manpower. The problem is only just beginning. Like our roads, our computer network is deteriorating. For future purchases, we will finally have to give free software a chance. Since 2011, a law has required Quebec to make it eligible for calls for tender. But it has since been circumvented by decree, because it lacks the expertise to manage this shift. The previous government had the good idea of creating two centers specializing in free software (Chicoutimi and Rimouski), but much remains to be done. For now, Quebec continues to negotiate without any real expertise or overall strategy. In short, without a balance of power. But it is rarely on your knees that you get what you want. paul.journet@lapresse.ca

## ###ARTICLE\_START### ID:2501

HOMEWORK HELP Ms. Catherine Harel-Bourdon, President of the CSDM, makes a big deal of her organization's obligation to cut homework help. Why not consider maintaining this service without it costing taxpayers a cent? But when we talk about homework help, who do we want to help? The parents who can no longer or no longer want to play this role? Or is it the teachers who have not been able to help the student learn certain concepts? Because it is important to remember: the purpose of homework is essentially to allow for the reinforcement of concepts not only taught but also recently learned. In principle, a student should be able to do his or her homework on his or her own. But that doesn't matter. It seems obvious that some children need help. Here are two solutions that would not cost a cent: 1-Young people enrolled in International Education Programs must complete a community engagement project. Why not suggest that they help other young people with their homework. It is recognized that explanations given to a young person by other young people are often better understood than those given by adults. 2-Many retirees want to volunteer. This is an excellent area for action. Why does the solution to a problem always have to be allocated a budget? We even come to think that all it takes is for a minister to announce a budget allocation for the problem to be solved. With a little imagination, many problems could be solved without it being necessary to allocate new financial resources. With all due respect to the unions, we sometimes find that by doing things differently, we can even do more, if not better, with fewer resources. This could be the case with homework help. Louis Dion GOVERNMENT COMPUTING: A CHANGE IN CULTURE The State is a huge ocean liner that is not as easy to maneuver as a personal watercraft. But that is no reason not to make a serious change when it is necessary. That is why the announcement of the resignation of the Chief Information Officer (CIO) offers the government a perfect opportunity to change the IT culture within the State. AN ACCOUNTABLE CIO Currently, the CIO position is held by the President and CEO of the Centre de services partagés du Québec (CSPQ). However, nothing in the law creating the CIO position requires that the same person hold both positions. The CSPQ was created, among other things, to consolidate administrative support functions for departments and agencies and to consolidate government purchases. But an IT project is not managed like you buy pencils or charter a plane. With IT contracts worth billions of dollars each year, the public has the right to expect that the CIO will have specific expertise in the field and, above all, that he or she will devote himself or herself to this function full time. Also, these costly issues should be directly under the Treasury Board. This would strengthen accountability. A CIO WHO COMES FROM OUTSIDE The public service is full of talented people who want to make things happen, but their ideas encounter significant resistance to change from some public decision-makers. New blood must therefore be brought to the top of the pyramid. The government should appoint a CIO who comes from a dynamic and innovative company and who is willing to leave the private sector to turn around government IT projects. This person should have experience in managing large-scale IT files while being open and flexible to new ways of working. It goes without saying that this person must have free rein, and be supported by a political power determined to change a technocratic culture into an entrepreneurial culture adapted to the realities of the 21st century. AN AMBASSADOR Even if it is unusual for a civil servant, the DPI should have a public role as an ambassador for innovative solutions, within the government as well as within society. For example, the use of free software, which may seem logical and optimal, is far from being a given in our society. Let us recall that in March 2013, the government created a Centre of Expertise in Free Software. This was a first step that must continue to anchor itself in the culture of the State. Is this proposal a panacea? Of course not. Beyond the debate on structure, the government must seize the opportunity presented to it to question the role that the DPI should play. The status quo is not an option. Pierre Bouchard The author is a strategic advisor in public affairs and communications and a former political advisor

## ###ARTICLE\_START### ID:2502

LIBÉO IS LOOKING FAR AHEAD. THE QUEBEC COMPANY, WHICH WORKS IN THE FIELD OF INFORMATION TECHNOLOGY, IS GOING ON A HUNT FOR ACQUISITIONS WITH THE IDEA OF BECOMING THE LEADER OF DIGITAL FIRMS IN QUEBEC. With phenomenal growth of 400% in five years, all hopes are allowed for Libéo, which has carved out a place of choice in the industry with more than 750 mandates to its credit. "Our mission is to take all the digital needs of companies and propel them onto the web," explained Joé Bussière, the CEO. Today, Libéo is ready to take flight towards new horizons. In addition to anticipated organic growth of 20%, the management plans to make at least two acquisitions, including one in Montreal over the next three years. To be ready, the company inaugurated its new 12,000 sq. ft. premises this fall in the Lebourgneuf district, where activity is booming with 70 employees “with slightly crazy minds.” A PIONEER Libéo, created in 1996 by Jean-François Rousseau, is a pioneer in the use of open-source software. Formerly Sys-tech, the company has been growing since 2003, when Joé Bussière joined as a partner. Originally, Libéo had only five employees. \*\*\* HOUSING CONSTRUCTION EXPLODES Number of rental housing starts in the Québec City CMA September 649, 2014 September 144, 2013 350% increase (Provisional actual data from CMHC) $1 M FOR THE L'IMAGINAIRE BOUTIQUE The L'Imaginaire Boutique in Laurier Québec doubles its surface area thanks to a $1 million investment. This expansion will allow for more air in the sections reserved for collectors, as the area increases from 8,000 to 19,000 sq. ft. An entire floor is reserved for costumes. LA MAISON LAVANDE ESTABLISHES ITS OWN LOCATION IN QUEBEC CITY La Maison Lavande, founded by two former journalists, Nancie Ferron and Daniel Joannette, is expanding in Quebec City with the opening of a perfumery at the Laurier Québec shopping centre. This will be the fourth opening for the company, which already has locations in Saint-Eustache, Montreal and Laval.

## ###ARTICLE\_START### ID:2503

Sherbrooke - It would take a clever person to predict what will happen to school boards after the November 2 elections. The outgoing president of the Commission scolaire de la Région-de Sherbrooke (CSRS), Gilles Normand, believes that the region's school boards could resume their discussions to see how they can work better together. The organizations already work together on various issues, including vocational training, insurance, etc. Mr. Normand wants to keep his position as president of the CSRS. Three other candidates are also vying for this position: Nathalie Goguen, Noël Richard and Hubert Richard. Education Minister Yves Bolduc has indicated that the school elections on November 2 will be decisive for the future of these organizations. In the school community, several scenarios are being discussed: their disappearance or other mergers, as well as the disappearance of the boards of commissioners. Such a message does nothing to help those seeking funding, according to presidential candidate Nathalie Goguen: why fund a campaign for an organization that is going to disappear? she was told. Former president of the CSRS, Noël Richard believes instead that we are moving towards new structures, new ways of doing things. The candidate indicates that the election of the president by universal suffrage has sparked his interest in running again. "We will need to have strong leadership on the board of commissioners. It will no longer be the same. We will have to deal with a majority of newcomers," believes the man who was president from 1994 to 2003. Gilles Normand emphasizes the importance of retaining experience on the board of commissioners, since the face of the board is set to change with the November 2 election. The CSRS will have to set up a new strategic plan and identify the targets on which it intends to work. "The status quo is no," notes Ms. Goguen, a former municipal councillor. But we must ensure that we do not change "four thirty cents for a dollar": "We must ensure that if we transfer tasks to other levels, it is viable." "I am not caught in a straitjacket... I am arriving with a new vision," she says. Former candidate for mayor of Sherbrooke, Hubert Richard wants to bring free education back to the public arena, in a context where even in the public network, fees are multiplying. "I want to bring it up to date," he says, emphasizing that as a parent, he has noticed several breaches of free education. He is also campaigning by focusing on the use of free software (software that can be duplicated), which he believes would save money. In the context of cuts to homework help, he is launching a debate on the relevance of homework. "Having read up on the subject, we can perhaps find something else." In his opinion, this reflection should be done by consulting teachers. Let us recall that La Passerelle, in Asbestos, has eliminated homework in recent years; a pilot project has also been launched in a school in Saguenay-Lac-St-Jean. Gilles Normand emphasizes the importance of student success as an issue. The dropout rate has decreased in recent years: the rate of CSRS students who leave high school without a diploma went from 33.3 percent in 2006-2007 to 18.2 percent in 2010-2011. In a period of budgetary austerity, the CSRS can nevertheless count on initiatives put in place in recent years that aim to encourage academic perseverance, Mr. Normand points out, such as the Research Chair on Student Success and Perseverance. "We have some great things in place, but we have to remain vigilant," he says, referring to the cutbacks. "Student success is not just one person's business, everyone has to be involved." Everyone agrees that education is a priority. "We have to stay on course, our students' success, make students want to go to school, make teachers want to teach, make parents want to get involved..." notes Ms. Goguen. "I find it deplorable that in Quebec, education is not at the forefront," says Noël Richard. The outgoing chair of the Eastern Townships School Board (ETSB), Michael Murray, was elected by acclamation.

## ###ARTICLE\_START### ID:2504

Are François Hollande's policies and those of his government still left-wing? Bernard Maris: François Hollande may still be left-wing, but he is no longer a socialist. The socialist dream, which consisted of extending the great revolution of human rights and freedom with a social dimension, has vanished with him. What Manuel Valls said in his speeches to the bosses in front of the PS activists, speeches endorsed by the president, is that there is no beyond capitalism. This earthly paradise of abundance promised by the great thinkers in the history of the socialist movement has disappeared from the horizon with pragmatism, realism, and social liberalism, which are prevailing today. Manuel Valls is short-termist. He is not interested in the future of capitalism - and even less in that of socialism - but in the fight that France must lead in this world of permanent economic competition to still find its place in the concert of nations. The Prime Minister is implementing a supply-side economy to enable businesses to develop, and is advocating a liberalisation of the labour market. The Valls 2 government is making a major liberal shift. Jacques Attali: The government calls itself left-wing, and I believe it to be sincere. But, for me, it is neither right nor left, it is in theatre, in posturing. Neither on theory nor on practice. I have not heard any theoretical discourse that is truly left-wing, in the most modern sense of the word, that is to say on the priority given for everyone to free time, to "good time", allowing everyone to succeed in their life, which is, in my opinion, the horizon of the emancipation of the citizen and the nation. This requires a better balance between the market and democracy, whereas the former crushes the latter today. On the most practical subjects: since there is no love, but only proofs of love, I am waiting for the publication of the budget to know his true position on the emergencies of the day, in the light of the left's project, which must be that of the liberation of "good times". What structural reforms will he put in place? Will he subscribe exclusively to economic liberalism aimed at giving market value to time, or will he launch reforms of political liberalism aimed at giving human value to time? Since the socialists came to power without a program, because they were elected to rid the country of a right that was then unbearable, they are in total improvisation, like actors who entered the stage without a script, who fill the time while waiting to find something to say. For twenty years, on the left as on the right, and not only in France, we have had nothing but words, posturing, quarrels over ambition; it is time to abandon the rhetorical wind and enter the era of reforms and doctrinal modernity. Are we witnessing the triumph of rhetoric or a real political turning point? BM: But words speak for themselves. When the Minister of Labor, François Rebsamen, wants to control the unemployed more and suspects some of them of cheating or lazing around, he is, forgive me, "on the floor," at bay. Where has all the socialist thinking gone on alienation, chosen time, the cycles of work, training, and rest? On the useful and the useless? On everything that socialism had inherited from Christianity through the love of work, fair pay, cooperation which is only a synonym for fraternity? It will be said that when the boat sinks, there is no longer time to dream about painting it; but - precisely - panic, urgency, the nose to the grindstone make us forget what characterizes the left in relation to liberalism: the future, time and long-term investment. We do not calculate for France as we do for the Stock Exchange. J. A: Certainly Mr. Hollande has made some reforms that gave a certain priority to tax justice, but nothing that constitutes the undeniable marker of a desire to make democracy prevail over the market, "good times" over commercial time. But the major reforms that would restore power to democracy, such as that of local authorities, the deepening of the priority to education or professional training, are, for the moment, dead ends. The last opportunity for the President of the Republic to get out of the ambiguity is the 2015 budget. What should a left-wing policy be? A regulation of capitalism or a policy of radical rupture with this economic system? JA: A radical break, in the continuity of History: we are already in the West in what could be a "beyond capitalism" in the sense of Marx. He placed this concept not in the collective ownership of production goods but in the economy of free, made possible by abundance. Now the economy of free began with new technologies, which make possible the free exchange of information, with the desire to use time differently, for creation, and not for consumption, and the desire to put forward other values than the sharing of wealth. The ultimate rarity of man is time. So the true dimension of the left is to give everyone the freedom to use their time. To make a good time of it. The left must not focus on reducing working time but on the content of work so that it is interesting, creative, freely chosen and valued; and subordinate the question of retirement age to that of its usefulness, its fullness and its potential for development. In a society where free things take up space, it is possible to have a good time that is a factor in growth that is not measured only in points of gross domestic product. Being on the left then rests on the desire to create the conditions so that people have the freedom to make the best use of the only life to which everyone has the right. This is already in particular what is happening with what we call the "positive economy", the one that works in the interest of future generations. Those who find pleasure in using their time in altruism give full meaning to their working time. They have a good time working for future generations. The fact that people are interested in the long term and the general interest thus marks the birth of something that is perhaps in the process of exploding capitalism from the inside. BM: We are moving towards an economy of sharing, of freeware, of free software indeed. The central figure of tomorrow will be the researcher who, when he gives something to the community, does not lose it. The researcher responds to the fundamental needs of man: creation, curiosity, change, progress. He is obliged to cooperate. Cooperation channels violence, which liberalism hoped to channel through gentle commerce! The afterlife of capitalism will be a solidarity and fraternal economy. Today, the unavoidable question concerns the nature of work. The question of the 35-hour week is essential. For Marx, the socialist revolution began with the reduction of working time, but because he only saw it as a source of alienation. However, Mr. Valls, like Nicolas Sarkozy, affirms the opposite: "Work liberates" and, in this, he is completely liberal. François Mitterrand asked: "But why shouldn't all men have the right to beauty?" Beauty is a public good, so why build miserable areas and park downgraded citizens there and then be surprised when they vote for the National Front? The British economist John Maynard Keynes - 1883-1946 - said, in an interview with the BBC, something like: "Build magnificent buildings for workers and you will see that they will become more intelligent and fulfilled." These are questions that socialists used to ask themselves. Manuel Valls' horizon is his meeting with Chancellor Angela Merkel, on September 21 and 22, in Berlin. Liberalizing the labor market, strengthening control of the unemployed and circumventing the 35-hour law: he affirms this liberal turn to try to stick to this economic war that others, especially Germany, are waging against us. Isn't this endorsing a certain failure of Europe? The split for the socialists will be on the 30% of the socialist electorate who are likely to turn to Marine Le Pen in the next elections. The fear is that they will hold Germany, Europe and the euro up as the culprits. What reforms should a government that is resolutely left-wing put in place? JA: Certain reforms must be put in place regardless of the party in power. The bipartisan commission, which I chaired under Nicolas Sarkozy, reached a consensus that must absolutely be implemented: reform of land ownership, the fight against rents, the reduction of waste in continuing education and in public procurement policy, the reform of local authorities, administrative simplification, the constitution of a strong European power, the creation of a French-speaking power. Then, there are measures of social justice, in the use of "good times", more in line with the concerns of the left, and others of immersion in the market, more right-wing. In total, any modern left-wing program will have to be part of a long-term collective project built on three pillars. First, the modernization of the social model around the idea of "good times", free and altruistic, with the development of new technologies. Then the establishment of a classic social democratic model at the European level, with a government and a parliament of the euro zone and a Keynesian European policy. Finally, the development of the French-speaking world, of a French-speaking union, a production area of the future, a factor of growth and identity. Proof that one can be European and French. BM: But the priority remains the more than 10% of unemployed people in France. Giving people work also means allowing education to function properly. For me, unemployment is one of the main reasons for the failure of the current education system. How do you expect children, seeing their parents unemployed, to want to go to school? When François Hollande came to power, he announced that employment was his priority and he was absolutely right. But with a short-termist Manuel Valls, a management that is also short-termist, as much as the current banking system, I fear the makeshift solutions. Are we going to promote, as in Germany, small jobs and authorize jobs for 1 euro? Or discourage, as in the United States, people from registering on the Pôle Emploi lists to deflate the statistics? How can we finally fight unemployment effectively? J. A: France, left and right combined, has always thought, without saying so, that it is better to have well-paid unemployed people than poorly paid workers. Germany, right and left combined, has made the opposite choice. All this for deep historical reasons. To have fewer unemployed people, without proletarianizing those who work, the solution is the reform of continuing education. By a radically new design: just as anyone who seeks treatment is not considered unemployed, anyone who trains should not be excluded from unemployment. Because training, like seeking treatment, is a socially useful activity. In our country, continuing education is a scandal. Some 32 billion euros are wasted due to the collusion of social partners, a shameless waste reinforced by the Sapin law - promulgated in March -. However, if they were used for the unemployed, as the real social democrats do, France would train those over 40 or 50, who would thus work longer. This would partly resolve the issue of pension financing. The lack of courage in the reform of continuing education is very damaging. In Germany, there are 2,000 continuing education centres, compared to 60,000 in France, and the 32 billion are collected by structures where it is impossible to know even the names of the members of the boards of directors who profit greatly from it. It is this society of connivance that the left must explode. But I unfortunately think that it will not do so. BM: Added to the scandal of vocational training is that of the reduction of social security contributions, launched by Edouard Balladur and perpetuated to this day by Valls. We have exactly substituted reductions in social security contributions for devaluations, which are now impossible. And, like devaluations, they are short-term solutions that destroy what made the quality of work: good technical training, a strong possibility of social promotion through the profession in the company. The deskilling of work and the abandonment of technical work partly explain the downgrading of our industry. An economy like France's does not need poor quality jobs. We need to raise the level of employment. And it is better for our engineers to go into industry rather than into trading rooms. As for growth, which is essential to reduce unemployment and give work a horizon, we will have to dare to give it content, based on quality and cooperation, and dare to say that salaries, like trees, do not grow to the sky. Life is not just "a level". There are places for France to expand: the French-speaking world, for example, as Jacques Attali says. However, a Franco-European pitfall may arise: when Nicolas Sarkozy launched the Union for the Mediterranean, the Germans howled against this refocusing of the French on a market of their own. However, as with the French-speaking world, we need to open up economic spaces where Germany does not dominate. Is the alternative between a supply-side policy and a demand-side recovery still a real divide on the left? JA: This is a meaningless discussion, because we are not talking about supply or demand. Behind the word demand, we are actually talking about social justice. And, behind supply, we are talking about corporate profits. A country faced with a potential market of 7 billion people and a State that spends 25% more each month than it earns cannot have a demand problem; it may possibly have a competitiveness problem. This is the case for France. BM: The time for recovery through consumption is over. Today, we are placing the cursor on the competitiveness of companies, without thinking about the nature of the work. We need to reform the employment contract: we don't dare touch the permanent contract but we hire 80% of people on fixed-term contracts, we can't continue like this. Security in the workplace, essential for trust and creation, cannot exist in a country where more than 10% of workers are unemployed and 90% are terrified of being unemployed. As for pensions, it is obvious that the French, all things being equal, must be treated the same, which does not imply a levelling down. Is it around European policy that a left-wing policy could find its identity? JA: The question of deepening Europe will be a turning point, the moment of truth. At that moment strange alliances will be born between the National Front and the far left, both of which want to seek a single national strategy, without compromise with other European countries. Between the democratic left and the right, the differences will be clear. The democratic right will want a Europe of the market. The one that exists today. A democratic left will want to build a European State with the means to generalize to everyone the French model of a powerful State. And effective if possible. B. M: I think that the divide will therefore be political, between those who will castigate Europe and the others. With Mario Draghi discreetly unraveling the statutes of the European Central Bank (ECB), part of the center and the French right are pleased with the possibility of seeing attributes of the European Bank return to the Bank of France. I am thinking in particular of the definition of the collateral of refinancing, for example the introduction of housing loans or intercompany loans which are essential for France, but concern other countries less. We must expect a real fight aimed at recovering part of the authority of the ECB. One way to avoid a break-up of the Eurozone would be to restore autonomy to the central banks within the framework of the European banking system, which would define the general guidelines, such as the interest rate, and to submit the ECB's policy to the control of Parliament. The exit from the Euro as it exists today will be done willingly - through a transformation of debts in particular - or by force - through a new and terrible financial crisis. The left in power seems to have made a diplomatic shift that is less discussed than the one made on the economic level. In foreign policy, Atlanticism now dominates our chancelleries. Is a left-wing neoconservatism in power? J. A: We are in complete confusion. It is clear that beyond NATO, which no longer has any reason to exist (except for those, very many, who want to reinvent the Cold War), the real war is between democracies and dictatorships. In the current financial crisis, which has not been resolved at all, even at home, the United States needs an enemy to justify enormous expenditures and, later, the plundering of savers. The Cold War, if not the hot war, is a good strategy. The Europeans, not being united, are letting themselves be trapped in this strategy of which they will be the first victims. Many things should distinguish us from our American friends. Their democracy is theocratic. Ours is not. They are an isolated continent rich in energy. We are not. And there are many other differences. It is time for Europe to give itself a diplomatic identity. And for France, to also give itself a French-speaking identity. BM: Is there a real doctrine? We must trust the left - just as much as the right - to evolve from pacifism to warmongering, depending on whether we are in 1914, 1940 or 1956. Today it seems that we have returned to the time of Guy Mollet - 1905-1975 -, of the Americans, the English and Israel. Heading towards the Atlantic or the pacification of the former colonies, we forget the heart of the problem: the continent, Europe... and Russia! The Europe of the Six wanted by General de Gaulle resolved the old continental quarrel, because France, economically powerful, exercised its moral guardianship there. And France recognized China and associated itself with Russia. In a certain way, France is giving up "weighing" on Europe. This is a mistake. And it should not have to go to NATO to find its road map with regard to Russia. The Hollande presidency is gripped by an incessant whirlwind of blunders, conflicts of interest, and revelations about private life. How do you explain this decay? Is it a sign of the death of the left? Of the implosion of the French political system? BM: If it is not dead, the left is very sick. As for the fall, it is simple: the State was invented to protect citizens, to avoid war of all against all, and it no longer protects. At the moment, the State is under surveillance: from Brussels, the markets, NATO, Germany... How can Mr. Hollande protect his fellow citizens if he appears totally subject to external law? What does Marine Le Pen say, if not: "I will protect you, the threatened social classes"? J. A: When we lose the sense of grandeur, when we love power more than France, when we no longer believe that we can invent a new model of life, when we reduce politics to personal power games, when nothing important, ideologically and philosophically, separates the left from the right, the revolution is near. Interview by NT Jacques Attali Writer, economist and professor, Jacques Attali was special advisor to François Mitterrand from 1981 to 1991 and chaired the Commission for the Liberation of Growth under the presidency of Nicolas Sarkozy. Founder of Action Against Hunger, the European Eureka program and the European Bank for Reconstruction and Development, president of PlaNet Finance, he will publish "Devenir soi" (Becoming Yourself) at Fayard on October 6 Bernard Maris Writer and economist, Bernard Maris is a member of the general council of the Banque de France. An editorialist and journalist, he first worked at "Le Monde", then, today, at "Charlie Hebdo", France Inter and France 24. He has notably published "Plaid (impossible) for the socialists" (Albin Michel, 2012) and, recently, "Houellebecq economist" (Flammarion, 160 pages, 14 euros).

## ###ARTICLE\_START### ID:2505

Makers are high-tech tinkerers, campaigning for the freedom to do things yourself and for the democratization of knowledge, in a collaborative spirit and on the principle of free access. The members of this international community obey codes, of which open source and non-commercial licensing are the founding elements. They communicate on the Web, meet in clubs and "Fab labs", during Makers Faire or in "hackerspaces". The movement is also spreading to universities. The dedicated magazine Make was founded by the American Dale Dougherty in 2005.

## ###ARTICLE\_START### ID:2506

Since he founded the company with his father Yves Baron in 1996, the world of coffee has changed a lot. And it is still changing. Twenty years ago, coffee in a flint was all the rage. Coffee brewers were not popular and had to carve out a niche for themselves. In recent years, it was individual portions in small plastic containers for a small cup of coffee. Again, Cafection has no intention of remaining in the caboose. While Cafection's brewers were first sold in Quebec and the Canadian market, today, 96% of production goes to the United States. With his sales manager Mike Cochrane, François Baron was returning from a tour of Germany and Asia, where he hopes to make a breakthrough in the coming years. "The demand is interesting," he admitted in an interview, "but we don't want to respond to all business opportunities. We believe that 20% of our exports will be outside the United States within two to three years." The company that he took over as the main shareholder three years ago is in the process of turning around. From 45 employees, Cafection has grown to 82 staff members. In August, a new division was opened in the United States to be closer to the resellers with whom the company does business. The company has launched new models of interactive devices, connected to the Internet, both to interest coffee consumers and to remotely resolve problems on the devices, including changing coffee recipes to suit customers' tastes. A team of five programmers have been working on a computer solution based on open source software to control various functions on the coffee maker and improve the experience of the machine owner and coffee lovers. "With our software development, we can currently resolve 86% of problems remotely. What we want to add is an algorithm for maintenance so that the operator will be warned before the coffee bins are empty, or the filters run out. Instead of reacting to a problem, we will be able to prevent it." Thus, the maintenance staff will be able to organize their tour circuit to prevent instead of resolving a breakdown. The coffee maker therefore becomes a connected object that will also be able to broadcast personalized messages to users in the near future, or even coupons with the new devices that Cafection wants to offer to convenience store owners. The research division has also developed a brewing system that can prepare a 24-ounce coffee format in 40 seconds, the most popular format in the United States, from grinding the fresh bean to pouring the beverage into the takeaway container. Rejuvenation treatmentAll of the plant's production lines have undergone a rejuvenation treatment to improve workstations and productivity. "We invested $700,000 in the last year," he continues. "This will allow us to increase production by about 30% with the staff in place. And we have other renovation work to do in the short term." Currently, the average production capacity is 600 machines per month. The modifications will allow us to reach a production of 1,000 machines without adding staff or having to add a shift. Unlike in Quebec, in companies, coffee is not sold, but offered for free. When a machine is broken, the employee will go out three or four times to buy a coffee at the corner store or restaurant. This is seen as a waste of time for the company. Cafection is therefore focusing on a marketing approach with the quality of its products, freshly ground coffee that has flavor, and always the same taste according to customer requirements. Mr. Baron also emphasizes the ecological side of infusion coffee makers, because the leftover coffee grounds are compostable, like the filters. It’s more environmentally friendly than the small, single-serve containers of ground coffee months ago, and it tastes better because the recipe can be adjusted based on the number of ounces in the container, with the amount always being exactly right to produce a perfect cup of coffee, he says. Depending on taste, the grind will yield between 1.5 grams and 1.9 grams of ground coffee for every ounce of water. He also does business with the two largest coffee break machine retailers in the world, Aramak and Compass. More than 80,000 Cafection coffee makers are in service in the United States.

## ###ARTICLE\_START### ID:2507

In this era of widespread "gamification", where game mechanics apply to all aspects of society, from marketing to training, in order to make boring tasks fun, we are grateful to Gamerz, the multimedia arts festival in Aix-en-Provence, dedicated to games and their diversions, for reactivating one of its fundamental features. "All play is first and foremost a free action. Controlled play is not play", defined the Dutch historian Johan Huizinga in Homo Ludens (1938), where he argued that play is at the origin of culture. Or even of agriculture, one could say here, in the case of the experiment conducted by Sandra and Gaspard Bébié-Valerian and presented at the art school. The two artists have imagined Viridis, an online "survivalist" gaming experience, where the decisions of the community of players have a direct impact on a real spirulina farm based in the Cévennes. At Gamerz, we have always preferred homemade games to those sold in stores. To passive leisure activities, the festival contrasts collaborative practices, technological appropriation and "do it yourself". The Englishman, an absurd variation of Kyle McDonald's Liberator Teapot weapon. For its tenth anniversary, Gamerz invites two emblematic collectives of this approach. The FAT Lab, an international group of artists, engineers, and hackers operating at the crossroads of open source culture and (hip) pop culture, presents several projects that favor farce and direct action over long speeches. Like this 3D printed teapot weapon designed by Kyle McDonald, an absurd variation ridiculing the Liberator, this first pistol that could be printed at home and which had caused a stir in the United States. The Cathedral and the Convenience (excerpt) by Evan Roth The video The Cathedral and the Convenience documents the intervention of Evan Roth, who stood in front of Parisian churches with a sound system suitcase and played the ringtone of an iPhone at full blast as bells, questioning the smartphone as a new object of worship (as well as the conditioned reflex of passers-by). The Ripoulain Brothers (Mathieu Tremblin and David Renault) are the Frenchies of FAT. Creators of disruption in urban environments, they play with the permeability between the physical world and the digital environment. At Tremblin, the explosive mixture of Coca-Cola and Mentos candy, popularized by YouTube, is decorated with paint and transformed into a spray can to spray the walls. David Renault revisits the warp zone, the teleportation zone of the video game, by unhooking two neon lights and making them flash randomly on the ground. The artist plays with this cinematic shot of the malfunctioning tube and the disturbing atmosphere it creates, which can also be found in Guillaume Stagnaro's impressive installation on the façade of the Vasarely Foundation, where neon lights seem to have a life of their own. But Renault didn't program anything; he simply modified a piece of electronics. "I'm more of a gypsy who tinkers with electric meters than a hacker who tinkers with codes," he says, claiming a primitive relationship with technology. Tremblin has the same simple idea when he draws the Gettyimages logo, this digital tattoo applied to online photos, in chalk on a city wall, teasing the notion of copyright. Exhibition view of Copie Copains Club at the Vasarely Foundation (Photo Luce Moreau) Copains et copie. FAT is a supporter of free culture and shares all its work under an open license. This uninhibited celebration of copying is also at the heart of the Copie Copains Club, launched by Emilie Brout, Maxime Marion and Caroline Delieutraz, both a license and a web platform that brings together "friends who copy each other." To be a member of the club, you must either make a copy or be copied. "At a time when production companies and governments are striving to ban all copying, the CCC aims to be a free space [...], a playground where geek creators and contemporary artists can question their relationship to intellectual property and their own creation," they write. If the works previously only existed online, in the form of a conversation between artists, they materialized for the first time at the Vasarely Foundation. Such as this monumental animated GIF by Nicolas Sassoon that emerges from the screen to project itself onto the facades, a digital variation of Buren's stripes motif. Conversely, Joëlle Bitton brings the sun that Olafur Eliasson made shine at the Tate Modern in London into her computer as a wallpaper, starting from the observation that for her, artificial radiation had supplanted that of the sky. On the left, Spectra by Lucien Gaudion and on the right its culinary variation. Suicide in a loop. If we recognize in the exhibition the references to Banksy, Depardon or Ruscha, others require a small detour via the room sheet that illustrates the "originals" from which they come. Thus Grégoire Lauvin makes twelve fridges buzz in his caustic reinterpretation of Cécile Babiole's installation, which gave us the "noise of electricity". The exhibition could be summed up as inside jokes but most of them function autonomously and invite us to reconsider the hierarchy between the "original" image and its avatars in the era of digital production. 99 Problems [WASTED], GTAV intervention, Georgie Roxby Smith, 2014 This problem is also present in the Machinima presented by curator Isabelle Arvers, films designed by artists within commercial video games. Particularly disturbing is this action in GTA online by Georgie Roxbie Smith, where a young woman commits suicide in a loop in general indifference, condemned to endless resurrection because, in the digital hell, even death is not an escape. It is also a way of doubting the freedom of players in this hyper-scripted universe.

## ###ARTICLE\_START### ID:2508

Premier Philippe Couillard concludes that it is impossible for Quebec to regulate digital media in order to ensure a greater place for French on the Web. "It's as if we were telling you that you have to get in the middle of the St. Lawrence to try to stop the flow," said Philippe Couillard who, accompanied by the Minister of Culture and Communications, Hélène David, unveiled the details of his government's Digital Cultural Plan on Monday. "Whether it's Uber for shared cars, or Netflix for video, it's an irreversible social phenomenon," argued the premier, who spoke of a "change in civilization." The predominance of English in digital media does not concern him. "Other countries in the world whose language is also in a difficult status sometimes, whether they are Scandinavian countries or others, do not see any threat in this," he said. "What is important is that our Quebec culture, our language, be present" in the digital world, the premier argued. In his eyes, it would be "a serious mistake" to try to limit access to certain media. In any case, "the bulk of the jurisdiction is federal," he noted. Philippe Couillard does not fear for our broadcasting system. Francophone Quebecers are attached to local productions, as shown by the controversy surrounding the future of Radio-Canada, he observed. "People will remain attached to seeing themselves in the mirror." Beyond this digital plan for culture, his government has begun work on "a digital strategy for all sectors," he mentioned, an exercise that is still in its infancy. A plan reduced to $110 million In broad terms, Quebec's plan aims to stimulate the influence of Quebec culture in the digital world by supporting cultural industries and institutions in this change. One hundred and ten million dollars must be devoted to it over seven years, of which $100 million is part of the Quebec Infrastructure Plan (PQI). Last March, the Parti Québécois presented a similar plan with $150 million, including $50 million for the digitization of Quebec heritage and works. Both plans are based on the same consultation of cultural communities by MCC officials for over a year. A third of the envelope will be spent in the next three years. In total, Quebec highlighted 51 projects in progress seeking to include the creation and dissemination of culture in an increasingly digital present and now exposed to new communication tools. The museology sector is the big winner, receiving $10.9 million to support its digital projects. Arts and Letters ($6.3 million), Heritage ($5.1 million) and Music ($3 million) are following suit. The plan mentions, among other things, the creation of content at Télé-Québec, the launch of applications for the Musée de la civilisation, the development of a collaborative platform focused on archaeology and the dissemination of the collection of the Musée d'art contemporain de Montréal. "It's an interesting map of the projects underway in the field of digitizing culture in Quebec," commented Olivier Charbonneau, a library researcher at Concordia University and observer of cultural transformations on the blog Culture Libre. "But we don't sense an incredible strategic vision behind all of this." "There's not much innovation in this," notes Sylvain Carle, a figure of digital Quebec and former Twitter employee, while emphasizing the low amount of money associated with this plan in light of the challenge it faces. "We're in the same silos as before. But we have to go through the structures of the 20th century to get to those of the 21st century," he admits. For their part, defenders of free software and an open digital culture described the Quebec plan as "interesting," but were surprised by the absence of clear references to the promotion of "free and open formats" capable, according to them, of properly promoting Quebec culture online by moving it "from a culture of accessibility to one of reusability," said Mathieu Gauthier-Pilote of the Association pour l'appropriation collective de l'informatique libre (FACIL). "Let's hope that the public money" put into this project "will not be used to support the worst practices in the industry," he added.

## ###ARTICLE\_START### ID:2509

About ten years ago, the French National Gendarmerie undertook a migration of its IT systems, which led it to adopt the OpenOffice office suite - and since then, LibreOffice - and the Linux operating system (Ubuntu) for its 95,000 workstations. In 2004, the OpenOffice suite replaced Microsoft Office on 20,000 computers in the Gendarmerie and in 2005, OpenOffice was installed on all 90,000 workstations. The following year, the Firefox browser and the Thunderbird email client from Mozilla were installed on 70,000 workstations. In 2008, it was decided to abandon Windows and gradually migrate to Ubuntu. Major migration The National Police has since followed suit, adding 130,000 users for these solutions, so much so that today the procedure writing software of the police and the national gendarmerie (LRPPN and LRPGN) and the software for processing legal proceedings (TAJ) are mostly based on free software. This case is often cited as an example of a large-scale migration to free software. Recently, Colonel Xavier Guimard, deputy director of anticipation and coordination of the technology and information systems department of internal security in France, was in Quebec City to talk about the experience he had at the Gendarmerie. He was a guest speaker at the Salon du logiciellibre du Québec (s2lq.com). He granted us an interview to tell us about the progress of this project over more than ten years. Let us specify that the Gendarmerie is the force that ensures security in the countryside and on the roads, even on the outskirts of cities, and this since the 14th century, our interlocutor reminds us. The work of the gendarmes ranges from traffic to criminal investigations. As for the National Police, it is the police force that operates in cities, having succeeded the old municipal police forces. QR / SEVEN QUESTIONS FOR... XAVIER GUIMARD Q: What led the Gendarmerie to review its computer systems? A: Originally, it was security constraints that prevented us from connecting our network to the Internet. We had a second complete network, with shared workstations in the corridors, in addition to individual workstations. We also had budgetary constraints. We needed to improve our IT infrastructure, but without using the new budgets, which were reserved for new applications, new missions. Q: What kind of problem were you facing? A: We couldn't tackle a new project without having to renegotiate others because there was a domino effect, for example when the new software shared the library of software already in use. We reached the point where, to replace a central server, we had to change all the client stations of the radio system, that is to say 15,000 computers. There, we were blocked. Q: What solution did you find in this case? A: We did a staff work, agreeing on what had to be done. We built a new IT environment, in parallel with the old one, which remained there. It's as if we were building a new city, in which we moved people each time we added applications. This happened because we had leaders who weren't afraid. The people in the Gendarmerie know how to take risks. Talking about LibreOffice today doesn't scare anyone, but 10 years ago, it was a choice that could make some people back down. Q: Did you have trouble selling this approach to users? A: No, because we made a positive migration. We didn't tell people: here is the software that will allow us to save money. We could show them that there was a gain for the user. In our software, it is a robot that enriches the XML document to insert the metadata necessary for the legal procedure, such as the identity of the offender, the police officer, and all the documents. Before, two applications were needed to do this work, but with OpenOffice we only did one procedure, which covered everything. So people were happy to adopt it because of the added value. And OpenOffice is only the background of the software. Q: Was it the same for the migration to Linux? A: The operating system, for us, was a non-issue. We chose Linux when we had to leave XP for Vista. It posed serious architectural problems for us. Since we had to migrate, Linux was no more expensive than Windows, but it made our lives easier. There was no meeting to explain Linux. We worked to explain OpenOffice, but Linux.... Since people had learned to use OpenOffice under XP, the migration was transparent. It's as if we had only changed the wallpaper. Free software was never an issue. What matters is the standards. We had chosen the Open Document format, and it turns out that free software was the least expensive and the most efficient. That's all that matters. Q: Why did you decide to use the Open Document format? A: For archiving reasons. When we have to archive a document for civilian use, it has to be accessible for 30 years. And for the judiciary (criminal in Quebec), it's 50 years. If you archive a document with a proprietary format, what tells you that you'll have the software to open it in 50 years? Once we knew what format we wanted, we chose the software that lent itself best to it. And it was Open Office. Q: How was this choice advantageous? A: On several levels. First of all, the strength of free software is not that it's open, it's that it's modular. If Drupal and Firefox are so popular, it's because it's easy to create plug-ins to do what you want with them. And that allows you to pool the energies of people who don't even know each other. And on the economic level, when you compare it with what you would have had to pay to have the same thing with a proprietary solution, you would have paid 25 million euros the first year and 11 million per year. There, it doesn't cost us much, one or two million per year. And finally, in human resources for IT, telecommunications and telephony, our workforce has gone from 2,200 to 1,500 people.

## ###ARTICLE\_START### ID:2510

Montreal and Lyon have in common the fact that they have mayors who have made the smart city a key issue of their mandate. Last November, a study by the connected objects operator m2ocity named Lyon as "the smartest city in France." The greater metropolitan area of Montreal, for its part, was recognized among the 21 smart metropolises in the Intelligent Community Forum (IFC) ranking and is publicly aiming for first place by 2017. Denis Coderre and Gérard Collomb, respectively mayor of Montreal and mayor of Lyon, will jointly open the conference entitled Smart and digital cities: open government, efficient administration, attractive economy and creative eco-system, which will be held on October 6 at the Society for Arts and Technology (SAT). They responded by email to Le Devoir's questions about the technological shift they have undertaken.Interview with Gérard Collomb During the conference on the same theme, as part of the latest edition of the Entretiens Jacques-Cartier, it was noted that there were several different visions and models of what a smart city could be. What is the model or vision that you are pursuing for Lyon? In Lyon, we believe that the smart city will only be built through enhanced cooperation between public and private stakeholders. This is why we worked with companies to develop our strategy. The projects that fall within this framework can then be either public, private or, more often, mixed. Does Lyon have lessons to learn from Montreal's technological approach? Which other metropolises inspire you in this area and why? Opening up data, developing intelligent energy or transportation management systems, creating incubators for "start-ups": Montreal's approach is quite similar to ours. We also share a strong political impetus: in my opinion, this is fundamental to triggering a real dynamic. In addition to Montreal, we draw our inspiration from Yokohama, Japan, and Amsterdam, cities that are very advanced on these subjects. It is this comparative analysis work that allows us today to be, according to several rankings, the "smartest city in France". What role do you think should be given to citizens in the development of the smart city? Citizens have an essential place in this process, because it is for them that we are developing the smart city! This is why we are going to create a "living lab" in our business district, Part-Dieu, in which residents will be involved in the development of the various services and applications. Our ambition is to make life easier, smoother and more pleasant. How do you anticipate transparent municipal governance with the opening of data facilitated by new technologies? The opening of data is a major issue. This is why we launched the Grand Lyon Smart Data platform in 2012, which makes public and private data available to everyone. While it is of course about establishing transparent municipal governance, we also see this platform as a lever to encourage innovation in our companies. Does free software have a place in Lyon's technological shift? The Grand Lyon Smart Data platform is precisely based on free software. This is something very important to us. Beyond questions of reputation and image, how do you think the digital shift can make Lyon more attractive or competitive compared to other metropolises from an economic point of view? Based on the observation that companies that effectively integrate digital technology have a growth rate twice as high as others, we have made the dissemination of these technologies a priority. This is why we created the Espace Numérique Entreprises ten years ago, which aims to develop the use of these tools in our SMEs. This is also why we launched a major fiber optic plan, which will equip our entire territory with very high speed by 2019. When we know that one euro invested in very high speed generates on average 6 euros of GDP, we can measure the importance of such a policy. Finally, digital technology is an economic sector in its own right for us since with 36,000 jobs, Lyon is the second largest French hub. It is with these assets that the Lyon digital ecosystem is a candidate for the "French Tech" label. In short, I can tell you that our "start-ups" are going to make headlines in the years to come! Despite the hopes it inspires, the smart city also generates fears regarding possible malfunctions, computer hacking or attacks on privacy. How do you plan to prevent these slippages? All new developments generate risks and fears. On the subject of the smart city, I believe that the key is to put the municipality in a regulatory position. This is precisely what Montreal and Lyon are doing. So there is no need to worry. Interview with Denis Coderre During the symposium on the same theme as part of the last edition of Entretiens Jacques-Cartier, it was noted that there were several different visions or models of what a smart city could be. What is the model or vision that you are pursuing for Montreal? My administration is committed to making Montreal one of the smartest cities in the world. To achieve this, I have mandated the Vice-President of the Executive Committee, Mr. Harout Chitilian, to lead this strategic issue. He will be able to count on the involvement of the entire municipal administration. Since the beginning of the year, we have taken concrete action with the creation of the Smart and Digital City Office and the appointment of the director of this office, Mr. Stéphane Goyette. The office will have to develop the Montreal strategy and an integrated action plan by drawing on the collective creativity and wisdom of Montrealers, drawing inspiration from proven smart city models such as Lyon, Amsterdam and New York, while relying on the expertise of our public service. Ultimately, we want to create a uniquely Montreal model to meet the specific needs of our citizens. Does Montreal have lessons to learn from the technological approach initiated in Lyon? Which other metropolises inspire you in this area and why? Like Lyon, we advocate using the public domain as a laboratory to test solutions to municipal issues. In this way, we want to promote innovation and the development of intelligent systems for managing transportation, infrastructure, security, energy, water and the environment. This involves working closely with our university incubation centres, such as District 3, Centech and Mosaïc, as well as institutional centres, such as the Quartier de l'innovation and Maison Notman. As in New York, we must leverage our network of start-ups to develop participatory applications. What role do you think citizens should play in developing the smart city? The smart and digital city must be designed by citizens and for citizens. Its role is not only central but also participatory. The public administration can no longer define citizens' needs without consulting the population. It must involve them. That is why we have wasted no time, and in preparation for next winter, we will launch an application platform on smart snow removal, the result of close collaboration with the population and our networks of start-ups. This is how we want to define and then implement a collaborative and participatory model to support the implementation of digital projects. How do you anticipate transparent municipal governance with the opening of data facilitated by new technologies? Since 2012, Montreal has had an open data policy and continuously releases its data on a specially dedicated portal. I was elected with a commitment to transparency and efficient management of public funds, and the use of new technologies will strengthen this transparency. Our administration will massively release data and develop visualization tools to showcase it. Will open source software have a place in Montreal's technological shift? Open source solutions already have their place in the current technological shift. From now on, each time a tool is replaced, an analysis is carried out to assess the possibility of replacing it with open source software. The latter are involved in the work to reassess the IT needs of all the City's IT workstations. Beyond questions of reputation and image, how do you think the digital shift can make Montreal more attractive or competitive compared to other cities from an economic point of view? Economic development is a priority for my administration, and Montreal has major assets in terms of innovation. The video game industry is firmly established there and we can count on high-quality creative companies, such as Ubisoft, Moment Factory or Sid Lee, recognized for their highly qualified personnel. We have this know-how, but it is certain that we must also equip ourselves with the best digital infrastructures in order to seize all the new business opportunities that are available to us. And that must necessarily involve a Montreal that is connected for all. Despite the hopes it stimulates, the smart city also generates fears regarding possible malfunctions, computer hacking or breaches of privacy. How do you plan to prevent these slippages? We have internal technical IT expertise that has been built up over many years, but above all, we are committed to testing our systems twice rather than once before announcing them publicly. It is with this in mind that we launched the Urban Mobility Management Center, which required several months of testing before being 100% operational. Privacy is an essential condition in the process of digitalizing public services. Protecting citizens' personal information is our responsibility as elected officials.

## ###ARTICLE\_START### ID:2511

SHERBROOKE - The fight for the presidency of the Commission scolaire de la Région-de-Sherbrooke (CSRS) will be a three-way race. Former city councillor Nathalie Goguen announced yesterday that she intends to file her candidacy. When speaking to her, Ms. Goguen planned to file her candidacy by Sunday, the deadline. With the reduction in elected school officials, the school board is experiencing "a new beginning," says Ms. Goguen, emphasizing that this is a good opportunity for a new face to take over the presidency and praising the work done so far. "I think I can bring things, a new vision, a freshness," says this mother of four children, who attend both the public and private sectors. Ms. Goguen, who is currently studying for a master's degree at the Université de Sherbrooke, was until now on "a sabbatical from politics." In addition to having been a city councillor in Sherbrooke, Nathalie Goguen has also been a candidate in provincial and federal elections. She claims to have been approached by certain people to make the leap during the upcoming school elections, scheduled for November 2. She has never been a commissioner until now, but she has already sat on school boards. "I am a mother, a taxpayer." She says she wants to run with openness, also noting that "the model may need to be reviewed." The outgoing president, Gilles Normand, has been a commissioner since 1998, and he was appointed president four years ago, succeeding Gilles Boudrias. If he wants to run again, it is because he wants to continue to serve students. "We had a strategic plan, we carried it out well. The results speak for themselves," he says, citing in particular the dropout rate. A lot of effort has been made in recent years to reduce the dropout rate at the CSRS. The rate of students leaving high school without a diploma has dropped from 33.3 percent in 2006-2007 to 18.2 percent in 2010-2011 (latest data available). As La Tribune wrote yesterday, Hubert Richard, who has been a candidate in municipal elections on numerous occasions, is also trying his luck. He returned to the charge yesterday in a press release sent to the media. Mr. Richard announced his candidacy by emphasizing his position on free software. He again questioned the choices of the CSRS yesterday, arguing that he wants "the CSRS to become a leader in this field." "I want us to agree on an unequivocal desire to move toward free software," he argued. The deadline for nominations for school elections is 5 p.m. tomorrow.

## ###ARTICLE\_START### ID:2512

RELAXNEWS | After a first faulty update quickly removed from its servers, Apple yesterday offered to download iOS 8.0.2 in order to make its new mobile operating system more stable. Given that it only fixes minor bugs and does not bring any new features, it is better to wait for the first user feedback before downloading iOS 8.0.2. Apple therefore took less than 48 hours to react after the failed release of iOS 8.0.1. Many users complained of Touch ID (fingerprint sensor) malfunctions and loss of cellular connection, mainly on the new iPhone 6 and iPhone 6 Plus. According to Apple, less than 40,000 devices were affected by these bugs. SECURITY FLAW In addition, Apple assured its Mac computer users yesterday that they did not have to worry about the new security flaw discovered by the American authorities concerning its Mac OS X operating system as well as Linux GNU. "The vast majority of Macintosh OS X users are not exposed to the Bash vulnerability," said a spokesperson. "With OS X, systems are secure by default and are not exposed" to any hacking action unless, he qualified, users have configured Linux services in advance. In this case, "we are rushing to offer them updated software," added the brand with the apple. This announcement comes the day after the United States warned against a new security flaw, deemed "major" by experts, six months after Heartbleed. The American Department of Homeland Security revealed Thursday that this flaw concerns the "Bourne again shell (Bash)", a free software that allows you to launch commands in a console window. Millions of computers could be affected.

## ###ARTICLE\_START### ID:2513

WASHINGTON - Apple assured its Mac users yesterday that they need not worry about the new security flaw discovered by US authorities concerning its Mac OS X operating system and Linux GNU. "The vast majority of Macintosh OS X users are not exposed to the BASH vulnerability," a spokesperson said in an email to AFP. "With OS X, systems are secure by default and are not exposed" to any hacking action unless, he qualified, users have configured Linux services in advance. In this case, "we are rushing to offer them updated software," added the brand with the apple. This announcement comes a day after the United States warned against a new security flaw, deemed "major" by experts, six months after Heartbleed. The US Department of Homeland Security revealed Thursday that this flaw concerns the Bourne Again Shell (BASH), a free software that allows you to launch commands in a console window. Millions of computers could be affected. "We consider it to be potentially more serious and dangerous than Heartbleed, since BASH is installed by default on all Unix and Mac OS," Paul-Henri Huckel, head of vulnerability monitoring at the French IT security consultancy Lexsi, told AFP. Computer attacks have multiplied in recent weeks against American groups. For example, the American DIY chain Home Depot indicated last week that the security of 56 million bank cards had been compromised during the cyberattack it suffered between April and September.

## ###ARTICLE\_START### ID:2514

SHERBROOKE - The presidents of the Sherbrooke Region (CSRS) and Hauts-Cantons (CSHC) school boards, Gilles Normand and Gaétan Perron, will face opposition in the school board elections on November 2. A multiple candidate on the municipal scene, Hubert Richard has filed his candidacy for the presidency of the CSRS, while Yves Gilbert, retired from the education sector, has done the same for the CSHC. President since 2007 at the CSHC, Gaétan Perron has also been a commissioner for many years, before the creation of the CSHC, born from a merger of other organizations. Why run again? Gaétan Perron says he still wants to represent the CSHC. Among other things, he wants to focus on the work of school boards at a time when they are being called into question, and on rural areas, particularly on maintaining small schools. "If we close a school, we extinguish a village," he illustrates. Yves Gilbert says he is drawing on his 35 years of experience in education, particularly as a teacher and principal, to meet this challenge. "The sound management of public funds and increasing graduation rates will remain priorities. With limited financial resources, I want to further promote collaboration and the work of all the different stakeholders in the education sector..." he says. The last school elections were in 2007. The commissioners were elected for a four-year term, but they have ultimately sat without interruption since then, since the vote that was to take place in November 2011 had been postponed to a later date. Across Quebec, the turnout hovered around 8%. Changed rules Some rules have changed since then. For the first time, the presidents will be elected, and no longer appointed by their peers. In addition, the number of commissioners in the organizations was reduced under the previous government. At the CSRS, for example, the number of electoral districts has gone from 19 to 11. There will still be 16 commissioners. In addition to the 11 elected commissioners, there will be four parent commissioners and a president. The CSRS wanted 15 commissioners elected the day after the school elections, but the former Minister of Education, Marie Malavoy, had decided on 11. Other organizations, however, have settled for the number of elected officials provided for in the legislation. This is the case at the Commission scolaire des Sommets (CSS), where the number of elected officials will be reduced by about half. Hubert Richard sent a press release in which he denounces the CSRS's position on the use of free software (software that can be duplicated, for example). In his eyes, the CSRS "deliberately chooses to ignore the importance of free software in the future of education." However, the school board indicates that this topic has already been considered. The organization already uses open-source software in certain circumstances, but not in all, since it is more expensive in some cases, it maintains. The outgoing president, Gilles Normand, has been a commissioner since 1998. He presents himself as "the promoter of equity throughout the organization in order to obtain equal opportunities for each student." Those interested in becoming commissioners have until Sunday, 5 p.m., to submit their applications. Commissioners' role is to represent parents and the public in order to guide the education services of a school board. At the Eastern Townships School Board (ETSB), outgoing president Michael Murray is seeking another term. At the CSS, remember that the two candidates Michel Breton and Jean-Philippe Bachand are both aiming for the presidency, Huguette Desrochers having decided not to seek another term.

## ###ARTICLE\_START### ID:2515

In the absence of confronting reality, we maintain myths. Thus, some persist in asserting that, in its current form, the French school, the cement of republican equality, can give all students a chance and promote social advancement through merit. Alas, the 2012 Pisa study reminded us that the French education system is, among the OECD, the one that most reinforces social inequalities. World champion of inequalities in terms of academic success for the country of Jaurès; unbearable distortion between words and facts. This denial of reality slows down the necessary evolution of our system, places the burden of academic failure on the sole responsibility of individuals and encourages the development of family strategies to emerge victorious from the great academic competition. In the background, the question of effort returns like a leitmotif, implying that today's children are less deserving than before. So, if failure is first and foremost this lack of effort made by an individual, let's ask the question: "Are the children of poor people lazy?" If so, then they only have what they deserve. If not, it is scandalous and unfair that they are the first victims of the production of massive academic failure in our education system. In reality, academic difficulties are the result of the intersection between the individual situation of the student, the social or family context, and the functioning of the school. It is therefore on these three levers that we must act. To understand the reality experienced by many children from working-class backgrounds, let's imagine the typical path of one of the 150,000 young people who leave the school system each year without a diploma. Having reached the last year of kindergarten, he has benefited less from the contributions of school than those who are in a favorable cultural environment (1) and finds himself facing a wall when learning to read in CP. 90% of students struggling in 6th grade were already struggling in CP. He struggles with his primary school education, internalizing with each zero he gets the fact that he is useless. In a middle school designed like a small high school with a very tough school climate (2), he begins to drop out or is sent to a vocational high school. There, he either drops out after the first year or rebuilds himself academically and obtains his vocational baccalaureate. But, failing to find a place in a BTS, stormed by general high school students, he fails at university (3) or tries to find a job by measuring at each stage of his professional career the weight of the diploma in France. What can be done about it? There are ways to improve and in reality, many of them are a consensus, especially since they have proven themselves in other countries. But, here, reforming the school is not easy, to put it mildly. The last few months have proven this again. As stakeholders and partners in the school system, equally aware of our limits and our role, we do not want to give up and are, more than ever, determined to act. In a context that is complex to say the least, it seems to us that two paths must be favored. The first is political: to convince again and again of the need to reform our system. The media coverage of the 150,000 young people leaving the school system without qualifications and the consideration of this reality by political personnel were, from this point of view, a first victory. Beyond the reforms already undertaken, two questions seem urgent to us in the perspective of combating inequalities: the reform of middle school and support for the parental role. Middle school, because we know that these difficulties are increasing in the most fragile territories, leading to a two-speed school system, depending on the place of schooling. Support for the parental role, because in a rapidly changing social context, this support for working-class families in their educational mission and in their connection to school must constitute a founding act of a new approach to inequalities. The second is pragmatic. We no longer believe in the illusion of a "great evening", decided from above, applicable everywhere, immediately and for everyone. Also, we must act, locally, more and better. Thus, many teaching teams and associative structures are already collaborating and successfully; the digital revolution facilitates more individualized teachings adapted to the level of each child; decentralization has made it possible to better adapt education to local realities. All these developments contribute, at their level, to creating a movement of profound transformation of our education system. Each participates in opening the school to its territory, in democratizing culture, in helping the most vulnerable children, in strengthening the bond with families. So, let's identify these actions, evaluate them, to succeed in the challenge of swarming. This dynamic of innovation must be echoed in the very functioning of the school. The first State budget never really gave itself the means to have a real budget for Resources and Development and to continuously train its staff in the changes in society. In a world that is changing ever faster, this is an ever more glaring aberration that others have been able to correct. Teachers are highly valued professionals trained to a bac + 5, so let's move from a culture of control and isolation to one based on cooperation and trust; let's give them the means to make students succeed, all students. The countries that have been able to do this have known, in the face of learning difficulties, not to send students back to their social origins or personal situation, but to put teachers in the position of solution seekers who can rely on the quality of their initial and continuing training, on a network of peers, on their innovations and on the results of research. We therefore call on all actors who innovate, who do not give up, to form an alliance, whatever their sector, to synergize their actions, to make common cause, to put their methodology in "open source" so that the successes of some benefit all, to create, in a way, cooperative ecosystems of learning and pedagogical innovations against educational inequalities. Reforming is not easy in a society that doubts. Let us become aware of the difficulties and the assets of our school, let us each take our share of responsibility, without catastrophism, with determination and, above all, let us project ourselves positively by taking advantage of the developments in the world and the opportunities that they open up to us. Let us make school our most precious common good again. (1) According to Terra Nova, at the age of 4, a poor child has heard 30 million fewer words than a child from a privileged background. Cf. THE FIGHT AGAINST INEQUALITIES BEGINS IN NURSERY SCHOOLS, October 2013. (2) 2013 Barometer of the relationship to school of children from working-class neighborhoods, Trajectoires-Réflex, Afev. (3) Less than 1% success in the first year of university for those from a vocational high school

## ###ARTICLE\_START### ID:2516

"50 years ago, the Liberal Party gave us electricity. Why wouldn't it give us digital technology today?" That's how Michel Cartier addressed Philippe Couillard last week at the Forum des idées organized under the auspices of the PLQ. Michel Cartier trained generations of communications students at UQAM. He wasn't going to miss this opportunity to speak directly to the Prime Minister. Quebecers "ride bicycles on dirt roads while in the United States, we drive Cadillacs on highways," he said, referring to our communications network. He wasn't the only one to hit home this point. Experts from Quebec, France and the United States came to open the participants' eyes to the reality of our century, where data, processing and communication tools are transforming our society and our economy. Digital technology represents 8,000 companies, 175,000 jobs and $30 billion, with no ministry to structure government action. All of this depends on a civil servant, somewhere at the Treasury Board. In almost all developed countries, however, this responsibility goes to the top of the government, hammered home Mr. Cartier, deploring what he calls our monumental error. This message is not new. The "technological shift" promised in 1982 is still awaited. We have neither a strategy nor a governance structure to harness this engine of our economy, to update our decision-making mechanisms. Quebec would do well to study the decision-making structure through which France not only asserts its sovereignty over this sector, but appropriates the tools of the future. A "digital tsunami" is sweeping the world, explained Daniel Ratier, Secretary General of Étalab, the department of the Prime Minister of the French Republic responsible for the opening of public data. On average, 29,000 gigabytes of new data are added to the world's servers every second. "Digital is no longer technology. It's about uses and culture. We have to take hold of it, do what we want with it and make it correspond to our aspirations, to our culture," he argued. Sylvain Carle (afroginthevalley.com), a Quebecer who rose through the ranks at Twitter and who has just returned to Quebec, implores the premier to launch a "Nerd Plan." "We can't not take advantage of this new wealth," he said. "The raw material of the knowledge era, of the networked society, is not in the ground, it's in the minds of Quebecers. If we miss the boat, we risk becoming part of the digital third world." Digital is also free software, without which the Internet would simply not exist, which powers an embedded system on the Bombardier C-Series, developed with the help of Savoir-Faire Linux, a Quebec company; which allows the Montreal company Collabora to offer professional support for the LibreOffice suite across the globe. "There will be a digital strategy in Quebec," promised Mr. Couillard at the end of the exercise, acknowledging the "absolute necessity" that it not be done in a vacuum. Everything indicates that the Prime Minister has understood the message. The replacement, last week, of the chief information officer shows a desire for change. All that remains is to translate it into a policy and a credible decision-making structure, which is totally absent at the present time. Above all, we do not need another empty label, we need a vision that translates into actions. We cannot just cut, we must also build, construct new dams. The dams of knowledge.

## ###ARTICLE\_START### ID:2517

Twenty years ago, no one would have said that Quebec would have an enviable place in the world of video games. There were only a handful of entrepreneurs in the field. Alexandre Zapolsky, president of the French company Linagora, is convinced that Quebec has a similar opportunity today by developing an equally important market niche in the world of free software. The Quebec government gave it a good boost at the time. He believes that the same thing should happen now, in particular by firmly asserting its will and implementing clear policies that would promote the creation and establishment of free software development companies. Then, with similar conditions, there will be an economic boom that could transform the St. Lawrence Valley into a new Silicon Valley of free software, he says. He firmly maintains that we must move from being a consumer of free software to being a creator, because if the Quebec market is lagging behind the rest of the world, it is partly for this reason. By investing in local companies capable of offering adapted solutions instead of using technologies that generate revenue abroad, the government's finances would be better off, especially since jobs would be created and maintained in Quebec. However, he also admits that marketing methods based on the opposition of free software to proprietary software, such as those of Oracle, Microsoft and others, have aroused more suspicion than support. Similarly, the legal measures taken to have free software accepted in public calls for tenders may have created the impression that free software could become a source of problems rather than a solution in the management of information technology. "We need to move on to another stage," he maintains. "There needs to be a consultation of specialists in the field of free software to convince the authorities to trust this technology. We need to develop a collective vision. The choice to use open source software should not be a source of hassle, but a way to regain control over the technology used according to the needs of the client." He agrees that open source software is neither a miracle nor a magic potion. It takes work to get results. Giving the example of the many projects that Linagora has worked on in the public administration sector over the last 15 years, he points out that government authorities have saved more than 400 million euros ($562 million). "Using open source solutions instead of software under license that must be renewed periodically is not protectionism," continues Mr. Zapolsky. "This is done in Brazil, in the Asian region and many other countries. It is a wise use of taxpayers' money. Investing in technologies with local companies that create projects adapted with open source software will benefit the local economy and will ensure independence and control of technology for government and municipal organizations." At the Salon du logiciellibre, which was held in Quebec City this week, Mr. Zapolsky also highlighted the first anniversary of his company's Canadian division. However, he does not want to reproduce the business model he set up for the European market. He wants to develop partnerships with other companies in the country to further push the inclusion of free software in the public market. "Free software has reached a very interesting level of maturity. Public decision-makers must also be as open as the open source sector," he concluded, recalling that social networks, such as Facebook, are essentially organized around free software.

## ###ARTICLE\_START### ID:2518

Imagine the portrait: a very kind and attentive cleaning lady would come to your home regularly, whenever she wants, to take care of your living environment. For free. In exchange, she would examine the privacy of the place with a magnifying glass, noting the contents of the underwear drawers here, the contents of the bookcases there, the fridge... to then share her observations with the neighbors, with your friends, but also her friends. She could even, discreetly, remove from your shelves the books or music albums that she doesn't like, that she considers inappropriate, subversive, unhealthy, and then, hey, install a coffee maker in the kitchen while she's there, the only one, to sell the coffee capsules that go with it. Crazy? "This situation should seem completely unacceptable," says Jérémie Zimmermann, a European activist for rights and freedoms in the digital age, to the other thread. The man, a close friend of Julian Assange, with whom he published a series of interviews on the WikiLeaks creator's favorite topics in 2012, is in Montreal on September 23 to take part in a round table on privacy and Internet governance as part of the Semaine québécoise de l'informatique libre. "And yet," he adds, "millions of individuals accept this scenario, without protest, with the electronic devices that they have brought into their new digital life." Liberticidal excesses The young activist, contacted in Paris by Le Devoir earlier this week, has a way with words, a sense of image, but also a way with a shock phrase to denounce the liberticidal excesses that seem to increasingly accompany the social and digital changes of the moment. "The whole technology has been turned against us, against the users," he says, referring to the captive computing environments imagined by Apple with its iPads and iPhones, as well as the passive surveillance of Google's followers and Facebook's business model, based on the collection of personal information for commercial sale. "Unlike the 1980s, [communication] machines have become closed, welded objects, whose battery can no longer be extracted to escape from a network, which can no longer be opened to understand how they work. It is no longer the user, but they and their invisible masters, in a logic of hypercentralization of data, who decide which applications we can use or not, what content we can consult, what we are allowed to see." And he adds: "If individuals understood this reality and the architecture of the communication systems they use, they would simply stop doing it." The confessions of Edward Snowden, on the institutionalized surveillance of citizens in networks, have timidly shaken the masses, recognizes Zimmermann, who believes that "intravenous injections" - or even a "Fukushima of personal data" - would perhaps be necessary today to stop a certain collective blindness to the faults induced by our new technological habits. "We are being taken in by the marketing of the companies that offer these products and services," says the man who, in 2008, with a few friends, founded La quadrature du Net, a pressure group focused on defending citizens in cyberspace, against controls, surveillance, degradation, exploitation... "It is legitimate to consider it a comfort to have a third party who makes choices for us. But when we lose our ability to choose, we also lose the ability to understand the reality around us." The young activist, who says he lives far from these systems, "except for Google's mapping," he candidly admits, has a severe lucidity towards mass surveillance, for which he holds responsible the centralization of digital data by the companies that trade in it, the closing of computer systems to hold customers captive and the illusion of security that is sold by these companies to ensure the trust of users. "We know that a small padlock in an online form is not a guarantee of privacy," he says, before discussing his possible solutions. "We also know that other systems offer alternative solutions capable of leading humanity to the opposite of this increasingly toxic social and digital environment. By decentralizing data, by free software with open codes... And not only that." Citizens first A fighter for rights and freedoms, the modern-day activist does not mince his words and calls for an urgent paradigm shift to "put information systems back in the hands of citizens" and to get rid of these socialization tools that are more like tools of social control. "Our devices are under control," says Jérémie Zimmermann. The project is no easy task, acknowledges the young man, who sees, in citizens taking control of their digital destiny, of their sovereignty in these universes, one of the most important battles that humanity must lead on a global scale, to avoid being swept away by a crisis that it is ultimately itself feeding. "When we see the use of these systems for political, repressive, geostrategic, liberticidal purposes, we understand that it is a crucial project, he adds. Without doubt as much as the environment and ecology." The right to be forgotten: a decoy? Is the legal provision allowing European Internet users to demand the removal of online information concerning them, to protect their image or their privacy, just a fool's errand? Jérémie Zimmermann believes so. "When we talk about the right to be forgotten [the name given to this framework], we're talking about putting the toothpaste back in the tube," he says. "The Internet never forgets. We see it with the Streisand effect [a digital paradox that oversizes online visibility and propagates information that we seek to make disappear]. "According to him, on paper, the idea may be attractive. But, in reality, this quest for oblivion becomes above all a tool of censorship for the wealthy. "Politicians, business leaders, wealthy Internet users use it above all to make information that they don't like disappear. We are far from the intended objective."

## ###ARTICLE\_START### ID:2519

QUEBEC'S COMPUTER FILES, WHICH COST TAXPAYERS MORE THAN $3 BILLION PER YEAR, WILL BE MANAGED BY A... PSYCHOLOGIST BY PROFESSION. HIS CHALLENGE GUARANTEES TO BE COLOSSAL. Yesterday, our Investigation Bureau revealed that the great chief information officer, Jean-Marie Lévesque, will be replaced by Jean-Guy Lemieux. Mr. Lévesque is a computer scientist and has worked in government IT management since 1982. He is leaving a year before the end of his contract, while several IT abuses were brought to light during his term. Mr. Lemieux, for his part, has degrees in sociology and psychology. He has a lot of experience as a manager, but little in IT. He was a political attaché and chief of staff for five years during the Robert Bourassa era for the Liberal Party, the same party that has just named him IT chief. APPOINTMENT CRITICIZED “When you’re sick, you call a doctor. When you want a bridge to be solid, you call an engineer. And now, when we want to straighten out IT, we call a psychologist. I don’t understand,” complains one of our sources who works at the top of the government’s IT department. The Liberals respond that Mr. Lemieux has a long track record as a manager, that a change of direction is needed and “that he has the full confidence of Minister Martin Coiteux to make the necessary changes.” At a time when the government wants to reduce its spending and is becoming aware of its delay in the sound management of IT, our Investigation Bureau lists the enormous challenges facing Mr. Lemieux. He becomes the big boss of IT and also of the Centre de services partagés du Québec (CSPQ), the largest donor of IT contracts in the government. The healthy and profitable management of the Centre des services partagés (CSPQ), an organization that is responsible for the largest IT projects, is a major challenge. As the Auditor General (AG) did, we questioned the CSPQ's call for tenders process which, for nearly half of the contracts - - - QUANTIFYING EXPENDITURES The former IT boss was unable to know the costs of IT, to the great displeasure of elected officials and taxpayers. The new boss will have the same problem if nothing changes. THE BILLION TO BE EXPECTED The CSPQ is preparing the new call for tenders for the Integrated Multimedia Telecommunications Network (RITM). The contract promises to be lucrative and historic. It involves the rental of infrastructure allowing the secure transport of data between 1,650 establishments in the health and public administration networks. The first RITM, won by Telus, from 2008 to 2018, will cost nearly a billion dollars. The next one will be close to the same costs, according to our analyses. Mr. Lemieux will have to explore how to limit these astronomical expenses. - - - RIGHTING A CRUCIAL ORGANIZATION that we had analyzed, attracted only one bidder. Last spring, the AG stated that the CSPQ did not have the assurance of free competition, does not promote the fair treatment of suppliers, does not have a clear management strategy and does not adequately measure its performance. - - - THE SAGIR MONSTER Very lucrative for private firms, the SAGIR project, which has grown from $83 million to $1 billion, is continuing. It aims to computerize public service management systems. The version of the software on which this project is based is developed by the American firm Oracle. The latter has decided that this version will no longer be supported or will soon become obsolete, which will require major and costly changes. The SAGIR timeline remains unknown. NEGOTIATING TIGHTLY Our Investigation Bureau has already revealed that public service computer workstations are no longer supported by Windows and its XP version. They must be replaced by a new version. This migration is underway, but the delay is forcing the government to negotiate an extended warranty with Microsoft. This warranty will clearly have to be extended and renegotiated. Another version of Microsoft will no longer be supported, Windows 2003, in July 2015. These will be big files for Mr. Lemieux. HEALTH AND EVERYTHING ELSE The computerization of health care needs very close monitoring to avoid drifting while costs are exploding. This project was promised for 2011 at a cost of $543 million. Quebec is targeting 2021 and $1.6 billion. Like governments everywhere else, Quebec wants to move to cloud computing (transporting data over the Internet and not via terrestrial infrastructure). Short-term issues and decisions are crucial to achieving this goal. Continually using private sector IT is expensive and actions must be taken to attract IT professionals to the public service. - - - COMPLEX PROJECTS The government wants to develop several large data processing centres, i.e. secure locations to bring together a host of equipment from departments and agencies. This project is delicate and the benefits of this grouping would be nil if the project is not well executed and well managed. FREE SOFTWARE The development of free software, which is often free to acquire and use, is gaining momentum around the world and Quebec is interested in it. A study centre on free software has even been created by Quebec. But in concrete terms, major actions and investments are still awaited. Mr. Lemieux will have to establish the place that the software will take in the computerization of the government machine.

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While the Quebec government has created the Centre d'expertise en logiciellibre and a law requires departments to include solutions that open the door to free software in calls for tenders, there were no high-level decision-makers from the provincial government at the Salon du logiciellibre du Québec, lamented Laurent Bounin, organizer of the event at Espace Dalhousie in the Old Port of Quebec City yesterday. "Even though there were heads of government departments and network architects among the 250 participants, I didn't meet any of the CIOs [chief information officers] or DSIs [sector information officers]. I'm disappointed," said Mr. Bounin, "because it was largely for them that we organized this show with speakers who came to explain how government administrations in France and the United States have chosen to switch to free software in their information technology use strategy." Moreover, in the morning's opening, Colonel Xavier Guimard, of the French National Gendarmerie, explained how the organization had taken a turn by massively using free software to master the technology and ensure the independence of the service in its technology management. In the afternoon, Gunnar Hellekson, Chief Strategy Officer, Public Sector at Red Hat, explained the steps that led the American government to use free software in its technology organization. Gap in wills For Laurent Bounin, it is clear that there is a significant gap between political will and administrative will with regard to the use of free software. For him, it would seem that the public administration is not ready to undertake the change, even if it was an opportunity to see the importance of the community of developers and programmers while meeting different firms specialized in the field. For some free software specialists met on site, government administrations sometimes tend to remain reactive instead of being proactive, despite the government's desire to use free software and open source code to achieve substantial savings. For others, it is the approach of companies that is lacking by insisting too much on the opposition of free software to proprietary software such as Microsoft products, among others. However, companies such as Microsoft or Oracle were on site with proposals for using open source code in the proposed solutions. And even CGI representatives also demonstrated that it was possible to use components from the free software world to meet the needs of customers.

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A new business association is emerging in the world of free software. The Centre de services en logiciellibre du Québec (CS2L) and the Canadian counterpart of the French company LINAGORA are joining forces to accelerate the implementation of free software in municipal and government organizations. For Jean-François Rousseau, president of CS2L and Libéo, this partnership will put free software at the forefront, because LINAGORA has developed strong expertise in implementing this type of solution in France, over the past 15 years, in large government structures and municipalities. The agreement was sealed Tuesday evening just before the Salon du logiciellibre et des technologies ouverts du Québec which was held yesterday.

## ###ARTICLE\_START### ID:2522

Are François Hollande's policies and those of his government still left-wing? Bernard Maris: François Hollande may still be left-wing, but he is no longer a socialist. The socialist dream, which consisted of extending the great revolution of human rights and freedom with a social dimension, has vanished with him. What Manuel Valls said in his speeches to the bosses in front of the PS activists, speeches endorsed by the president, is that there is no beyond capitalism. This earthly paradise of abundance promised by the great thinkers in the history of the socialist movement has disappeared from the horizon with pragmatism, realism, and social liberalism, which are prevailing today. Manuel Valls is short-termist. He is not interested in the future of capitalism - and even less in that of socialism - but in the fight that France must lead in this world of permanent economic competition to still find its place in the concert of nations. The Prime Minister is implementing a supply-side economy to enable businesses to develop, and is advocating liberalisation of the labour market. The Valls 2 government is making a major liberal shift. Jacques Attali: The government calls itself left-wing, and I believe it to be sincere. But, for me, it is neither right nor left, it is in theatre, in posturing. Neither on theory nor on practice. I have not heard any theoretical discourse that is truly left-wing, in the most modern sense of the word, that is to say on the priority given for everyone to free time, to "good time", allowing everyone to succeed in their lives, which is, in my opinion, the horizon of the emancipation of the citizen and the nation. This requires a better balance between the market and democracy, whereas the former crushes the latter today. On the most practical subjects: since there is no love, but only proofs of love, I am waiting for the publication of the budget to know his true position on the emergencies of the day, in the light of the left's project, which must be that of the liberation of "good times". What structural reforms will he put in place? Will he subscribe exclusively to economic liberalism aimed at giving market value to time, or will he launch reforms of political liberalism aimed at giving human value to time? Since the socialists came to power without a program, because they were elected to rid the country of a right that was then unbearable, they are in total improvisation, like actors who entered the stage without a script, who fill the time while waiting to find something to say. For twenty years, on the left as on the right, and not only in France, we have had nothing but words, posturing, quarrels over ambition; it is time to abandon the rhetorical wind and enter the era of reforms and doctrinal modernity. Are we witnessing the triumph of rhetoric or a real political turning point? BM: But words speak for themselves. When the Minister of Labor, François Rebsamen, wants to control the unemployed more and suspects some of them of cheating or lazing around, he is, forgive me, "on the floor," at his wit's end. Where has all the socialist thinking gone on alienation, chosen time, the cycles of work, training, and rest? On the useful and the useless? On everything that socialism inherited from Christianity through the love of work, fair pay, cooperation, which is only a synonym for fraternity? It will be said that when the boat sinks, there is no longer time to dream about painting it; but - precisely - panic, urgency, the nose to the grindstone make us forget what characterizes the left in relation to liberalism: the future, time and long-term investment. We do not calculate for France as we do for the Stock Exchange. J. A: Certainly Mr. Hollande has made some reforms that gave a certain priority to tax justice, but nothing that constitutes the undeniable marker of a desire to make democracy prevail over the market, "good times" over commercial time. But the major reforms that would restore power to democracy, such as that of local authorities, the deepening of the priority to education or professional training, are, for the moment, dead ends. The last opportunity for the President of the Republic to get out of the ambiguity is the 2015 budget. What should a left-wing policy be? A regulation of capitalism or a policy of radical rupture with this economic system? JA: A radical break, in the continuity of History: we are already in the West in what could be a "beyond capitalism" in the sense of Marx. He placed this concept not in the collective ownership of production goods but in the economy of free, made possible by abundance. Now the economy of free began with new technologies, which make possible the free exchange of information, with the desire to use time differently, for creation, and not for consumption, and the desire to put forward other values than the sharing of wealth. The ultimate rarity of man is time. So the true dimension of the left is to give everyone the freedom to use their time. To make it a good time. The left must not focus on reducing working time but on the content of work so that it is interesting, creative, freely chosen and valued; and subordinate the question of retirement age to that of its usefulness, its fullness and its potential for development. In a society where free things take up space, it is possible to have a good time that is a factor in growth that is not measured only in points of gross domestic product. Being on the left is therefore based on the desire to create the conditions so that people have the freedom to make the best use of the only life to which everyone has the right. This is already happening in particular with what we call the "positive economy", the one that works in the interest of future generations. Those who find pleasure in using their time in altruism give full meaning to their working time. They have a good time working for future generations. The fact that people are interested in the long term and the general interest thus marks the birth of something that is perhaps in the process of exploding capitalism from the inside. BM: We are moving towards an economy of sharing, of freeware, of free software indeed. The central figure of tomorrow will be the researcher who, when he gives something to the community, does not lose it. The researcher responds to the fundamental needs of man: creation, curiosity, change, progress. He is obliged to cooperate. Cooperation channels violence, which liberalism hoped to channel through gentle commerce! The afterlife of capitalism will be a solidarity and fraternal economy. Today, the unavoidable question concerns the nature of work. The question of the 35-hour week is essential. For Marx, the socialist revolution began with the reduction of working time, but because he only saw it as a source of alienation. However, Mr. Valls, like Nicolas Sarkozy, affirms the opposite: "Work liberates" and, in this, he is completely liberal. François Mitterrand asked: "But why shouldn't all men have the right to beauty?" » Beauty is a public good, so why build squalid areas and park downgraded citizens there and then be surprised when they vote for the National Front? The British economist John Maynard Keynes [1883-1946] said, in an interview with the BBC, something like: "Build magnificent buildings for workers and you will see that they will become more intelligent and fulfilled." These are questions that socialists used to ask themselves. Manuel Valls' horizon is his meeting with Chancellor Angela Merkel, on September 21 and 22, in Berlin. Liberalizing the labor market, strengthening control of the unemployed and circumventing the 35-hour law: he affirms this liberal turn to try to stick to this economic war that others, especially Germany, are waging against us. Isn't this endorsing a certain failure of Europe? The split for the socialists will be on the 30% of the socialist electorate who are likely to turn to Marine Le Pen in the next elections. The fear is that they will hold Germany, Europe and the euro up as the culprits. What reforms should a government that is resolutely left-wing put in place? JA: Certain reforms must be put in place regardless of the party in power. The bipartisan commission, which I chaired under Nicolas Sarkozy, reached a consensus that must absolutely be implemented: reform of land ownership, the fight against rents, the reduction of waste in continuing education and in public procurement policy, the reform of local authorities, administrative simplification, the constitution of a strong European power, the creation of a French-speaking power. Then, there are measures of social justice, in the use of "good times", more in line with the concerns of the left, and others of immersion in the market, more right-wing. In total, any modern left-wing program will have to be part of a long-term collective project built on three pillars. First, the modernization of the social model around the idea of "good times", free and altruistic, with the development of new technologies. Then the establishment of a classic social democratic model at the European level, with a government and a parliament of the euro zone and a Keynesian European policy. Finally, the development of the French-speaking world, of a French-speaking union, a production area of the future, a factor of growth and identity. Proof that one can be European and French. BM: But the priority remains the more than 10% of unemployed people in France. Giving people work also means allowing education to function properly. For me, unemployment is one of the main reasons for the failure of the current education system. How do you expect children, seeing their parents unemployed, to want to go to school? When François Hollande came to power, he announced that employment was his priority and he was absolutely right. But with a short-termist Manuel Valls, a management that is also short-termist, as much as the current banking system, I fear the makeshift solutions. Are we going to promote, as in Germany, small jobs and authorize jobs for 1 euro? Or discourage, as in the United States, people from registering on the Pôle Emploi lists to deflate the statistics? How can we finally fight unemployment effectively? J. A: France, left and right combined, has always thought, without saying so, that it is better to have well-paid unemployed people than poorly paid workers. Germany, right and left combined, has made the opposite choice. All this for deep historical reasons. To have fewer unemployed people, without proletarianizing those who work, the solution is the reform of continuing education. By a radically new concept: just as anyone who seeks treatment is not considered unemployed, anyone who trains should not be excluded from unemployment. Because training, like getting treatment, is a socially useful activity. In our country, continuing education is a scandal. Some 32 billion euros are wasted due to the collusion of social partners, a shameless waste reinforced by the Sapin law [promulgated in March]. However, if they were used for the unemployed, as the real social democrats do, France would train those over 40 or 50, who would thus work longer. This would partly resolve the issue of financing pensions. The lack of courage in the reform of continuing education is very damaging. In Germany, there are 2,000 continuing education centres, compared to 60,000 in France, and the 32 billion are collected by structures where it is impossible to know even the names of the members of the boards of directors who profit greatly from it. It is this society of connivance that the left must explode. But I unfortunately think that it will not do so. BM: Added to the scandal of vocational training is that of the reduction of social security contributions, launched by Edouard Balladur and perpetuated to this day by Valls. We have exactly substituted reductions in social security contributions for devaluations, which are now impossible. And, like devaluations, they are short-term solutions that destroy what made the quality of work: good technical training, a strong possibility of social promotion through the profession in the company. The deskilling of work and the abandonment of technical work partly explain the downgrading of our industry. An economy like France's does not need poor-quality jobs. We need to raise the level of employment. And it is better for our engineers to go into industry rather than into trading rooms. As for growth, which is essential to reduce unemployment and give work a horizon, we will have to dare to give it content, based on quality and cooperation, and dare to say that salaries, like trees, do not grow to the sky. Life is not just "a level". There are places for France to expand: the French-speaking world, for example, as Jacques Attali says. However, a Franco-European pitfall may arise: when Nicolas Sarkozy launched the Union for the Mediterranean, the Germans howled against this refocusing of the French on a market of their own. However, as with the French-speaking world, we need to open up economic spaces where Germany does not dominate. Is the alternative between a supply-side policy and a demand-side recovery still a real divide on the left? JA: This is a meaningless discussion, because we are not talking about supply or demand. Behind the word demand, we are actually talking about social justice. And, behind supply, we are talking about corporate profits. A country faced with a potential market of 7 billion people and a State that spends 25% more each month than it earns cannot have a demand problem, it can possibly have a competitiveness problem. This is the case for France. BM: The time for recovery through consumption is over. Today, we are placing the cursor on the competitiveness of companies, without thinking about the nature of the work. We need to reform the employment contract: we do not dare touch the CDI but we hire 80% of people on fixed-term contracts, we cannot continue like this. Security in the workplace, essential for trust and creativity, cannot exist in a country where more than 10% of workers are unemployed and 90% are terrified of being unemployed. As for pensions, it is obvious that the French, all things being equal, must be treated the same, which does not imply a levelling down. Is it around European policy that a left-wing policy could find its identity? JA: The question of deepening Europe will be a turning point, the moment of truth. At that moment, strange alliances will be born between the National Front and the far left, both of which want to seek a single national strategy, without compromise with other European countries. Between the democratic left and the democratic right, the differences will be clear. The democratic right will want a Europe of the market. The one that exists today. A democratic left will want to build a European state with the means to generalize the French model of a powerful state to everyone. And effective if possible. B. M: I think that the divide will therefore be political, between those who will castigate Europe and the others. With Mario Draghi discreetly unravelling the statutes of the European Central Bank (ECB), part of the French centre and right are pleased with the possibility of seeing attributes of the European Bank return to the Bank of France. I am thinking in particular of the definition of the collateral of refinancing, for example the introduction of housing loans or inter-company loans which are essential for France, but concern other countries less. We must expect a real fight aimed at recovering part of the ECB's authority. One of the ways to avoid a break-up of the eurozone would be to give back autonomy to the central banks within the framework of the European banking system which would define the general guidelines, such as the interest rate, and to submit the ECB's policy to the control of Parliament. The exit from the euro as it exists today will be done willingly - through a transformation of debts in particular - or by force - through a new and terrible financial crisis. The left in power seems to have made a diplomatic shift less discussed than that made on the economic level. In foreign policy, Atlanticism now dominates our chancelleries. Is a left-wing neoconservatism in power? J. A: We are in complete confusion. It is clear that beyond NATO, which no longer has any reason to exist (except for those, very many, who want to reinvent the Cold War), the real war is between democracies and dictatorships. In the current financial crisis, which is absolutely not resolved, even at home, the United States needs an enemy to justify enormous spending and, later, a plundering of savers. The Cold War, if not the hot war, is a good strategy. The Europeans, not being united, are letting themselves be trapped in this strategy of which they will be the first victims. Many things should distinguish us from our American friends. Their democracy is theocratic. Ours is not. They are an isolated continent rich in energy. Not us. And there are many other differences. It is time for Europe to give itself a diplomatic identity. And, for France, to also give itself a French-speaking identity. BM: Is there a real doctrine? We must trust the left - just as much as the right - to evolve from pacifism to warmongering, depending on whether it is 1914, 1940 or 1956. Today it seems that we have returned to the time of Guy Mollet [1905-1975], the Americans, the English and Israel. Heading towards the Atlantic or the pacification of the former colonies, we forget the heart of the problem: the continent, Europe... and Russia! The Europe of the Six wanted by General de Gaulle resolved the old continental quarrel, because France, economically powerful, exercised its moral guardianship there. And France recognized China and joined forces with Russia. In a certain way, France is giving up "weighing" on Europe. This is a mistake. And it should not have to go to NATO to find its roadmap with regard to Russia. The Hollande presidency is gripped by an incessant whirlwind of blunders, conflicts of interest, and revelations of private life. How do you explain this decay? Is it a sign of the death of the left? Of the implosion of the French political system? BM: If it is not dead, the left is very sick. As for the fall, it is simple: the State was invented to protect citizens, to avoid the war of all against all, and it no longer protects. At the moment, the State is under surveillance: from Brussels, the markets, NATO, Germany... How can Mr. Hollande protect his fellow citizens if he appears totally subject to external law? What does Marine Le Pen say, if not: "I will protect you, the threatened social classes"? JA: When we lose the sense of grandeur, when we love power more than France, when we no longer believe that we can invent a new model of life, when we reduce politics to personal power games, when nothing important, ideologically and philosophically, separates the left from the right, the revolution is near.

## ###ARTICLE\_START### ID:2523

He's just come out of a two-hour night's sleep, but it apparently takes more than that to start his very high speed. Camouflage jacket over a bright red jersey brought back from Mexico, teeming hipster beard not too well groomed, Jérémie Zimmermann has the joyful activism of "those who are having fun, otherwise we'll never win!" Prolix, with a willingly biting irony, the co-founder and former multitasking spokesperson of the Quadrature du Net receives a stone's throw from his tiny HQ with walls covered in stickers and schoolboy slogans - "We Make Data Love", "Hadopi Rip Lol"... -, in a bistro in the 11th arrondissement of Paris where this fighter for "citizen rights and freedoms on the Internet" praises the "natural wines and food made with love and humanity, it's important to be human". The step-by-step protest against the society of generalized technological surveillance, the result, according to him, of a "monstrous distortion at work by the Internet", is fueled in this hacker, a pleasure seeker, by a self-proclaimed hedonism. Back from a four-month trip to Latin America, the former gunfighter of Dadvsi and other Hadopi, the "uncompromising and uncompromising" defender of Net neutrality and "killer" of the anti-counterfeiting treaty Acta in the European Parliament, continues to enjoy his newfound freedom. After six years spent dissecting European directives and draft laws, writing more than 1,200 press releases to denounce the "repressive agendas" of politicians of all persuasions, orchestrating "flash mobs" in Fnac stores and in front of the Ministry of Culture, the former activist employed by La Quadrature, earning 1,850 euros per month, took off in February. But not the tangent. A "happy" unemployed person but still a hyperactive member of a collective "that only represents itself" and "has nothing of a lobby", this engineer by training, experienced in legal guerrilla warfare and harassment of elected officials online and by phone, went to take the pulse of the post-Snowden response in countries that, like Brazil, are trying to provide alternatives to American technological imperialism. He has, of course, lost some illusions there but sharpened his thinking on the urgency of "a global strategy against the public and private oppressors who, in the era of mass surveillance, have turned the machines against us". As if the "explosion" that Edward Snowden's revelations represented for this pure libertarian, "but not anarchopunk or anti-regulationist libertarian", made the link between all his past battles led in the name of free software, the fight against censorship, for a "fair" copyright, etc. Before posing as a defender of all fundamental freedoms - "which are neither right nor left", he specifies, while slipping in that there is a "fair political diversity at La Quadrature" -, this formidable debater, reputed to be a fine tactician and great connoisseur of European mysteries, was long accused of being a Trojan horse for telecom operators, a "useful idiot" for Google. Which makes him laugh. "You will be hard-pressed to find someone more anti-Apple or anti-Google than me," he retorts. "I don't use it. Uh, shit, except for mapping... Saying that we defend Free or Google, which were able, it's true, to be at one time an ally of circumstance before falling into the copyright police, is proof that we are disturbing and that our ideas are advancing. We are for freedom, all freedom, not half, that leads us to put spokes in everyone's wheels. If that's what it means to be a supporter of liberalism!" And when we tease him about the funding of his association at 40% by the Open Society Foundation of the American billionaire financier and philanthropist George Soros (out of a total annual budget of 272,000 euros including 130,000 euros of personnel expenses), he has his answer ready. "This foundation has Internet heroes on its board and leaves us royally alone," he continues after having quoted a little earlier the economist and liberal polemicist Frédéric Bastiat in the name of the fight against rents and dominant positions. "We are not defending a romantic vision of the Internet, but despite its hypercentralization around a few players that we are fighting, it is important to emphasize that this global public good remains open today. Competition is certainly not pure and perfect, but less distorted than elsewhere." A liberal-libertarian profession of faith? "Isn't it said that anything excessive is insignificant?" Pascal Nègre, head of Universal France and number 1 in the French market, who has often crossed swords with Zimmermann on TV sets, tries a pirouette. "They use the Internet very well and have even managed to make a few MPs believe that they were flooding with their messages, that the whole of France was panicking with Hadopi," he recalls. In reality, there were only a few of them, a small group representing only itself and who believe that you can make an album with 3,000 euros. This surprising collusion of interests, between this libertarian militancy and a few giants of industry and the Internet delighted to see them unravel intellectual property, remains nonetheless problematic. It is not because Zimmermann has an answer for everything that he is necessarily right! "The person concerned readily admits that "little Jérémie" has "always liked to piss people off" and this "well before transforming Hadopi into a bowl of parliamentary Diên Biên Phu". At 4 years old, this Parisian, "a bit of a spoiled child", son of divorced parents, is already taking apart a Walkman to "understand how it works". A nerd before his time, he pestered his mother to buy him, barely a teenager, his first PC with which he discovered the network in 1995. Not enough to make him an activist who, apart from a memory of a demonstration against Dominique de Villepin's CPE and a thorough dissection of the draft European Constitution, has very little interest in politics. Very independent, taking on a series of small jobs from the age of 16, before later setting up his own business as an independent consultant, Jérémie Zimmermann only became aware of the political dimension of the Internet when he met Richard Stallman, a pioneer of free software. "When I discovered the law," he recalls, "I understood to what extent it was a tool of control as much as of emancipation. And as a good hacker, I adopted the tools of the adversary to turn them around." "We have managed to disabuse a number of politicians, and above all to increase the political cost of their bad decisions. Now, it's like a Pavlovian reflex, they know that when they touch the Internet, it hurts, it burns, you have to think carefully before." Before leaving, his friend, a columnist and current affairs singer "la Parisienne libérée", with whom he tried his hand at singing in a duet on Data Love, asks us to write that he "would be ready to give up everything for music", his great passion. "We'll see, first of all, I have a swimming pool", dodges a little embarrassed the one who confesses to having "cried" at the arrival of Napster, delighted to show off his latest find of a "nasal flute" (7 euros on eBay) and who is toying with the idea of singing Brassens with a Mexican Mariachi orchestra. "I don't want anyone to steal the idea from me." In 7 dates 1978Birth. 1985First computer, Amstrad CPC 6128. 1995First MP3 and first rave. 1999 Discovers Napster. 1998Meets Richard Stallman, father of free software. 2008 Creation of Quadrature du Net. 2012 Rejection of Acta by the European Parliament.

## ###ARTICLE\_START### ID:2524

In the early 1990s, in the prehistory of the Internet, a Finnish student named Linus Torvalds sowed the seeds of the free software revolution by creating his Linux operating system. Now there was an open source alternative to the proprietary Windows-Mac duopoly that had previously reigned supreme over consumer and professional computing. Every Linux user was free to install and use the new dissident OS on their computer, free to study its code and operation, free to copy and redistribute it, and, above all, free to improve it... So many possibilities banned in the prison-like worlds of Microsoft and Apple. Twenty years later, the Italian Massimo Banzi and his techno-hippie friends are in the process of achieving the feat of transposing these four "freedoms" from the immaterial world of software to the material world of objects! With its all-purpose chip card, Arduino has offered the maker community the Swiss army knife of its "DIY" revolution. No need for coding or electronics courses: the Arduino microcontroller is known for being easy to program and the "Arduinonaut" community is vying for tutorials. Obviously, it has nothing to do with the performance of a microprocessor. Arduino is not a competitor for Intel or AMD. Its playground is electronic DIY, not smartphones or tablets. With the little blue card, anyone can play Gyro Gearloose in their garage to design, invent, manufacture, repair or improve just about anything: from a simple toy to a sophisticated drone, from a kibble dispenser to a complete home automation system! The world according to Arduino is a great DIY for everyone and by everyone. We are still far from this "third industrial revolution" predicted by Jeremy Rifkin. But clearly, the "free hardware" revolution has begun.

## ###ARTICLE\_START### ID:2525

Nestled in a square in Ivrea, a Piedmontese town at the foot of the Alps, the bar is unassuming. However, foreigners passing through make the detour to come and have a beer to the health of the guys who revolutionized the world of "open hardware", these free technologies developed according to the open source principle. The Bar du roi Arduino, named after the local marquis who briefly occupied the throne of Italy in the 11th century, was in 2005 the HQ of the students and professors of the Interaction Design Institute of Ivrea. And it was over a drink that the simple and brilliant idea was born to make a cheap printed circuit board, which would allow the students of the school, but also everyone else, to program any thing in home automation and robotics without having to take coding classes. A handful of engineers - two Italians, a Spaniard and two Americans - are behind a dozen versions of the famous Arduino smart card, which have now sold more than 1.2 million copies. "And at least as many Chinese counterfeits!" says Massimo Banzi, a design professor who runs the company. "I'm pleasantly surprised to see what people can make very quickly with Arduino," he says, happy to measure the role played by this electronic Swiss army knife in the third industrial revolution, that of makers. Textiles. The attractive price of the card (the Uno, the best-selling version, costs only 20 euros), its versatility and its ease of use explain its success. It integrates a microcontroller that can be programmed to perform simple but very diverse tasks. And thanks to a library of tutorials, anyone can type a few lines of code to make their Arduino interact with anything and everything: robots, motors, mobiles, cameras, 3D printers, detectors, probes... even the garage door! Some versions of the Arduino are equipped with light or temperature sensors, wheels or a buzzer: the Arduino Ethernet connects to the network, the Nano is waterproof, the Lilypad can be sewn onto textiles... And, according to the random experiments of some users, the Uno is also very robust because it resists assembly errors and even being immersed in liquid nitrogen, at minus 196°C! Originally intended to simplify electronic prototyping, Arduino has won over artists who create connected works and shows. It has also proven itself to scientists. Economical, resistant to magnetic fields and low doses of radiation, the Mega 2560 was adopted by the European Organization for Nuclear Research, CERN, where it manages hundreds of data from environmental sensors without batting an eyelid. In less than ten years, liberating garage tinkering, the all-purpose smart card has conquered the sprawling community of DIY ("Do it yourself") enthusiasts. Everyone finds a use for it: we start by making LEDs shine and end up programming the coffee maker. Children post their automatic cat food dispenser on social networks. High school students spend their nights building an articulated hand prosthesis or a glove that translates sign language. Their elders install a "tracker" on the car (to locate it in case of theft), tinker with a GPS, predict the weather or robotize the lawnmower. Even bees are getting involved: thanks to the Zigbee kit from the Fab Lab in Lannion (Côtes-d'Armor), when the population of a hive is saturated, they call the beekeeper! "Sometimes, makers like to find complex solutions to non-existent problems!" jokes Frédéric Jourdan, president of Snootlab and moderator of the French-speaking Arduino community. So, the printed circuit, which is definitely adaptable to all uses, closes the door of the henhouse in the fox's nose, sniffs the gases escaping from a baby's diaper or sets up the basket to catch balls of crumpled paper in flight. Arduino is above all a pure product of the alternative spirit: the software intelligence and its documentation are open source, in order to promote its free circulation. The design diagrams of the card itself are free on the official website and have given rise to many legal copies. "Thanks to Arduino," Frédéric Jourdan rejoices, "innovation is not limited to rich countries." In fact, there are distributors in every corner of the planet: Yemen, Mongolia, Angola, Bangladesh. Now, the official Arduino website attracts 4 million regular visitors. On the forum, more than 200,000 active users exchange their tips. And thousands of creations are exhibited on the Internet and in specialized magazines. Arduino clubs and evenings are organized all over the world. There is no Fab Lab without Arduino. The same in neighborhood digital spaces. In France, on the France Université Numérique (FUN) website, the Mooc - free online course - on "digital manufacturing" has fascinated 12,000 enthusiasts, its greatest success. More and more colleges are adopting it, where people make "Arduino." Technology teachers love this fun tool that, through robotics, introduces teens to programming without twisting their neurons. Platforms like Duino Edu or Educa Duino, administered by teachers, market fun and educational modules based on this universe. "The community grows by capillarity," explains Frédéric Jourdan. People want to appropriate knowledge. The more we empower them, the more their creativity is freed. So we broaden the field of possibilities and generate anthropy." A universal and community tool, Arduino sometimes takes on the appearance of a manifesto for the freedom of people to self-determination: after the Fukushima disaster in Japan, Libelium, a Spanish company specializing in connected objects, designed a nuclear radiation sensor equipped with a Geiger tube and an Arduino Uno, so that the region's inhabitants could measure the real contamination rates. In Santiago, Chile, 390,000 Twitter subscribers are alerted to the slightest hint of a seismic tremor thanks to Alarma Sismos, developed in 2011 by Sebastián Alegría, then aged 15. Faced with the problem of global warming, the Excite project puts the microcontroller at the service of citizen science, to inform the Inupiats, Eskimo hunters, in real time about the state of the ice floes in Alaska. Bioreactor. In the first participatory biology laboratory in France, La Paillasse, Arduino watches over the experimental bioreactor in which the culture of microorganisms is carried out, such as plant proteins, medicinal substances and natural coral-type materials, which could one day be used by astronauts on long flights to other planets, but also to produce organically sourced plant foods for Earthlings. "The bioreactor is freely accessible to enlightened amateurs. Programming is long and complex. Without Arduino, we wouldn't have started," says Marc Fournier, co-founder of this "hacker space." Similarly, everywhere in disruptive technology labs, "biohackers" are tinkering with low-cost DNA sequencers for everyone, just to find out what's hidden in our burgers and sushi. In homage to Arduino, which globalizes mutual aid, its name has given rise to neologisms. Like Vinduino, a device imagined by a Californian producer to control the irrigation of vines and share solutions for better global water management. Above our heads, the Ardupilot flies drones. And in August 2013, a team of American scientists eager to democratize space raised $100,000 (76,000 euros) through crowdfunding to send the Ardu Sat nanosatellite into orbit. It was equipped with the lightweight, heat-resistant microcontroller that was programmable by contributors. They were then able to individually use the onboard equipment for three days to make observations and take photos. Ecosystem. While it still operates in a craft mode, the company has generated an entire ecosystem. "I am proud that our electronics platform has been adopted by the maker movement and to have helped make electronics accessible to everyone," says Massimo Banzi. "People who were not specialists have set up electronics product start-ups. It was unthinkable fifteen years ago!" On the industrial side, the giant Intel has undertaken to attract DIY enthusiasts and evangelize engineering students and developers around the world, by distributing 50,000 free copies of the Galileo card, whose processor is designed to be compatible with the Uno R3. As for Google, it offers its customers an Android accessory development kit (ADK) based on the Mega card and a library of open-source software, to do home automation with your smartphone. Finally, Texas Instrument, which had tried to create a competing product, is teaming up with Arduino to launch the Tre this year, a real mini-computer equipped with sensors. Today, Massimo Banzi is convinced: "Thanks to its accessible design, Arduino is undoubtedly one of the most influential players in the open source electronics movement of its time."

## ###ARTICLE\_START### ID:2526

Whether it is the Ukrainian crisis crystallizing the rivalry between Russia and the European Union or the Islamism that inflames Syria and Iraq, which stirs up the Israeli-Palestinian conflict, the expansionist fever is raging more and more. At PUF, two works analyze it: Géopolitique de l'Europe, by Gérard-François Dumont and Pierre Verluise, on the power struggles "from the Atlantic to the Urals", and Géopolitique du Printemps arabe, by Frédéric Encel, on the clashes between progressives and fundamentalists from the Maghreb to the Near East. By republishing for the first time in 70 years volume ii (1915-1918) of Winston Churchill's Memoirs of the Great War, Tallandier recalls, thanks to the testimony of the British politician, to what extent hegemonic aims are inscribed in history. For his part, Jacques Follorou, in Démocraties sous contrôle (CNRS), points out the danger for the West of restricting civil liberties by fighting against this underground geopolitics that is terrorism. He sees this as "the posthumous victory of Bin Laden". Faced with this world still struggling with the competition of expansionisms, the American futurologist Jeremy Rifkin sets out, in The New Collaborative Society (Les liens qui libèrent), the paradigm that he anticipates to succeed capitalism: the convergence of participatory phenomena, such as free software and the social economy. Other People's Money, by the French economist Emmanuel Martin (Les Belles Lettres), stigmatizes the irresponsibility that reigns on the financial markets. As for the promising book Malcolm X, a life of reinventions, by the African-American historian Manning Marable, Pulitzer Prize winner (M éditeur/Syllepse), it should bring a very human dimension to socio-economic and political questions by trying to uncover the secret of the most radical of the great black leaders of the United States. Kafka, Sade, Orwell Other works of a historical nature attract attention. Heidegger and anti-Semitism, by the German intellectual Peter Trawny (Seuil), deals with the Black Notebooks which, still unpublished in French, are said to reveal the profound anti-Semitic thinking of the philosopher, whose links with Nazism were already known. Franz Kafka, poet of shame, by the Israeli historian Saul Friedländer (Seuil), lifts the veil on the shame of the body felt by the writer, his sadomasochism and his homosexuality. In La passion de la méchanceté, on a supposedly divine marquis (Autrement), Michel Onfray, accustomed to controversy, revisits Sade. He wonders if the myth of this writer is not the creation of Apollinaire and seeks the meaning of Sade's work. On the occasion of the 20th anniversary of Guy Debord's death, Les situationnistes, by Éric Brun (CNRS), is presented as the first sociological analysis of the revolutionary political and artistic movement created by Debord in 1957. Le siècle de Baudelaire, by the poet and thinker Yves Bonnefoy (Seuil), tries to show that the trivialization of disbelief encouraged Baudelaire to see in poetry the place of a new transcendence. Le fascinating pouvoir de la poésie, Will le magnifique, by the American critic Stephen Greenblatt (Flammarion), explores it in the work of Shakespeare on the occasion of the 450th anniversary of the playwright's birth. A book of which almost two thirds are unpublished in French, A Life in Letters, Correspondence (1903-1950), by George Orwell (Agone), will undoubtedly remind us that no one like a writer can suggest all the cynicism of the expansionists who, in the name of one political truth contrary to another, never cease to tear the world apart.

## ###ARTICLE\_START### ID:2527

If we use Firefox as a web browser, it is first and foremost because it works perfectly. But it is also a militant gesture. Firefox is free software, which does not respond to the sirens of the markets, which is at the service of its users, which strives to improve the Web rather than to plow it to collect personal data. So, when in February, we learned that advertising was going to arrive in Firefox, our reaction was "WTF?" (in French). If, at the time, the operation only concerned new users, the principle of sponsored thumbnails when opening a new tab should be generalized in the coming weeks. And it has indeed just appeared in the "nightly" version of Firefox, which allows you to test current developments. Dazzling. Firefox is not free software like the others. It is probably the one that has reached the general public the most (more than 500 million users at present) and, unlike most of its peers, it is not developed by a handful of computer scientists devoted to the cause. Behind Firefox, there is the non-profit Mozilla Foundation, which employs more than 1,000 people and claims a turnover of more than 300 million dollars (228 million euros, 2012 figures). Problem: behind 85% of this turnover, there is Google, which pays for its place as the default search engine on the browser. And Google is also the publisher of the Chrome browser which has dazzlingly taken the world's number one spot in just a few years. Over time, it has become essential for Mozilla to try to free itself a little from the Californian giant. Logo. Advertising will therefore appear in Firefox when a new tab is opened. Until now, the new page displays a Google search box as well as a grid of thumbnails to the most visited sites. In the new version, some of these thumbnails will be "improved" with a nice logo of the site and, above all, several of them will come from advertisers. But if it is possible to pin a thumbnail to ensure that it remains present, it can also be deleted permanently, advertiser or not. You can also choose to return to the old system with a click and thus delete all these sponsored thumbnails. For Darren Herman, Mozilla's vice president in charge of content, this new feature is not just about big money: "We are showing the world that it is possible to get a foot in the advertising ecosystem based on trust, transparency and user control. Some $43 billion is spent each year on online advertising. Our opportunity is to make the Web healthier. We can't just sit on the side of the road and tell people what to do." The trick for Firefox is to get just its foot in the door without getting its leg eaten.

## ###ARTICLE\_START### ID:2528

As a child, Gaël Langevin did not like school. During his lessons, he dreamed of building a submarine at the controls of which he would plumb the depths of the Seine. In Clichy, he had spotted the bank from which the machine would dive. The project was ambitious but, with a solid determination and equipped with a welding station, he believed in it wholeheartedly. Moreover, in the family workshop, he had already tinkered with a pedal kart using recycled materials. Surrounded by a father who was an advertising illustrator and a mother who was a serial handyman, the mechanic explorer was redirected in time towards technological education, thereby escaping boredom and drowning. Modern Gepetto. A few years later, after multidisciplinary training in the United States and France with a sculptor, he finally turned his passion into a profession: model maker. In his Parisian workshop called Factices, the designer makes models and sets for advertising and cinema. Two years ago, an order for a prototype of a futuristic hand for a car manufacturer would put his finger in the cogs. The industrialist's project was ultimately abandoned, but Gaël Langevin, who had always been fascinated by the shape of hands, seized the opportunity to continue his research on this beautiful mechanism and to test his 3D printer. Once the parts were modeled, printed in rigid plastic and then assembled, the articulated hand seemed to have been designed by Marvel. Gaël decided to offer the plans to the community of makers, these "fablab" rats and tinkerers of all kinds who share the files of their creations on the online platform Thingiverse. The story begins. The hand is still inert, but its virtual fingers run across the Web, cross continents and take shape again on the printer trays of other tinkerers, as far as China or Russia... In total, the open-source file will be downloaded more than 80,000 times. In Brazil, engineer Gustavo Brancarte equips the hand with a forearm and myoelectric sensors; American Greg Perry, a computer networking professional, perfects the programming. Could the hand that can be printed at home become a low-cost prosthesis? Nicolas Huchet, who lost his right hand after a work accident, sees it as a chance to "give a helping hand to penguins who have few resources, so that a prosthesis no longer costs them an arm and a leg". And he brings the Rennes fablab into the adventure. For the designer, the project takes on a new dimension, and his research will devour his nights. This collaborative work results in a prosthesis that is accessible to all, with only 150 euros of materials: a bit of plastic, a few batteries and open-access Arduino printed circuits, myosensory sensors and two servomotors for scale models. Not forgetting... fishing line! An emblematic project of the maker movement, which wants to give power back to the consumer, the hand is called InMoov. But how can you not want to go further, to give a face and a body to your hands that come to life? "Making the first humanoid robot printed in three dimensions has become a goal," admits the creator who now leads a double life. At night, Gaël Langevin transforms into a modern Gepetto, father of a human-scale puppet that comes to life, responds to voice, speaks English, follows eye movements thanks to face tracking and two webcams. The robot is quite a handsome guy: an androgynous face and the build of an athlete, 1.85 meters when it has legs. Once equipped with a games console scanner, it can even record and reproduce a gesture on demand. Faithful to the community spirit of do-it-yourself, Gaël Langevin continues to post new elements for free download on the Net, under a non-commercial license. "We are no longer in fiction!" he assures. The time has come when everyone will have a robot at home. InMoov helps you understand how to do it." "Mutual aid." Making the humanoid yourself costs 750 euros. And it works. The black and white robot community has 600 members on all continents. More than 100 clones are already being made on laboratory benches around the world and in the homes of passionate fathers. English researcher John Murray, from the University of Lincoln, uses InMoov to study the interactions between humans and the robots that will share our lives in the future and their ability to help the elderly or the mentally handicapped. At the Daejeon Aerospace Center in South Korea, InMoov takes part in simulations. In 2013, in Utrecht, in the Netherlands, it was the star of the world's largest gathering of 3D printers that competed to make the robot in a day. In France, schoolchildren print their hands during technology classes. Gaël Langevin is convinced: "Mutual aid can make us go further. I sincerely believe in this utopian world where sharing allows us to live without selling. So, I give all my free time to this robot that learns to make robots and that, what's more, can repair people!" But by donating his plastic puppet to the whole world, Gepetto Langevin also exposes it to bad encounters. Like the hero of Carlo Collodi's novel, wandering in the adventure between vice and virtue. Already, abroad, unscrupulous makers are reaping laurels for an artificial hand of which they are the craftsman but not the father. "When I let my Pinocchio loose in the wild, I always wonder if he will meet madmen, bad guys or the blue fairy. I hope it will be the fairy." CV 1964Born in Clichy-la-Garenne (Hauts-de-Seine) 1983Tulare Union School (California) 1984Guillaume Fouan's sculpture workshop 1986-1989 Creation of the Tomawak workshop 1991Creation of the company Factices 2012Creation of InMoov. Partnership with Wevolver for the sale of the Fingerstarter learning kit and fundraising to finalize the robot. Photo Rémy Artiges

## ###ARTICLE\_START### ID:2529

The famous Canadian-Hungarian performance artist Istvan Kantor (born in 1949), also known as Monty Cantsin - an "open" name that anyone can use as an open source -, gently vandalized the Jeff Koons retrospective at the Whitney Museum in New York on Wednesday. After drawing his favorite cross on the wall behind a Bibendum rabbit with spurts of blood, the founder of neoism wrote in marker "Monty Cantsin was here" before being taken away by the cops for mental evaluation at the nearest hospital. He still had time to have his photo taken to post it all on his Facebook account. In 2004, he had already tried to attack a Koons, but his greatest success was having deposited, in 1988, as part of this artistic "Blood Campaign", a few drops of his blood on Picasso's Young Girl in Front of a Mirror at MoMA. He has been strictly forbidden from entering the latter museum since then. On his website, Kantor complains about such distrust: "I give them wonderful gifts, but they don't seem to appreciate my generous gestures. They destroy my works and put me in prison. Despite everything, I am sure that one day they will understand and love me for what I have done."

## ###ARTICLE\_START### ID:2530

An ardent campaigner for the implementation of free software, Professor Daniel Pascot finds it "scandalous" that CEGEPs are relaying the promotion of Microsoft to their students. Mr. Pascot, who is a professor in the Department of Organizational Information Systems at Université Laval, is not surprised by the strategy adopted by the computer giant: "It's a bit like the drug dealer's strategy. They give you the product for free so that you can't do without it and, after that, you have to pay for it." He is rather offended by the step that colleges have just taken. "That CEGEPs are relaying the promotion of a supplier is unacceptable, it's a scandal," he says. The president of the Association for the Development of Technology in Education, Pierre Cohen-Bacrie, is more nuanced, even though his organization aims to develop free software. He acknowledges that it can be "an interesting offer for students." But the most important thing is to know if CEGEPs will renew their Microsoft Campus license, which will expire next year in many institutions, he adds. This fall, the Association will send colleges a survey to find out what place they are prepared to give to free software.

## ###ARTICLE\_START### ID:2531

Microsoft is eyeing CEGEP students, who are returning to class tomorrow in several colleges. Thanks to an agreement with the college network, CEGEPs will offer Office suite software to their students for free this fall. In Quebec City, Cégep Limoilou is the first to follow suit. Microsoft has long been well-established in the province's CEGEPs, through the Microsoft Campus license, intended for educational institutions. However, a few months ago, Microsoft enhanced its offer, which now allows several CEGEPs to offer the multinational's services to their students for free. In the region, Cégep Limoilou has successfully set up the IT infrastructure required for the start of the school year. Starting this week, all their students will be able to use the Office 365 suite for free, worth about $100, which they will have access to from any workstation (in the cloud version) using a password provided by the CEGEP. Online storage space of one terabyte is also offered, again for free. "The other CEGEPs should all follow suit, we were just a little faster than the others," says Russel Pearson, director of information systems and technologies at Cégep Limoilou. He acknowledges that this is "clearly" a marketing operation on the part of the multinational "that smells of competition with the Googles of this world." But he is also pleased with the advantages that will be offered to students. "For us, it's a milestone. Once we've improved our offer, we never back down. We can expect competitors to offer more too." This agreement with Microsoft was negotiated through Vitrine technologique, a non-profit organization that manages group purchases for the college network. However, it was impossible last week to find out how many CEGEPs are offering Microsoft products to their students for the start of the school year, but Cégep Ahuntsic in Montreal has been doing so since last year, says Christophe Reverd, a technopedagogical advisor at Vitrine technologique. The "rebel" But not all CEGEPs have the same approach. Cégep de Rimouski, for example, is considered "the rebel among rebels," since it has chosen to massively opt for free software, says Mr. Reverd. The shift began a few years ago, when the Cégep had to renew its Microsoft licenses, which would have cost it about $100,000. The institution therefore turned to free software, which is accessible free of charge. Unlike proprietary software, their source codes are public, which allows everyone to improve them. Currently, 85% of the software used by employees and students is free software, says Claire Bérubé, spokesperson for the Cégep de Rimouski. However, the Fédération des cégeps says that Microsoft software responds to a reality in the job market. "Employers tell us they want us to train students on PCs," says spokesperson Judith Lussier.

## ###ARTICLE\_START### ID:2532

The paths to freedom, some software has been treading them since the mid-80s. Little by little, discreetly, they have imposed themselves in most of the cogs of modern computing. To learn about them, nothing could be simpler: open a Web browser (Firefox preferably, for the purposes of the exercise), use your favorite search engine, type "logiciellibre", then click on the first link that appears. In four steps, you are about to learn more about the subject and, above all, you are now a seasoned user of free software (read opposite). Just for these manipulations, dozens of them have come into action. Non-exhaustive list: Firefox, the search engine computers most likely run under GNU-Linux, and the information is sent by Apache; security is managed by OpenSSL; to display its results, Wikipedia (since it is the first result, as usual) uses MediaWiki, developed in PHP and which uses the MySQL database. And we will give you all the bits of code that are responsible for transporting data in the pipes of the global network. Serving the community The journey of free software began in 1980, at the Massachusetts Institute of Technology (MIT), near Boston, in the United States, where many stories begin when we talk about computing. Richard Stallman, a programmer at the artificial intelligence laboratory of the famous institute, has just sent about fifty pages to be printed on the department's brand new laser printer. But when he arrives, only four have come out, and they are not even his (1). This paper jam scourge! Stallman knows the problem well. A few years earlier, he modified the program of another printer so that it would warn users in the event of a jam, and he intends to do the same with this newcomer offered by Xerox. He then discovered that the company had not transmitted the source code of the printer driver. It was therefore impossible to improve it. Worse, when he asked another researcher, who he knew was close to Xerox, about the availability of the code, the latter refused to share it, because of a confidentiality agreement. For Stallman, this was a betrayal of the spirit of computer coders who, until then, had been ready to collaborate. This hitch was a trigger: to serve the community, software must be free. It must therefore be possible to distribute, modify and use it as one wishes and without constraint. He left MIT in 1984 to devote himself to the development of GNU, a free operating system (which would be combined with the Linux kernel a little later to result in GNU-Linux), founded the FreeSoftwareFoundation in 1985 and published in 1989 the first version of the GNU General Public License, which serves as a legal basis for the proliferation of free software. But while many programmers decided to follow Stallman in his long epic, the general public was light years away from these concerns. Indeed, when personal computers began to arrive in homes in the mid-90s, they were accompanied by tools from a firm that was almost a monopolist in the sector: Microsoft. And there is nothing less free than software stamped with the Redmond giant's logo. Windows, Word, Excel, Internet Explorer, all these programs function like black boxes, and their manufacturing secrets are inaccessible to their millions of users. At the end of the 90s, Alexis Kauffmann was one of them. "I didn't really ask myself any questions. And then one day I came across an article entitled "How to intelligently computerize schools?" The author talked about free software, and I discovered a world that went beyond computing. It was a system of collective and collaborative intelligence. Richard Stallman does not talk about technique, he talks about ethics. The free software movement is a social movement." Kauffmann then decided to devote his energy to making this movement known and helping other users to free themselves from proprietary software (or "proprietary", according to Stallman's terminology). He thus founded Framasoft, a site that references free software and which has become, over the years, an association managing a multitude of activities: publishing house (of books under free license, of course), online service provider (the collaborative publisher Framapad) or distributor of a USB key containing a multitude of software and books, as well as the entire French Wikipedia (Framakey). Tristan Nitot, for his part, could have fallen into the free software pot earlier: "In the mid-80s, before my baccalaureate, I had managed to embed myself in the premises of the World Center for Information Technology and Human Resources, a structure created by Jean-Jacques Servan-Schreiber. I would hang out on computers day and night, and I ran into Stallman several times. I even used Emacs, the text editor he had developed. But, well, I didn't really know who he was. I understood much later." In the 90s, Nitot joined Netscape, at the time the browser competing with Internet Explorer. But, in 1998, unable to resist Microsoft's browser (free and installed by default with Windows), Netscape decided to make its Communicator free and to release the source code under a free license. This was the beginning of the great Mozilla project, which resulted in 2004 in the release of the Firefox browser, one of the first free software to massively reach the general public. "The incredible thing about Firefox is the collaborative work on a global scale. The power of free software is being able to change the world thanks to the collaborative production of non-market wealth. And, above all, we serve a single entity: the end user. That's who we want to set free." "Freeing ourselves from Google" This attention to the user is also what motivates Jean-Baptiste Kempf, who has been working on VLC, the famous video player represented by a construction cone, since 2005: "It may be a bit utopian and ridiculous, but above all we want to create cool stuff for people." Since the mid-90s and the beginnings of the project at the Ecole Centrale Paris, more than 700 people have participated in the development of this software capable of playing any video format. With more than 1.3 billion downloads, VLC has established itself among the general public. A satisfaction for Kempf, who nevertheless regrets that most users are unaware of its free aspect: "VLC is considered normal by a majority. By default, they have the cone on their desktop, but they don't understand that one of the features of VLC is precisely to be free: we don't spy on them, we don't watch what they do. Today, it's just as important as the rest." At the beginning of August, Firefox overtook Internet Explorer in terms of the number of users in France. VLC has become essential. LibreOffice allows you to do without Microsoft's office suite, and even video games are starting to become compatible with GNU-Linux, thanks in particular to the Steam platform. However, it's not time to celebrate within the community. "The cloud and mobility have turned everything upside down in a very short time," warns Alexis Kauffmann. Faced with the massive adoption of Google services, data collection by Facebook, mobile apps and all these systems that seek to lock users in, free software is no longer enough. We now need to teach Internet users to free themselves from Google." Tristan Nitot makes the same observation: "The keystone of our movement is user freedom, and this freedom has never been so threatened. We have changed paradigms: today, the free software community must tackle head-on the issue of decentralization of the Web. We have freed software, and we must continue to do so. But we must also free the servers and the data that are in them." (1) "Richard Stallman and the Free Software Revolution" by Sam Williams, ed. Eyrolles. Available on Framabook.org

## ###ARTICLE\_START### ID:2533

One of the particularities of the GNU General Public License (otherwise known by its English acronym GNU GPL), developed by Richard Stallman and the FreeSoftwareFoundation (FSF), is to rely on the restrictive laws of copyright to establish the rules ensuring the respect of the principles of free software. The GNU GPL establishes four freedoms that guarantee rights on computer programs: - The freedom to run the program as you wish, for any purpose (freedom 0). - The freedom to study the functioning of the program and to modify it so that it performs your computing tasks as you wish (freedom 1). Access to the source code is a necessary condition. - The freedom to redistribute copies, thus to help your neighbor (freedom 2). - The freedom to distribute copies of your modified versions to others (freedom 3). By doing this, you give the whole community a possibility to benefit from your changes. The GNU GPL, created in 1989, and now in its third version, is far from being the only license guaranteeing freedoms of use and sharing. One of the most popular today is Creative Commons (CC), initiated among others by the activist academic Lawrence Lessig, in 2002. This license can apply to all kinds of content (work, software, text, etc.). It guarantees the right to distribute freely, outside of any commercial use, but the creator can, thanks to variants, authorize a more or less broad use of his work. CCs became known in particular thanks to the photo sharing site Flickr. Wikipedia now uses the CC BY-SA license, which requires citing the source and sharing any modification under the same conditions.

## ###ARTICLE\_START### ID:2534

While Europe, particularly France, is implementing solutions with free software at all levels of public administration, Quebec is circling the issue in multiple debates. In this line of thought, the Salon du logiciellibre du Québec, which will be held in September at Espace Dalhousie in Quebec City, hopes to relaunch these debates among decision-makers and information technology managers in government and municipal administrations with star speakers such as Colonel Xavier Guimard of the French Gendarmerie and Gunnar Hellekson of Red Hat, who should mix up concepts and dispel prejudices. "Mr. Guimard led the migration of the 90,000 workstations of the French Gendarmerie to free software, while Mr. Hellekson acts as chief strategist for the public sector," says the organizers of the show. Times are changing, but not quickly enough for free software supporters. For them, action must be taken to follow the movement launched in Europe. And this is true even though the Quebec government passed a law in 2011 to allow free software to be evaluated on an equal footing with proprietary solutions such as Oracle or Microsoft systems. In 2013, the Centre d’expertise en logiciellibre was created to document what is available in the world of free software and to provide tools to study the possibilities with free software more seriously. Free software, say its defenders, is not the solution to all ills. What is needed first is a reflection on the organization of technologies, on management models, says Patrice Caron, who has believed in free software for years and is an integration architecture consultant at Linagora Canada. “We don’t manage information technologies as if we were building a bridge,” he continues. “It’s not the same management model.” In his opinion, we make the mistake of buying technology to manage a set of needs by focusing on objects to organize the business plan instead of focusing on the heart of the organization, on the mission, not on the furniture. One of the striking examples has just arrived. Microsoft is abandoning support for its Windows XP operating system. Several organizations have had to migrate to another system from the American giant that is not always compatible with the tools in place. In a typical organization, administrative staff could use an operating system from the free software world without difficulty for current operations. Specialists will need something else. "Software is convenience, not an end in itself," adds Mr. Caron. "Training will be necessary, as in any migration. Training will have a cost, but free software will not entail the same expenses as purchasing proprietary software that cannot be modified according to needs with on-site staff." Not a fad In a world where mobile devices are beginning a cycle of domination, we must think about the interoperability of systems. So, do not lock yourself into a single model. Free software is one of the means, and it is not a fad, especially since a large majority of software created by user communities has reached great maturity, he likes to repeat. What has value in an organization or a company is not the software or the computers, but the information that is processed. For him, by thinking outside the box, solutions appear. "We go further than open source [software], he maintains, it is open innovation, or distributed innovation, as the inventor of electric cars Tesla does. We manage complexity with innovation, like Facebook with its Cassandra database, which can manage several tens of terabytes of data per hour without failing. Digital strategy goes beyond an operating system or closed software." Mr. Caron gives the example of the city of Arles (population 50,000), in France, which revised its plans to develop a Web-oriented architecture. The savings were 788,000 euros ($1,144,500) in expenses and a decrease of 55,000 euros ($79,900) in maintenance costs. He also talks about the French project of ADULLACT (Association of developers and users of free software for administrations and local authorities), which has made the pooling of projects the spearhead to reduce the dependence of municipal organizations on proprietary software with solutions from the world of free software. In France, the debates have long since ended; it is the solutions that are being implemented. The September conference will report on this while the debates continue on this side of the Atlantic.

## ###ARTICLE\_START### ID:2535

A SIMPLE SEARCH ENGINE ten years ago, Google has since multiplied its services and become an almost essential player on the Internet. From Gmail to YouTube, including Google Drive and Google Maps, the services and applications developed by the Mountain View (California) firm have become part of the daily lives of Internet users, to the point of forming an ecosystem that is difficult to escape once "connected". The NSA wiretapping scandal, which highlighted the responsibility of web giants in communicating collected data to American intelligence, has helped to change minds. An "anti-Google" lobby is developing, not only to protest against its data collection and targeted advertising policy, but also to promote alternatives to a system deemed hegemonic. In a call for testimonials launched on Lemonde.fr, Internet users shared their solutions and little tips for doing without Google on a daily basis, while admitting that the strategy, time-consuming, tedious and sometimes costly, had its limits. The first and most obvious tactic is to use IT products that are independent of each other: this involves getting out of the Google+ platform connection system to choose tools that are not linked to each other and limit data collection and aggregation. "The principle is simple," summarizes Jean-Baptiste B., project manager, "to avoid as much as possible that everything happens on a single system." Opensource The first step is to use alternative search engines: whether they develop their own algorithms, or whether they take the results from Chrome but without associating advertising or collecting data. These engines, such as DuckDuckGo, Startpage or the small French Qwant, in fact assure that they do not "track" the searches carried out. To get around Gmail and other "proprietary" email services, self-hosting is the preferred method for the geekiest: "My emails are now stored on a server that I administer myself," explains Loan, a high school student, with an address in "@myname.fr"." If you want to benefit from the performance of Google Chrome, extensions that block ads (like AdBlock) or disable tracking tools (Disconnect) are a good solution. Many of these tools are based on open source, participatory, scalable and often freely available codes. One of them, OpenStreetMap, is regularly cited as the best alternative to Google Maps, and even praised as "much more precise and efficient" by a convinced reader. Another example, cited by Eric J., student and webmaster: "The free solution Piwik", which allows him to replace Google Analytics "to obtain statistics of visits to my sites". Independence has a price To replace Google Drive in cloud data storage (cloud computing), HubiC, Dropbox and OneDrive are among the most frequently mentioned tools: "There is a considerable choice in this area", underlines Cédric M. But the offer is often paid for... Independence and the absence of advertising do indeed have a price, and even if it does not seem high, service by service, it is sometimes difficult to swallow for those who are used to "everything free" online. "It is a useful investment, believes Pierre D., IT specialist. Given the services that can be dematerialized today (taxes, EDF, insurance, etc.), I think that paying one euro per month is a reasonable investment for an ad-free messaging service that centralizes so much information." "I switched to FastMail, an offer at 40 euros per year, qualifies Henry K., student. After two or three months, I went back to Google's paid "pro" offer. "Because Google did not wait for criticism to offer a premium offer to customers most concerned about respecting confidentiality and thus remain in the field of vision of those who continue to think that the firm, despite all its faults, offers the most efficient and easiest to use products. Mathieu H., a student, mentions in this regard his "attempts" to get out of the system which brought him "their share of frustrations": "It is clear that I have become accustomed to the comfort provided by Google services (...), abandoning them represents a daily effort that I am not capable of making."

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## ###ARTICLE\_START### ID:2537

For nearly a week, a Twitter account has been making it possible to track changes made by federal government employees to pages on the online encyclopedia Wikipedia. "I am a software that tweets anonymous edits made from IP addresses of the Government of Canada, the House of Commons and the Department of National Defence," says the Government of Canada Edits account, created on July 9. Since its creation, the automated account has broadcast a few dozen edits made to the English-language pages of Conservative politicians, such as MP Dean Del Mastro and Minister Shelly Glover. The pages of the Canadian Museum of History and military aircraft have also been touched up. Some changes are minor, others more bizarre. In the case of Minister Glover, a sentence was removed from a paragraph explaining why Elections Canada requested her suspension in 2013. Other pages have been modified more substantially. In Senator Pierre-Hugues Boisvenu's office, an entire paragraph concerning an ethics complaint against the senator in June 2013 was removed yesterday. "We have no idea who did it. We don't know about it, and neither does the senator. He didn't ask anyone for anything," assures Flore Lambelin, from Senator Boisvenu's office. The paragraph was resubmitted by another Internet user, with an IP address not linked to the government, about ten minutes later. This is not the first time that anonymous modifications have been made to the Wikipedia pages of certain Conservative senators and ministers. An article from the media outlet VICE reveals that, on June 10, 2013, an IP address from the House of Commons removed an entire section from Pamela Wallin's page about the controversy related to the senator's expenses. The creator of the Twitter account, Nick Ruest, is a librarian who works at the digital archives at York University in Toronto. He says he was inspired by similar accounts that broadcast edits made by the British Parliament and the U.S. Congress, which were created on July 8 and 9. The account is linked to open-source software and automatically broadcasts changes to the online encyclopedia's pages as they occur. "There's no specific intent or purpose," Ruest says, explaining the purpose of the Twitter account. "It's an example of what you can do with public data. It's to inform citizens." In recent days, accounts that list edits to Wikipedia pages from IP addresses associated with governments have been growing in number, thanks to the work of users in Finland, Sweden, France, Australia and Germany, among others. Ruest says he's received a lot of positive feedback from Canadian users. "If members of the general public have more information and want to share it, they are invited to do so," he says. For example, he invites citizens to send IP addresses associated with other ministries.

## ###ARTICLE\_START### ID:2538

1-THE ABYSSAL WEB In April, Ogden joked on Twitter that Alaclair Ensemble's new album was now available, but only on the "deep web", the far reaches of the internet that are not accessible from traditional search engines. The community went hunting. Faced with the craze, the group took advantage of this budding buzz. At the end of a treasure hunt in the abysses of the web, punctuated by traps and dead ends, Internet users were finally able to hear songs from Toute est impossible. But be careful, the "deep web" is hostile territory, and the pieces were deliberately "sabotaged". A few seconds of hope passed, then a shrill noise spoiled the listening experience. More on that later... http://alaclair.com/deep-web 2-OPERATION IKEA In June, Alaclair Ensemble announced that it had been the victim of a leak. Their new album was apparently pirated by unscrupulous Swedes. Maybe and Ogden brave the bridges of the Montreal suburbs to knock on the doors of the real embassies of Scandinavia: IKEA stores. Internet users can follow the adventures of the vigilantes through a photo novel. They manage to recover the album in Boucherville, but - of course - in pieces. Instructions in hand, fans must download the a capella and instrumental versions from the Alaclair website and reconstruct the original songs themselves using free software. "An invitation to remixes," notes Maybe. "And a way to introduce people to our editing tools, to have them participate in the creation," adds Ogden. http://alaclair.com/enter-the-36-pictures 3-THE SOCIAL "IMMEDIATES" Few groups can boast of taking advantage of social media as much as Alaclair Ensemble does. "We take the tools that life gives us and we use them in a very personal way," Maybe explains. The connection the band has established with a community of Internet users facilitates spontaneity. "Record companies are in a logistics that doesn't fit us; we have a way of thinking and doing that finds more answers in social media," Ogden says. It takes two to rock, and fans don't hesitate to play along: one of them created an Instagram account to show the adventures of a garden gnome who allegedly ran away from the launch of Alaclair to try a solo career. http://ink361.com/app/users/ig-1 414 886 333/lenaindalaclairencavale/photos 4-FREE ALBUM "If I make a living from my music, it's because it's free," says Ogden, who recently began a conference on Alaclair's business model with this observation. Not selling their albums has become "a dogma" for the collective, which, before its success, distributed the noted 4.99 on the street. On the other hand, the group accepts donations in exchange for downloading Toute est impossible. "But above all, with our projects, the minces (a catch-all nickname in Alaclair jargon) give us time, and time is money," says Maybe. Time to put on plays, try to solve puzzles and exchange on the internet, a way to solidify the loyalty of the public. http://alaclairensemble.bandcamp.com/album/toute-est-impossible 5-PUTTING ON STAGE Anyone who knows Alaclair will tell you: it's in a show that their universe takes on its full meaning. All the energy put into this "anti-marketing" made of crazy ideas and impulses culminates on stage. "While some may think that we're on an insider's trip, in a show, they see that our music isn't off-putting and that all the flourishes bring us back to it," Maybe assures us. But if creation reaches its climax in concert, it's also at this stage that Alaclair Ensemble's business plan becomes viable. Thus, with a little money in their pocket, its members will be able to perpetuate their slightly offbeat world on a fourth album and, why not, a tenth? http://alaclair.com/calendrier

## ###ARTICLE\_START### ID:2539

Grenoble Envoyée spéciale - He could have done without the controversy. On Monday, July 7, Eric Piolle was accused by the local UMP for his links with Raise Partner, a company that the new Green mayor of Grenoble co-founded in 2001. The company, where his wife works, manufactures software "for risk management, digital optimization and portfolio organization." The "Friends of Alain Carignon," the former RPR mayor of Grenoble convicted of corruption, accuse this company of selling its services to clients based in tax havens, including Guernsey and the Cayman Islands. Attacks taken up by the PS, also in opposition. "There is a gap between Piolle's speech, which made the fight against tax havens a priority, and reality," criticizes Jérôme Safar, a former PS deputy and now municipal councilor. Mr. Piolle, whose declaration of assets published during the campaign mentioned that he held 0.5% of Raise Partner, claims that this is not about tax optimization but "tax regulation." "The aim is to measure the risk to avoid speculation," he adds. As for the company's clients, "they are banks, some of which have subsidiaries in tax havens." The elected official also specifies that he has no intention of selling his shares. "I take responsibility for it, it's part of my history," he emphasizes. "I got involved to renovate the system from the inside: this was true for Raise Partner as well as for Hewlett-Packard or my entry into political life." Around him, his team is united. "This is nonsense!" replies his first assistant from the Left Party (PG), Elisa Martin. "All this has been known for a long time. The question is: why is it coming out now?" » On March 30, at the head of an atypical list bringing together Europe Ecologie-Les Verts, the PG but also citizens' groups, the former executive of HP was elected to everyone's surprise against Mr. Safar, runner-up to the outgoing mayor Michel Destot, in place since 1995. A fragile group but which has passed the first stages. "We have gone from protest to proposal and then to implementation", rejoices Raymond Avrillier, member of ADES, an environmental association and backbone of the rally around Eric Piolle. The pressure is high. Embodying the slogan so hammered home during the campaign of "doing politics differently" cannot be improvised and the new mayor is moving forward cautiously. Even before the controversy over Raise Partner, a touch of humor the day after his victory had served as a lesson to him. Asked about his desire to dismantle the video surveillance cameras, Eric Piolle replied that he wanted to "sell them to Christian Estrosi", the UMP mayor of Nice, before backpedaling in the face of the interest of certain right-wing elected officials in his proposal. In Grenoble, we no longer talk about the deputy for security but about "public tranquility", an elected official is dedicated to "open data and free software" and municipal council meetings are broadcast live on the town hall website. During the first of these, the elected officials' allowances were reduced by 25% for a gain estimated by the city at 300,000 euros per year. Eric Piolle's priorities? "Participatory democracy, schools and urban renewal." This response does not satisfy his socialist predecessor. "We are more in the realm of announcement and communication than in projection," criticizes Michel Destot. "We lack clarity, vision and organization. » At the end of June, the municipal council adopted a modification of the local urban plan to reduce the height of buildings, tighten energy efficiency standards and ban telephone antennas around schools and daycare centers. "We are trying to repair what has been done: we are taking back the foundations to then build the house," explains Elisa Martin. The elimination of a flagship project of the former municipality, the renovation of the Esplanade district, was also voted. Enough to make the socialists jump, although they were in a bad way after their defeat in March. "In their new project, the environmentalists are maintaining a car park and an urban boulevard with more than 20,000 cars per day," denounces Mr. Destot. "We are rubbing our eyes!" In addition to a start-up that is inherently delicate for a new municipality, another difficulty has been added. With the PS refusing to merge in the second round, many candidates from Mr. Piolle's list, who had simply come to lend a hand, were unexpectedly elected and discovered how a town hall works. Coming from a citizens' collective, Alain Denoyelle, a lecturer in electrochemistry, was thus propelled to the position of assistant for social affairs, at the head of one of the largest municipal social action centers (CCAS) in France. "I learn on the job by using a lot of the staff's skills," he says. Eric Piolle advised everyone to keep a professional activity, even if reduced. "It allows you to stay fresh and energetic to free yourself from the heaviness of the system," he assures. This did not prevent the criticism from piling up. "They were not prepared to manage the city," judges Olivier Noblecourt, PS municipal councilor. There is a legitimate period of adaptation but things need to become clearer." The socialists did not appreciate the criticism of the 2014 budget, while the next municipal council must vote on an extension to cover, according to the majority, a gap of 14 million euros. "This shows a lack of understanding of how a municipality works: in one year, things change," Mr. Destot defends himself. When they have experience, they will reconsider their initial naivety." The attack does not seem to affect Eric Piolle. "Every day, we discover commitments that were not budgeted, including 6 million for personnel alone," the mayor asserts. "That is where the amateurism lies."

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Switching to free software, abolishing a large part of the telephone lines, focusing on wireless Internet: experiencing a significant technological delay, the City of Montreal is undertaking a major clean-up of the tools used by its employees. At the beginning of the year, the metropolis analyzed all the technological tools used by its employees. The computers are modern, but not the software they use, summarizes Harout Chitilian, elected official responsible for information technology in Montreal. "If one thing has been done well in recent years, they have renewed the hardware almost religiously. You will not find a 486 or Pentium 1 in the City," says the elected official, referring to computers from the early 90s. However, many of the software programs are outdated. The main operating system used by the City's computers is Windows XP, for which Microsoft stopped providing technical support in April. The migration to Windows 7 will take about a year, for a bill of about $7 million. By focusing on free software and streamlining phone lines, the city hopes to save at least $1.5 million per year. Outdated browser City of Montreal employees use an outdated browser, Internet Explorer 7. It should be noted that Microsoft is on the 11th version of its browser. According to Net Applications, less than 0.7% of Internet users still use IE7. However, several City applications are optimized for this outdated browser. As a result, many Internet users, particularly Apple users, can often experience difficulties with the City's website. "This is not normal," acknowledges Harout Chitilian. Montreal is considering the possibility of using multiple browsers, such as Google Chrome or Firefox. In Canada, the Google Chrome browser is the most widely used (33%), followed by Internet Explorer (24% for all versions) and Safari (15%), according to StatCounter. Pruning in software Montreal civil servants will have to give up their games. During its audits, Montreal identified no fewer than 2,311 software programs (16,000 including the various versions) on its employees' computers. Of these, 945 programs had no connection with their work, including games. The City now wants to reduce the number of programs on its computers to 300 in order to facilitate the management of its computer equipment. Indeed, the Auditor General of Montreal noted in his most recent report significant gaps in the management of licenses. In recent years, the City has received three unexpected invoices totaling $2.7 million for its use of unlicensed software. From Office to free software Montreal employees still use version 2003 of Microsoft Office, a software suite that has not received technical support since last April. The City of Montreal has given up on the idea of equipping its computers with the most recent version of this suite, believing that it no longer meets its needs. The metropolis is juggling three scenarios, focusing on free software and cloud services, i.e. those offered online. The city estimates that it would cost nearly $11 million to rely entirely on free software, mainly to convert files. Montreal has not yet determined how much it could cost to rely on cloud software. Slack in the "hard lines" At least 3,200 Montreal employees have both a landline and a cell phone. The city estimates that 80 to 90% could do without their hard line. "We see a strong trend where people have a landline, but don't use it. The decision seems pretty obvious to us to rationalize the number of lines," says Harout Chitilian. Montreal estimates that it will be able to save $3 million over 5 years, with each landline costing $207 annually. At the same time, Montreal also wants to convince the 3,000 employees who are still using "old" telephone lines to switch to IP technology. These new lines cost $8 per month, compared to $25 to $28 for the old ones, a potential saving of more than $600,000 per year. Towards a wireless Montreal The City of Montreal wants to switch to wireless to stay connected in its buildings. Currently, Telus manages the metropolis' "wired" network that allows computers to be connected. The City estimates that it could do without its 18,000 access points by relying on wireless terminals. However, Montreal will have to better secure its network, warned the Auditor General in his recent report. Of the eight buildings audited, two had open networks, without any security, which represents a "high" risk. The Auditor even discovered a "hidden" terminal whose installer could not be determined. Bring your own tablet Montreal is considering allowing its employees to use their personal devices at work. In its report, the city notes the "increasingly widespread practice of using personal equipment (laptops, tablets) in a professional context," which English speakers have dubbed Bring Your Own Device. "We're not there yet, but we need to think about it, especially for security reasons. Between an SME and the city, there are about twenty thousand employees of difference," says Harout Chitilian.

## ###ARTICLE\_START### ID:2542

Simple: go to Framapad.org and click on the big "Create a pad" button. A basic but well-stocked word processing interface is then displayed. The special feature of this software is that you just have to send the URL address of the document to a contact so that they can join you there to also work on it, in real time. And the number of simultaneous collaborators authorized is unlimited. Can we make it a real competitor to Google Docs (or Google Drive, according to its new name)? This is more or less the ambition of Framasoft, the French association that develops this tool. It is currently organizing a crowdfunding campaign to raise 10,000 euros and offer it new features. "It will look even more like Google Docs," says Framasoft founder Alexis Kauffmann. "But the message is that we must all take care of this free software that allows us to decentralize the Web and no longer be dependent on Google and Co."

## ###ARTICLE\_START### ID:2543

In my firmament of Quebec builders who do not seek the neon lights of celebrity, Monique Savoie is in the top 5. Halfway between Jeanne Mance and Calamity Jane, this pioneer acts by thinking freely and never takes life for what it seems to offer. She visualizes in 3D and the expression "Think outside the box" was invented for her. "I like the shop but not the base," she simply admits. Capable of administering a budget of five to seven million dollars and 256 salaried employees per year without a secretary, the founding president of the SAT (Society for Arts and Technology) also rubs shoulders with the stars of her Satosphère, a planetarium with an artistic rather than scientific mission, located on the Main. A great Montrealer A great Montrealer of the caliber of Phyllis Lambert of the CCA, Phoebe Greenberg of the Phi Centre or Nathalie Bondil of the MBA, we can guess that she is a nonconformist and rebel. Monique comes to us from the audiovisual sector, from the Festival de théâtre des Amériques, and she already had one foot in digital, at a time when people were still betting on the future of the CD. "The cultural community wasn't interested in that. Civil servants asked me if it wasn't a fad that was going to pass... Plus, a girl who tried to make them understand the new Klondike didn't go down very well," summarizes this visionary. Today, 23,000 members subscribe to her newsletter and she negotiates as much with the banker in a tie as with the tattooed geek, a cap askew over his piercing. New technologies don't scare her, nor does innovation, alliances between science and art seem natural to her. She locates her satospheric conference and research center somewhere between the university nursery and the productive greenhouse of industry. In this talent incubator, a "higher school for the tinkerers of the future", cross-pollination is practiced on an international scale, open source, living lab, open playground, open architecture, name it, we are open. The future is now This charismatic leader, both firmly established in her convictions and fly enough to espouse others, is also an administrator at the Corporation de développement du Faubourg Saint-Laurent and at Techno Montréal. The SAT does not just broadcast, it trains gray matter and encourages vocations from elementary school onwards. "Our next generation is in the strollers!" Her VJing, DJing, and video game creation day camp for young people aged 10 to 17 (a huge success) began in July and the president could no longer contain herself: "I can't work when they're here! I find it so exciting. I'm trying to make them authors, not just consumers." She has even agreed to alliances with the CSDM to combat school dropout with her innovative programs that excite the youngest child sitting at the back of the class. The Satosphère is the dome that tops the SAT building, wedged between the homeless and streetwalkers. It is one of the achievements that crown 18 years (adulthood) of this well-kept secret in Montreal but visited by 125 foreign delegations per year. "The idea of the rotunda is not new, the public was already going to the one in Saint-Anne-de-Beaupré, one of the first places where people who could not travel paid to see the horizon. The "physicality" of the experience is important to us. The sound (157 speakers) touches the bones and the image occupies a 210-degree screen that reaches the ground. And we can create on the dome screen in real time," explains Monique Savoie, whose mentors are the architect Buckminster Fuller, the philosopher Marshall McLuhan and the ecologist Pierre Dansereau. She considers them the fathers of digital culture. The morning of my visit, I attend the dress rehearsal of a conference by the Californian artist in residence, David McConville, on the beginning of the universe via NASA's digital atlas supported by the philosophy of the architect of the Biosphere, Richard Buckminster Fuller. The absolutely fascinating conference of the president of the Buckminster Fuller Institute will be relayed that same evening, from dome to dome, with the Morrision Planetarium of the California Academy of Sciences in San Francisco, despite a three-hour time difference. I took a trippy cosmic journey, lying on sausages on the ground and without smoking any illegal substances. Senses awakened The boomers had their Osstidcho and their Woodstock, generations C, Y and Z have their SAT which offers them a very 21st century multisensory experience, a Food Lab (excellent canteen on the roof), a conference and premiere room with bar, unique visual and auditory experiences, a living laboratory, a Sensorium. "We have a politicized clientele, the 20-30s, who have global concerns. There is work to be done to make ourselves known but we also protect a great freedom", summarizes the one who only gets 7% of her funding from grants. The rest is the festivals (MUTEK had a blast at the SAT for 15 years), the 5 à tard, the launches, the first posh events, the think tanks, the partnerships and the Satosphère that bring water to the mill. Over the next few months, Monique is working with David McConville, Héritage Montréal and other partners such as the chief scientist, Rémi Quirion, on the future of the Biosphère, "this gift that has never been understood", which she compares to our Montreal Eiffel Tower. This think tank is trying to give a new purpose to the geoscope designed by Buckminster Fuller for Expo 67 and which belongs to the City of Montreal. The jargon? "Positive contamination", "inclusive playground", "future of the planet", "interdisciplinary". "We would like to make it the flagship of future design at the international level and connect all the domes of the planet together," says Monique Savoie, always at the service of artists whom she tries to bring closer to decision-making powers. Despite everything. "An artist is a researcher. What lights him up is an intuition, a vision. I try to make this vision visible." I have just introduced an artist to you. Note that every Tuesday (for the past eight years), you can attend urban cinema under the stars at Place de la Paix, in front of the SAT, from 9 p.m. to 11 p.m., until September 16. Free admission. The event is presented at the SAT in case of rain. Very eclectic and interesting programming, you can count on them. Before, we will have a drink and Turkish mezzés at the Food Lab (the current theme) and it is a perfect evening a stone's throw from the south gate of the Quartier des spectacles. sat.qc.ca/fr/peacepark. Loved the Satosphère and its comfortable cushions where you can soar your spirit by escaping into the firmament or geometric shapes. Quantum and Nimbes are on display until June 27, "proposing a digital singularity caused by the collision of quark-pixels, elementary particles constituting the imaginary of great theories of physics and the cosmos." Understand who can, and it is not necessary to understand, by the way. You can also have fun starting at 5 p.m. by reconstructing the Turcot interchange in 3D, in an unprecedented interactive architectural installation. sat.qc.ca/fr/programmation/tous. JOBLOG Resurrection and parsley juice First of all, thank you for the flowers (I prefer to receive them while I am still alive), the chocolate, the sweet words, the many tips, the recipes and the affectionate thoughts. You have been generous and many of you have shown yourselves. Following last week's Zeitgeist, some thought I was dying. Let me say it another way: I'm stopping a pre-vent-i-ve chemo that was killing me off while I was cured. I've been on fire since I've been going to hospitals less and I'm still pestering my B to stop putting his elbows on the table. Poor little guy. Pray for him instead. I've started using all sorts of potions that I'll tell you about again one day. In the meantime, this one, quite refreshing, guaranteed good breath and to which I've converted my less-than-new husband, Guy Corneau's parsley juice (Revivre!): half a bunch of parsley with a handful of alfalfa or sprouts, half an organic lemon squeezed and its zest, a piece of grated ginger, half a liter of white grape juice (I cut it with water because it's sweet). Blend it all together and enjoy. It's good for everything, even heat waves. Parsley is a well-known anti-inflammatory. And since I get inflamed easily...

## ###ARTICLE\_START### ID:2544

Tesla Motors, the pioneer of electric cars, will let everyone use its patented technologies, even its competitors. “We will not sue anyone who, in good faith, wants to use our technology,” wrote Elon Musk, Tesla’s chairman and founder, on his blog. The charismatic industrialist explains that he is giving up his patents in part to accelerate the development and progress of electric cars, which remain a marginal product, with less than 1% of global car sales. “Tesla Motors was created to accelerate the advent of sustainable transportation. If we lead the way in creating irresistible electric cars, but then lay a minefield of patents behind us to block the path for others, we are acting contrary to our goal.” In short, Mr. Musk has decided that he no longer sees other electric cars as competition. The competition, the enemy to be defeated, is the gasoline or diesel car. He is betting that making Tesla's electric technology public and putting its patents in "open source" will increase the chances of success of the electric car. He says that his original vision of patents was wrong. When Tesla was born, his fear was that big manufacturers would copy its technology, then crush the small company "using the overwhelming power of their production capacities and their sales and marketing forces." But that was a mistake, he was totally wrong, he adds. In fact, the only automotive Goliath interested in the 100% electric niche is the Renault-Nissan Alliance, with the Nissan Leaf and the Renault Zoé. The others have invested in hybrid but have put most of their gigantic resources into improving traditional technologies. Tesla's challenge is therefore to bring the all-electric car out of its elitist marginality and encourage the proliferation of other popular cars like the Leaf, the Zoe and the future $30,000 Tesla sedan capable of driving 500 km in one go. Basically, Elon Musk is not risking much: if Tesla goes bankrupt, his hundreds of patents are worthless. But if the big manufacturers use them now, they are helping to make the electric car an increasingly ordinary car, which ordinary people will stop seeing as an eccentricity of the rich.

## ###ARTICLE\_START### ID:2545

First airplanes, first automobile, first bicycles... the great French innovations of the 19th century that are exhibited at the Musée des arts et métiers must coexist with some new competitors. Tabby, one of the first "open-source" cars, 100% buildable by its buyer, or television screens with Li-Fi connection - powered by an LED source at the top of the screen - are accessible free of charge to the general public during the Futur en Seine digital festival, the fifth edition of which was held at the Gaîté Lyrique and the Musée et conservatoire national des arts et métiers (CNAM) from June 12 to 15, in Paris. At the Gaîté Lyrique, opened in 2011, video games, applications and education are the focus. There, we test the Oculus Rift virtual reality headset, "serious games" - games with educational virtues - such as Fireman VR, which puts the player in the shoes of a firefighter, or OFabulis, a treasure hunt to discover the monuments of France. At the CNAM, founded two hundred and twenty years ago, start-ups rub shoulders with large groups such as Orange or Dassault. A clever mix of generations of entrepreneurs, where students from a computer science school talk with Cédric Tournay, the CEO of Dailymotion, or with Tim Berners-Lee, one of the founders of the Web. "This exchange between generations of entrepreneurs and creators is quite new in France," says Jean-Louis Fréchin, curator of Futur en Seine, who draws inspiration from universal exhibitions for the festival. Futur en Seine also organizes debates on the major challenges of innovation: teaching computer code, processing personal data, digital and democracy... Bringing back a bit of culture For Stéphane Distinguin, president of Cap Digital, which organizes the festival, Futur en Seine must "rematerialize digital." "The problem today is that the general public does not know what we - entrepreneurs and creators - do" in innovation. "Digital, which is by definition an economy of contribution, must be done by several and together," says Mr. Distinguin. This "made with", which gave its name to the edition, brings together more than 150 schools, laboratories, industrial groups and start-ups, and should welcome up to 50,000 visitors over the four days. "I want to bring back a bit of culture into this business" of innovation, says Mr. Fréchin. "Optimism, too. In digital more than anything, we must teach generations to talk to each other." Considered the largest digital festival in Europe, Futur en Seine, which Mr. Fréchin sees as a "digital marketplace," is associated with the French Tech label, which also organizes Startup Assembly in June, an open house operation for start-ups throughout France from June 12 to 14, and events until the end of the month. Elian Peltier

## ###ARTICLE\_START### ID:2546

After the Heartbleed flaw, detected in April in the OpenSSL library, an open-source (i.e. free and participatory) code for protecting data on the Internet used by a large number of sites around the world, six new vulnerabilities were discovered in April and May by a Japanese researcher, and made public on Thursday, June 5 by the OpenSSL Foundation. According to the organization, the bug is of the "man in the middle" type, meaning that it weakens a connection between two devices (a computer and a server) encrypted using an OpenSSL tool and can allow a malicious person to intercept an exchange between the two. Typically, the "at-risk" configuration is that of an individual connecting to a public Internet point, for example on the Wi-Fi of an airport. For the conversation between the two devices to be "readable", however, both ends of the chain must be vulnerable, so the required configuration is very specific. This flaw should be much less dangerous for Internet users than Heartbleed, which has been silently raging for more than two years in the OpenSSL library. "At present, no exploit code has been made public, which limits the risks," explains Paul-Henri Huckel, head of monitoring and incident response at Lexsi, "not everyone has control over the flaw." The solution to both flaws is the same: companies using the library must correct the code on their servers, then ask users to perform a system update. Beyond the fact that the person who made the coding error that caused this flaw could also be the author of the Heartbleed bug, the most surprising thing is that this vulnerability has remained undetected for so long: it has been present since the launch of OpenSSL... in the late 1990s. The OpenSSL protocol, collaborative and typical of the open Internet, does not have any more flaws than "proprietary" IT tools. On the contrary, its defenders believe, the fact that any engineer can enter the platform and work on it allows for a permanent verification of the efficiency and security of the tools offered. And the certification of IT solutions does not ultimately depend on whether they were designed as an open tool or as proprietary software. "If the flaw is exploitable, that does not mean that it will be exploited," Paul-Henri Huckel also emphasizes. And the multiplication of discoveries of this type is not significant of a degradation of the quality of the OpenSSL library. "On the contrary," replies Paul-Henri Huckel, "we risk discovering others, because Heartbleed has encouraged IT specialists to look for other weaknesses in the library." "This is a good thing," he adds, "the discovery of small errors represents a guarantee of transparency and reliability for open source codes. » These are widely used worldwide, including by very large companies, and yet the OpenSSL Foundation's budget is ridiculous: a few thousand dollars in donations each year, and only a handful of volunteers. In the wake of the Heartbleed "scandal", large OpenSSL user groups have pledged money to a support fund launched by the Linux Foundation, a pioneer in free software. The goal of this fund: to give free software players the means to respond to the increase in traffic and data on the Internet. Open source is not subject to an external regulator, and relies on the mass of its voluntary contributors to exercise a form of self-regulation. However, commercial standards apply when a company uses the OpenSSL library: it commits in particular to leaving the software free and open, and not to appropriate it.

## ###ARTICLE\_START### ID:2547

After the Heartbleed flaw, detected in April in the OpenSSL library, an open-source (i.e. free and participatory) code for protecting data on the Internet used by a large number of sites around the world, six new vulnerabilities were discovered in April and May by a Japanese researcher, and made public on Thursday, June 5 by the OpenSSL Foundation. According to the organization, the bug is of the "man in the middle" type, meaning that it weakens a connection between two devices (a computer and a server) encrypted using an OpenSSL tool and can allow a malicious person to intercept an exchange between the two. Typically, the "at-risk" configuration is that of an individual connecting to a public Internet point, for example on the Wi-Fi of an airport. For the conversation between the two devices to be "readable", however, both ends of the chain must be vulnerable, so the required configuration is very specific. This flaw should be much less dangerous for Internet users than Heartbleed, which has been silently raging for more than two years in the OpenSSL library. "At present, no exploit code has been made public, which limits the risks," explains Paul-Henri Huckel, head of monitoring and incident response at Lexsi, "not everyone has control over the flaw." The solution to both flaws is the same: companies using the library must correct the code on their servers, then ask users to perform a system update. Beyond the fact that the person who made the coding error that caused this flaw could also be the author of the Heartbleed bug, the most surprising thing is that this vulnerability has remained undetected for so long: it has been present since the launch of OpenSSL... in the late 1990s. The OpenSSL protocol, collaborative and typical of the open Internet, does not have any more flaws than "proprietary" IT tools. On the contrary, its defenders believe, the fact that any engineer can enter the platform and work on it allows for a permanent verification of the efficiency and security of the tools offered. And the certification of IT solutions does not ultimately depend on whether they were designed as an open tool or as proprietary software. "If the flaw is exploitable, that does not mean that it will be exploited," Paul-Henri Huckel also emphasizes. And the multiplication of discoveries of this type is not significant of a degradation of the quality of the OpenSSL library. "On the contrary," replies Paul-Henri Huckel, "we risk discovering others, because Heartbleed has encouraged IT specialists to look for other weaknesses in the library." "This is a good thing," he adds, "the discovery of small errors represents a guarantee of transparency and reliability for open source codes. » These are widely used worldwide, including by very large companies, and yet the OpenSSL Foundation's budget is ridiculous: a few thousand dollars in donations each year, and only a handful of volunteers. In the wake of the Heartbleed "scandal", large OpenSSL user groups have pledged money to a support fund launched by the Linux Foundation, a pioneer in free software. The goal of this fund: to give free software players the means to respond to the increase in traffic and data on the Internet. Open source is not subject to an external regulator, and relies on the mass of its voluntary contributors to exercise a form of self-regulation. However, commercial standards apply when a company uses the OpenSSL library: it commits in particular to leaving the software free and open, and not to appropriate it.

## ###ARTICLE\_START### ID:2548

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They thought they had protected themselves from the "Hollande blues", the bitterness that gripped the PS candidate's close associates after his installation at the Elysée, forced to share their traveling companion with the greatest number. However, nine weeks after Manuel Valls' arrival at Matignon, it is indeed a form of acidity that we sense emerging among certain socialists in the first circle. "Today, it's funny, everyone is close to the Prime Minister", smiles a member of the first hour of the "very small Valls enterprise". Because beyond this base of half a dozen loyalists who have lunch at Matignon once a fortnight, there are many who are trying to unite around the Prime Minister. From the reformers' pole - around twenty deputies who came out of the woodwork on the evening of the European elections to support the "reformist" line of the head of government in the face of criticism from the left wing - to a part of the socialist "swamp", these parliamentarians who make up the bulk of the group in the Assembly without being the loudest. Garrison. "We must never forget that there are still 244 [deputies] who voted for the responsibility pact", they are constantly reminded at Matignon, while the 41 rebels hold the upper hand in the media spotlight. "What do you want, strength goes to strength", theorizes a close friend of Valls when questioned about the growing garrison of the Prime Minister. Given the rupture between the French and François Hollande, which the polls confirm one after the other, "even for unconvinced deputies, Manuel Valls appears as the lifeline", says Parisian elected official Christophe Caresche, a member of the reformers. At the risk of fueling the (unbalanced) popularity match between the two heads of the executive and of maintaining the idea of a Valls alternative as early as 2017... Around the Prime Minister, we sensed the danger. "Manuel will not be Chirac's Balladur, it's not in his DNA," one of his close associates strongly assures. "It's anything but a movement that needs to be built," insists Yves Colmou, his political advisor. "We need to mobilize people of all persuasions who want it to succeed." "That," understand François Hollande's five-year term. "Around Manuel, it's a free software type organization, everyone can add their touch," relates Vallsist senator Luc Carvounas. Who hastens to add: "All we ask is to support the Prime Minister's policy, which is that of the President." Protests of loyalty that do not prevent organization: before the end of June, Valls will return to Vauvert, in Camargue, for a "meeting, but not a party" with his supporters. Like the one that caused so much ink to flow last summer. Hubbub. At Matignon, the leader of the majority chairs increasingly eclectic weekly lunches, on Tuesdays or Wednesdays, bringing together a dozen parliamentarians, from all denominations. In particular, signatories of the Appeal of the Hundred PS Deputies, who want to reorient the government's line. In short, "not just people who kiss," summarizes Carlos da Silva, spokesperson for the PS and one of Valls' main transmission belts in the Assembly. With Jean-Jacques Urvoas, the chairman of the Law Commission, Christophe Borgel, a former close friend of DSK before being a linchpin of Aubry's campaign during the primary, or Pascal Popelin, MP for Seine-Saint-Denis, who spoke for Matignon on penal reform in committee last week. Despite the double electoral disavowal in the spring and at a time when some are calling for a shift to the left, Valls, who until then embodied a social liberalism that was not very unifying, continues to pick up points with socialist sympathisers. Far from his outbursts against the 35-hour week or on social VAT and from his republican preserve at Place Beauvau, Valls signed a decree pouring out "economic patriotism" in bronze, announced gestures for small pensions, then tax cuts for the most modest households. "Valls is the bodyguard: he manages order and PR, and that's not bad, but the driver of social change is Hollande," says a leading member of the majority. This week, the Prime Minister did slip in that he was in favor of stripping criminals of their nationality and on Thursday considered punishing the mere fact of wanting to go and wage jihad abroad. But in the hubbub of territorial reform, then the commemorations of the Landings, his martial declarations have gone rather unnoticed. Unlike his flights of fancy on the air of loyalty to the head of state, at the risk of overdoing it a bit and implicitly highlighting the latter's weakness. "That's because Manuel continues to be very high in the polls," explains a Dutch minister, a smirk on his lips. "But it will get better..."

## ###ARTICLE\_START### ID:2550

On Friday, in the presidential Falcon that is taking him to Rodez to inaugurate the Soulages museum, François Hollande is deep in discussion with Michel Rocard. And what are they talking about? The deleterious political climate? This cursed couple president-prime minister, condemned, by the Fifth Republic, to leave or kill each other? The Figaro poll that confirms the popularity gap between the two heads of the executive among left-wing sympathizers? No, Michel Rocard is developing two of his hobbyhorses: global warming and free software. And it does the head of state good. Hollande would like to turn the page on this political-media week that has drummed on the mode of his (already) impossible candidacy in 2017. To tell himself that, no, nothing is lost yet, "since three years is still a long time", as his entourage repeats over and over again. And to prepare for this crucial week that is coming. Since Hollande will be everywhere, in a big way and live. On Sunday, he was the first to react to the arrest of the suspect in the Brussels massacre (see pages 2-4). On Tuesday, he will announce the outlines of his territorial reform, based on 12 super-regions. On Wednesday, the President will be in Brussels for a G7 devoted to Ukraine. On Thursday, after welcoming the Queen of England, he will receive Barack Obama at the Elysée, then Vladimir Putin. And on Friday, surrounded by 17 heads of state and government, he will be live on television for almost ten hours for the commemoration of the 70th anniversary of the Normandy landings. It could look like a kind of grand finale. Or a double or quits in order to get the President out of the trenches of discredit and unpopularity. "It's shit." At the Elysée, no one is trying to pretend anymore. Or to downplay the seriousness of the situation. The only recourse is understatement. "I'm not going to tell you that the mood is cheerful," confesses one of the head of state's collaborators. "The situation is politically dangerous," says another. All this to avoid saying what a third advisor blurts out as obvious: "It's shit." The economy is desperately at a standstill, consumption is falling, unemployment is on the rise again. "The government should think about whether an increase in VAT has consequences on the level of activity," denounces a heavyweight in the majority. But, at the Elysée, there is no question of self-criticism or a change of direction. Hollande has already thrown his dice: his "responsibility pact," his 50 billion euros in savings over three years and his billion in tax cuts for low-income households. "Companies are about to receive the CICE [competitiveness and employment tax credit, editor's note] check, it's normal that our policy has not yet produced results," argues one advisor. All that remains is to rely on international growth that seems to be fleeing France. "If the economic situation in 2014 does not really improve, I do not feel it at all for 2017," sighs a close friend. Never has the President's close entourage appeared so helpless. Without a compass or ammunition. The worst thing is that Hollande does not have many mitigating circumstances. While growth has picked up strongly in Germany, reinforcing Angela Merkel and her coalition, in Italy, Matteo Renzi has demonstrated that a policy of center-left reforms can win elections. "He is the one who embodies today the hope of a reorientation of Europe and no longer Hollande," sighs a PS MP. "mending". In this depressed context, talking about the possibility of a rebound would be inappropriate. To sum up the state of mind at the Château, a Hollande collaborator takes the time to tell this story. In 1983, at his lowest in the polls, François Mitterrand is said to have asked his ministers to suggest an idea to get him back on track. After an unsuccessful round table, Jack Lang said: "Mr. President, you should walk on water." That is the scale of the task facing François Hollande today: learn to walk on water. And quickly. "If he steps back, he disappears. He is much too weak to play the scarcity card," maintains a close friend. So the head of state multiplies the small steps towards the French. "There is some mending work to be done," admits an advisor. Hollande invites himself to Clairefontaine to the Blues, decides to open the gardens of the Elysée every Sunday and the gates of Fort Brégançon all summer long. It is anecdotal. But on the scale of defiance. "The head of state will devote more time to his relationship with the French people," they say at the Elysée. With a new modus operandi: create the element of surprise. To prevent the various oppositions from having time to organize themselves on the ground. The presidential weekly agenda was only made public on Sunday. A first.

## ###ARTICLE\_START### ID:2551

FACED WITH EDWARD SNOWDEN'S REVELATIONS ON THE INDISCRETION OF HIS FORMER BOSSES, CITIZENS ARE NOTING THE IMPORTANT ISSUE OF PROTECTING BOTH THE INTEGRITY AND CONFIDENTIALITY OF THEIR COMMUNICATIONS. SOLUTIONS EXIST, BUT THEY STILL HAVE A LOT TO DO BEFORE THEY CAN BE APPEAL TO THE GENERAL PUBLIC. UNFORTUNATELY. I have always thought that a simple technological response to a much more complex problem that is the issue of communications security and data protection was simplistic, if not useless. However, for several months, I have believed that citizens and also journalists must respond head-on and publicly with the technological tools at their disposal to guarantee their correspondents (and their sources) total confidentiality. DATA ENCRYPTION SOLUTIONS According to Wikipedia, "encryption is a cryptographic process by which one wishes to make it impossible for anyone who does not have the decryption key to understand a document or email". In short, an encryption tool allows you to protect both the contents of your hard drive and all communications that may come from a source. A few old farts who, like me, have been surfing the networks for ages, had clearly seen the day coming when PGP and encryption would be issues for citizens and journalists. DO YOU KNOW PGP? Pretty Good Privacy is "cryptographic encryption and decryption software, created by the American Phil Zimmermann in 1991. PGP guarantees confidentiality and authentication for data communication". There are commercial versions of PGP (which I tend to trust less) and open-source versions, therefore verified and validated by peers. The only problem with PGP and most encryption products? A user interface that turns off even the most experienced users. So imagine what it's like for ordinary users. Once the learning curve is tamed, however, encryption tools will prove to be the "best friends" of citizens who want to protect both the contents of their computers and ensure the confidentiality of their emails. Some will argue that putting these powerful encryption tools in the hands of the mafia or terrorist organizations will make police investigations difficult, if not impossible. Zimmerman's response: "If privacy is outlawed, only outlaws will have privacy. Intelligence agencies have access to good cryptographic tools. So do arms and drug traffickers. But ordinary people and political organizations have never had access to affordable "military-grade" cryptographic technologies. Until now." Let's face it, for both citizens and journalists, the time for recreation and naivety is now over. That said, let's not be naive: it will take some time for the use of PGP and encryption tools to find their place in the toolbox of citizens and journalists. But it would be foolish not to take an interest in it today. And eventually, I would not be surprised to see citizens and journalists publish, along with their profile, their public key allowing a correspondent concerned about their anonymity to send them encrypted messages.

## ###ARTICLE\_START### ID:2552

When he's stuck in São Paulo's endless traffic jams, Antonio kills time in his own way. This consultant in his forties grabs his smartphone to go on his favorite social networks. "I don't post much, but I like to read and like posts," he confides. His "friends"? Antonio has more than... 400 on Facebook. "I accept everyone so as not to make myself unfriendly," he admits. Brazilian cordiality is not an empty phrase. Like Antonio, Brazilians are addicted to social networks. A godsend for the latter, still banned in China and faced with the saturation of so-called mature markets (Europe, the United States and Japan). Here, their growth is dazzling even if 100 million inhabitants (nearly half the population) still do not have access to the Web. And like everywhere else, it is the mobile Internet that is growing the fastest: 68 smartphones were sold per minute last year in Brazil and, by 2017, 70.5 million Brazilians are expected to have this sesame to access the global network. Now, one in two Brazilian Internet users is on Facebook. In less than three years, the local audience of Mark Zuckerberg's network (52 million daily users in Brazil) has become one of the five largest in the world. The same goes for the microblogging site Twitter, where millions of fans of football and TV stars flock. On YouTube, it is comedians who are the hits. Google's video channel has its largest number of users outside the United States. As a result, Lulu, the app that lets you rate men, has chosen Brazil for its first international foray. In the two weeks following its Brazilian launch in late 2013, Lulu was downloaded 5 million times... before being suspended, after poorly rated men sued for invasion of privacy. When it comes to social networks, Brazilians are early adopters. In this vast, self-centered country, people are hungry for trends and openness. The democratization of the Internet is at the heart of this craze. Marked by deep inequalities, Brazil has embarked on a proactive policy to reduce the digital divide, which dates back to the 1990s. Under former President Lula (2003-2010), the state reduced taxes on computers and offered credit. Sales exploded, while 40 million people were lifted out of poverty. "Cybernetic favela" But, as researcher Raquel Recuero explains, the real turning point in digital inclusion came with the obscure Orkut. Launched in 2004, this Google social network, named after the Turkish geek who invented it, never really took off in the United States. Here, however, it has become a cultural phenomenon. "Young people went online just to access it, while internet points were opening in deprived suburbs," Recuero continues. Brazilians colonized Orkut, becoming the world's first users. Google transferred management of the network to its local subsidiary. But for the pioneers, the arrival of the poor on Orkut made it a "cybernetic favela." Brazil is therefore abandoning Google's social network and migrating massively to Facebook, which had struggled to establish itself until now and is now threatened in turn with... "orkutization". This term that has entered the language designates popularization, a pejorative notion for local elites. Brazilians devote more than a third of their monthly time spent on the Internet to social networks, a world record. "It's a way of spreading gossip," laughs Nelson, an architect. He is crazy about Instagram, the photo-sharing app. "I go there all day long, to see what others have posted." Sometimes even with one eye glued to the TV, "during the advert". This phenomenon is becoming more and more widespread. And that I tweet about the latest twist in a telenovela. And that I post a photo of my wedding dress or my new car while watching the news... On Instagram, many don't even block access to their page. Brazilians are extroverts. The kind who tell their life story to their neighbor on the bus. And then, "we like to flaunt our success," notes Raquel Recuero. In June 2013, social networks took to the streets. It was Facebook that sparked the social revolt against corruption and the dilapidated state of public services. In a country with little politicization, young people were introduced to civic participation. The other side of the coin is the escalation of violence. The number of pages reported for racist, homophobic or crime-inciting content has tripled in three years. A Facebook page is even said to have been behind the lynching, earlier this month, of a woman accused of black magic by Internet users. President Dilma Rousseff, for her part, can pride herself on being at the head of a country at the forefront of the fight for new digital rights. The State was the first to adopt a sort of Internet constitution at the end of April. Entitled Marco civil da Internet, this innovative text engraves strong principles in the law: protection of personal data, net neutrality, impossibility of blocking content without a court order... A digital habeas corpus wanted by Dilma Rousseff in the wake of Edward Snowden's revelations about the NSA's wiretapping of her communications and those of her entourage. However, the law was stripped of one of its key provisions: while the government initially wanted all data collected in the country to be hosted in Brazil, the latter will be able to continue to be stored outside the country, i.e. in the United States in the case of internet giants like Google, Facebook and others. Very costly and complex - or even unfeasible according to some - this project of total digital sovereignty over data has certainly been abandoned, but not the one to achieve a "de-Americanization" of internet governance. American counter-model A diplomatic battle led by Brazil that gave rise, at the end of April in São Paulo, to an international summit on the future of the management of the global network. Named Netmundial, in a nod to the Football World Cup, this gathering attended by representatives of 90 countries was an opportunity for President Rousseff to recall that "the Internet we want is only possible within the framework of respect for human rights, in particular freedom and privacy." In a country that very early on became interested in free software in order to limit its technological dependence on American giants, this summit was an opportunity for Brazil to position itself as a counter-model for Internet governance that is dreamed of here as more democratic, transparent and respectful of cultural diversity. In its final resolution, the participants condemned spying on the Web and demanded that the surveillance of personal data be punished by law. The document, however, fails to mention the principle of Internet neutrality, which is nevertheless enshrined in the Marco Civil. Like Chile, which initiated a start-up program in 2010, the Brazilian government has also recently launched a policy of active support for innovation and its young shoots. The Start-up Brasil program was launched in 2012 with public grants (200,000 reals, or 65,000 euros) for the 100 most promising projects. In order to allow Brazilian start-ups to benefit from the experience of more advanced countries in this area, the government has even reserved a quarter of this program for foreign companies. "Infancy stage" These innovative companies are multiplying everywhere, in São Paulo, Rio, or even further north in Recife, where the abandoned port has been converted into a digital district called Porto Digital. From music to mobile payment systems, from crowdfunding platforms to online education, a key market for the country's development, they work in all areas. They are deployed even in the favelas where start-up weekends are organized (more than 600 to date), to develop in a very short time an innovative business project supported by its inhabitants. Created in 2011 by a network of entrepreneurs, the Brazilian Association of Start-ups (ABStartups) lists 2,633 companies, and this number continues to grow despite a glaring shortage of qualified labor which constitutes the main obstacle to the development of a "digital ecosystem that is still in its infancy" as Diego Alvarez, founder of the educational site Easy Aula, recognizes. As elsewhere in the world, these young shoots are boosted by tax incentives and benefit from administrative facilities in a country known for its bureaucratic red tape. Setting up a business requires a minimum of two months, not to mention that they are subject to "an incalculable number of taxes," explains a local incubator. In order to accelerate the movement, the Senate voted in October on a text providing for a tax exemption for these young digital companies still in development and whose quarterly turnover does not exceed 22,000 euros. Emblematic of this new wave, the carioca incubator 21 212 (21 for the Rio telephone indicator, 212 for that of New York where it opened an office) has already incubated, since its creation in 2011, no less than 37 young shoots, including Queremos ("We want!"). Specializing in the organization of concerts pre-financed by fans who are reimbursed in the event of cancellation, this concept has been exported to the United States under the We Demand brand, based in New York. The beginning of a Brazilian touch of the Internet?

## ###ARTICLE\_START### ID:2553

The New Weathermen, a radical group on the border between activism and environmental crime, rejects bioconservatives, supporters of degrowth and a return to nature, as well as technoprogressives, who imagine solving problems with ever more technology. Their manifesto calls for moving forward ("there is no pristine nature to return to"), for doing away with the precautionary principle, for abolishing intellectual property on living things and for conserving all species and genomes, while "creating new ones as much as possible". Their weapon is not the bomb, but synthetic biology. Their inspiration: the biopunk movement and the vindictive hydra Anonymous. Code names for the actions: #Pirate Pollen Club, which consists of scattering open-source seeds of a genetically modified, pesticide-resistant weed on golf courses and manicured lawns; with #PalmOPS, they tackle palm plantations responsible for deforestation by designing a lipase inhibitor that makes it impossible to digest palm oil; and #Bioccupy Diesel aims to sabotage the use of diesel by optimizing a diesel bacteria. The New Weathermen currently only exists as fiction, imagined by David Benqué. Intentionally provocative and ambiguous, it is presented in the exhibition Blue Prints for the Unknown at V2\_ in Rotterdam, on the occasion of the Deaf festival, among a set of scenarios that question the impact of synthetic biology and the risks associated with the engineering of life.

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How far can you go in making a pact with the enemy to avoid losing your market share? This is the dilemma Firefox is facing. The red fox browser will soon integrate a system for playing DRM-protected videos, which is essential to remain compatible with video-on-demand sites, but goes against its philosophy. DRwhat? DRM (Digital Rights Management) are technical measures for protecting music files, videos, games and digital books. They prevent the copying, the storage of files, and any circulation not desired by rights holders. It is massively used today on video-on-demand sites. Browsers today use Flash or Silverlight plug-ins to play DRM-protected videos, but tomorrow, they will have to manage them on their own, "natively", via the HTML5 programming language. This does not pose a problem for commercial players like Internet Explorer, Chrome or Safari, but Firefox wanted to oppose it. What is the problem? The little piece of code that will allow DRM to be processed in HTML5 is proprietary: only its creators know what's in it and to whom it will send their personal data, which they have secretly collected. The complete opposite of how Firefox works, a free software whose source code is open; everyone knows exactly what's under the hood. In order not to be the only idiot browser that won't work on Netflix, CanalPlay or Pluzz, Mozilla finally gave in and will integrate this system into a future version. So Mozilla is sold, and we're all lost? Many activists in the free software community have a hard time forgiving this decision. "If Mozilla accepts DRM, we've all lost," is the title of a text from the Electronic Frontier Foundation. But did Mozilla really have a choice? At most, the foundation can promise that the integration of the proprietary module will be painless. The proprietary module will be locked in a digital safe that will prevent any unauthorized data entry or exit. So, even without knowing what the module code (written by Adobe) actually contains, Mozilla ensures that only the audio and video streams will actually reach the user's browser... which competing browsers will not do.

## ###ARTICLE\_START### ID:2555

CHOOSING FREE MEANS ENCOURAGING A COMMUNITY, MANY OF WHOSE MEMBERS MAY BE CLOSE TO YOU, TO INVEST IN COMPUTING AND TECHNOLOGY THAT ARE AVAILABLE TO ALL. IT ALSO MEANS ALLOWING OUR PUBLIC INSTITUTIONS, GOVERNMENTS, ADMINISTRATIONS, NGOs AND SCHOOLS TO HAVE ACCESS TO FREE TOOLS, WHILE INVESTING IN LOCAL KNOWLEDGE. CHOOSING FREE MEANS VOTING. Surprised then that last week's very simple column earned me several emails, some saying they were happy that Le Journal was (finally) tackling free software head-on, while others criticized me for "still shoveling clouds". Those who know me know that free software has always been one of my major concerns. Yes, from a simple consumer point of view, it is always nice to have access to products that are freely available and free of charge. But, as a citizen, free software is also a powerful tool that would allow our institutions to achieve significant economies of scale, while promoting the development of local knowledge. Without even changing the operating system (no, Linux is out of the question today), an administration that uses Windows or Mac OS X or both could very well adopt free tools developed for these software platforms for a very large majority of workstations, if not almost all of them. In short, for zero cost, the Quebec government, which needs to recover billions of dollars, they say, could stop using proprietary software and switch to free software. Hundreds of millions in savings. No, don't thank me, it's in my nature, I'm like that, good, generous and cheap. In addition, local firms, whether small or large, could meet the needs of customization and adaptation of free tools. In short, local knowledge would be valued, we would employ local people, well-paid programmers, who incidentally pay their taxes here in Quebec. EQUAL PERFORMANCE And we must not forget that free tools are just as efficient as their proprietary counterparts. And many even work better. I call upon this monumental turd born GIRÈS, declined SAGIR and whose setbacks continue to be the daily life of my colleague Jean-Nicolas Blanchet. In addition, may I respectfully remind you that the "z'Interwebs" operate mainly thanks to free technologies? And that many of you use free software without really knowing it. That said, it is nevertheless true that for certain very specific professional uses, free software does not yet offer tools as efficient as proprietary software. Nobody is perfect.

## ###ARTICLE\_START### ID:2556

The Salon de Montrouge, directed since 2008 by the former gallery owner Stéphane Corréard, also a columnist for the monthly Next of Libération, is on the way to becoming the New Star of French contemporary art. Open to self-taught artists, to non-market artists, it has brought out talents such as Théo Mercier or Julien Salaud, guest of honor this year. Walking its aisles, we come across teenagers from Montrouge and collectors armed with luxury bags, all here to sniff the wind of the times. Among other discoveries this year, Florent Lagrange and his formidable installation of 2D and 3D prints, Open [source] Hearing (2014), Qingmei Yao and her video of a hilarious lawsuit brought against a drinks distributor, Virginie Gouband and her beautiful Light Sculptures (2013), and Louise Bossut, whose photographs (above: Brussels landscape, Forest park under the snow, 2010) recall the work of old masters. Salon de Montrouge, le Beffroi 2, place Emile-Cresp (92). Until May 28. Info: www.salondemontrouge.fr

## ###ARTICLE\_START### ID:2557

IT'S NOT ONLY IN PARLIAMENTS WHERE BIPARTISM IS NO LONGER THE NORM. MAC OS X, WINDOWS, SEE, BUT LINUX? SERIOUSLY, YOU'D BE SURPRISED AT THE ADVANCES ON THE FREE SIDE. COME ON, OUT WITH TECHNOLOGICAL BIPARTISM! As you know, I never talk about politics. Or very little. However, I will allow you to make this one comment, which is not intended to be editorial, and even less political: "No to political bipartisanship... and technological bipartisanship." The fact that only two platforms, Apple and Microsoft, are competing for consumers' favor excites me to the highest degree. In the same way that I appreciate, as a citizen, the interventions of third parties like QS or the CAQ. OPENNESS The world of technology needs a varied and open ecosystem. Far from the desire of certain companies to want to lock you at all costs into their ecosystem, more or less closed to competition. In short, openness is what free software offers to citizens. In addition to being able to extend the useful life of these computers, desktop or laptop, that we would be tempted to throw in the trash. And there is the price. Free is the best price I can give. Not to mention all these software programs that, by dint of being improved by the communities that run them, reach maturity. But first of all, let's prevent the blows that will undoubtedly come from those who use their machines and their software tools in a professional context: you are absolutely right, Linux is not yet made for you. Final Cut, Quark, In Design, etc.: these tools have no equivalent in the free world. Not yet. This column is not for you, by the way. LIKE A CHARM That said, when I think back to my first attempts at Linux in the late 1990s, we are far, very far from those first versions of Linux that required having your home geek nearby to install and configure your machine. I myself was at a loss. But today, installing new distributions (versions), with some exceptions, is a charm. Recently, I had fun testing several Linux distributions in order to see for myself where we were in terms of ease of installation, user-friendliness, software offerings and all that. Whether it was Linux Mint, Ubuntu, Open Suse and several others, honestly, there were very few problems to overcome. Everything or almost everything worked like a charm. And what's more, in order not to disorient the average user who is considering migrating to the free world, some distributions like PCLinuxOS do everything to look like Windows. The same goes for Pear OS or Elementary, which cannot deny their affiliation with the Mac OS X interface. And that's without counting specialized distributions like 64 Studio, ArtistX or Ubuntu Studio designed for creatives or SuperGamer for gamers. And SteamOS, which alone is worth a column. Curious? You should, although I can already hear several people protesting: "I'm willing to test it, but I don't want to destroy my current PC configuration if it doesn't work." Good news, almost all of these versions of Linux can boot and run directly from the CD or DVD. No files will be installed on your hard drive. So, give free software a try again, you have nothing to lose.

## ###ARTICLE\_START### ID:2558

On this Tuesday, May 6, 2014, International Day Against DRM, FACIL joins many citizens and organizations around the world to protest against the digital handcuffing technologies imposed on the public by the big players in the cultural and technology industries. Digital handcuffing? According to those who promote it, "digital rights management" (DRM) only serves to prevent unauthorized copying on the Internet. If that were all, perhaps there would be nothing to complain about, but that is unfortunately not the case. "Digital rights management" is a misleading term that actually refers to the management of digital restrictions, which the largest copyright holders impose on the public, with the complicity of the IT and online distribution sectors. These restrictions are managed through copy protection devices, license activation mechanisms, access control, incompatible file formats, watermarking, etc., which constitute nothing less than the digital handcuffing of computer users, who are all considered by default as delinquents ready to steal from rights holders. Installed on most of our digital devices, the so-called DRM restrictions are nothing more or less than anti-features whose purpose is to control, monitor and study our use of media, in defiance of our constitutional right to privacy. The defiance of a constitutional right would amply justify the fight against DRM, but there is more. In the zone controlled by DRM, legitimate uses of legally obtained copies of a work become extremely complicated or even impossible for most users. This is the case, for example, of transferring one's private digital media library from one's old to one's new device. The same goes for making a backup copy, converting media to other formats to move to another application, etc. Users often find themselves in a dead end, giving up and paying a second time for what they have already paid... But the height of it is probably that an action as harmless as lending a copy of a printed book or a music record to a friend, a relative or a neighbor, is now considered 'piracy' as soon as it involves the use of the Internet. We no longer sell copies, but restricted rights to read, listen to and view works. It is obvious that the means used by the industry to supposedly "prevent unauthorized copying" are anything but proportionate to the intended goal. The Future of Our Public Domain It is also obvious to many people that it is the financing of cultural production through the sale of copies or limited usage rights that must be questioned in the face of digital networks and not the very natural desire of humans to share with their fellow human beings. By circumventing the power of networked computers to multiply copies, we participate in the artificial creation of a scarcity that is harmful to our collective intelligence. This is curiously contrary to the spirit of copyright. Indeed, in the society that saw the emergence of this right, it was understood that mass reproduction could serve the common good. Theoretically, the more a book sold, the more copies were printed, the more affordable it was for the reading public. The more authors were read, the better they were paid. The more well-paid authors there were who were free to devote themselves to writing, the more the public domain was enriched with new works. In the digital society, the society of perfect and abundant copies, this system no longer works. The systematic ban on reproducing a work has the obvious consequence of slowing down its distribution to the public. Under the DRM restrictions, it is worse: sharing is a repressed behavior and the public domain is an enemy to be fought. However, in a world where the multiplication of copies would not be illegal by default and hindered by digital handcuffs, in a world where the enrichment of the public domain would always be on the agenda, there would still be a whole range of ways to finance the production of new works: bandwidth taxation, ticket sales, crowdfunding campaigns, public subsidies, more generous competition prizes, sale of derivative products, etc. We have known for a very long time that market logic necessarily confines Quebec culture to marginality, even on our territory. One wonders why we would want to cling to economic models that are based on this logic of the pre-digital era, when there are good reasons to believe that with imagination and work it would be possible to both better finance culture AND not take away from the public the means to freely access it via the Internet, even if only for non-commercial use. As all competent computer scientists will tell you: there is no better way to saturate the Internet with Quebec culture than to let people who love it share it without restriction. Isn't it time to seriously debate the advisability of legalizing sharing? In any case, while waiting for the major copyright reform that we need, several things can be done immediately by the public and authors to get us out of the DRM-controlled zone: - Prefer freedoms protected by free licenses (Creative Commons) for works - Prefer freedoms protected by free formats for digital publishing - Prefer freedoms protected by free software for your digital devices We also invite the public to consult the "DRM File" that we have set up in our wiki. \*\*\* FACIL's Board of Directors: Fabián Rodríguez, President; Antoine Beaupré, Vice-President; Éric Beaurivage, Secretary; Martin Chénier, Treasurer; Luis Molinié, Diane Mercier, Omar Bickell, Claude Coulombe, Mathieu Gauthier-Pilote, Frédéric Côté and Immanuel Guilea, administrators.

## ###ARTICLE\_START### ID:2559

Last week, a scathing article with Marxist overtones appeared in English: a full-scale denunciation of inequalities in the richest countries and their increase over the last thirty years. It states, for example, that over the last forty years, particularly in Anglo-Saxon countries, the richest 1% have "captured" a significant share of the additional wealth brought by economic growth: 20% in Australia and the United Kingdom, 37% in Canada and around 47% in the United States. It is therefore not surprising that a very large majority of the population has the impression that their income is stagnating: this corresponds to the reality of the facts, with only the very rich becoming even richer. This alarming observation on the evolution of social cohesion is not taken from Thomas Piketty's global bestseller, but from an 8-page note published by the OECD on May 1. The OECD, which brings together 34 of the most developed countries, is currently organizing several events around the theme of "a resilient economy for an inclusive society". The OECD is best known for its advocacy of the market economy. Never before has this club of rich countries looked so clearly at the evolution of inequalities within it. Why such an evolution? We know the parable of the street lamp: one night, a man is looking for his keys under the light of a street lamp; another passes by and asks him if that is where he lost them; the man replies that it is a hundred meters away, but that he is looking for them there because it is the only place with light... Economic analysis often proceeds like this: we are primarily interested in the questions best illuminated by the available statistical data. This shortcoming reinforces the interest in adopting a complementary logic: looking for the data that will allow us to address the most relevant questions. And new technologies make it possible to multiply the impact of original databases. Thus, the OECD note presents an analysis of the evolution of high incomes based on original data, collected by many researchers and made available to all, free of charge, on the site Topincomes.parisschoolofeconomics.eu. This approach of general opening of data is booming, particularly with regard to public statistics, through Data.gouv.fr. These statistics do not respect borders and can be used by researchers or citizens of any country: this public good is global. On this scale, such an approach is new. It can feed economic policy debates with figures and nourish counter-powers, whether political, academic, or emanating from civil society. Obviously, nothing is self-evident. As for statistics on income, they come from a systematic exploitation of tax data, from income declarations. In many countries, the tax administration is very reluctant to transmit this data for statistical analysis, including to Parliament or other official bodies: knowledge is power. The fact remains that, in this sector as in so many others, the digitalization of the economy makes this movement inevitable. This is demonstrated, for example, by the recent online publication of the tax and social security contribution scales in France, some since 1914, carried out by the Institute of Public Policies (www.ipp.eu). Combined with the development (in open source, naturally) of simulation tools, these approaches will fuel countless analyses of public policies; these analyses will be contradictory, their conclusions will bear the trace of the ideological or moral convictions of their authors; but, based on validated figures, they will not be able to completely free themselves from a confrontation with the reality of social phenomena. The quality of the debate, and, who knows, of public policies themselves, can only benefit from it. However, this collaborative, often international work of data collection, and their formatting and online, is based on Benedictine work. However, unlike monks, researchers do not all work for the glory of God. In addition to the technical difficulties, this construction of street lamps often comes up against financing problems, according to methods that remain classic today: permanent jobs most often public, temporary recruitment authorized by project financing. Let us bet, however, that such a production of global public goods will be able to rely on new methods of financing, which remain to be invented... Pierre-Yves Geoffard is a professor at the Paris School of Economics and director of studies at the EHESS.

## ###ARTICLE\_START### ID:2560

In the collaborative economy family, they chose the commerce branch. But not just any. A commerce that "favors use over the object", according to the two founders of the company A little market, Nicolas Cohen and Nicolas Audriffet, who manage a community sales platform. Since Thursday, alongside other start-ups - pioneers of carpooling, couchsurfing, participatory finance or even digital manufacturing (open source and fab labs) -, they have been participating in the first week dedicated to the collaborative economy. Starting with the D system, this alternative model is "establishing itself as a new deal", according to "Ouishare", the network that organizes the event in Paris. To highlight this sector "which can no longer be ignored", workshops and conferences follow one another until May 7. The opportunity for the co-founders of A little market, "one of the rare players in the collaborative economy to encourage job creation in France", to make their voices heard. Federate. For them, it all started in 2008 with a meeting with an artisan who was looking to distribute his products. To help him, the two Nicolas, who were then running a business club, searched the Internet and discovered a whole community of French "makers" who, like him, were struggling to make themselves known. The idea of a marketplace dedicated to these creators took root in the minds of the two men who wanted to start a business, "but with meaning". Joined by Loïc Duvernay, in charge of technology and research and development (R&D), the team said that it was possible to "change the world" thanks to the Internet. "We are not anti-globalists," Nicolas Audriffet specifies, "but we are aiming for a fair rebalancing of relations between producers and consumers." Their goal? To unite these small entrepreneurs and creators scattered across France and make them visible to buyers who want to consume differently. "The community creates its ecosystem and frees itself from traditional players," rejoices the second Nicolas. Their model, "that of a more human economy," is simple: registration on the site is free, as is posting ads, and for each sale, A little market collects 5%. "The site's reputation reassures customers and for us, it facilitates the relationship," explains Christelle Chosson, who uses the site to promote her clothing brand, Louisa Bonheur. "Springboard." Profitable since the end of 2013, the start-up raised 500,000 euros in 2010, then tripled that in 2011. It now has 2 million creations for sale, for nearly 5,000 orders per day. Jewelry, clothing, decorations, small furniture: the products offered are homemade and "made in France." On the designer side? "Most of them are passionate amateurs, who aim to earn extra income, around 50 to 500 euros per month," comments Nicolas Cohen, "but some end up turning this hobby into their main activity." For some, it is "a springboard", an opportunity to bounce back. This is the case for Manon Bousquet, 36, who created her brand of decorative objects, Cosita Buena, while she was unemployed. "I was feeling down and "do it yourself" was my therapy," she explains. Today, she makes at least four sales per week, enough to earn a small salary. "Thanks to A little market, I can reach all the regions, even though I live in a small village near Montpellier." The same enthusiasm goes for Valérie de Rossi, who has been making leather bags for the past four years, which she sells under the La Baïta brand: "Thanks to the site, I have a reference that I would never have been able to have on my own." While most people start out without a status, "they quickly choose to be self-employed, or even a small business at a later stage," explains Nicolas Cohen. Djamel Mahour's company, M-decoindustriel, is one of the site's success stories. Made redundant in 2011, this "handyman at heart" started making furniture at the age of 50. "Three years later, with ten orders per month, our family business is doing well. We are now an SARL because we exceed the limits authorized by the self-employed status," says his wife, who manages the accounting. Not without pride, the former unemployed person turned business owner is going to hire his first employee. "We are proof that the collaborative economy can create jobs," emphasizes Nicolas Audriffet, the founder of A little market. To date, the site brings together 81,000 creators, "including around 3,000 who live solely from this activity, with a turnover of at least 10,000 euros per month," continues his sidekick. Building on this success, in 2011, the start-up expanded, creating a new branch, A little mercerie, then a second, last year, A little épicerie. "We want to become the largest factory in France," enthuses Nicolas Audriffet. The company, which works with Adie, a microcredit association and Kisskissbankbank, the crowdfunding platform, wants to support its creators on the financial side. And why not also help them find a place to work. "We would like to work with town halls that have unused premises," explains the entrepreneur. A kind of coworking for creators." A project is underway with a municipality. And in the capital? "In Paris, the spaces are much too elitist," Nicolas Cohen tackles. "We need to invent new solutions adapted to self-taught people." "Sharing." The "A little family" has also created jobs internally: around thirty permanent contracts, half of which are developers. The Parisian company is banking on an ambitious development plan. In France, "a leading country in the collaborative economy," the market is favorable. "One in two French people today consider that this model represents the future of the economy and commerce," explains Nicolas Audriffet, citing the results of a study that the start-up commissioned from Ifop. Normal: "The culture of sharing is in our DNA," he adds. A lucrative market that could attract large groups? "We need to clarify the definition of this sector, which is still unclear," Nicolas Cohen dodges the question, not worrying about the appetite of the giants: "Amazon, for example, doesn't know how to do what we do. They don't have that community spirit." "Neither philanthropists nor simple intermediaries," A Little Market wants to have an impact on its time. "Of course, we can always go further, with a collective shareholding model," Nicolas Cohen gets excited. Dare you? Cartoon Rocco

## ###ARTICLE\_START### ID:2561

Michel Bauwens, a Belgian thinker on the collaborative economy and peer-to-peer, created the P2P foundation, a think tank for alternative solutions. He now works for Ecuador and is preparing the country's transition to a "free and open knowledge society". From Quito, he analyses the effects of the collaborative wind blowing on the economy in France and around the world. What is the collaborative economy? It brings together three major models. First, the free knowledge economy, which became known with free software. Then, the sharing economy, which is based on the pooling of material resources and includes all the start-ups for rental and sale between individuals. Finally, "crowdsourcing", or open outsourcing, which is a type of collaborative work. Can it dethrone the traditional economy? The risk is real for traditional players. Every billion dollars invested in free software destroys, for example, 60 billion dollars in the traditional economy. Today, the old economy runs on intellectual property. But, as soon as it is eliminated, new start-ups become ultra-competitive. So will this destroy jobs? Start-ups can work with fewer employees. This can therefore result in an increase in unemployment, unless appropriate public policies are responsible for redirecting the resources freed up to other sectors. This is the whole issue of the policy of transition towards a society of the common good that we are implementing in Ecuador. The emergence of parallel economies can also create jobs. In Europe, a quarter of the workforce is self-employed, and they will be a third in 2020. Centralized capitalism is evolving towards a more distributive model. Should the sector be better regulated? This is one of the major issues. For many, regulation is necessary because new models endanger traditional activities, such as taxis, which are competing with Uber [a chauffeur-driven car service, editor's note], and hotels, which are competing with Airbnb. The problem is that start-ups refuse regulation; it's not in their software. Of course, we need to eliminate the abusive rules that protect monopolies. But can we really do without regulatory frameworks, even just in terms of safety and hygiene? Is France ahead? The community is very active in Paris, but the dynamism of the sector is based more on social movements than on real political will, as in Naples or Bologna in Italy, for example, which are examples.

## ###ARTICLE\_START### ID:2562

Proof by experimentation. At the end of a massive request for access to information held by some twenty ministries, the Association pour l'appropriation de l'informatique libre (FACIL) is categorical: "the Quebec state" is far from being "open" and, as a result, "there are still many barriers to be broken to free public information," summarizes the group, which has just openly released the results of its investigation. The operation was launched on February 21, the day before International Open Data Day. FACIL requested from the ministries of Transport, Culture, Health, Family, Justice and Education -- to name a few -- the "project reports" and "annual reports" that these organizations must now produce under a 2011 law on the governance and management of information resources of public bodies and government companies. Results? A quarter of the requests remained unanswered, while the others, the group summarizes, provided "insufficient" and not very "uniform" responses. This also highlighted the government's inability to manage massive requests for access to information and to respond to them in a coherent manner with digital files in so-called open formats, in order to facilitate subsequent analyses of this public information. "The new government must understand that the opening of data of public interest, the proactive disclosure of documents, in free access and in open formats, are all essential and necessary elements to realize the promise of transparency, participation and collaboration of "open government", summarizes FACIL on a site that details its efforts (wiki.facil.qc.ca/view/MDAI21FEV2014). Necessary reform These results are in line with those obtained by Le Devoir at the beginning of the year, and this, at the end of a massive test of the access to information law in several provincial public bodies. The lack of consistency in the responses, the blacking out of data that was supposed to be public and a transparency that varied greatly were then highlighted. Paradoxically, the ministries most affected by the "corruption affairs" -- Transport and Municipal Affairs -- turned out to be the least inclined to open up their public data. The day after his election, Philippe Couillard made transparency and openness in his government one of his priorities, promising nothing less than a reform of the Access to Information Act (LAI), a law that has been widely criticized for years by citizens and groups who use it to follow the activities of the State a little more closely. In light of the results of its investigation, the FACIL association also promises that it will keep an eye on this legislative overhaul.

## ###ARTICLE\_START### ID:2563

"I'll print dinner and let's eat!" This is the invitation that will soon be extended by fans of innovative gadgets who will "cook" with the Foodini 3D printer developed by the Barcelona-based start-up Natural Machines. Additive manufacturing processes have until now mainly used plastics, waxes and metal powders heated to high temperatures to be printed in layers. The cartridges of the Foodini printer contain food: pasta or sauces are extruded to create dishes, petits fours and other cakes with original shapes. Far-fetched? NASA has already validated the idea for its astronauts who demand pizzas. Professor Forgacs, from the University of Missouri, has just raised $350,000 (€253,000) for his research on printing steaks from beef cells grown in vitro. The objective: to feed a growing population and reduce the impact of livestock farming on the ecosystem. The technology is still emerging, but 3D printing has not finished surprising us. Serving the human kit While this concept is still fiction, printing living human cells is the daily life of Fabien Guillemot, a researcher at the Inserm bioengineering unit in Bordeaux. "Bioprinting helps fundamental research because it allows us to print the components of skin, cornea or bone tissue in high resolution and to experiment with their organisation in three dimensions, which is revolutionary. These synthetic tissues are used for tests in pharmacology, in the chemical industry and in cosmetology, where animal experimentation is now prohibited. Clinical applications for grafts on humans are possible within seven to ten years." Bioprinting carries with it some of the hopes of the "augmented human". It serves research against cancer, osteoporosis and reconstructive surgery. In the United States, morpho-adapted and biocompatible materials such as polymer have made it possible to replace 75% of a patient's skull and create a resorbable splint for an infant's trachea. "As for printing organs, it will take decades or will be impossible, due to the inability to reproduce their complex functions and vascularization," the researcher emphasizes. In the field of prosthetics, additive manufacturing also works miracles: for example, the exoskeleton equipped with hydraulic cylinders produced by 3D Systems makes Amanda walk, who became paraplegic after a skiing accident. The polyamide structure, less expensive, lighter and more comfortable, opens the way to mass customization. The technique is very advanced for dental and hearing prostheses: laboratories are pooling their investments in laser fusion printers (from 180,000 to 400,000 euros each). "3D printing is essential to the survival of the profession because it reduces material waste and lowers manufacturing costs. Production is accelerated, the finished product is of better quality, without additional cost to the patient, which makes it possible to compete with imports, which represent a quarter of the products put in the mouth," summarizes Sylvestre Nunes, digital consultant. The digital factory tool In industry, architecture, fashion, design, sports or the food industry, additive manufacturing has become a major asset. Prototyping is commonly done by specialists such as the American leaders 3D Systems, Stratasys and the French challenger Sculpteo or better, within the company itself, thus freeing it from back and forth with subcontractors often based in Asia. All-digital combined with the diversity of available materials allows for greater agility and boldness: wax, plastic, resin, metal, titanium, aluminum, ceramic, stone, paper, rubber, nylon, elastoplastic, corn starch, wood filaments and soon algae filaments make tangible, with extreme precision of reproduction, any digitized or scanned image, whatever its geometric complexity and above all, without assembly. "What is new is being able to design new shapes, with strong constraints of weight and qualities calculated by computer, that a designer would never have imagined," explains Frédéric Vacher, director of marketing strategy at Dassault Systèmes, a software publisher. The European Space Agency is testing the feasibility of a lunar base that could be printed with regolith, moon dust. An onboard printer will facilitate the repair of parts or the creation of tools. Sections of Airbus wings will be printed in tungsten without welding or bolts for greater lightness and kerosene savings. The innovations are countless: satellites, bodywork, electronic components, sports shoes... All power to the creator 3D printing simplifies production and reopens the way for local manufacturing. "It is an innovation accelerator for start-ups and creators," notes Clément Moreau, CEO of Sculpteo. Competitive for small and medium series, it also allows for the creation of unique pieces. In jewelry in particular: no stock, production to order, this is the secret of the success of the virtual jeweler Gemmyo. And why not furniture? On the collaborative platform TOG, you can already customize chairs or stools designed by creators, including Starck. Eventually, the designer plans to put the plans for some of his creations in open source. All that remains is to find the printer that is the right size! As for Google's future smartphone, "Ara", it will be modular thanks to its fully printed components. According to observers, sales of additive manufacturing products and services are in the billions. Experts anticipate an industrial and environmental impact comparable to that of computers and the Web. "We are at the beginning of the story," says Raphaël Gorgé, director of Prodways, the only French manufacturer of professional 3D printers. "3D printing offers companies the opportunity for virtuous growth. It gives power back to those who manufacture. It may be the end of mass production and the future of objects with high added value." Many countries, led by China and the United States, are investing massively in research and the creation of innovation hubs. The United Kingdom has released 500,000 pounds (607,000 euros) to equip schools. In France, the measures are less spectacular: as part of the French Tech program, the Ministry of Industrial Recovery will provide financial support to 14 Fab labs (manufacturing laboratories). "France has had its share of international influence in this cutting-edge technology, where it was even a pioneer, but greater support for innovation and exports is needed," confides Alain Bernard, vice-president of the French Rapid Prototyping Agency, who has regretfully seen innovative processes from French companies such as Optoform and Phenix Systems pass under the American flag of 3D Systems. Homemade objects While the global market for this new technological ecosystem is booming, the private sector is still a niche. According to Juniper Research, 44,000 printers were sold worldwide in 2013. In France, Marc Pfohl, co-founder of the information site 3D Natives, estimates the number of printers at between 2,000 and 4,000. "The desire is there. For six months, we have received 80,000 monthly visits to the site, mostly from technophiles. They customize their phone case, make jewelry, figurines, toys or invent clever pieces." For the moment, single-material, monochrome, with however risks of toxicity of the molten materials, the personal printer is still in its infancy. Accessible from 300 euros, the technology appeals to the community of "makers" who are fans of "do it yourself" and responsible consumption. Tinkerers and creators model on Sketchup or Solidworks, exchange plans on Thingiverse, the community site hosted by Makerbot, leader in personal printers. Others have their creations printed at Sculpteo or Shapeways. Scanning is child's play: the Kinect sensor on Xbox 360 even does the job! In these conditions, what about intellectual property rights? Guillaume Seligmann, a lawyer specializing in digital technology, points out the existence of the "private copy exception for the use of the copier", which authorizes the reproduction of an object purchased for personal use. "But to combat fraud, we will have to find an attractive legal offer, transpose legal solutions that have been found for music and films, impose technical protection measures to control sources and limit use. And we will also have to establish safety standards for objects made in garages..." According to Marc Pfhol, "counterfeiting is a real threat to the toy industry, particularly Lego and Playmobil, whose plans can be found on sharing platforms". As a result, household appliance manufacturers are thinking of offering their plans for spare parts for legal download... before digital DIYers do it for them. Giving power back to the consumer? The 3D revolution is already making a good impression.

## ###ARTICLE\_START### ID:2564

Sao Paulo (Brazil) Special Envoy - The NETmundial in Sao Paulo opened on Wednesday, April 23, with a speech by Brazilian President Dilma Rousseff, widely welcomed by representatives from nearly 90 countries and a handful of activists wearing masks of whistleblower Edward Snowden. It ended the next day on a much more ambivalent note and a downwardly revised assessment. The participants of this international summit on Internet governance did indeed condemn spying on the Web in the final resolution and demand that the surveillance of personal data be punished by law. "The collection and use of personal data by state and non-state actors must be subject to international human rights laws," states the text, made public on Thursday. However, the document fails to include Internet neutrality in its principles, despite the insistence of Brazilian representatives. The idea, defended by Ms. Rousseff at the United Nations (UN) in September 2013 and adopted in the Marco Civil, this sort of Internet Constitution recently ratified by the Brazilian legislature, consists of all content providers being treated identically on the Internet. This rule prevents network access providers from slowing down or favoring access to a particular site. It devotes a connection without discrimination to an "open and complete" network, as Neelie Kroes, the Vice-President of the European Commission, emphasizes. On April 3, the Strasbourg Parliament also recognized the need to guarantee this network neutrality. The approach is, however, strongly criticized by the major North American Internet access providers (ISPs) and their relays in Washington. The American communications regulator (FCC) even has a regulatory project that undermines the principle of equal treatment of content providers... According to a source close to the negotiations, in Sao Paulo, the Brazilian side was on the verge of interrupting the negotiations in the face of the inflexibility of the various representatives of the United States. In the end, the resolution indicates on its last page that "Net neutrality" was postponed to a later discussion, implied at the next Internet Governance Forum (IGF) in Istanbul, in September. First milestones It therefore took two days of "intense" negotiations, according to Virgilio Fernandes Almeida, president of the summit, to arrive at this eleven-page document intended to lay the foundations for global governance of the Internet, but also a roadmap for the future development of the Web. Internet governance must tend towards "a single, interoperable, flexible, stable, decentralized, secure, interconnected and accessible network for all", affirm the summit participants. The day before, the opening day of NETmundial, Nigerian Nnenna Nwakanma of the Web Foundation institute stated that Edward Snowden's revelations had "harmed confidence in the Internet". An idea taken up shortly afterwards by Axelle Lemaire, French Secretary of State for Digital Affairs: "Our great challenge is to invent an inclusive, fair model that rejects oligarchies and the concentration of power." A way of recalling that the transition to a new status for ICANN (the organization that issues domain names) has been underway since Washington announced in March that it would give up its control before the end of 2015. "This summit, which has received many endorsements, is a first step, that's already something", stressed Polish Michat Andrzej Wozniak of the Free and OpenSource Foundation. "The text is a step backwards compared to the working documents and is even disappointing," comments Markus Beckedahl, activist and founder of the website Re:publica.de, "but it has the merit of existing."

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## ###ARTICLE\_START### ID:2566

At the start, there was a big outburst of anger from Brazilian President Dilma Rousseff. At the end, the international summit on Internet governance, which was to take place in Sao Paulo on April 23 and 24, had the ambition to tackle nothing less than American hegemony on the Web. When, in September 2013, Ms. Rousseff learned, thanks to Edward Snowden's revelations, that the American intelligence agency (NSA) was intercepting her communications and those of Brazilian leaders, she was unrestrainedly indignant. At the United Nations podium in New York, she stated that mass surveillance of the Internet was incompatible with freedom of expression, democracy and national sovereignty. She demanded from the United States "explanations, apologies and guarantees that such operations will never be repeated." And even cancelled a long-planned state visit to Washington. Ms. Rousseff also advocates a radical change in the governance of the organizations that ensure the functioning of the Web at the global level - addresses, domain names, standards, protocols, etc. For historical reasons, these bodies are often under the supervision of the United States. Their "de-Americanization" is a long-standing demand, which is regularly taken up by many countries. The United States has certainly always rejected it, but this time, the supporters of reform feel in a position of strength, after the shockwave caused by the NSA wiretapping scandal. A new development is that the revolt is growing within the governance bodies themselves. Meeting in October 2013 in Montevideo, the capital of Uruguay, the leaders of a dozen of them declared themselves in favor of a more "multilateral" mode of governance, that is to say less American. They want to start with ICANN (Internet Corporation for Assigned Names and Numbers), responsible for managing Internet domain names and addresses. This is part of the US Department of Commerce. It subcontracts technical operations - management of the ".com", ".net" domains, etc. - to the private company VeriSign. After Montevideo, the director of ICANN, an American in favor of ending US control, went to Brazil to meet President Dilma Rousseff, who promised to support him. Brasilia then stepped up its diplomatic offensive and announced that an international summit on Internet governance would be held in Sao Paulo in the spring of 2014, called NETmundial, in reference to the World Cup to be held in Brazil in June. At the same time, the country joined forces with Germany, where the NSA wiretapping scandal had a major impact, to have the United Nations General Assembly adopt a resolution affirming that respect for the privacy of Internet users is a fundamental human right. Then Berlin announced its willingness to get actively involved in the preparation of the Sao Paulo summit. The French government remained very discreet in its denunciation of the NSA's activities. Paris does not seem ready to confront the United States on this issue. But on the occasion of François Hollande's official visit to Brazil in December 2013, France agreed to be co-organizer of the NETmundial. In March, the Brazilian Chamber of Deputies adopted an "Internet law" guaranteeing freedom of expression, protection of privacy and equal treatment of all types of content - a text that could serve as a model for the countries invited to the NETmundial. In fact, to pass the law, Brasilia had to accept a compromise. Initially, it was planned to oblige all Internet service providers (including American ones) to store the personal data of Brazilian Internet users on servers located in the country - a concept close to the "European cloud" advocated by the Germans. But it soon became clear that the project would be costly and complex, perhaps even unfeasible, and it was abandoned. The surprise then came in March from the United States. Washington announced its decision to give up control of ICANN before the end of 2015. In Europe, particularly in France, this decision was widely interpreted as a step backwards: since the Snowden affair, they had lost their "moral authority" and could no longer demand that the rest of the world trust them to defend freedoms on the Web. In private, French civil servants and elected officials are convinced that the time is right. According to them, the NSA scandal has also provoked a conflict between the US federal government and the major American Internet groups, which fear losing the trust of foreign users. Supporters of this thesis cite the statement by Mark Zuckerberg, CEO of Facebook, in March: "The American government should be the champion of the Internet, not a threat." » Thus, even before it took place, NETmundial would have already achieved a major success: forcing Washington to enter into a power-sharing process, so as not to arrive in Sao Paulo isolated, in the position of the accused. Other experts, particularly technical ones, note privately that the Americans remain in a position of strength, and have already set their conditions: no question of ICANN being placed under the control of an intergovernmental bureaucracy, nor of the United Nations. In fact, in accordance with their tradition, they want the future governance to give a large place to the private sector - in particular to the world-class Web companies, which are mainly American. The conflict between Washington and Silicon Valley would therefore be only an epiphenomenon. Furthermore, ICANN's area of competence has nothing to do with the activities of the NSA, which will not be affected by this reform. To complicate matters further, in Washington, Republican Party lawmakers are already opposing ICANN's "internationalization" plan, which they see as further evidence of President Obama's weakness on the international stage. In total, eleven countries are co-organizing NETmundial alongside Brazil - including Germany, France and the United States. Its steering committee has received 188 submissions from governments, NGOs, universities and technical organizations in forty-six countries. If we are to believe the preparatory documents, it will cover everything: legal and technical governance, infrastructure, norms and standards, human rights, Net neutrality, free software, cybersecurity, balance between surveillance and privacy... The official objective of the Brazilians is to have a joint declaration adopted on the principles of a new governance - which must be democratic, transparent, responsible, respectful of cultural diversity... It must be "multi-stakeholder", that is to say include the main players of the Net - given their number and diversity, this could pose unprecedented legal and logistical problems. In the end, Brazil remains on a fairly classic line, in opposition to the United States, since it wants as a priority to increase the powers of organizations dependent on the United Nations such as the Internet Governance Forum (IGF), which, to date, is a simple consultative body. The eternal triangular conflict between statists, privatization advocates and libertarians will therefore probably resurface in all debates. Despite everything, one of the French invited to NETmundial as an expert, Mathieu Weill, CEO of the French Association for Internet Naming in Cooperation (Afnic), is reasonably optimistic: "We are not going to make a revolution in two days, but Brazil is in a good position to advance a reform of governance. It is close to European principles, and at the same time, it has the confidence of the least developed countries." After ICANN, the states in favor of another governance plan to take an interest in the IETF (Internet Engineering Task Force), the organization that sets the standards allowing the Internet to modernize while remaining a unified network. However, the IETF, a pure product of Internet culture, is an informal meeting of engineers working on a voluntary basis. It has no legal status or board of directors, and it operates as one of the "activities" of the Internet Society, an NGO based in Washington and Geneva, run by a team of thirteen people, including six Americans. The IETF meets three times a year, in different countries, thanks to the financial support of large companies in the sector. The philosophy of its members is contained in a motto, issued in 1992 by the American computer scientist David Clark, one of the founders of the Internet: "We reject: kings, presidents and elections. Our beliefs: finding a vague consensus, and running code." The task of the reformers looks complicated.

## ###ARTICLE\_START### ID:2567

Overwhelmed by technology, the City of Montreal has begun urgent work to modernize 95% of its computers, which have officially become obsolete. The vast majority of the 14,000 computer workstations used by City of Montreal civil servants are surprisingly still using the old XP version of Windows. This version is 13 years old and has not been supported by Microsoft since April 8. The multinational no longer commits to resolving security flaws and crashes on the XP version, unless you buy an extended warranty at great expense from Microsoft, a temporary solution for latecomers. OUTDATED MODELS Our Investigation Bureau recently revealed that the provincial government had purchased this extended warranty because thousands of computers were still equipped with the XP version. The same delay is true at the federal level, where a quarter of the computer fleet, or nearly 125,000 computers, is outdated. AWAKENING IN 2013 If the situation is even worse in the City of Montreal, it is because the municipal administration only started the modernization during "the middle of 2013," confirmed the political manager of IT files at the City, city councilor Harout Chitilian. Microsoft announced the end of support for April 8 several years ago, suggesting that large organizations plan for this glitch two years in advance. Mr. Chitilian, in charge of IT files since last November, is the first to acknowledge that Montreal should have tackled it sooner. "If I had been in place for longer, we would have definitely taken additional means. But I can't change the past," he regrets. Having inherited the problem, the city councilor still managed to minimize the impacts. The City negotiated with Microsoft an extended one-year warranty that will cost $317,000 instead of $2 million. The discount was offered in exchange for a formal commitment from Montreal to keep Windows as the operating system for the next migration. The price is attractive, but allows Microsoft to ensure that Montreal will not implement anything other than its products. Free software is thus excluded. NEW VERSIONS Mr. Chitilian estimates that the entire computer fleet will be equipped with the new versions of Windows by March 2015, the end date of the extended warranty. The April 8 bug, which marked the end of Windows XP support, will cost the City of Montreal nearly $8 million, including the purchase of new licenses with Microsoft. The City has been much more transparent than the provincial government in the migration of workstations. \* \* \* City of Montreal computer fleet 14,351 computers 95% still have Windows XP $317,000 extended warranty (1 year) $8 million for Windows 7 licenses and contract with the private sector for support

## ###ARTICLE\_START### ID:2568

A collective of designers, including Philippe Starck, is launching a project for a website dedicated to 3D printing of 100% open source furniture. TOG should open several stores around the world, in addition to its website and thus promote the creation of personalized models. The site aims to allow you to customize and then buy stylish furniture, from series designed by renowned designers. But the idea of TOG is also to go further and offer furniture creations to customize and then print from 3D "spots" made available to the general public. The 3D printer will then be able to create any object, as long as it is made from a material supported by the 3D printer used. For the moment, the TOG site does not offer any files to download, just to discover the works of the designers, including Philippe Starck, attached to the project. The project especially wants to take advantage of the announced boom in 3D printing in the years to come. Eventually, it should even be possible to create your own creations and share them with Internet users. A first TOG store should open in Sao Paulo (Brazil) during the summer of 2014. To discover TOG: togallcreatorstogether.com

## ###ARTICLE\_START### ID:2569

NEW GOVERNMENT IN QUEBEC: DESPITE THE DEEP CHANGES DUE TO DIGITAL TECHNOLOGY FOR ALMOST TWO DECADES AND THE UNBELIEVABLE LAG IN THIS MATTER IN QUEBEC, NO 2.0 "LEADER" HAS YET SHOWN HIMSELF IN OUR COUNTRY. WHEN WILL A DIGITAL LEADER COME FORTH? Groundhog Day? With each new government coming to power, it seems to me that the same subject comes back on the table, that the same issues are raised again. Where are those who will take their administration or government by the hand in order to bring them into the 21st century? It is not for lack of convincing reports and studies that the migration towards an administration aware of the issues raised by digital technology has not happened. TABLET DIRECTION From the Berlinguet report submitted to Jacques Parizeau to the one written by Henri-François Gautrin and his team, including the Cliche and other variants, all these documents showed the way forward so that an administration could evolve harmoniously towards digital. And guess what each government did once the spotlight went out? They reserved a special place on a tablet for each of these reports. In short, since 1995, whether they were PQ or Liberal, each successive administration has miserably failed in its responsibility to be the digital locomotive that could have finally allowed the train to leave the station. There is no doubt that this inaction has considerably harmed the development of a digital economy, a digital culture and a 21st century administration in Quebec. If local tech entrepreneurs succeed in breaking into the world stage, if Quebec artists can succeed and earn a living despite the changes caused by digital technology, if citizens succeed in being vectors of change in their community thanks to digital tools, only they can be proud of it. Not the governments that have succeeded one another since the 1990s. AN INDEPENDENT MINISTER AND CHIEF EXECUTIVE I therefore dare to believe that our new Premier, Mr. Couillard, described as a Cartesian mind, from the scientific world, will be able to see that when it comes to the digital economy, digital culture and e-governance and e-administration, it is one minute to midnight. Because of Quebec's delay, the appointment of a Minister of Digital Affairs is essential. A minister who will understand the (numerous) issues that the new administration will have to face. A minister who could play the role of evangelist to his colleagues. A minister open to open data, open-source software and bottom-up consultations. A minister whose mission will be to implement a true e-government. But be careful, our Prime Minister will also have to review the position of Chief Information Officer (CIO), which currently reports to the Treasury Board. He will have to ensure that the future CIO becomes an officer of Parliament, in the same way as the Ombudsman, the Auditor General or the Chief Electoral Officer. All this in order to make him more impervious to pressure from the merchants of the temple... or from a new administration.

## ###ARTICLE\_START### ID:2570

The exhibition “Italian Design Beyond Crises” that has just opened its doors at the Triennale Museum (1) could have served as a perfect preamble to the sprawling event that has become the Milan Furniture Fair, which ended on April 13. Scanning three decades that have been able to stimulate alternative creativity - the one that followed the Great Depression of 1929, the one that had to face the first oil shock of 1973 and the one of the 2000s that fell under the combined reign of finance and globalization - this presentation explicitly subtitled “Autarky, austerity, self-production” was just as useful as the Interni guide, published on the occasion of the fair, to find one's way through the multitude of presentations, both “on” and “off”, that crisscross the streets of Milan. Avanti! Back to the land version 2.0 More than ever, design is asserting itself as an Esperanto. Digital technology has not only radically changed the ecosystem of this discipline on the production and distribution side, but also shaken up the Monopoly of places and modes of creation. It is now possible to create anywhere in the world, far from these epicentres that are (were?) London, Milan, Barcelona or Paris, to name but a few. On the condition, however, of being connected, the power now being in the hands of access providers and others like Google, Skype, Instagram. The Spaniard Jaime Hayon has chosen to make a return to the land version 2.0 by relocating his studio to a small village near Valencia, which has not prevented him, quite the contrary, from launching new products in Milan with Danish publishers (Analog table for the company Fritz Hansen), Italian (Pina armchairs at Magis) or Spanish (indoor version of his Gardenias armchair at BD Barcelona). Trained in Florence, then at the Design Academy in Eindhoven (Netherlands) and now based in the lands of the famous Droog Design collective in Amsterdam, Andrea Trimarchi and Simone Farresin (Studio Formafantasma) proposed a contemporary exploration of vernacular design with the exhibition “De Natura Fossilium”, commissioned by the Libby Sellers gallery in London. In the Brera district, under the patinated baroque golds of the Palazzo Clerici, we scrutinized a collection of small stools and pedestal tables made from blocks of lava recovered from the slopes of Etna and Stromboli, melted down and then digitally recut before being embellished with a few brass finishing details. Produced in partnership with the Catania volcanology center, the Glass Museum of Leerdam (Netherlands) and an Israeli expert specializing in basalt fusion, the pieces presented were certainly closer to the formal research of the Italian maestro Ettore Sottsass (1917-2007) than to the souvenir industry of lava objects such as those found in Sicily. At the Cappellini brand showroom, "Losing My America" represents another demonstration, as modest as it is exemplary, of the dialogue that is established between ancestral local know-how and high-tech technologies. This small exhibition is designed by the Brazilian gallery Coletivo Amor de Madre with the Chilean studio gt2p. On the same object, a traditional artisanal technique and a cutting-edge industrial process coexist. Mexican Ariel Rojo scanned authentic ceramic skulls to 3D print them and then cover them with beads embroidered one by one by hand, as has been done for centuries. What if the future of design rested on the BRICS (Brazil, Russia, India, China, etc.)? "Neo-simplicity" The question is legitimate and all designers or publishers worthy of the name ask themselves it at one time or another: why design yet another chair when standards that are just as desirable still exist? Added to this ethical dimension is an economic reality. What could be easier than digging into in-house archives to which you hold the rights, and what could be more exciting than bringing original sketches to life using the most innovative technology? This year again in Milan, reissues continued to represent an El Dorado for brands: the Danish publisher Fritz Hansen is putting into production the Drop chair that Arne Jacobsen had designed exclusively for the SAS Royal Hotel in Copenhagen in 1958, the Italian company Arper is offering a limited edition of Lina Bo Bardi's Bowl Chair, while the Swiss house Vitra is now marketing some emblematic products from the graphic, colorful and abstract world of Alexander Girard (a pouffe, wall panels, cushions). But this vintage mood, skillfully marketed, also allows the generation of designers who emerged at the end of the 90s to redefine minimalism by renaming it "simplicity" or "neo-austerity". A successful exercise in style for the Japanese designer Oki Sato of the Nendo studio, who has managed to transpose the imprint seat of the iconic Navy Chair by Emeco into a wooden version, for a two-material stool available in two heights. Or the Belgian designer Sylvain Willenz who designed a modest wall shelf with an integrated fixing bracket for the Anglo-Danish brand Wrong For Hay. But it is above all two office chairs in wood and/or wood and metal, unequivocally targeting all those who work at home, that best illustrate this trend. The first, Uncino, proves that the collaboration initiated between Mattiazzi and the Bouroullec brothers is both sustainable and promising. The second, Rival, brings the German Konstantin Grcic into the very closed club of designers working for Artek. Should we see this as a new, more international and less strictly Nordic direction for the Finnish brand bought this fall by Vitra? Béatitude 3D We know how much young designers today are tempted to give in to the sirens of self-production. The obsolete and economically inadequate royalty-based remuneration system, the reluctance of many publishers preferring the guarantee of stars of the profession are pushing them towards 3D printing - a promise? - which offers the possibility of designing small series. On the market side, whether professional or private clients, the demand for more personalized products is growing. Multiple choices of different backs are now an integral part of the grammar of seats, as could be seen while strolling through the aisles of the Salone del Mobile with Radar, by Claesson Koivisto Rune for Casamania, or Tabu, by Eugeni Quitllet for Alias. But it is perhaps in the heart of the towers under construction of the new Milan, preparing its special landscape for the Universal Exhibition 2015, that the 2014 edition of the show could well be historic. On Monday, April 7, in Piazza Gae-Aulenti, TOG was launched. A new brand, coupled with an e-shop and an application now offering 21 open source products. A press conference brought together Philippe Starck - at the origin of the project even if he does not openly claim it - and Nicola Rapetti (designer who has successively led the R & D departments of Driade, Cassina, Dedon). They are mainly launching seats and tables in rotomolded polyethylene or injected polypropylene. Which, as soon as large format 3D printers become democratized, will allow each of us to play the self-production card (in a private capacity all the same!). Alongside them, we find a prestigious dream team of designers including Sam Hecht and Kim Colin from the British studio Industrial Facility, Sebastian Bergne or the French Ambroise Maggiar, Jonathan Bui Quang Da or Dai Sugasawa. While waiting for these announced hours of 3D bliss, TOG proudly displays a 100% made in Italy and an ambition of democratization to the height of the 6 million euros already put on the table by Grendene, Brazilian leader in plastic shoes and main investor. More than a brand therefore, it is a community platform of creatives, bringing together on a global scale designers, artists, artisans and customers invited to customize the products. From the beginning, they were "designed to be the support for someone else's creativity", underlines Philippe Starck. Could TOG - like the first three letters of "together" - and Airbnb, the apartment sharing site, both be the flagships of this oxymoron that the Anglo-Saxons call the sharing economy? (1) In Milan, until February 22.

## ###ARTICLE\_START### ID:2571

For two years, a gaping security flaw has made two out of three web servers in the world vulnerable. Heartbleed is the name of this flaw - the first of its kind to be so well "branded", with a nice logo and a dedicated website - in the OpenSSL software that encrypts communications between a user and a website (read yesterday's Libération). And the services affected are not strictly speaking unknown: Facebook, Google, Yahoo, Amazon, etc. These giants, whose capitalization has reached record levels, have therefore been vulnerable, and not just a little, for two years because of an error introduced into a computer code managed by a dozen people around the world. And these people don't even work full time to improve, verify and maintain OpenSSL, they don't have the means to do so. OpenSSL is in fact free software, usable for free and whose code is accessible. To finance part of the developments, a foundation was created in 2009, but it only manages to raise funds by offering paid services (support, specific development) that require a lot of time from the small team in place. Time that is not dedicated to OpenSSL as such. This is what Steve Marquess, who takes care of its finances, explains in a blog post. He also explains that the sudden (involuntary) popularity of OpenSSL triggered a wave of donations that total $9,000 (€6,500) to date. What Google earns in about six seconds (50 billion in turnover in 2012). OpenSSL is one of the many free software bricks that serve as the foundation of the Internet. We can also cite, for example, the Apache web server, the MySql database, and the GNU/Linux operating system. Without these bricks, today's giants might not have been born. But they often take these bricks for granted, like self-maintaining common areas. For $50,000 in donations a year, a company can have its logo on the "sponsors" page of the Openssl.org website. It should be full of them. There are only four.

## ###ARTICLE\_START### ID:2572

Canada Economic Development sprinkled an investment of just over $2 million yesterday to support the marketing efforts of 10 Quebec technology companies. For example, the $300,000 granted to Panthera dentaire, a company that manufactures computer-based prosthetics and dental appliances, will allow it to hire market managers and purchase ultra-specialized equipment to increase production capacity. An amount of $200,000 granted to mobile application developer Mirego will help it develop its clientele outside Quebec and further target the market of large retail banners. The companies Consulair Gaston Boulanger, Phytronix Technologies, Ellicom, Telops, De Marque, Agil-IT Logicielslibres en affaires, NovAxis Solutions and Polyrix also received a grant. The federal agency headed by Minister Denis Lebel anticipates the creation of a total of about a hundred jobs.

## ###ARTICLE\_START### ID:2573

The former boss of Alcatel Serge Tchuruk, who predicted in 2001 "the factory without a factory", in the middle of the odyssey of the internet bubble, was completely wrong. The fad of fabless wanting the Western industrialist to become a pure designer outsourcing all his production to Asia to maximize his margins, was obviously bullshit from a consultant in a gray suit. A language element that will have allowed hundreds of sites to be relocated, destroying tens of thousands of jobs and a lot of value(s) in the first sense of the term. Today, by one of those epistemiological reversals of which economic "science" has the secret, the factory is making its big comeback in 2.0 mode. The digital revolution is no longer supposed to disperse the production chain to the four corners of the world like a puzzle. It must give birth to the "augmented factory": hyperproductive, ultra-competitive and job-creating... As a scalded employee fearing a cold shower, we will remain cautious with this new seasonal concept. The factory of tomorrow will obviously be much more connected and robotized than it is today. In a word, "intelligent", if their managers are. Because the whole question is to know what place the "digital factory" will leave for the flesh-and-blood worker. Some predict the worst: the humanless factory, the destruction of half of industrial jobs by the end of this century in favor of machines (read EcoFutur of March 17). Others like Jeremy Rifkin are more (too) optimistic and prophesy "the third industrial revolution": the one that will see production decentralized-relocalized, and the citizen-maker reappropriate the production tool in open source with a 3D printing workshop at home... Between nightmare and utopia, Cassandra and delighted with the internet nursery, the factory of the future remains to be invented. With a single watchword: as long as there are men and tools, there will be innovation.

## ###ARTICLE\_START### ID:2574

Founded in Italy by two car enthusiasts, OSVehicule presents itself as the Ikea company of the car. Mechanics enthusiasts can assemble their own Tabby, which comes in the form of a kit to assemble. It apparently takes about 60 minutes to complete the job. Legally, the Tabby is not recognized as a car, but rather as a quadricycle, a small, four-wheeled, cylinder-powered vehicle with a maximum speed of 75 km/h. The assembly plans are freely distributed and, as with the "open source" plans, they can be modified according to the public's wishes. People can thus create their own version of the Tabby, which can take an urban, road, sporty or even family style. The different concepts offered accommodate two to four passengers. AVAILABLE FOR LESS THAN 6,000 EUROS The Tabby is currently only sold in Europe and costs between 4,000 and 6,000 euros, depending on the options chosen, which may include ABS brakes or airbags. Orders must be placed directly on the OSVehicule website, which will begin delivering the Tabby by the end of spring 2014. However, the vehicle cannot yet be driven on the roads of most European Union countries since it is not yet approved. COMPETITION Among OSVehicule's competitors, we find Velocar, a French company that offers an electric three-wheeled vehicle whose price is around 3,500 euros. However, this concept takes much longer to build since it takes between four and six days to complete the work. The first version of this vehicle should be delivered by next May. www.autonet.ca/fr/2014/03/31/tabby-la-voiture-a-assembler-soi-memelogiciels OTHER LINKS FOR THIS ARTICLE fr.wikipedia.org/wiki/Open\_sourcevelocar.fr www.osvehicle.com

## ###ARTICLE\_START### ID:2575

After the Canada Revenue Agency (CRA) transactional site earlier this week, the federal government confirmed Friday morning that it had closed several other websites in order to resolve a major security problem in its digital networks that would expose thousands of citizens' personal information to potential hackers. Known as Heartbleed, this flaw, which has existed for nearly two years, has been causing a stir in public and private computer networks around the world for several days. On the recommendation of the government's Chief Information Officer, Corinne Charette, several federal agencies and departments were asked early Thursday evening to suspend their digital activities on the Web while waiting for a solution to this problem to be found. The complete list of sites affected has not been revealed. The duration of the suspension has not been specified either. "This action is being taken as a precaution until an adequate and tested remedy has been put in place," said Tony Clement, President of the Treasury Board, on Friday. "The consequence is that Canadians will no longer be able to access government sites for the entire duration of this measure." Delays On Wednesday, the Canada Revenue Agency (CRA) opened the shutdown by blocking access to its transactional space, in the middle of tax filing season, by drawing attention to this computer flaw called Heartbleed. Located in the communication protocol between OpenSSL servers, it allows access to information that was thought to be encrypted. Passwords, usernames and personal data can thus be read in plain text by a malicious eye. On Friday, the opposition expressed surprise that the government waited two days to apply the measure adopted by the CRA to other sites. "It's worrying," responded NDP MP Mathieu Ravignat. "Hacking is a fast-paced profession, if I can put it that way. So we can talk about seconds and minutes, and important information can be lost. [The shutdown of all federal sites] should have been done more quickly." In an update posted on its website, the CRA indicated Friday afternoon that it had "made good progress." Its online services should resume over the weekend, it estimated. A widespread evil The OpenSSL protocol is used massively by private and public organizations to encrypt information transmitted by a third party -- a citizen, a client -- on the servers of a company or a public organization. It finds its place in increasingly complex networks, which, paradoxically, are becoming more vulnerable to attacks and intrusions. Nearly 500,000 sites are affected worldwide. On Friday, the computer giant Cisco indicated that the consequences of this flaw were probably more significant than previously thought, and was working to review the security of several of its applications and services affected by this unsolicited access point in an encryption protocol. A point, moreover, through which a hacker can slip without being detected. Software, computer routers, but also Cisco teleconferencing systems have been affected by Heartbleed, the company summarized in a press release, calling on its customers to be cautious. This security problem is yet another computer flaw that has shaken up the digital world, and this, since the famous bug of the year 2000 which will have however highlighted more the credulity of digital citizens than the precarious security of networks. This was not the case, however, with computer viruses such as Melissa, ILOVEYOU, Nimda or Code Red, which exploited and highlighted the fragility of computer networks and an increasingly complex digital ecosystem where the interconnection between servers not only facilitates the sharing and access to information, but also, by cause and effect, intrusions. This fragility is not only exploited by hackers, but also by the American secret services, as revealed by the former NSA analyst Edward Snowden, who exposed the modules and protocols developed by these intelligence services to intercept personal data online, the security of which is ensured, in theory at least, by encryption. Paradoxically, OpenSSL is a so-called "open source" system, and participates in the construction of a digital environment based on the principle of free software. An environment that is nevertheless said to be more secure. With Marie Vastel

## ###ARTICLE\_START### ID:2576

On January 3, 2009, a masked individual planted a bomb on the Internet. A time bomb. Two months later, a few loyal followers began to connect to this program and create the first bitcoins. They call themselves "miners", by analogy with the gold prospectors of California. Objective: to provide the Internet with a universal currency. The principle is simple, the application complex. Each miner puts the computing power of his computer into the pot. In exchange, he is rewarded with a few bitcoins that he keeps or puts back on the market. They are the guardians of the system. Each time a transaction is made in the world with bitcoins, the purchase of an object online or the exchange into another currency, they validate it by linking it to the entire history of each bitcoin since its creation. In theory, this absolute tracing of each cent eliminates any risk of counterfeit money. As if, each time you bought a baguette, the baker had the journey of your euro checked since its birth. A titanic task that only the Internet can offer. Today, the cumulative power of the computers of all the "miners" in the world is greater than that of the five hundred largest computers on the planet. The immense force of the multitude. Without intermediaries But what interest do users find in paying for their purchases with a currency other than that of their country? They do without banks, their commissions, their paperwork. After music or information, which are exchanged directly, without an intermediary, here comes money. This spreading phenomenon takes up all the ingredients of the previous ruptures created by digital technology. First, a new economic freedom is created, which pushes prices down and destroys intermediaries. Then, it relies on the exponential power of decentralized computer calculation, whether we call it "cloud computing" or "big data". Finally, it is community-based, without hierarchy, but with an army of volunteers who pool their strength using tools that can be manipulated by everyone thanks to free software. The power of "open source". On the other side, the response of the established powers is always the same. Denial and attack. As in the time of the first music pirates. Some States prohibit transactions. The major issue is precisely that of the States. Money, since its invention, is not only an instrument of exchange and a unit of value. It is also an attribute of sovereignty of a country. We can clearly see, with the euro, the problems that this poses when sovereignty and money are no longer aligned. Bitcoin's detractors claim that this is the reason why the latter is doomed to failure. Perhaps, but, apart from the fact that this spectacular method of certifying transactions has a bright future ahead of it, it is the very notion of State and borders, physical and virtual, that is called into question here. A cluster bomb.

## ###ARTICLE\_START### ID:2577

The episode is worthy of a Hollywood script. On March 6, the American weekly Newsweek announced, with great fanfare, that it had found Satoshi Nakamoto. Satoshi Nakamoto? The supposed inventor of bitcoin, this mysterious electronic currency that appeared in 2009. Until then unknown to the general public, Mr. Nakamoto is a true myth in the community of geeks, computer enthusiasts. Wild rumors are flying about him: behind this pseudonym hides a Robin Hood of the Web, a repentant secret service, or even a group of cryptology experts. Imagine the disappointment of the bitcoin community when Newsweek revealed that Mr. Nakamoto was an ordinary retiree living peacefully in the suburbs of Los Angeles! Attacked by raging paparazzi, he was nevertheless quick to confess his lie: no, he is not the inventor of bitcoin, which is still on the loose. The myth is safe... For several months, not a week has gone by without the sulphurous virtual currency hitting the headlines. But not all episodes are as incredible as Mr. Nakamoto's. On February 28, MtGox, the main bitcoin exchange platform, declared bankruptcy, ruining the thousands of users who had placed their money there. A few months earlier, the FBI arrested the boss of Silkroad, a site where you could buy weapons, drugs and false papers with just two clicks using e-currency. No wonder the latter is causing so much debate! For some, bitcoin is a dangerous speculative object that should be banned immediately. "It works like a Ponzi scheme that will ruin thousands of unwary people if nothing is done," warns Georges Ugeux, boss of the investment bank Galileo Global Advisors in New York. For others, it is a technological revolution whose scope is not yet measured. "It will change our lives as profoundly as the Internet did," says Pierre Noizat, co-founder of Paymium, a French start-up in the niche. And what if the truth was somewhere in between? Regulators have not yet decided the question. But they are working on it. In August 2013, Germany gave bitcoin the status of "private currency" in order to be able to tax 25% of the profits generated. On Tuesday, March 25, the American tax authorities declared that it would be considered as an asset: the capital gains made will therefore be taxed as capital gains. In the European Union, bitcoin exchange platforms are already subject to the directive on means of payment. "The subject is complex, legislators are a little lost," analyzes Philippe Rodriguez, of the investment bank Avoltapartners, which raises funds for start-ups. If electronic currency is as confusing as it is disturbing, it is because it does not obey any of the classic monetary rules. "To understand how it works, you have to hang on," warns Eric Larchevêque, an entrepreneur who will open the Maison du Bitcoin in Paris in April, a business incubator open to the public. "It reminds me of the early days of the Web: we were taken for crazy." Unlike euros and dollars, bitcoins are not managed by a central bank. Their issuance is controlled by a computer program that generates them automatically and at a decreasing rate, until their amount, currently 12 million, reaches 21 million. Where things get complicated is that this algorithm works thanks to computer enthusiasts, nicknamed "miners." These quasi-professionals of the genre put the computing power of their computers at the service of the network. Each time their computer solves a certain number of complex equations, they receive a handful of bitcoins as a reward, which they spend, resell or convert into euros. This is where the great innovation lies: these equations, operating according to the principles of cryptography, are used to verify and validate all transactions made in bitcoins on the planet. Better still: the calculation chain constitutes a public database, which lists all the exchanges made since the creation of the currency. This makes it impossible to use fakes or cheat, since each bitcoin is followed and tracked by the network from its creation. "Bitcoins are therefore at the same time a currency, a raw material and a payment protocol", summarizes Philippe Herlin, economist at Cnam and specialist in the subject. Users can buy bitcoins on one of the dedicated marketplaces, such as Bitcoin-central.net or Kraken.com, before storing them in a digital wallet. They can then spend them in one of the "real" stores or, above all, on one of the thousands of websites that accept them, from Pizza.fr to the WordPress.com blogging platform. Since the end of January, Overstock.com, one of the major American furniture sales sites, has accepted the e-currency. In two months, its sales in bitcoins have reached the equivalent of 1 million dollars (0.725 million euros), for average purchases of 250 dollars, compared to 150 dollars for traditional customers. The advantage for customers? Transactions are faster, more secure, and above all less expensive. "This proves that this currency has a great future," enthuses Patrick Byrne, CEO of Overstock.com. "It's a pure fantasy, it will never happen," says Eric Posner, professor of law at the University of Chicago. Like him, most lawyers and economists, such as Nobel Prize winner Paul Krugman, are skeptical. They point out that, to be viable, a currency must be both a unit of account and a store of value. Above all, its quantity must vary according to the economic health of a specific monetary zone. Thus, to deal with the 2008 crisis, the American central bank increased its dollar emissions to revive the economy... "Bitcoin does not obey any of these rules: it is doomed," predicts Mr. Ugeux. Especially since its price is very volatile: in a few hours, it can collapse from 1,200 to 600 dollars. Even if the bitcoin community denies it, some buyers are in fact pure speculators. In fact, speculative financial products, such as "CFDs", are created every day to bet on the price of the e-currency. "It is therefore impossible to build up savings in this pseudo-currency," asserts Mr. Posner. Concluding that once regulated by the States, it will lose all interest for speculators and will disappear. Especially since the bankruptcy of MtGox has proven that it is not secure enough to conquer the general public. To which its defenders retort that they are working on a solution. To prevent bitcoin theft, the most serious platforms actually keep the cryptographic keys that allow access to customers' wallets on USB sticks, which they hide... in a safe, at the bank! "We are at the very beginning, volatility and insecurity will eventually diminish," assures Mr. Noizat. Perhaps. The fact remains that while we can doubt that bitcoin will one day replace the euro or the dollar, the technological revolution that it represents is no less promising. Particularly in terms of means of payment. Since the network tracks, validates and records all bitcoin exchanges using miners' calculations, there is no longer any need for a banking intermediary to carry out the transaction. In addition, payment is made in a few minutes instead of several hours or even days for traditional payments. Take the case of an Internet user wishing to buy a sofa on Overstock.com. He can pay directly in bitcoins, and therefore will not pay any of the commissions usually charged by MasterCard, Visa, PayPal or Western Union (1.5% to 8% depending on the country) during bank transfers or by credit card. Another option: the customer chooses to pay in euros. When he validates his order, a specialized platform, such as BitPay, converts his euros into bitcoins, credits the merchant's account, then converts them back into euros. And this, for a commission of 0.5% to 1%. "It's a considerable saving for everyone," insists Mr. Byrne, of Overstock.com. But why stop there? Just like when free software was created, the Internet sphere is teeming with ideas. Ethereum, Colored Coins, Mastercoin... For several months, little Web geniuses have been inspired by the bitcoin computer protocol to create programs that allow the exchange of other things than money. For example, property titles, shares, contracts... "The possibilities are unlimited," says Mr. Herlin. The exchange of information is each time recorded in the public and tamper-proof database: from then on, all intermediaries become useless." A bit like when e-mail was invented: no more need for a postman to exchange messages. "Even if bitcoin disappears, innovations inspired by its protocol are underway and nothing will stop them," adds Mr. Noizat, convinced that the next Google and Facebook will be born there. American business angels, for their part, have no doubt about it. According to a study by the Aite Group, they raised $117 billion in 2013 to invest in 19 bitcoin-related start-ups in the United States. “Europe and France are a little behind,” laments Mr. Rodriguez, who hopes to help close the gap. In February, he created the Bitcoin France Association, in order to de-demonize the e-currency. While it is still difficult to imagine what the future holds for bitcoin and its derivative technologies, one thing is certain: just as peer-to-peer file-sharing software has disrupted the music industry, these innovations could well change the game in many sectors, such as finance. “It is no coincidence that bankers are afraid of us,” confides the founder of a start-up. Before concluding: “And rightly so: they haven’t seen anything yet.”

## ###ARTICLE\_START### ID:2578

So why do we persist in powering our tablets, smartphones, cameras and other computers with batteries that contain dangerous elements, that last more or less long and that inevitably need to be recharged? This is the question that more and more manufacturers are asking themselves. Especially since we have at our disposal a free, efficient and non-polluting source of energy, that of the sun. Remember: it was solar calculators that set the example. Placed under light, they power and recharge themselves without requiring any other source of energy. The progress made in this field now makes it possible to imagine other electronic devices that directly integrate photovoltaic panels. Keyboards, speakers, telephones and even computers: this new generation of eco-friendly products is supplied with the natural, inexhaustible and renewable energy of the sun, without releasing greenhouse gases. While we wait for the gadgets that big brands like Apple and Samsung are preparing, here are some of the most emblematic examples in this category. 1 The WEWI SOL portable and sustainable computer This is the portable and completely autonomous computer. Unfold the solar panels hidden behind the 13-inch screen and, after two hours of charging, you can work wirelessly on your feet for 10 hours. Intended primarily for emerging countries, the Sol, created by the Canadian company WeWi Telecommunications, also stands out for its all-terrain aspect and the choice of operating system, Linux Ubuntu, which allows you to run a quantity of free software, the majority of which is free. Equipped with a GPS, compatible with Bluetooth and capable of connecting via Wi-Fi, the Sol can also accommodate a SIM card to communicate in 3G or 4G. It should be sold for 350 dollars (250 euros) as soon as the company has found distributors. 2 The TAG HEUER MERIDIIST INFINITE perpetual energy phone What if your phone recharged naturally, without having to plug it into the mains or monitor its battery level? This is the principle of the Meridiist Infinite, the new mobile from TAG Heuer. Under its screen, a small invisible film made up of photovoltaic cells transforms natural or artificial light into electrical energy to power the device. Fifteen minutes of exposure are enough to make a one-and-a-half-minute call, the manufacturer specifies. This smartphone, the first to use Wysips technology from Sunpartner Technologies with the one recently presented by Alcatel, remains a luxury product. With a titanium and carbon fiber case, a sapphire crystal screen, and a 24-hour concierge service, it is being marketed in a limited edition of 1,911 units. You will have to wait until next July to be able to buy it... at a price of 9,800 euros. 3 Good sound with complete autonomy ETON RUKUS XTREME A portable speaker to take anywhere: lightweight and equipped with a carrying handle, it has an all-terrain coating that ensures it is resistant to falls from 1 meter and splashes. It connects wirelessly to any Bluetooth smartphone and its buttons allow you to control music playback. The speaker is NFC compatible, which makes pairing easy. And there is nothing to stop you from connecting an audio source to its minijack input. The entire upper surface is made up of a solar panel that powers its batteries and guarantees a battery life of around 5 hours. You can even take advantage of it to recharge a device on its USB port. The icing on the cake: the sound of the speakers is very good, especially for a speaker of this size, with bass that is very present without being exaggerated. We regret a finish that leaves a little to be desired, with rather unstable buttons and a somewhat plastic appearance. 250 euros. 4 The KUDO CASE SOLAR energy-filled case In the garden or on the beach, your iPad's battery will no longer threaten to let you down if you adopt the Kudo Case Solar case. In addition to protecting your tablet, it will recharge it thanks to its integrated solar panel. Its manufacturer assures that by exposing it to the sun for 1 hour or 14 hours to indoor lighting, the iPad will work for 10 days with an average use of 2 hours per day. The only problem: the case must be closed, and therefore cover the screen, to capture light sources. As a bonus, the case has an HDMI output to transfer the display to a large screen and a USB port to charge another device. Removable feet allow the iPad to be held in two positions, for typing or watching a film. On kudocase.com: $129.95 (in black) for iPad air (95 euros), $119.95 (in black) for iPad mini (87 euros) and $89.95 in blue, red, pink, green or white for iPad 2 and 3 (65 euros). Add $45 (33 euros) for delivery. 5 The solar keyboard for travelers LOGITECH WIRELESS SOLAR KEYBOARD K760 Thin and light, this wireless keyboard is equipped with a sensor that converts daylight or interior lighting into electricity. A short day (6 hours) is enough to fully recharge the integrated batteries which then offer a battery life of three months. You can pair three different devices, Mac, iPad or iPhone, and associate it with one or the other by simply pressing a key. Pleasant to use with its real mechanical keys, this keyboard offers several specialized keys (Fn, Ctrl, Alt, Cmd, playback control, shortcuts for Mac OS X, etc.). Too bad, it lacks the ability to navigate the interface of an iPad, for example, with the arrow keys, and a touch zone that would prevent you from placing your finger on the tablet screen to scroll through a document or launch an application. 50 euros.

## ###ARTICLE\_START### ID:2579

Founded in Italy by two car enthusiasts, OSVehicule presents itself as the "Ikea" company of the car. Mechanics enthusiasts can thus assemble their own Tabby which comes in the form of a kit to assemble. It apparently takes about 60 minutes to complete the job. Legally, the Tabby is not recognized as a car, but rather as a quadricycle, a small, four-wheeled, cylinder-powered vehicle with a maximum speed of 75 km/h. The assembly plans are distributed and as for "open source" software, they can be modified at the will of the public. People can thus create their own version of the Tabby which can take an urban, road, sporty or even family style. The different concepts proposed accommodate two to four passengers. AVAILABLE FOR LESS THAN 6,000 EUROS The Tabby is currently only available in Europe and costs between 4,000 and 6,000 euros, depending on the options chosen, which may include ABS brakes or airbags. Orders must be placed directly on the OSVehicule website, which will begin delivering the Tabby by the end of spring 2014. However, the vehicle cannot yet be driven on the roads of most European Union countries since it is not yet approved. THE COMPETITION Among OSVehicule's competitors, we find Velocar, a French company that is offering a three-wheeled electric vehicle that will cost around 3,500 euros. However, this concept is much longer to build since it takes between four and six days to complete the work. The first version of this vehicle should be delivered by next May. \* \* \* OTHER LINKS FOR THIS ARTICLE fr.wikipedia.org/wiki/Open\_source velocar.fr www.osvehicle.com

## ###ARTICLE\_START### ID:2580

A "super GMO"? A synthetic yeast? A tool for science? A tool for biotechnology manufacturers? A risk? An opportunity? Last Friday, the journal Science published an article (1) asking all these questions. It announces the "total synthesis of a functional eukaryotic chromosome, produced to plans." The journal does not hesitate to refer to this publication as the "Mount Everest" of synthetic biology. Reason? It is the "first artificial eukaryotic chromosome." One of the sixteen chromosomes of baker's yeast, Saccharomyces cerevisiae for biologists. A microorganism used to make bread, beer, or in the production of bioethanol in industrial fermenters. But also the basic tool for eukaryotic genetics in molecular biology laboratories around the world, appreciated for its robustness and its ability to copy DNA. "Yeast is practical, inexpensive, robust... A bit of a do-it-all tool," explains Romain Koszul (CNRS, Pasteur Institute), one of the 80 signatories of the Science article. An international team, mainly American (John Hopkins University in Baltimore) led by Jef Boeke (New York University), but with several French groups (CNRS, Pierre-et-Marie Curie University) slipping in. Eukaryote? The word rings a bell for any biologist and anyone who remembers their college biology classes. The living world is divided into prokaryotes - bacteria and archaea whose genetic material is free in the cell - and eukaryotes whose genome is confined in a nucleus separate from the rest of the cell. In other words, yeast is closer, in terms of molecular biology and organization of its genome, to a human than to a bacterium. And more complicated than the latter. In addition to the size of the genome, it also presents an architectural order: "To be functional, the chromosome must not only align the correct DNA sequences, it must also fit into the three-dimensional arrangement of the genome in the cell nucleus," explains Pierre Tambourin, director of the Génopole d'Evry (Essonne). However, until now, the pioneers of synthetic biology had attacked bacteria, like the first synthetic bacterium whose genome had been chemically manufactured by Craig Venter's team in 2010. A choice dictated by the simplicity sought - producing the minimal genome necessary for bacterial life - and by the prospects for industrial use. With this first synthetic yeast chromosome, the milestone reached is therefore very symbolic since, Pierre Tambourin notes without hesitation: "This first shows that this will be possible for a plant or an animal." The journal Science devotes a long commentary to this publication, subtitled: "Chromosome by chromosome, a global army of researchers and students is in the process of constructing the first synthetic eukaryote genome." Boeke speaks of a "step comparable to the first sequencing of the human genome." A global cooperation, bringing together many laboratories and mobilizing hundreds of masters and doctoral students, with a very strong participation of Chinese teams, has divided up the 16 yeast chromosomes. A question of time Romain Koszul specifies the milestone reached. Students first produced small fragments of DNA by chemical synthesis, then these were gradually integrated into the natural yeast chromosome, "until total replacement." Furthermore, the artificial chromosome represents "only 2.5% of the genome, but still 300,000 base pairs out of a total of 12.5 million." The operation was not aimed at replacing the DNA sequences with identical sequences, but with those designed on a computer and aimed at transforming the chromosome. This profoundly modified the genome. In the sense of a fairly radical simplification, with the elimination of repetitive parts since the natural chromosome contains more than 316,000 base pairs. However, the yeast was then cultivated without problem, thus proving that its genome, despite this transformation, was functional. This first result seems to show that the final objective of assembling a completely artificial genome, designed on a computer, of the yeast Saccharomyces cerevisiae is only a matter of time. What to do with this new tool? Science, industry? Romain Koszul underlines the "scientific, academic" interest of this work. Understanding how genomes work, which remains largely mysterious. To the point that debates continue on the notion of gene, and especially of "genetic programming", to which researchers oppose a "stochastic" vision, where chance plays a strong role in cellular life (2). "We will be able to play with the genome and study biological processes with a powerful investigation tool", rejoices Romain Koszul. Among his research targets, "the three-dimensional organization of the genome, how is it modified by the elimination of repeated sequences", or "accelerated evolution experiments in a controlled environment". "Patenting" This scientific aim is clearly at the heart of the global cooperation set up. Thus, the participants signed a charter that prohibits any profit-making in this research. "We are not too much in favor of patenting the results", notes Koszul. The young researcher advocates open science, "all our results are open source", he affirms. And the cultivated strains can be sent to researchers who request them. As for the "educational" dimension, with the mobilization of dozens of students while "Jef Boeke could have bought the pieces of DNA", it seems to him a positive point of the adventure. However, he does not deny the prospects for industrial applications. Logical since with this artificialization "the genome becomes very plastic and could accept very different metabolic pathways to produce molecules of interest for pharmacy or industry". Pierre Tambourin regrets a certain "naivety" of French researchers, an accusation that, for his part, Koszul rejects. Tambourin is certainly not indifferent to the scientific advances of this work. Even if he remains skeptical about the idea of a minimal genome of life defended by Craig Venter (3). But he sees in synthetic biology an enormous economic and industrial stake. Among which, "the biosynthesis of drugs some of which today depend on production by plants. If we could recover the genes that code for the active molecules and insert them into a bacterium or yeast in order to mass produce them, at low cost..." he is already considering. Recently, the Minister of Research, Geneviève Fioraso, launched the "creation of a French team" on synthetic biology. Little public money to distribute, but rather the dissemination of a sort of "economic patriotism", bringing together public and private research teams with prospects of innovations arriving on the "market" - the word is underlined by the minister - in an industrial sector logic. As for the possible risks of the dissemination of these synthetic organisms, Pierre Tambourin underlines the paradox: the more they are transformed, the more their genome will be reduced to what interests the user, the less dangerous they will be, because they are incapable of surviving in the natural environment. Furious debates in perspective. (1) N. Annaluru et al. "Science" of March 28. (2) “Libération” of September 14, 2012. (3) “Le Vivant sur mesure”, by Craig Venter, JC Lattès, 318 pp., 20€. Illustration by Jochen Gerner

## ###ARTICLE\_START### ID:2581

After months of repeated requests, the government has never wanted to disclose the total cost of migrating computer workstations. A working document from the Treasury Board Secretariat (TBS) that was released indicates a cost of $1.4 billion. But that doesn't hold water, according to Benoit Boivin of the TBS. The figures provided by Mr. Boivin give a more modest cost of $143 million, or 76,000 computer workstations that will cost, on average, $1,880 each for the migration. Upon further questioning, however, we realize that the calculation excludes computers in the education and health networks, which include 675,000 workstations, or 90% of Quebec's computer equipment. The TBS did not want to provide the cost for these workstations, limiting itself to saying that the networks had negotiated specific advantageous agreements with Microsoft and that not all workstations must migrate. The Ministry of Health has not yet responded to our question sent three weeks ago on the subject. The Ministry of Education was unable to answer us and suggested that we contact the 72 school boards, 49 CEGEPs and 19 universities. $600 million Considering that only a third of these positions must migrate, the total cost of the migration is close to $600 million. Implementing a technology other than Microsoft, according to the SCT, including free software, would have involved overall costs 2 to 5 times higher. A detailed analysis was carried out, but the government never wanted to provide it to us. The outgoing Minister and President of the Treasury Board, Stéphane Bédard, has already deplored the fact that Quebec is handcuffed by Microsoft in this matter. The government explains that the migration only concerns 76,000 positions in departments and agencies, but refuses to reveal the costs for the other 675,000 positions.

## ###ARTICLE\_START### ID:2582

STRATEGY "Have you all thought about sleeping?" John Karp, with a big smile and small eyes, asks the hundred people sitting in front of him. "Sleeping is dying!" exclaims a young man. Laughter in the room. Finally, about ten people admit not having slept for twenty-four hours. "Try to get some rest tonight," John Karp recommends. In the third row, a boy snickers under his hood. "But if we sleep, what's the point of doing a hackathon?" From January 24 to 26, the 42 computer school hosted a hackathon organized by the Axa insurance group. A first for the company, but not for the establishment founded by Xavier Niel. On university benches, hackathons are now legion. A contraction of "hack" and "marathon", the word designates a collaborative computer programming event. People with diverse talents (developers, designers, entrepreneurs) compete in teams to design a prototype of an application or online service on a chosen theme. The time allocated to this task is very short: a hackathon generally takes place over a weekend. There is a lot of coding and very little sleep. The concept of the hackathon was born in the United States in the late 1990s, within the community of developers who were fans of free software. "At the time, we would come together around a project to give it a boost," explains Mael Inizan, project manager at Silicon Xperience and Silicon Sentier, an association that promotes innovation in the Île-de-France region. The hackathon culture spread to companies when computer geniuses became entrepreneurs. Facebook was a pioneer in the field. At the instigation of Mark Zuckerberg, employees of the social network regularly compete in corporate hackathons. There is only one rule: design a project that is not related to your chosen field. Some ideas developed during these events have changed the face of the site, such as the "Like" button or the instant chat function. The phenomenon has since spread to France. Axa, Orange, Pernod Ricard, SNCF, RATP and many others have already tried their hand at the exercise. The hackathon has left the experimental stage to become part of the corporate strategy. It is no longer a question of limiting oneself to organizing a competition between employees. Most hackathons organized by companies are open to everyone: students, start-ups or simply curious people contribute to the research and development effort. "With hackathons, we are looking to move away from the classic innovation model," explains Frank Mouchel, CIO of Axa France. The insurance group organized its first hackathon on the theme of customer relations. Around forty teams developed a project submitted to a jury of professionals. For forty hours, participants alternated between lines of code, micro-naps and slices of pizza, hoping to win the first prize of 10,000 euros. A week later, it was Pernod Ricard's turn to bring together students and curious people at the 42 school, in collaboration with Facebook and Deezer. This time, the hackathon focused on "the bar of tomorrow". A deliberately broad theme to leave the field open to innovation around the brand's products. On the program of the projects presented: an application to help make cocktails, a social network open only at night or a service to take a taxi at a lower cost. Is the hackathon the future of innovation in business? On the developers' side, they do not really share the general enthusiasm and denounce the "commercial excesses" of the concept. "A hackathon should not be done for the benefit of a company but in the common interest", warns Mael Inizan. "The problem is that companies finance these events hoping for an immediate return on investment. » Other, more concrete concerns surround the interest of companies in these innovation competitions. The specter of unpaid work hangs over hackathons. A participant in the competition organized by Axa confides his fear of the theft of ideas, especially when the themes are very specific. "Participants must protect their productions by using free licenses," warns Ivan Béraud, general secretary of the CFDT federation of communication, consulting and culture. The latter claims to have not received any complaints relating to hackathons to date. "A large company would be better off involving someone with a brilliant idea rather than profiting from it behind their back," relativizes John Karp, co-founder of the company BeMyApp, which organizes many hackathons, such as those of Axa or Pernod Ricard. For many developers, hackathons are a way to meet potential recruiters. “Since October, I’ve received about ten job offers,” enthuses Cédric Le Gouard, a 26-year-old freelance developer with nine hackathons under his belt. According to him, ideas from hackathons don’t have time to mature and are therefore unlikely to be exploited at the expense of their creators. “A finished product goes much further than the kind of projects you develop in a hackathon,” confirms John Karp. The short duration of a hackathon has both advantages and disadvantages. “The problem with hackathons is that you complete 80% of a project and forget to finish the remaining 20%,” regrets Sarah Cherruault, CEO of Auticiel, a company specializing in applications for autistic children. The young entrepreneur has nevertheless been luckier than average. In 2011, she took part in a hackathon sponsored by Orange as part of the Téléthon, where her application won first prize. This allowed her company to get in touch with the Orange Foundation, which is now a partner of the start-up. "Hackathons are a huge opportunity to build your network, meet partners and future collaborators," says Sarah Cherruault. Despite some great successes, the post-hackathon shift remains difficult for companies to negotiate. SNCF, which has been organizing hackathons since 2012, is trying to set an example by taking more time to help develop the concepts resulting from these events. One application has already been launched, Tranquilien, and two others are under consideration. The public company is also participating in the Data Shaker program in partnership with Silicon Sentier, a new type of hackathon that lasts three months. "We are trying to develop the format, to go further than a strong but one-off event," concludes Mael Inizan. Developers aren't going to bed anytime soon.

## ###ARTICLE\_START### ID:2583

A FEW YEARS AGO, THE TOP TINKERERS WERE THOSE WHO ENJOYED PROGRAMMING OR MODIFYING THE SOURCE CODE OF SOFTWARE. RECENTLY, A NEW GENERATION OF TINKERERS HAS RECOVERED THE "FUN" THAT THE OLD ONES HAD IN ASSEMBLING GALENA RADIO SETS. THEY ARE THE 2.0 TINKERERS. I am from the generation that enjoyed disassembling electrical devices in order to understand how they worked. Radios, televisions, hi-fi systems, speakers: there was nothing that was beyond our control. We could spend long hours with friends looking at the disemboweled device in order to understand how this or that component could work. The strongest even promised to improve the performance of these devices by substantially modifying them. Today, these tinkerers are regaining their letters of nobility with the marketing of pico-computers that can be easily programmed and integrated into existing devices. Their church is the magazine MAKE, created by the American publisher O'Reilly, known for its books specialized in the field of computing. Their god is the OpenSource pico-computer Arduino. Their religion is DIY, "Do It Yourself" or "handmade". MAGAZINE MAKE We won't be telling you anything new by telling you that these days, the vast majority of all the devices around us are from a completely different generation than that of our parents. Today, it's all electronics, for better or for worse. Fans of MAKE magazine will find everything there: robotics projects, modifications of existing devices, projects to divert a device from its primary function, creation of new devices using 3D printers, printers that MAKE even offers to create and assemble instead of those on the market, which are much more expensive, etc. MAKE offers us, every two months, dozens of exciting projects, or just funny ones, requiring only a minimum of tools, a few electronic components and a computer. For example, on the MAKE site, we are offered to modify a counter bell that we find on a hotel counter for example, in order to go from the traditional "ding!" to the most incredible sound effects. Another project? Modify a pico-computer to transform it into a radio transmitter with a range of a hundred meters. And what about these completely crazy ideas to modify a Roomba robot vacuum cleaner to add a webcam that will transmit its video signal via WiFi on the Web. Crazy. But don't worry, there are also hundreds of other projects on MAKE, all as useful as each other. In short, by combining hardware components and software programming, these new 2.0 tinkerers can create, if we push the idea to the limit, a real smart home... while respecting a tight budget. Because Arduino pico-computers (yes, there are dozens of these small hardware platforms) are sold at more than reasonable prices. And their programming is within the reach of anyone who decides to get started, for a few hours of learning, no more. It is not for nothing that several schools decide to jump on the "handmade" bandwagon. These are great learning tools that allow young people to learn both electronics and programming.

## ###ARTICLE\_START### ID:2584

The reputation of Google, a company founded in September 1998, is well established. Inspiring cinematographic works and adding the term "google" to our daily vocabulary, Google has changed the lives of all Internet users. Alas! While the success of its search engine, Google Maps or its Chrome browser are confirmed, the projects of this company founded by Larry Page and Sergey Brin have not all had the same luck. Here is our short list of five Google projects now thrown into oblivion. Google Lively Offered only to users of PCs equipped with Windows Vista and XP, Google Lively was a 3D virtual world allowing Internet users to create avatars and personalize their virtual universe. Not unlike the successful game Second Life, Google Lively could accommodate up to 20 players simultaneously. While the idea of offering an alternative to Linden Lab's title may have seemed good in theory, it was a failure in practice. After the novelty interest, the number of followers quickly dropped, quickly falling below the 100,000 unique visitors per month mark. Launched on July 8, 2008, Google Lively shut down on December 31 of the same year. Google Health Used to securely store, manage and share medical data, Google Health promised to give a serious helping hand to patients and medical staff. Allowing, among other things, to record current treatments, to enter allergies and to record medical history and test results, Google Health was an Internet service for archiving personal medical records intended for American patients. Able to be consulted by project partners such as hospitals and pharmacies, Google Health was nevertheless considered unsuitable by professionals in the field. Launched in March 2008, the health of Google Health deteriorated and the number of users declined year after year. The service shuts down on January 1, 2012. Google Answers A paid question-and-answer service offered only in English, Google Answers was the answer to its free competitor Yahoo! Answers. For a pre-set fee ranging from $2 to $200, users could ask a question by simply formulating it and receive a precise answer given by subject matter experts called Researchers. Why pay for a service that can be offered for free? This is probably the conclusion that many people have come to. On November 28, 2006, Google announced the shutdown of its service, leaving the question of why unanswered. Google Wave An ambitious project, Google Wave wanted to revolutionize the world of communications by combining, in a web browser, the functionalities of electronic messaging while also integrating collaborative tools such as chat, content sharing and social networks. According to Jens Rasmussen, one of the developers behind the project, Google Wave would make all existing communication tools obsolete. Unfortunately, this open-source project did not ride the wave of success for very long. It was probably the company's biggest failure. Less than 15 months after its launch, Google announced that it would not continue developing Wave. Google Reader Launched in 2005, Google Reader is an RSS feed reader created to make it easier for Internet users to discover new websites while helping them stay informed about what's happening around them. Allowing users to receive all the updates from their favorite sites in one place, Google Reader is one of the most popular news aggregators. However, in March 2013, the Mountain View firm announced the closure of the service, pointing out in particular the decline in the use of RSS feed readers in favor of social networks. Despite a petition for its continuation signed by more than 154,000 Internet users, Google Reader definitively ceased its activities in July 2013.

## ###ARTICLE\_START### ID:2585

At 4, rue du Texel, in the 14th arrondissement of Paris, the Hadopi offices are spread over the six floors of a building that is rarely open to the press. It could almost be welcoming if the imposing stairwell did not cut the living space of each floor in two. From top to bottom, the same U-shaped corridor serves offices that look like... offices, vaguely brightened up by a few bamboo sticks. Not much to do with this den of super-Internet cops that we liked to imagine for a while. Nor with a start-up, an image that Eric Walter, secretary general, likes to use when he talks about the High Authority (read opposite). There is one department per floor, with the bosses at the very top, on the sixth floor. "The first thing I wanted to do when I arrived in these premises was to move," remembers Eric Walter. "But hey, we did what we could with these badly designed offices." Kingdom. In Hadopi, there is the "pi", for "Protection of Rights on the Internet". It is the syllable that sends warning emails to Internet users suspected of piracy (116,298 last month), registered letters to repeat offenders (13,000 in February), and which deliberates on desperate cases who absolutely wanted to see the latest episode of True Detective despite two warnings (24 cases studied in February). The "pi" is the subject that annoys. It has mobilized against it, since the creation of the High Authority in 2009, all the defenders of freedoms and connected activists that the Internet has. But in Hadopi, there is also the "do", for "dissemination of works": the fourth floor is its kingdom. This is where we take care of the legal side of the Force, so that Internet users can find what they are looking for. The subject is fascinating, and broad enough to move away a little from the Manichean opposition between pirates and rights holders. Too broad sometimes perhaps, as when in June 2011, the High Authority got tangled up in the communication budget by bombarding TV and radio ads with shaky humor and a useless "PUR" label to certify legal offer sites. Since then, May 2012 has passed, and with it the political promise (unkept, but it sets the tone) to repeal Hadopi. Faced today with the risk of a merger with the CSA - which should be made official in a future bill on creation -, it was necessary to change strategy. Play it modest, subtle and useful. In December, without drum rolls but not without pride, Hadopi liquidated "PUR" to launch instead an in-house approach, the "Hadopi Legal Offer label", with a site developed internally for a mere 8,000 euros. And a freer interpretation of the law, to include all sites "that can be considered legal". Today, finally, Hadopi is addressing Internet users. And entrepreneurs wanting to create a legal offer platform, to whom it has recently dedicated information workshops to share its expertise. And to teachers and schoolteachers too. Damien Combredet is thus working on awareness workshops at school. Nothing to do with the ad nauseam recitation of the mantra "thou shalt not download": the Authority has even invited the French-speaking Association of Free Software Users (Aful). "It's always a headache to use protected works in a class," says Damien Combredet. So we try to highlight completely free works. That's part of our role." On the same floor, Frédéric Nassar, who runs the Offrelegale.fr website, is trying to rally goodwill to help him search for works reported by Internet users as unobtainable in legal versions. The function has been active for a few days, and there are already 150 titles to be found (or not). The success of the project is motivating: an internal competition is organized, a "task force" set up... "Yes, we use pompous terms as soon as there are three of us around a table," they laugh. Under the legal direction, exclusively female, the rights protection department occupies a floor and a half. Only sworn agents work there to have access to the personal data of "flashed" Internet users. Some, equipped with a microphone headset, answer the phone to Internet users worried about their warning email. Others put together pirate files for the commission that meets every Wednesday. Most of them end in a "non-transmission" to the public prosecutor's office - "that's rather good news!" They are the executors of a law passed in 2009. A little lost in a corridor, a sort of large printer franks registered mail. For the moment, it is switched off, but it still has 283,673 items to its credit. We pass it at a respectful distance to go down to the ground floor. Catalogues. Hey, daylight! Oh, a bay window! A pirate flag, drawings on the wall, a ping-pong table! Ah, it was hidden there, the start-up spirit... The studies, research and monitoring department (Drev) squats in a former meeting room converted into an open space. It is here, under the direction of Pauline Blassel, that the quantitative and qualitative studies of Hadopi are conducted (and decided). Young researchers often applied to Hadopi "for fun" or "out of curiosity", then stayed and swear they were having a blast. You can tell. Drev has been prolific for several months: typology of culture consumers, barometers of legal supply, Internet users' consumption logs... Until this monstrous project launched in June 2013, the title of which nearly made all Hadopi-skeptics fall off their chairs: is it possible, economically and legally, to legalize sharing between Internet users while paying creators? Loïc Baud, a researcher in computer science and applied mathematics, analyzes the catalogs of platforms, legal or not. He is currently interested in the T411 site. Who puts new films and albums online? Who fills out and rates the work sheets? How does the well-oiled mechanics of one of the main peer-to-peer platforms in France work? In short, how do we pirate in 2014? A story of understanding the uses in depth before, no longer punishing them, but perhaps, one day, legalizing them. Photos Lionel Charrier. MYOP

## ###ARTICLE\_START### ID:2586

What if we learned to code from primary school? It's the new craze of geeks, start-ups and learned societies. We had noticed the emergence of Xavier Niel's 42 school, the Simplon.co initiative, the many post-baccalaureate training courses that added a few hours of targeted lessons here and there. But here's the next step. For a few years now, enthusiasts of all persuasions have been teaching our little ones the basics of computer programming and algorithms, grouped under the vague and trendy term "code". First, there are the "coding snacks" where groups of parents and children aged 5 to 15 get together to tinker with programs. There are also Devoxx4kids, one-day introductory workshops, or the Magic makers workshops accessible from 8 years old. The method is fun. It uses programmable Lego robots, the open source Kano computer, the Minecraft game, Kodu to make your own video game on Xbox... The important thing is to understand what is happening behind the screen, how the software we use every day works, so that children glued to their PCs and tablets are no longer passive in front of the machine. Older children are turning to the "code academy", a platform to discover the basics of programming in CSS or Javascript in one hour per day. It will soon be translated into French by Bibliothèque sans frontières and the entrepreneur Gilles Babinet, responsible for digital issues for France at the European Commission. So many initiatives to draw from. On April 2, the Parisian competitiveness cluster Cap digital will organize a day of conferences and tinkering around this theme to try to unite the community. Who are the coding aficionados? In France, learning IT still too often comes down to knowing the usual software, from word processors to spreadsheets. And the "Internet license" recently introduced by Manuel Valls is mainly aimed at protecting children from the dangers of the Web. But more and more interest groups are defending the learning of code as a tool for empowerment. An open letter to the President of the Republic, sent in January 2014 by academics, associations and entrepreneurs, advocates the teaching of this computer science from the age of 7-8, i.e. the start of primary school. "The teaching of computer science does not meet the economic and social needs of the country. All students should learn to program small software programs", summarizes Colin de la Higuera, one of the signatories, professor at the University of Nantes and president of the French Computer Society. These coding zealots are defending the introduction of a new subject, duly included in the programs, so that the French students and employees of the new generation are adapted to the world of tomorrow. But what is the point of integrating it into the programs when private initiatives are multiplying? Avoiding a new digital divide between students depending on the territory. The countryside and the suburbs could be abandoned by geek associations. "In the long term, coding could become part of ordinary literacy. If we don't teach the necessary computer culture fairly, we block citizens' power to act, we let them be dominated by the machine," worries Sophie Pène, professor at Paris Descartes University and member of the National Digital Council (CNNum), the organization responsible for studying these issues. Even the general public seems convinced. According to the "French & Digital" barometer by TNS-Sofres and Inria presented in March 2014, half of French people consider that it is "useful" to "know how to code software". The wording is so vague that we can well imagine that many don't really know what they are talking about. Regardless, politicians have noticed this underlying trend. As early as April 2013, the Minister of the Digital Economy and SMEs, Fleur Pellerin, declared herself "in favour of learning to code as early as possible". When presenting her wishes to the press in January 2014, she made it one of her projects for the year. During his trip to Silicon Valley in February, even François Hollande defended "coding (sic) at school, everything must start there and we are going to give this impetus. It will gradually be generalised". When, how, by what means, the questions remain unanswered. Why learn to code from childhood? "The objective of school is to train people, workers and citizens. There is a paradox to see a science so omnipresent in society and so little taught", explains Jean-Pierre Archambault, president of the association Enseignement public et informatique and co-author of a report by the Academy of Sciences on the subject. "To participate in many debates like the one on Hadopi and free software, you need to know the basics of programming. In the job market, beyond professional IT specialists, everyone should know how to use IT tools and understand how they work." There is no shortage of arguments. For the Ministry of the Digital Economy and SMEs, "the best way to understand tools is to program them, to learn to code in order to decode. The interest in coding goes beyond IT. It is about being able to set up projects, to solve problems, it is more of a learning process than a subject in itself. It is an activity that can be integrated into the range of intellectual tools available to the youngest." In terms of method, it is possible to study programming or algorithmic thinking without going through the code itself. "We defend multimodal practices: we can make objects, work on data, try our hand at data visualization, use machines," continues Sophie Pène of CNNum. What could be wrong? According to some supporters of the code as a new subject, the Ministry of National Education is "hostile" to it. Officially, the ministry is deferring to the Higher Council of Programs. "The lobbyists have not understood that it is not us who decide but an independent structure composed of teachers, personalities and parliamentarians," it is specified. The latter is responsible for developing the new programs, but not before 2016... "At present, we are rather in a logic of refocusing on the fundamentals," adds the ministry. "While our schoolchildren's timetables are among the busiest in Europe, we are not going to add hours. We are trying to define a base of skills and necessary culture, do we consider that the code should be part of it?" The advocates of the code would therefore be capricious, tempted to overload our students with work. However, adding new courses to meet the needs of society is not new: economic and social sciences (SES) are recent; music and sport have, for their part, helped raise the overall level of the population, as well as awakening vocations. Another point of contention is that France does not have the strength to teach this hypothetical new subject. There are no CAPES or aggregation of computer science yet. Nothing is currently planned in future teaching schools. Only weeks of internships - "insufficient and not targeted enough" according to the association Enseignement public et informatique - would be planned. France lagging behind? In terms of teaching computer science, France is not one of the pioneers. However, it was well on its way: in 1985, Prime Minister Laurent Fabius launched the "computer science for all" plan to introduce 11 million students to the use of computers and, at the same time, revive the national industry in this field. Since then, few initiatives have been proposed on a national scale. The Minister of Education, Vincent Peillon, did present a "global digital strategy" to "bring schools into the 21st century". But nothing concerns programming. The most recent incursion of computer science into school curricula is the launch of the "computer science and digital sciences" option for high school students, which was extended to other streams last year. We are a million miles away from the pioneers. In the United States, Barack Obama officially demanded that young people be trained in coding. "He understood the challenge: to ensure that the United States remains the world's leading nation in this field", believes the president of the EPI, Jean-Pierre Archambault. In Great Britain, David Cameron promoted the idea of a compulsory course, replacing the media initiation hour with this training. Finland has introduced a fun subject based on the use of games and gadgets. And in Estonia, since 2012, about twenty schools in the country have been testing the "Proge Tiiger" program, which teaches the basics of Java and C++. If France is lagging behind, it is therefore due to a lack of political will. The lobbyists for the binary system have not said their last word: they will be received at the Elysée on April 2.

## ###ARTICLE\_START### ID:2587

The heads of the Web firm Libéo, Jean-François Rousseau and Joé Bussière, are not "standard" entrepreneurs. "We are technology guys first and foremost. We don't have MBAs, we are not finance guys. Even today, our geek side is what propels Libéo," they say. Until recently, the two partners, aged 33 and 34, were called "young men" by their clients. "Four or five years ago, we dreamed of having grey hair. When you're young in business, it's still difficult. It's hard to say 'I have enough experience to be in business,'" notes Jean-François Rousseau, founder and president of Libéo for 18 years. The Quebec firm offers turnkey solutions to develop the Web presence of all types of companies, in addition to promoting the use of free software. This niche was far from being taken seriously at the beginning of the adventure, in 1996. Jean-François Rousseau says he has seen the perception of business people change over time. "When I left the company at 16, I wasn't accepted," he says with a laugh. "I went to open an account with a computer parts supplier and I was turned away because 'Well, you're too young.' I had to call back a week later and then they accepted me." In 2003, Joé Bussière joined him on board Libéo, both having studied computer science at Université Laval. "Exponential" growth followed, as the number of employees went from 6 to nearly 70 today. "We went from geeks to businessmen. Maybe it's this geek side that the business community is less used to. "These are geeks who are now capable of propelling a company," analyzes Joé Bussière. The latter is very active in the 2.0 community. He co-founded Québec numérique, which has been organizing the Web event in Quebec City for three years. He also relaunched the information portals Branchez-vous.com, Showbizz.net and Cinoche.com, which Rogers had sold in 2012. His commitment was recognized by the Jeune Chambre de commerce de Québec, which recently awarded him the title of Young Business Personality 2013, in the Technology and Research category. Last week, the company Libéo was awarded the Actif humain prize at the Fidéides, the entrepreneurs' gala, in recognition of its good management of human resources. The two bosses explain that they have redoubled their efforts since 2005 to ensure good working conditions for their employees. "We realized that everything went through human resources," explains Jean-François Rousseau. "That's what sets us apart in the market. Yes, the technologies we use are important, but it's how our employees use the technologies," adds Joé Bussière. Libéo gives its creatives the opportunity to choose their computer, which they can take home when they change devices every two years. The company also pays attention to work-life balance, by entrusting 1% of its payroll to an employee committee that determines the measures to be implemented. Libéo also has a "very active" social club. "Last week, we went to city hall and Mayor Régis Labeaume spoke of Libéo as a flagship of information technology in Quebec City. For us, it's the consecration of thinking that we are an important player in the Web," conclude the two "young men" in business.

## ###ARTICLE\_START### ID:2588

The Société de transport de Montréal (STM) will spend nearly $50 million over the next few years to refresh the software and computer operating systems on its 3,700 workstations, and to do a major clean-up of the company's applications, which are outdated or obsolete in 30% of cases. According to documents submitted to city council for approval of loan by-laws, the first project aims to replace the 11-year-old Windows XP operating system and the Microsoft Office suite version 2000-2002, currently installed on the STM's 3,700 workstations. The STM's director of IT services, Luc Lamontagne, told La Presse yesterday that the current computer operating system is so old that Microsoft will no longer provide any technical support for Windows XP as of next month. Microsoft's decision "makes the company vulnerable to cyberattacks" and will force the STM to implement "mitigation measures" to avoid being exposed to such attacks during the transition to the new systems and software that will be implemented over the next 18 months. The cost of the project, which also includes updating 300 of the company's applications and 1,300 commercial applications, is estimated at $25.4 million. The STM itself will oversee the project, says Mr. Lamontagne, and will issue calls for tenders in the coming weeks. On the advice of external consultants, the STM has decided to "continue using Microsoft products" and not opt for implementing free (and open-source) software such as Linux, for example. In 2010, the STM was forced to cancel a call for tenders after a Superior Court decision declared illegal a public call for tenders by the Régie des rentes du Québec, which limited its requirements to Microsoft products, excluding free software, like the STM. A $24 million cleanup The STM also completed a second loan settlement of $24.1 million to finance a four-year "Programme d'entretien tendance des techniques de l'information" (PEPTI), which aims to update computer hardware and hundreds of specialized software programs used internally. According to the documents, a study conducted by the firm CGI in 2012 estimated that 30% of the company's applications are "outdated" or "obsolete," and that this percentage "only increases year after year." The STM believes that this situation increases the risk of computer failures. The STM's IT Director explained that this second part of PEPTI will renew STM employees' IT work tools, after a first part devoted to hardware renewal. According to Luc Lamontagne, approximately 30% of the STM's IT equipment was reaching the end of its useful life when the first PEPTI was implemented in 2009. The program would have reduced this ratio to only 5% of the Corporation's IT equipment, according to Mr. Lamontagne. - With Pierre-André Normandin

## ###ARTICLE\_START### ID:2589

Social innovation is too often considered as a simple instrument for reducing poverty that has no effect on increasing inequalities. However, in different contexts in Europe and America, this innovation, anchored in a social economy in full renewal and boosted by the contribution of the solidarity economy, is beginning to be taken into account as a vector of democratic change. Solidarity experiences, long considered marginal, are now taking on an unprecedented political role. A survey conducted in Catalonia shows this with surprising results. It highlighted what was previously invisible, namely the fact that a much larger number of people than usually estimated were concerned by these practices that are solidarity initiatives. According to this estimate, more than 300,000 people are involved in the other economy in Catalonia, and the study of a statistically representative sample of the population in Barcelona shows that, out of 800 people questioned, 97% of them participate in at least one of these activities. The acceleration since 2008 is spectacular, because if the group of those who aim for a transformation of society through this means has greatly increased (indeed, participants in the indignant movement, in the absence of outlets on the side of traditional political parties, have turned to local networks and have become very active within them), they have been joined by a second group, alternative practitioners who were not convinced by ideology, but who have rallied following the difficulties encountered since the crisis: they find in the other economy a confidence in the future that they had lost, thanks to the interpersonal knowledge that they acquire there. Their presence gives a completely new scope to the phenomenon. They discover there how much the prospect of a new socio-economic model can be anchored in their daily reality. What was utopian is now becoming concrete. This recent structuring at the territorial level is also found in Italy with the districts of solidarity economy, bringing together groups of solidarity purchases, organic farming, fair trade, ethical finance, renewable energy, free software, etc. Numbering 20, these groups have called on local public authorities and initiated steps for recognition, which has resulted in laws in different regions. Thus in Friuli, the law was prompted by a forum on solidarity economy and common goods, which also invited each municipal council to adopt a resolution to promote neighborhood participation and policies for recovering the real estate stock as well as to support solidarity economy practices. New public policies This political visibility is also controversial in France, where debates are multiplying with events such as the annual one for the month of the social and solidarity economy, where hundreds of meetings are organized. Elected officials develop policies at the local level and eighteen of the twenty-two regions have modified their regional economic development plans in this sense. In addition, echoing what is happening in Quebec, a ministry delegated to the social and solidarity economy is promoting a framework law that responds to a demand from all stakeholders. The break with a vision that reduces the solidarity economy to a function of integration and the fight against poverty is even more evident in Bolivia and Ecuador. In both cases, the political configuration that brought Presidents Evo Morales and Rafael Correa to power is characterized by the delegitimization of traditional parties, incapable of combating inequalities and breaking away from liberal orthodoxy, leading to the creation of a group of social movements in favor of change. Plural economy Carried by this coalition, the new elected officials have enacted constitutions that replace the objective of maximum growth with that of good living for all, largely inspired by the revaluation of indigenous cultures. The appropriate means is to resort to a plural economy that, alongside the private and public economies, makes way for a solidarity economy. The latter therefore becomes a subject of public interest identified by the political sphere, which dedicates institutional reforms to it as well as banking and administrative institutions, because it is able to provide income opportunities to the working classes at the same time as it participates in the construction of a new ecological and social balance. Of course, in none of the countries mentioned is the process of recognizing the solidarity economy a long, quiet river. Tensions exist between government projects and field demands. The path is still arduous for a fuller and complete acceptance of a social and solidarity economy that is not limited to reparation actions, but which is truly a lever for transformation. Nevertheless, the progress is undeniable. The latest proof: the creation in 2013 of an interagency of the social and solidarity economy established by 13 UN organizations and coordinated by UNRISD. Economy and solidarity are no longer contradictory. Jean-Louis Laville is a professor and researcher at the National Conservatory of Arts and Crafts in Paris.

## ###ARTICLE\_START### ID:2590

Sustainability of digital heritage, surveillance of citizens in the new social spaces they frequent, digital divide between rich and poor, construction of a 2.0 democracy... In the midst of the current election campaign, several groups of citizens are surprised by the lack of interest of politicians for the major digital issues that, here as elsewhere, are redrawing the contours of the economy, culture, politics... A void that they are therefore seeking to fill with the launch this week of a manifesto that voters and aspiring MPs are invited to sign in order to better debate the digital future of Quebec, they say. "Digital technology affects all human activities," we can read in the manifesto For a Free and Open Digital Quebec. Communautique, the Association for the Collective Appropriation of Free Computing (FACIL) and the Institute for Digital Governance are among others behind this project. "Digital technology is part of our social and physical environment, but we ignore it, and this at our peril." "Critical" situation The group deplores that the issues related to digital technology "do not seem to interest our political class" and underlines in passing that the province "still does not have a vision, strategy or global action plan to build its digital future." In this context, transformations "come to us from the outside more often than from the inside," they insist, without however mentioning the names of Google, Apple, Facebook, Twitter or Microsoft, these American multinationals that now shape our relationship with the world. "And our interests are far from being taken into account." "The commitments of the parties in the race in terms of digital technology are more than limited, indicated Fabián Rodriguez, president of FACIL, on Thursday. This is partly explained by their ignorance of these issues, but also by their fear of disturbing job-creating companies." The man also points out that since 2002, several groups have called on Quebec to adopt a Quebec digital plan to build the changes instead of undergoing them. "It was urgent in 2002, in 2010, in 2012," he says. "In March 2014, it is now critical." By the end of the day Wednesday, nearly 130 people, including several candidates in the election, had put their digital stamp at the bottom of this manifesto. \*\*\* Digital in electoral platforms Parti Québécois: Wants to "ensure that the cultural sector takes the digital turn" and hopes to "optimize resources and investments in information technology" in the government apparatus. Parti libéral du Québec: No digital commitments revealed on its website. Coalition avenir Québec: Intends to "strongly support the export of Quebec's cultural products abroad and in the digital world" and "create [...] an Innovation Valley [dubbed the Silicon Valley of the North] that would encompass the metropolis and cover the entire St. Lawrence Valley." Québec solidaire: Commits to supporting "research and experimentation on the Internet of models based on sharing and collective creation, particularly where free licenses are used" and wants to diversify "the software used in education, by giving the greatest place to free software."

## ###ARTICLE\_START### ID:2591

It's a small Twitter account, not many subscribers, but it's nonetheless funny. You can reach it by typing ch value="226 128 168"/>@analphabete1 for a little less than two years? He retweets the statuses of our Quebec personalities that contain mistakes (the statuses, not the personalities). Our little not very scientific research allowed us to recognize a whole host of famous people who have the coquettish (or more if you like) typo. Alex Perron who says for example: "To celebrate St. Patrick's Day, I eat Lucky Charms dipped in Irish coffee!". We checked Mr. Perron's account and since he generally doesn't make many mistakes, our iron-clad logic forces us to think that it must smell like an old country bar in his ablutions room. Which is still strange, because his profile picture also leads us to think that he doesn't seem like the type to cover himself in Motomaster products. Well, it's all very complicated. In any case, we can already hear you throwing those fine words at us in the form of "who are you to throw garnotte chowders when your humble abode is made up of 50% fine Murano crystal with mistakes in gender and number?". In fact, what matters, as our personal experience teaches us beyond any doubt, is that no one is immune to a typo, and that, despite everything, if we see more mistakes, it's also perhaps because we write more... And that after all, it is comforting to see that there is, after all, a lot of quality (of French) in the land of our "personalities". As the person who wishes to remain anonymous behind @analphabete1 mentioned to us, she even noticed a certain improvement in the publications of her "victims" following repeated retweets. Which does not prevent our society from having horribly bad language. We can make numbers say many things, but the fact remains that most of those who know how to read them affirm that we live in a society composed of 50% functional illiterates. Half of us have difficulty reading the simplest things. This is bad timing, because more than ever, we live in societies where text is king. Reading well means knowing how to read novels, essays, tables, articles, manuals, in short, knowing how to decipher a text. Google's big boss, Eric Schmidt, also stated in 2010 that in terms of data, we were now producing in two days the equivalent of what all of humanity has produced since the advent of writing. That's a lot of texts. To what we call "classical" illiteracy, we must now add digital illiteracy. Which is even greater. It is common knowledge that a society of illiterates is not able to train people who will allow it to properly prepare for its future. Imagine today, in an era where new technologies surround us more and more, not understanding the code means agreeing to be overtaken. Today, we can say that Quebec City has its "digital elite". We only have to leaf through the program of the Web event in Quebec City that is in full swing until tomorrow at Espace 400e. Founded just four years ago, WAQ is already a must on the Quebec and French-speaking digital scene (there is even talk of exporting the concept to Bordeaux). The French delegation this year has about forty members. It should also be noted that through the conferences of major international stars, we find a bunch of local entrepreneurs and managers who give conferences and lead workshops, proof that the city has quickly been able to attract great "code" specialists. But it should still be noted that alongside these great achievements, the gap between this "digital elite" and the vast majority of the population is worrying. Already, we can say that there is a digital divide that overlaps the literacy divide. Should we generalize the learning of programming as well as thinking about this new environment from the first years of education? Several specialists, particularly in the world of free software, have been pointing this out for a long time (like Snowden and Assange, for that matter). According to them, it is a question of democracy and economic future. Olivier Ertzscheid, the author of Digital Identity and E-Reputation, also wrote this in 2011. "Finally understanding that the impossibility of mastering publishing knowledge will tomorrow be an obstacle and an inequality as divisive as the lack of mastery of reading and writing is today, a new digital illiteracy that is unfortunately already observable." Too bad that in this election campaign the idea of a "digital plan" is not at the top of the list of parties' priorities. In the meantime, bravo to these entrepreneurs who are making sure that we are currently discussing it here. Because these combined illiteracy could very soon relegate us to the ranks of nations whose typos will no longer interest many people. quebecnumerique.comwebaquebec.orgfacebook.com/webaquebec

## ###ARTICLE\_START### ID:2592

San Francisco Correspondence - Google is going on the offensive in the field of "smartwatches", these connected watches that many analysts consider to be the next growth market, but whose sales are still struggling to take off. On Tuesday, March 18, the Californian giant from Mountain View unveiled Android Wear, an adapted version of its operating system for mobile phones. True to the strategy that allowed it to triumph in the smartphone market and now tablets, Google only takes care of the software part. The hardware part relies on partner manufacturers. The South Korean LG and the American Motorola have made their first watches official. The South Korean Samsung, which launched in this segment in September 2013, is also among the partners. As are the Taiwanese HTC and Asus. But not the Japanese Sony, whose first models run on an operating system developed internally. Google has also partnered with Fossil Group, an American manufacturer of watches and jewelry. Android Wear is built around Google Now, a personal assistant that is supposed to display the most relevant information on the screen, depending on the time of day or location. The weather when you wake up, traffic conditions or the next bus... The watch will also display text messages received as well as notifications from social networks. The second essential component: voice recognition. Simply say the phrase "Ok Google" to activate it. The user can then search the Internet, send a message or even control their smartphone remotely. A niche market For Carolina Milanesi, an analyst at Kanter World Panel, it was important for Google to design an optimized version. This should allow it to ensure that manufacturers adopt Android for their watches. "The Wear interface seems fast and refined," she comments. For its second model, Samsung has abandoned Android in favor of Tizen, the "open source" ("open to all") operating system, considered faster and more efficient. In addition, Google wanted to act before Apple, whose CEO, Tim Cook, promised in 2013 the arrival of "new product categories" in 2014. The Apple company could present the iWatch in June or September. Smartwatches are still a niche market: 87,000 units were sold in 2013, according to Juniper Research. But the situation could quickly change: sales could reach 10 million sales per year by 2018, the firm predicts. In the longer term, Google also wants to become a key player in the field of "wearable devices", connected objects that we wear on our person. The company has already presented Google Glass glasses, which should go on sale this year. "We are only at the beginning, we have barely scratched the surface of the possibilities of mobile technologies", assures Sundar Pichai, the boss of Android and Chrome at Google. The battle between the high-tech giants is only just beginning. The market looks promising: 10 billion dollars (7.2 billion euros) in 2016, according to the Gartner firm.

## ###ARTICLE\_START### ID:2593

If you have any basic computer knowledge, you are probably familiar with the term open source, or open source code. The term broadly defines any software whose source code can be modified and accessed by anyone. A former engineer from the Williams F1 team is currently trying to adapt the concept to design a racing car. However, Englishman Nicolas Perrinn is not tackling an easy challenge with myTeam. He wants to enter the fruit of this virtual collaboration in the 2015 24 Hours of Le Mans in the LMP1 class, the most prestigious category of the legendary event. The engineer's website (http://perrinn.com/) is used as much to collect ideas in all possible forms as to raise the necessary funding for the next two years (8.5 million pounds or 15.7 million dollars). Perrinn maintains that he is not seeking money from collaborators, but rather through advertising and investors. The engineer has already published detailed 3D plans on the website as a starting point for designing the car. He claims that the drawings are complete enough to produce a model of the car using a 3D printer. He is also relying mainly on computer-aided design to carry out the adventure. The instigator of the project is aiming very high. He wants a car that can compete with the big manufacturers. It will have to be hybrid and have an all-wheel drive system. The combustion engine could be a turbocharged V6 or a naturally aspirated V8 supplied by an engine manufacturer. Perrinn does not rule out the development of an in-house engine, but funding will dictate the path taken. A fascinating experiment that encourages public participation to an unprecedented degree, and whose evolution will be particularly interesting to follow.

## ###ARTICLE\_START### ID:2594

A ship, perhaps that of Ulysses, has just docked in Brussels: on the occasion of the Hellenic presidency of the European Union, an exhibition organized by the Greek Ministry of Culture and Sports, "Nautilus. Navigating Greece", has been anchored since January 24 at the Bozar Museum. On board, exceptional archaeological pieces that trace the history of Greek art from 3,200 BC to the 2nd century AD. These are in dialogue with contemporary artists, as if Greece, which has become the bête noire of Europe, had never broken with Apollo, god of light and the arts. This idea is not unanimous. From March 26, in the same museum, another exhibition, entitled "No Country for Young Men", will offer a radically opposite vision of this country by evoking the Greek identity that was built through the crisis. "Most artists do not look to the past but focus on the present and the future," says its curator Katerina Gregos. "Contemporary Greece has very little to do with Antiquity." From this confrontation between two antagonistic views, the question of the identity of the Greek people arises, in the heart of the political capital of Europe. What remains, today, in Greece, of this Antiquity, which remains a reference for most contemporary artists? The exhibition "Nautilus" is structured around the theme of the sea. "Because it allows the exchange of ideas and wealth, the sea played an essential role in the development of Greek civilization," explains archaeologist Maria-Xeni Garezou, co-curator of this exhibition. It made possible the birth of democracy, philosophy, and theater. » The tour opens with an installation, Salt Testament - Chess Continuum, made of luminous blue threads and projections of marine reflections, by Aemilia Papaphilippou. "For me, Antiquity is an open source code, a software bequeathed and modified from generation to generation," continues Maria-Xeni Garezou. Our identity, like our culture, is not fixed in time: it is always being reinvented, in a continual flux. Being Greek is not a stereotype." In the following section, statues or vases with fine marine decorations bear witness to the birth of art within the Cycladic and Minoan civilizations. Opposite them, an image by the photographer Spyros Staveris taken during a festival in Lagada, Ikaria, where "every year, in a Dionysian 'trance' specific to Icarian music and dance, the most disparate 'pilgrims' commune", like an echo of the festival scene forged by the god of fire, Hephaestus, on Achilles' shield in The Iliad. "I was very moved to see the photo of this summer festival projected onto a display case containing small ritual cups from the Minoan era, made of terracotta and very simple, reminiscent of the plastic cups of our festivals", testifies the Athenian artist. Further on, in the section called "Odysseys", the faces of immigrants about to return to their country, photographed by Leonidas Toumpanos, respond to the images of the voyages of the Ancients on the Aegean Sea. As for the Parthenon frescoes, they find an echo in the sculptures of horses and warrior torsos made of driftwood by contemporary artist Alexandra Athanassiades. "Ruins and archaeological fragments fascinate me," she says. "They evoke in me this world fragmented by screens, by zapping, in which we live and which must be reconstituted." This is what it is all about: reconstituting a fleeting and fragmentary identity. Greece, placed under the yoke of the Ottoman Empire until 1821, did not experience the European Renaissance. "The question of Greek identity, torn between Antiquity, which links it more to the West, and the Byzantine past, which links it more to the East, has arisen in a conflicting manner throughout the 20th century," observes art historian Vanessa Théodoropoulou. Greece continues to ask itself these questions, particularly in times of crisis. » In the 1930s, artists and poets, around the poet Odysseas Elytis or the surrealist painter Nanos Valaoritis, wondered how to be modern. Should we get closer to the European avant-gardes and turn our backs on the past and tradition, or cultivate a Greek specificity? The debate resurfaced in the 1970s. "The question of Greek identity is all the more complex because the Greeks have always had to position themselves not only in relation to Antiquity, but also in relation to Antiquity as it is perceived by foreigners, believes Nadja Argyropoulou, independent exhibition curator. This period rediscovered by the Renaissance, an "idea" that has been fantasized, glorified, mythologized, interpreted by psychoanalysis over the centuries, is both a blessing and a burden." With the crisis, some seem to want to free themselves from this "burden". In 2007, the first edition of the Athens Biennale took place, organized with virtually no subsidies by the curator Xenia Kalpaktsoglou, the artist Poka-Yio and the critic Augustine Zenakos. Entitled “Destroy Athens”, it called for a reflection on the stereotypes that underlie identity constructions. The last edition, in 2013, questioned the solutions to emerge from the crisis. “Many meetings and debates were organized,” observes Nadja Argyropoulou. “As if journalism were interfering in art, which thus became a mirror of reality instead of taking a step back. It must be said that a folklore of the crisis was born in our country.” Between Apollonian Antiquity and the crisis, a third way is emerging. In her exhibition "Hell as Pavilion" in 2013 in Paris at the Palais de Tokyo, Nadja Argyropoulou revisits a history of art that is not Apollonian - like "Nautilus" - but Dionysian, made of crises, ruptures and convulsions. "In the center of Delos, the island of Apollo, there is a temple dedicated to Dionysus who symbolizes the darkness at the heart of Greek culture," explains Nadja Argyropoulou. "Today, all the "isms", communism as well as capitalism, have collapsed. For the first time, it is impossible for us to imagine the future. Greek art, which was marginal, out of fashion, becomes relevant as a result." Kostis Velonis' sculptures thus play ironically on the architectural codes of Antiquity. “My work, by adapting the archaeological practice of exhibiting ancient ruins and relics, aims to bring out a sense of weakness, highlighting how an archaeological ruin reflects the natural ruin of human life,” he explains. “My works function as a parody of the romantic idea of the eternal state, revealing the possibility of always starting over from the remains, from the debris of the wreck. This is particularly felt in Greece today, when we have been shipwrecked. For me, archaeology does not only produce knowledge, it contributes to the construction of Greek identity.” Antiquity, in Greece, does not seem to evoke a bygone past. In a context of crisis, on the contrary, it raises the question of what the expression “being contemporary” means. “The avant-garde is 5,000 years old!”, the surrealist Nanos Valaortis, now 93, likes to say. Like a watchword for these Greeks in search of a new identity. "My name is Nobody," Ulysses had said to the Cyclops before gouging out his eye and fleeing. To those who asked him who had injured him, the Cyclops replied: "Nobody." Always on the run, searching for its Ithaca through art, Greek identity seems to be like this Ulysses with a thousand towers... The avant-garde, in fact, is thousands of years old.

## ###ARTICLE\_START### ID:2595

Montreal - Québec solidaire accuses the "old parties" of tightening the screws on funding services to citizens rather than tackling the unnecessary squandering of public funds. The solidaire team announced yesterday the measures its government would take to tackle the waste of funds that, according to it, mainly benefits pharmaceutical companies, computer companies and engineering consulting firms. The money recovered would then be used to better fund services to the population and improve the working conditions of people employed by the state. "Currently, both the Parti Québécois government and the former Liberal Party government have the same obsession: zero deficit. They play so much in the spending column, which means cuts. What we say is that we have to increase government revenues, play in the revenue column," explained Québec solidaire president Andrés Fontecilla. These are the four measures that the party decided to present yesterday. First, Québec solidaire wants to tackle the reduction of drug spending by setting up Pharma-Québec, a fully public Crown corporation that would work to reduce the drug bill, in particular by negotiating their purchase for the entire health system, which would allow for better prices. "We believe that with Pharma-Québec, we can reduce the prescription drug bill by 40%, by having Quebec purchase all the drugs consumed. We can save $1.5 to $2.3 billion," said Mr. Fontecilla. End of PPPs The party then commits to ending public-private partnerships (PPPs), judging that this method of carrying out public projects has been "catastrophic everywhere on the planet." Québec solidaire also promises to put an end to the proliferation of health executives. The Solidaires deplore the recruitment of many executives to administer the cuts in health care, rather than hiring nurses to come and support those who are already overworked. Finally, the Solidaires want to see the government switch to free software, rather than paying sums for the renewal of licenses for the suites of programs used by the entire public service and government apparatus.

## ###ARTICLE\_START### ID:2596

Hollywood has a new enemy, which could also worry services like Netflix or Apple's iTunes Store. Popcorn Time, a free software designed by about twenty anonymous developers, seems to be already engaged in a fight for its survival. "Hollywood's worst nightmare" and "Netflix for pirates" are two expressions that are often used whenever Popcorn Time is mentioned, a new software that has been increasingly fueling discussions in recent days. References to Napster, the music file sharing software released in 1999 that irreparably shook the music industry, are never far away either. Simplified use Popcorn Time is based on the BitTorrent file sharing protocol, already very popular with fans of pirated music, films and software. However, it is attracting attention because it adds several elements that simplify its use, including a visual interface reminiscent of those of Netflix, the iTunes Store or the video-on-demand services of Videotron and Bell. This interface also makes it easy to obtain a quality copy of downloaded files, informs the user whether or not subtitles are present, and starts playing the file almost immediately, right from the software. Downloaded movies are deleted from the computer after viewing. The menu has several categories. The "Popular" section even includes movies that are still showing in movie theaters. It is worth noting that, as with any other software based on the BitTorrent protocol, its users also serve as a dissemination point for the files they have already downloaded. Available for Windows, Mac, and Linux computers, Popcorn Time has quickly gained popularity in recent days. Perhaps too much so. The file hosting site Mega, which made the software installer available on its servers, removed it yesterday morning, without providing any explanation. However, it reappeared during the afternoon, still without explanation. It is therefore unclear whether the host was responding to a legal request. Hard to eradicate Regardless of its availability through "official" channels, it seems clear that it will be very difficult for the film and television industry to completely eradicate Popcorn Time. Not only is it likely to reappear anywhere at any time, but it was also developed according to the principles of free software. The computer code that constitutes it is therefore also accessible. Legal proceedings Popcorn Time users do not benefit from the same protection and are exposed to legal proceedings to the extent that they use it to download content protected by copyright. The creators of the software also warn users, both on their website and when opening the software, in French: "Popcorn Time downloads films using torrents, which may not be legal (sic) in your country. We are not responsible (sic) for any problems that may arise, make sure you understand our general conditions before using the application."

## ###ARTICLE\_START### ID:2597

It is an online service that allows you to easily find a page using one or more keywords in a search form." This is how the site Commentcamarche.net defines the search engine. "Search engines do not only apply to the Internet," specifies the free encyclopedia Wikipedia. Some engines are software installed on a personal computer. These are called desktop engines (...). There are also meta-engines, that is, websites where the same search is launched simultaneously on several search engines." The search engine, an essential co-pilot for Internet users who crisscross the Web, is numbered in the dozens, from the late Alta Vista to Yandex, via Bing, Google, Qwant and Yahoo!. There are solidarity and/or ecological search engines - part of whose profits are donated to charities -, open-source search engines, others specialized in image or video searches or even those intended solely for children, such as Xooloo or the aptly named Takatrouver. "Google has become your best ally to answer all your questions? What if, for once, you called on your own knowledge to take stock of what you know, or don't know, about search engines", suggests ITespresso.fr in a quiz (lemde.fr/1i30LRE). The very first search engine? Archie. The slogan of Lycos, whose mascot is a black retriever? "Go get it". Is Voila the only French search engine still active in 2014? No. The name of the main search engine in China? Baidu. The percentage of searches carried out on Google in France? More than 80%. The number of search engines in the world in 2014? More than 100. Incongruous queries Each of them is put to the test, according to the whims and incongruous, even incomprehensible, queries of Internet users. The site Minutebuzz.com draws up, from the Tumblr devenirunninjagratuitement.tumblr.com which referenced them until October 2013, a selection of the worst French searches on Google (lemde.fr/1gn055R). The engines have an answer to everything, and even to these "the toaster appeared before bread", "how to make smoke with water" up to "looking for a cure for stupidity". Oh cogs, oh despair, oh enemy Internet users!

## ###ARTICLE\_START### ID:2598

To get involved in politics, you can run for local elections, debate with candidates, vote... but you can also browse the Web with Firefox, write documents with LibreOffice, watch videos with VLC, get information with Wikipedia... All these names not only designate free software, but also correspond, as Sébastien Broca explains, to "concrete utopias", "radical critiques of the current dominant model". Just that... Such a proposal could make you smile if the argument deployed were not so convincing and did not bring us, without difficulty, from soulless lines of code to bitter political struggles over software patents, anti-piracy laws, international trade treaties... As such, technologies are rarely neutral. A sociologist specializing in social movements linked to digital technology, the author begins by defining what free software is. It offers four freedoms: the freedom to use it, to study it, to modify it and to distribute it. This requires, in particular, that the source code of the program, that is to say the succession of its computer instructions, be accessible. This concept was introduced in 1986 by the computer scientist Richard Stallman as a resistance to the proprietary model that restricted the room for maneuver of programmers. Politics is written into the genes of "free". The book then analyzes three values conveyed by this movement: autonomy in work, technical creativity, defense of freedom of information. These software programs are, in fact, more than tools. To make them, collaboration and exchanges are necessary, modifying the usual working methods. Their economic model is also based on a subtle mix of volunteering and traditional salaried employment. Ambivalences and contradictions The philosophy of open code goes hand in hand with the hacker movement, which promotes the control and diversion of technical objects. Nothing to do with the figure of the geek, more concerned with playing with the objects that are sold to him than understanding them. Finally, the defense of the freedom of movement of information is based on the obligation of transparency in IT, which extends to other fields, such as culture or politics. The author remains critical of this "ethos" of Free Software, of which he also points out the limits: Free Software workers also suffer from overwork, can sometimes be exploited, have difficulty establishing boundaries between work and rest... On the technical creativity side, if some "free software advocates" believe in the reappropriation of technology by citizens, others see them as economic models that are perfectly compatible with a new age of capitalism. The semantic war between free software and its very similar but less ideological variant, open source, also shows that the classic economic system can recover these protest values for its own benefit. Concerning transparency, the sociologist notes, here again, the gap between principles and reality. Despite these ambivalences and contradictions, the author shows how free software continues to irrigate fields far removed from IT. Free software advocates have been at the forefront of debates on cultural and intellectual exchanges (piracy) or on law (software patents, gene patents, copyright). Radical thinkers like André Gorz or Toni Negri have, in a certain way, also been inspired by free software. The author even traces a connection with the utopia of universal income which, by allocating a financial resource to all, offers a way out of salaried employment. In conclusion, Sébastien Broca argues for a further extension of free software methods to the very way of doing politics. Quite a program.

## ###ARTICLE\_START### ID:2599

Back at Numa after a tour in the Antilles, Gaël Musquet shakes hands and jokes in the corridors. In this stronghold of Parisian digital, this fan of free software and open data is at home among developers, start-ups and other freelance graphic designers. His role as president of the French community of OpenStreetMap (OSM), the free and collaborative digital map launched by the British Steve Coast in 2004, has made him indispensable. "I have a dream: to see the Airbus of online mapping emerge to face the Boeing that is Google Maps," he says, like a Martin Luther King of free data. Cyclists. Despite the "constant requests" a few weeks before handing over the reins of the French branch of OpenStreetMap to devote himself to "more concrete projects, still within OSM", this 33-year-old from Guadeloupe remains calm: "The primary strength of OSM is the men and women who contribute to it, who check, add, correct." There are reportedly more than 3,000 active volunteers in France, geeks, cyclists, hikers or monks, tracing more than 1,000 kilometers of roads, paths and other bishopric boundaries every day based on the model of the online encyclopedia Wikipedia. The result: a world map that is generally precise, rich and up-to-date. And above all, free to access and use. "This civic approach changes the relationship with the territory," believes Gaël Musquet. Some try to provide information on the presence of pedestrian crossings, sports facilities or defibrillators, to link street names to their Wikipedia entries." Because what is at stake behind this achievement goes well beyond the search for directions. "It is a duty to give all this information back to the citizen, the State and Google must not have a monopoly on it. Without free software, no Internet; without free data, no GPS, he reminds us. An open map also encourages the emergence of an innovation ecosystem. Industrialists and start-ups can recover this data to create new services and sometimes improve the map. It is a virtuous circle." The American social media Foursquare has already switched part of its services to OpenStreetMap. The SNCF, in the middle of a cartographic census of the 300 stations in Ile-de-France, is said to be a "fan". The service has also proven its usefulness in managing humanitarian crises by mobilizing communities to highlight areas lacking food or equipment. To understand the origins of Gaël Musquet's commitment to open data and mapping, we must go back to 1989, the year his native Guadeloupe was ravaged by Hurricane Hugo. Ripped from the neighboring hill by terrible gusts, a huge tank ended up flying on the facade of the family home. Without causing any casualties, but causing enough damage to mark the boy. "The sky had an apocalyptic reddish color. I saw the eye of the storm." He then vowed to do everything he could to improve the lives of the islanders. In high school, he was thrilled when he finally had access to his first "data", infrared readings of cyclones approaching the coast. He opted for meteorology and wanted to make it rhyme with redistribution: at 16, he created scripts to automatically retrieve exercise corrections on his "mechanics" teacher's computer (then shared with the class); at 21, he developed sensors to assess the height of clouds. "I exchanged emails with engineers at the Goddard Space Flight Center [NASA's weather agency, editor's note] but I was far from having the same relationship with French meteorologists!" After stints at engineering school and university on the Old Continent, he landed a job as a research officer for the Ministry of Ecology in a center near Aix-en-Provence. That's where he discovered OpenStreetMap: "I needed map backgrounds to validate scenarios for installing roundabouts in business areas, but the ones I was interested in weren't up to date on OSM, IGN and even less so on Google Maps." With his two children, he then had fun drawing bits of maps himself. The Parisian business association Silicon Sentier spotted him and offered him the chance to work on structuring the nascent community of French "open cartographers." Before introducing him, at the end of 2011, to François Hollande's campaign team: "I collected data used for door-to-door strategies and to disprove statements by political opponents." Consulting. Again this year in the municipal elections where he gave a helping hand to the candidates' teams, including that of Anne Hidalgo. "But even in politics, I remain a free software advocate," he insists. Gaël Musquet now spends most of his energy on behalf of Fonderie, the digital consulting agency in the Ile-de-France region, where he shows associated organizations the prospects opened up by communities such as OpenStreetMap. He also watches over start-ups at Numa, speaks at the Sorbonne, Sciences-Po and Sup'Internet, and enjoys diverting the uses of accelerometers for Orange and the Euro-Mediterranean Seismological Center. "He is someone who is very resourceful, easy to approach and who has a real vision," describes a close friend. "That is very rare in the tech sector." CV 1980: Born in Guadeloupe. 2001: Studies engineering in meteorology. 2008: Traces his first sections of OpenStreetMap (OSM) road. 2011: Co-founds the OSM France association, of which he becomes president. 2011: Joins the Hollande campaign team. 2012: Recruited by Fonderie, the digital consulting agency in the Ile-de-France region. Photo Rémy Artiges

## ###ARTICLE\_START### ID:2600

Wave glider, the hurricane lookout One of these 2 m long and 60 cm wide platforms, designed by the American Liquid Robotics, was sent by NOAA (the American agency responsible for studying the ocean and the atmosphere) to the heart of Hurricane Sandy, in October 2012. It measured the temperature of the water, the air, the direction and speed of the wind, etc. During the hurricane season, NOAA is considering using several drones that move using the power of the waves. Emily, the lifesaver It's "Baywatch" without Pamela Anderson. But with "Emily", a motorized drone capable of saving five people from drowning at a time. Emily (for Emergency Integrated Lifesaving Lanyard) is a large buoy measuring 1.4 metres and weighing 11 kilos that travels at 3 km/h. No propeller but a water jet propulsion system like on jet skis. Remote-controlled from the beach by lifeguards, Emily is already in action on several American beaches, including Zuma - in Malibu (California). Saildrone, the American cousin Vaimos' main competitor flies the American flag. Fluorescent orange, this trimaran with its airplane wing sail has just sailed for more than a hundred days in the Pacific. Financed with tens of thousands of dollars by the Marine Science and Technology Foundation, a foundation created by Eric Schmidt (executive chairman of the board of directors of Google), Saildrone measures nearly 6 meters. Its creators intend it for essentially scientific missions. Protei, the cleaner A tailed drone to clean the sea of oil pollution. Conceived by César Harada, a Franco-Japanese researcher at MIT in 2010, during the oil spill in Louisiana, Protei was partly financed by crowdfunding: $33,000 collected in April 2011. Its technology is open source. The drone is a 6 m long sailboat with a 25 m tail that can absorb up to 2 tons of waste: oil, plastic, etc. Based in Hong Kong, Harada promises to market his drone "in a few months".

## ###ARTICLE\_START### ID:2601

A tailed drone to clean the sea of oil pollution. Imagined by César Harada, a Franco-Japanese researcher at MIT in 2010, during the oil spill in Louisiana, Protei was partly financed by crowdfunding: $33,000 collected in April 2011. Its technology is open source. The drone is a 6 m long sailboat with a 25 m tail that can absorb up to 2 tons of waste: oil, plastic, etc. Based in Hong Kong, Harada promises to market his drone "in a few months".

## ###ARTICLE\_START### ID:2602

Mixed success for Windows 8, ditto for the office suite, disaster in the adventure of mobile devices, tablets and phones combined: only the Xbox gaming platform seems to show decent results. Microsoft, a company in decline? In October 2003, while I was writing for the venerable Devoir, I wrote a little scathing article that earned me many "friends" among my friends in Redmond. "Farewell Microsoft", the title of this post, suggested that the firm founded by Bill Gates was in danger of disappearing in less than fifteen years, faced with, among other things, advances in free software. To revive the company and ensure its survival, its leaders had no choice but to breathe a wind of change into the company while playing a bold role by making the company do a 180° turn. It will be remembered that in the 1990s, faced with the arrival of the web, Microsoft had just succeeded with great success "a turn on a dime". But Steve Ballmer is not Bill Gates. With statements like "We have an action plan, we know and we know what consumers and businesses want, they know where and when to join us", it would have been surprising if Microsoft had succeeded again in the miracle of the 90s. A DISAPPOINTING DECADE After more than a decade, which ended with the recent departure of Ballmer, what about the one that was for a long time the most important (and influential) company on the planet, knowing that financially, Microsoft is nevertheless doing relatively well? On the operating system side, after the bitter failure of Vista, Microsoft had recovered well with Windows 7. But the release of Windows 8 is another resounding failure. Furthermore, the commercialization of operating systems seems to be doomed to disappear, when we know that Linux and, now, Mac OS X are available for free. The same goes for recent versions of the Office suite. Between the 2003 versions and recent versions, what is the added value? Why would the consumer pay tens of dollars for an upgrade that brings little? I know several who say they are very happy with old versions of Office. And once again, the value of office suites has just taken a hit when we know that the artisans of free software make excellent ones and that Apple, once again, gives away its two suites for free, Work for office and iLife for creative. The fact remains that there is still hope with the arrival of the new CEO, Satya Nadella. He seems to have a real vision for the future of Microsoft. Rumors here and there talk about taking over Android, originally a free operating system, and revamping it with Microsoft sauce in order to revive the mobility division. Why not after all. With the PC in decline, Microsoft needs a visionary who will be able to revive the company in the face of the Apple, Google and Linux of this world. Who knows if Satya Nadella is not the man for the job. We'll talk about it again in ten years with the post "Adieu Microsoft? (ad nauseam) " or "Adieu Microsoft? (I told you so)"

## ###ARTICLE\_START### ID:2603

Imagine. Alone in front of your computer, lulled by jazzy music, you slide colored bricks to align them in columns, filling in the empty spaces, all the while keeping an eye on the score indicator. No, you are not playing Tetris, you are advancing science by aligning DNA sequences on Phylo. This Canadian online game, developed at McGill University, asks participants to help scientists recognize segments of DNA sequences, or proteins, common to several species, while following rules that are understandable to all. Identifying genes and mutations carried by different families of the biological classification is essential to understanding the origin of a disease or the evolution of the genome. The contribution of Internet users is a reinforcement for biologists and geneticists, because computers do not always find the best possible answers. Phylo is just one example among others of games that call on collective intelligence to solve scientific problems where algorithms are ineffective in finding optimal solutions. On January 27, the Proceedings of the National Academy of Sciences (PNAS) presented the brilliant results of budding researchers who folded strands of RNA using the EteRNA game. These games are designed so that you can participate without having completed advanced scientific studies. The tasks proposed can be carried out by anyone and are based, for example, on logic or spatial representation. These devices are in line with participatory sciences, which are currently experiencing a real craze, although the participation of enlightened amateurs has long existed in the naturalist tradition, in particular with bird watching or counting butterflies ("Science & techno" of March 3, 2012). Physics is also getting involved. CERN, the flagship of particle physics research, is launching into the collaborative adventure. Players will be tasked with adjusting a series of parameters to simulate high-energy particle collisions on a computer, such as those occurring in CERN's accelerator, the LHC. Software will automatically analyze these simulations and compare the results to measurements obtained in reality. Peter Skands, who leads the project provisionally named "Atom Smashers," says that it was thanks to Mikkel Jeppsson, the son of a friend of his who was then in the 8th grade, who came from Denmark for an internship, that he came up with the idea. "I was looking for something interesting to make him do," he explains. Since he and his colleagues were working on a simulation system, he gave the 15-year-old a few explanations and showed him how to make changes to it. "By the end of the week, he had found a better setting than the one I had started with," recalls Peter Skands. These new settings were adopted by default and called the "Jeppsson tune", in homage to the intern. "It made me think that we could scale this experiment and let more people try to find a setting." Luis Van Ahn, a lecturer at Carnegie Mellon University (Pittsburgh, USA), was one of the first to study how the association of the human mind and the computer could solve problems to which neither taken independently could find a satisfactory solution. He is at the origin of ESP Game, an online game that presents two Internet users with an image accompanied by a list of key words. The terms designated by each as descriptive of the photo are adopted. The Google company now uses this system to provide more accurate answers on its search engine dedicated to the image. "I like what the game represents and what it brings to scientific research", explains one of the Phylo players. He adds that the motivations of the many participants are not necessarily the same. The playability, the recreational dimension of the "puzzles" or the background music contribute to the appeal of the game. Based on the work of Luis Van Ahn, who insisted on the importance of the time factor to motivate the player to take up the challenge, the creators of Phylo had initially integrated a stopwatch. "I very quickly started to receive emails from frustrated players who wanted to spend more time on certain problems," recalls Jérôme Waldispühl, lecturer in the computer science department at McGill University and instigator of Phylo. The time counter was finally abandoned, in favor of a score system to beat that seems to please competition enthusiasts just as much. If these games satisfy the participants, do they contribute anything to science? It would seem that this is the case, according to publications published in leading scientific journals. Foldit, an exemplary pioneer, which consisted of imagining the folds that a protein could adopt to reach its stable state, has communicated its results in prestigious publications such as Nature and PNAS. Proof of the enthusiasm generated by this particularly popular project, developed by the Center for Game Science at the University of Washington, the players were cited as co-authors. For Jérôme Waldispühl and Mathieu Blanchette, heads of Phylo at McGill, the objective was first to examine whether the contribution of the players could be an asset. "Ultimately, even if the alignment algorithms already do a good job, we realized that we could improve them a little thanks to the data generated by the players," concludes Jérôme Waldispühl. In their daily practice, this is how biologists proceed: they manually correct the alignments proposed by the algorithms. The results show that "the human-computer combination is more efficient than the computer alone or the human alone," specifies the founder of Phylo. But we must not "oppose the masses to scientists", he warns: "The idea is to extend their work with citizens. They have accumulated irreplaceable expertise, and players can only provide support for tasks that require little learning." Yann Ponty, CNRS researcher at the Computer Science Laboratory of the Ecole Polytechnique (LIX), explains that in order to avoid asking Internet users for a resolution for which machines are or will be better, we must ensure the "NP-hard" nature of the problem. In theoretical computer science, optimization problems are described as "NP-hard" if, under a hypothesis accepted by the entire scientific community, they cannot be calculated precisely in a reasonable time. "This concept, which materializes our inability to find an efficient algorithm, is a necessary condition for using a participatory approach for mathematically well-defined problems", specifies Yann Ponty. By not checking the complexity of a game, "we run the risk that the efforts of Internet users will be destroyed when faced with an exact and definitive resolution in a few seconds by a computer of all the proposed puzzles," he continues. This could discredit future collaborative projects with the public. This is one of the criticisms that this researcher addresses to the EteRNA game, which gives Internet users the mission of finding the sequences of the basic building blocks of a strand of RNA based on the shape it takes once folded. Not only do players propose RNA sequences, but they can also submit laws on their design, based on their observations of feedback. Thus, the results, presented by the authors of the game from Carnegie-Mellon University in the journal PNAS, affirmed that the RNA design algorithm built from the rules discovered by Internet users and the sequences proposed by the EteRNA community were more efficient than the latest existing algorithms. This attractive conclusion seems overestimated in light of certain elements: NP-difficulty does not seem to be proven for RNA design; the study compares the results of Internet users only to those provided by two algorithms, including one of the oldest in this field; participants must deduce general principles after familiarizing themselves with the basics of folding by solving puzzles for which they obtained a score calculated according to its conformity to the model known for thirty years. Finally, "the dynamics of folding processes are neglected, while they can influence the structure", points out Hervé Isambert, CNRS research director at the Curie Institute, who participated in the development of the Kinefold site, a tool for generating animations to visualize the folding of a given RNA sequence. The particularity of EteRNA is to test in the laboratory certain sequences proposed by the community. Each week, players vote for those that they think deserve to be synthesized. "This democratic voting system risks discouraging the emergence of new ideas, when that is what is sought. Someone who understood something that no one else understood would propose a strategy that would not be selected for synthesis because it disagrees with the commonly accepted rules," laments Yann Ponty. However, he recognizes the quality of the "production of the game and the educational value that makes EteRNA a very good introduction to RNA design." From Carnegie-Mellon University to MIT, including the University of Washington, more and more institutions are following in the footsteps of these experiments. "Only the game programmers have access to the data," regrets Jérôme Waldispühl. "Asking many volunteers for help to be the only one to exploit the results is selfish." Supporters of collaborative gaming often insist on the importance of setting up open systems, making both the game data and the optimization results accessible to everyone. "It is important that the computer code behind the game remains open to allow others to make their own version. And if the prototypes are improved, it helps us all move forward," emphasizes Ariel Lindner, Inserm research director and co-founder of the Center for Interdisciplinary Research (CRI). This institution is participating in the European project "Citizen CyberLab", which focuses on the creative approach of players and what they learn in online citizen science programs. One of the projects aims to set up a tool to facilitate the creation of video games. It should make it possible to produce new systems by recombining and modifying elements of existing games. This platform, called "Red Wire", is intended to be open to all and was presented at the Fosdem conference (Free and OpenSource Software Developer's European Meeting), which was held in early February in Brussels. Through participatory science games, the public is encouraged to take an interest in real problems that scientists are trying to address on a daily basis. "One of the things that fascinated me the most about these games is that for the first time I could talk about my research directly to citizens," reveals Jérôme Waldispühl. "This dissemination of knowledge is extremely rewarding."

## ###ARTICLE\_START### ID:2604

BARCELONA - | The Nokia Corporation booth is bustling with people at the Mobile World Congress in Barcelona, Spain. And rightly so: with its high-end Lumia, its very affordable Asha and the new Nokia X and XL in between, the Finnish brand hasn't looked this good in a long time. It's ironic that Nokia, soon to be owned by Microsoft, is introducing two new Android devices at the Mobile World Congress, but it's not stupid. First, it's caused a stir in the media, which suddenly found a taste for talking about a brand that's in need of love, especially in Europe and North America. Second, the Nokia X and XL only use the core of the open-source Android software, replacing the Google services used by other manufacturers with the combined services of Microsoft and Nokia (Nokia Store, Here Maps, OneDrive, Skype). Visually, the interface of these two devices (sold for 79 and 129 euros) is also heavily modified, not recalling in any way the visual elements put forward by Google. The only problem is that with Windows Phone, Asha (the system of entry-level devices intended for emerging markets) and now Android, Nokia is multiplying mobile platforms, having to juggle three incompatible systems. Even if this means that it will be impossible for the user to migrate all their data (and the applications purchased to use them) when they want to change handsets, it does not prevent Nokia executives from sleeping at night, assures Amit Patel, director of developer relations at Nokia. "That's where cloud services come in," he says, "services that are now available on smartphones costing from 50 to 130 euros without a contract, and which allow us to reach the 90% of the global market that the more expensive Lumias couldn't reach." FORGOTTEN MARKETS When you know Nokia, it's obvious. This is a brand that has always liked to make things complicated when it could have made them simple. And yet, the Nokia X and XL will not be sold in North America, Korea or Japan. As in the good old days, a market like Canada will therefore be deprived of the majority of Nokia's catalog of devices. A situation that escapes him, assures Mr. Patel. "We strive to offer the best choice of devices for the entire market, but this choice is often made for consumers by national service providers," he emphasized. The largest international event held annually in Barcelona, the Mobile World Congress is a kind of Super Bowl for telecommunications: an event that no one can ignore. Especially not Canadian companies in the sector, more than 120 of which are on site this year. The show ends tomorrow. For more information: mobileworldcongress.com

## ###ARTICLE\_START### ID:2605

In 2007, the agglomeration of the Aubagne and Etoile region (Bouches-du-Rhône) - 12 municipalities, 103,000 inhabitants - negotiated a public service delegation with the Aubagnais buses, a local company bought by Veolia. The challenge: to ensure the proper functioning of the 11 public transport lines in the country of Pagnol and the santons. For economic and ecological reasons, the agglomeration wanted to develop bus travel. A showdown between the public authority and the private company. The latter won the contract, but had to commit to increasing ridership by 15% over ten years. At a time when public transport was struggling to retain its users, this was seen as a resounding victory. 2008: municipal elections. The outgoing Aubagnais team - a left-wing union led by atypical communists - was looking for an emblematic measure. After lively debates, she proposed, amidst almost general scepticism, free public transport, which became effective a year after her election in May 2009. Since then, bus ridership has increased by 170%. 63% of journeys directly generated by free transport are made by people who would otherwise have taken their car. Public investment per journey has been halved. In buses where fraud and its control no longer have any reason to exist, where there is no longer a cash register, the atmosphere relaxes. Incivility, damage and aggression are down. Young people are getting used to leaving their estates and investing in the city centre. Distant towns suddenly seem closer. For a family of four, the gain in purchasing power is around 60 euros per month. This Provençal success story calls for some reflection. The heavy dogma according to which the market would be the only efficient and reasonable way to manage access to goods produced by human activity is being unequivocally denied. Free is economically, ecologically, socially, and even in terms of security, much more efficient than paying. Another observation is that the local level can support very forward-looking alternative policies. While States seem paralyzed by the accounting obsession that increasingly subjects them to the power (and delusions) of finance, local experimentation shows that we can free ourselves from it and make real political choices. Then, a sort of "contamination" is established from the base, due to the exemplary nature of this innovation. Thus, the entire east of the Oise department is gradually moving to free access, following in the footsteps of Compiègne, the first city in France to have tried the experiment. And this issue is now being raised by more and more players in local political life. About twenty communities have already taken the plunge. An encouraging symptom: the meetings that are organized on the subject contrast in their tonicity with so many political meetings where a depressive bitterness and a disoriented discontent are expressed. Free of charge touches on essential springs of individual and social life. What gives meaning to our existence is priceless, the exact opposite of "worthless". We are very attached to certain political inventions - free education, social security reimbursements - which place goods deemed essential above the constraints of the market and make them rights, not in words, but in deeds. Not to each according to his bank account, but to each according to his needs. These debates, where the intimate and the collective, the concrete and the utopian intersect, "feel good", the participants often say. The obsession caused by the rising influence of the market makes us believe in the depressing maxim according to which nothing is free. Rediscovering that this is a falsehood, indeed, feels good. However, free access to public transport does not erase the cost that makes it possible. The Aubagne-La Bouilladisse round trip is free for the user, free, say the Anglo-Saxons. But upstream, the buses and the drivers have to be paid. To finance its free service, the Aubagne conurbation benefited from a windfall. It passed the 100,000 inhabitants mark, which gave it the possibility of increasing the "transport payment" paid by companies with more than 9 employees. And its choice to build a tram line (free!) even made it possible to reach the maximum rate of 1.8% of the payroll. These increases alone have made it possible to absorb the cost of free transport: the disappearance of ticket revenues, new buses and faster frequencies to meet the increase in ridership (minus the costs related to the production, marketing and control of transport tickets). The companies concerned have rather well taken a measure that costs them money, but at the same time results in a fluidity of travel that is favorable to business and the transport of employees. These particular circumstances remind us that these experiments in alternative policy are incentives, not revenues. At least the question deserves to be asked. It comes from other sources, because public transport is not the only area where free transport is effective and desirable. Several communities practice free water quotas considered vital. Others have instituted free funerals, thus surrounding grief with concrete solidarity and freeing the bereaved from the painful negotiation with funeral directors. Still others are part of the free software movement that brings very innovative forms of collective appropriation and development. Will the decentralized imagination of the friends of local freebies be the catalyst for the alternative that the centralized state communism of the 20th century dreamed of and missed? "De la gratuité", éd. de l'Eclat, 2006. "Voyageurs sans ticket", with Magali Giovannangeli, éd. Au diable Vauvert, 2012. These two works are freely accessible on the Internet.

## ###ARTICLE\_START### ID:2606

We are a group of computer scientists who created the blog "Binaire.blog.lemonde.fr" with the Société informatique de France. Why this blog? Just take the question: what is computing? It is a complex question; the answers are multiple, even passionate. The goal of the blog is to answer it, to show that computing gives us real power over our digital world. In short, the goal is to share our passion for computing. The place of computing Computing has a crucial place in our society. It is the core business of many of the largest companies that have established themselves over the last fifty years, such as IBM, Microsoft, Oracle, Apple, Google, Facebook. Above all, computing has gradually invaded all areas of knowledge and has played an essential role in the major innovations of the last decades. It contributes to the threats to our way of life with major environmental and social impacts but also to the solutions with, for example, sustainable computing. An attempt at a definition Computer science is the science and technology of representing information of artificial or natural origin, as well as algorithmic processes of collecting, storing, analyzing, transforming and communicating this information, expressed in formal languages or natural languages and carried out by machines or human beings, alone or collectively. Said like that, it sounds complicated. But if computer science impresses, if it scares sometimes, it is mainly because we did not learn computer science at school or college, as we learned other sciences. We must change that and teach our children to reason and program as we teach them to read, write and count, so that they understand how computer science influences their lives by building a digital world, so that they participate in the construction of digital culture. Computer science and digital The meeting of these two words is a source of confusion. The word digital would be "trendy" when the word computer science would be "old-fashioned". No! Computer science, which has transformed and continues to transform the world, is anything but old-fashioned. These two words should not be confused. Digital is an adjective that describes all activities that rely on the digitization of information. If the world has become digital, if culture is digital, the science of information and algorithms at the heart of these transformations remains computer science. Science and computer science Computer science is therefore a science. It is a young science. We are using the word science here in a very broad sense, designating a field where the criterion of truth of a statement is objective, because it is based on observation, experiment, demonstration, calculation, etc. This term therefore includes the natural or life sciences; but also, for example, mathematics. In this sense, computer science is clearly a science. Like mathematics, physics, biology and other sciences, it allows us to explain the world. Computer science and other sciences Computer science contributes, along with other sciences, to explaining natural phenomena. It is interested in the same phenomena as other sciences but differently. Let's take the example of images. A physicist can study the propagation of light rays and the transformation of images when these rays pass through transparent media or change direction when they encounter various types of mirrors. Optics leads to the construction of glasses that correct vision or lenses for cameras. With film photography, chemistry allows the reproduction of images on a surface by depositing colored pigments that fix themselves on the surface. Mathematical geometers are interested in the shapes that can be drawn in the plane or exist in Euclidean space and their representation in the form of images visible in the plane. Doctors treat problems of the eye and optic nerves, which allow us to see images. Neurophysiologists are interested in the perception of images by our brain. For its part, computer science offers another way of understanding images. By "pixelating" them, we obtain a representation of the image that allows it to be transmitted, reproduced, compressed, transformed, and compared. Artificial and natural sciences and human sciences As we have said, algorithms live at the heart of computer science. Algorithms existed long before the computer. When we teach children the four arithmetic operations, we teach them algorithms. When we do mathematics, we are therefore also doing computer science without knowing it. We quickly accepted computer science as an artificial science, somewhere alongside mathematics. Like mathematics, computer science made it possible to state absolute truths. It helped solve problems such as better designing airplane wings or organizing one's address book and appointments, and also revolutionized science through simulation and data analysis. And then we realized that computer science was also a natural science. With DNA, the coding and transformation of information were at the heart of the study of biological organisms. And in the human sciences, computer science also made a remarkable entrance. The laws imagined by sociologists, linguists, economists, etc. could, for example, thanks to simulations, be confronted with experience. Knowledge and doing Learning combines a phase of acquiring knowledge with a phase of experimenting with the acquired knowledge, to move towards know-how. In computer science, this dichotomy between knowledge and know-how is found in an observation: computer science is both science and technology. As a technology, it allows us to create. It allows us to create software such as word processing or e-mail that we use every day. It also allows us to develop software that revolutionizes essential objects such as telephones or trains. The successes of computer science The achievements of computer science are already impressive. With computing, you can dream up a new software in a garage (Steve Jobs for Apple), in a university laboratory (Sergei Brin and Larry Page for Google) or even in your dorm room (Mark Zuckerberg for Facebook) and lay the foundations of an industrial empire. You can be a freedom freak like Richard Stallman and become the main architect of one of the most widely used software suites in the world, the free software GNU/Linux. You can also contribute to considerable scientific advances Donald Knuth and algorithms, Barbara Liskov and programming languages, or Adi Shamir and cryptography.

## ###ARTICLE\_START### ID:2607

TOKYO - The price of bitcoin on Tokyo's MtGox platform fell to a quarter of its value on other trading sites for the virtual currency around the world yesterday, just minutes before the company's website went down. Bitcoin holders were still unable to retrieve their virtual currency more than two weeks after trading on MtGox was suspended. The Tokyo-based platform had promised last week that everything would be back to normal, but that was not convincing. And yesterday at 2 p.m. Tokyo time, visitors to the website www.mtgox.com were left with a blank page. "There is nothing we can do," warned Japan's Financial Services Agency, which regulates transactions between financial institutions such as banks, insurance companies and brokerage firms. Concern has been growing among bitcoin users since MtGox, one of the oldest and largest bitcoin exchanges, stopped all withdrawals on February 7. The company said it was due to a computer problem. In free fall The value of bitcoin listed on MtGox has plummeted since then. Yesterday around noon, Japanese time, it was worth only $135, compared to $522 on the CoinDesk index, which reflects the value of this virtual currency on the main global platforms. In January, a bitcoin was listed at more than $900 on MtGox. MtGox, which did not respond to repeated requests from AFP, assured after the announcement of the outage that the problems had been resolved and that customers' assets were safe. But these bitcoin holders have still not been able to access their assets since and, last Thursday, the firm explained that it had moved its headquarters to the Japanese capital due to unspecified "security problems". "This move, combined with other security and technical concerns, has delayed our progress" in resolving the transaction problem, MtGox said in a statement released that day, its latest communication to date. On Monday, the American association that defends the cause of this virtual currency, the Bitcoin Foundation, announced that MtGox's boss, Mark Karpeles, had resigned from its board of directors. Bitcoin is the main value of the nascent movement of virtual currencies. It is based on an open-source computer code programmed five years ago by one or more individuals whose identity is not known. Unlike traditional currencies like the dollar or the euro, bitcoin is not backed by a central bank or a government. Its creation and transfer are based on cryptographic codes.

## ###ARTICLE\_START### ID:2608

BARCELONA - BARCELONA -- The Nokia Corporation booth is packed at Mobile World Congress in Barcelona, Spain. And rightly so: With its high-end Lumia, its very affordable Asha and the new Nokia X and XL in between, the Finnish brand hasn't looked this good in a long time. It's ironic that Nokia, soon to be owned by Microsoft, is showing off two new Android devices at Mobile World Congress, but it's not stupid. First, it's gotten the media excited, and they're suddenly back to talking about a brand that's been starved for love, especially in Europe and North America. Second, the Nokia X and XL use only the open-source Android core, replacing the Google services used by other manufacturers with Microsoft and Nokia's combined services (Nokia Store, Here Maps, OneDrive, Skype). Visually, the interface of these two devices (sold for 79 and 129 euros) is also heavily modified, not recalling in any way the visual elements put forward by Google. The only problem is that with Windows Phone, Asha (the system of entry-level devices intended for emerging markets) and now Android, Nokia is multiplying mobile platforms, having to juggle three incompatible systems. Even if this means that it will be impossible for the user to migrate all their data (and the applications purchased to use them) when they want to change handsets, it does not prevent Nokia executives from sleeping at night, assures Amit Patel, director of developer relations at Nokia. "That's where cloud services come in," he says, "services that are now available on smartphones costing from 50 to 130 euros without a contract, and which allow us to reach the 90% of the global market that the more expensive Lumias couldn't reach." FORGOTTEN MARKETS When you know Nokia, it's obvious. This is a brand that has always liked to make things complicated when it could have made them simple. And yet, the Nokia X and XL will not be sold in North America, Korea or Japan. As in the good old days, a market like Canada will therefore be deprived of the majority of Nokia's catalog of devices. A situation that escapes him, assures Mr. Patel. "We strive to offer the best choice of devices for the entire market, but this choice is often made for consumers by national service providers," he emphasized. The largest international event held annually in Barcelona, the Mobile World Congress is a kind of Super Bowl for telecommunications: an event that no one can ignore. Especially not Canadian companies in the sector, more than 120 of which are on site this year. The show ends tomorrow. For more information: mobileworldcongress.com

## ###ARTICLE\_START### ID:2609

Madrid Special Envoy - Among the candidates in the February 2 general elections in Costa Rica, 65 have already been convicted of non-payment of debts - some multiple times. If we add the cases currently under investigation, we arrive at a total of 91 candidates involved in 205 such cases. These exhaustive, quantified revelations were published in January in the "No voto a ciegas" ("I do not vote blindly") section of the website of La Nacion, the country's largest daily newspaper. The article is accompanied by tables, graphs and lists showing the exact amount of the sums owed, the names of the creditors and the type of goods purchased by the non-paying candidates. "No voto a ciegas" is produced by a team of data journalists specialized in the collection and exploitation of computer data. Composed of three experienced journalists and two young computer scientists, this team was led, until her departure from La Nacion at the beginning of February, by Giannina Segnini, 43, a petite, energetic brunette who was a "classic" investigative reporter for a long time and specialized at a very young age in corruption cases, which are not lacking in her country. To carry out the "No voto a ciegas" operation, her team first consulted the register containing the civil status, family record book and universal identity number of all citizens of the country, then it noted the data concerning 340 candidates in the presidential and legislative elections: "In Costa Rica, these registers are open to the public, without formality, and everyone finds that normal", says Giannina Segnini, met in Madrid, at the offices of the daily newspaper El Pais, where she was leading a seminar, on January 23. With this information, La Nacion's data journalists were able to query a second database to obtain a list of private companies owned by candidates. They then cross-referenced this data with a third registry to see which of these companies had signed supply contracts with the state - the aim being to identify potential conflicts of interest. At the same time, they downloaded the building permit applications filed by the candidates, then the list of those who were late in paying their taxes and social security contributions. For the most part, the collection was done automatically, thanks to computer robots equipped with software custom-designed by the team's web developer, Matthew Caruana Galizia, a 27-year-old Maltese who worked at the Financial Times in London before moving to Costa Rica. On the other hand, for the court records, it was necessary to return to more traditional methods. For four months, two young interns went to all the courthouses in the country to photocopy the files concerning candidates. Then they brought back thousands of paper documents to scan and integrate them into the newspaper's database. Giannina Segnini believes that technology will soon simplify the work of her journalists: "The scanning and transfer of documents will be possible on site, in the courthouses, thanks to a smartphone application that costs $5 [3.70 euros]." The success of this operation is the fruit of fifteen years of experience. Giannina Segnini, passionate about maths, physics and computers since adolescence, launched her first data survey in 1999: "It was very amateurish," she recalls, amused. "I had read that 193,000 people received the minimum survival allowance, reserved in principle for the homeless. I asked Social Security for the list of beneficiaries, but they refused. So I took the administration to court. The case went all the way to the Constitutional Court, and after eighteen months of proceedings, I won. This is an important ruling, which sets a precedent.” By cross-referencing the list with other databases, she discovered that in fact the allowance was given to voters, sometimes wealthy ones, who promised to vote for the party in power. “If I had done a traditional investigation, I would have uncovered a few cases, but the administration would have responded that these were isolated cases. Only a computer analysis was able to demonstrate that we were dealing with a large-scale corruption system.” Ten years later, after a stint as editor-in-chief, Giannina Segnini decided to return to investigation with a team of data journalists. Her greatest success to date dates back to 2012: “The government had announced a tax increase. I wanted to see if the politicians in favor of this measure paid their own taxes. In Costa Rica, property tax declarations are public documents. We were therefore able to show that many politicians had deliberately underestimated the value of their real estate in order to pay less tax. » Segnini couldn’t repeat the operation with income tax, because in Costa Rica, such data is confidential. But Treasury officials offered to secretly send her documents proving that some politicians were cheating on their income. “I warned these whistleblowers that if they logged into the database from their offices, they could be caught. But they decided to take the risk.” The scandal led to the resignation of a minister, but the collateral damage was significant. “The government launched a very aggressive investigation. The officials were identified, and some were charged.” The episode reinforced her conviction that she should work only with legally obtained data. “There is a black market for clandestine files containing masses of personal data,” she says. “People regularly try to provide me with some, but I refuse.” In Costa Rica, as elsewhere, the rise of data journalism is taking place in a difficult economic context for the press. Sales of the paper version of La Nacion are falling, slowly but steadily. At the beginning of 2014, its daily circulation was 90,000 copies - an honourable figure in a country of 4.5 million inhabitants. Its financial situation remains solid, as it belongs to the largest media group in the country (press and radio), which dominates the advertising market. For its part, the website, Nacion.com, is growing steadily: 2.4 million unique visitors in December 2013, compared to 1.7 million a year earlier. For Inigo Lejarza, the newspaper's sales director, this growth is not linked to the section hosted by Giannina Segnini: "Data journalism interests a minority of educated people who are passionate about technology. The general public is not yet keen on this type of product. We will have to educate them." Inigo Lejarza hopes that the experiment will continue, while knowing that this investment remains an uncertain bet. To date, the entire website is free; its advertising revenues are far from covering its operating costs. Faced with this reality, Giannina Segnini points out that her team has not cost much. "The only major expense was our five salaries - out of a total of 90 journalists at La Nacion. For the rest, a very powerful computer costs barely 3,000 dollars. As for database management, there is free software that is just as powerful as commercial software that costs money." So she was able to move up a gear. "Recently," she says, "we have been running about 24 hours a day, combing through more than 150 official databases: foreign residents, real estate transactions, vehicles in circulation, public contracts, traffic tickets, etc. We have created our own database, in which the data is indexed and cross-referenced, which allows all kinds of in-depth searches. » She wants her team to tackle data on climate, transport, demographics, by applying the concept of "zero waste analysis": "We keep everything. Data that is not useful today will be useful later, cross-referenced with other information to come. Soon, we will be able to explore this ocean of data without preconceived ideas, without following a pre-established trail. Software will make astonishing discoveries, that we would never have imagined." In three years, Giannina Segnini has become a star of data journalism. From New York to East Timor, from Madrid to Hamburg, she gives conferences, leads seminars, participates in international operations such as "OffshoreLeaks", of which Le Monde was a partner, which revealed the names of many beneficiaries of companies in tax havens. At the end of January, in Madrid, she hinted that, after twenty years at La Nacion, she was considering going to work in a larger media outlet. At the beginning of February, she took the first step, by resigning. She then mentioned editorial disagreements with management, without giving details. According to some sources, management refused to publish data concerning candidates in the general elections, because they considered it harmful to the reputation of the country's political leaders. By the end of February, she already had three firm job offers, and was hesitating between moving to Europe or the United States. She remained convinced that her model was easily exportable: "Everywhere I went, I found that journalists did not know the laws of their country on the subject and did not know what they could recover. In each country, we must study the legislation, then identify the databases already open to the public, and those that will become so." Then, editorial offices around the world will be able to follow the path she has traced.

## ###ARTICLE\_START### ID:2610

MEXICO CITY, CORRESPONDENCE - As you approach Talea de Castro, a remote town in the mountains of the state of Oaxaca, in southern Mexico, visitors receive an unusual message on their mobile phone: "Welcome to the Talea network!" Abandoned by traditional operators, this community of Zapotec Indians has created its own mobile phone network. Most of the 2,700 inhabitants of this remote village have long been cut off from the world. "There were public telephones, crowded and expensive, but nothing for mobile phones. The operators thought it would not be profitable," says Keyla Mesulemeth, who manages the community network. The local project was launched in March 2013 in collaboration with Rhizomatica, a collective of experts who have been campaigning since 2012 for access to telecommunications for poor and isolated populations. In Mexico, the America Movil group, owned by billionaire Carlos Slim, controls 80% of landlines and 70% of mobile phones. The inhabitants of Talea invested 100,000 pesos to acquire radio-computer equipment, consisting of an antenna fixed to a roof, a GSM transceiver and free software. "Our system uses VoIP technology, which converts an Internet connection into a telephone call platform, allowing us to offer unbeatable rates," explains Peter Bloom, founder of Rhizomatica. For 30 pesos (1.60 euros) per month, the 200 subscribers have access to local calls limited to five minutes to avoid saturating the fourteen lines in service. Calls to the rest of the country cost 50 peso cents per minute to reach a landline, 80 cents for a mobile. For calls abroad, it's... 29 cents. "It's a service that is popular with subscribers, many of whom have relatives who have emigrated to the United States," says Mr. Bloom, who considers access to telecommunications to be a human right. As for Ms. Mesulemeth, she points out that "the community network has boosted commerce, including motorcycle taxis and home deliveries." Experimental concession The community has a two-year experimental concession, granted by the government. But Rhizomatica is calling on the President of Mexico, Enrique Peña Nieto, to make the initiative permanent, citing the vote by Congress in March 2013 on a telecommunications reform aimed at promoting free competition in a sector virtually monopolized by America Movil. Especially since the experiment is setting a precedent. For four months, Rhizomatica has been testing a similar network in the village of Santa Maria Yaviche (700 inhabitants), an hour's drive from Talea. "We hope to soon be able to interconnect the two communities so that their inhabitants can communicate for free," says Mr. Bloom. The potential is enormous: 50,000 Indian communities do not yet have a mobile network...

## ###ARTICLE\_START### ID:2611

What does Edward Snowden reveal to us? First of all, that, contrary to what the indignant yelps of the American administration would have us believe, this is not a matter of state, but the business of all states. The weakness, or even the absence, of diplomatic reactions clearly shows that Prism and its galaxy of surveillance programs, if they were built under the aegis of the NSA, today in reality constitute a global exchange of personal data in which all the allies of the United States participate very closely or only slightly more distantly. Let us repeat, Prism and its ilk are not the work of a state but of states. Tomorrow, the Chinese NSA will certainly have replaced the American NSA, but if we, citizens, do not put a stop to it, this insane and obscene compulsion to put an eye behind every digital keyhole will remain. In France, the vote on Article 13 of the military programming law, ignoring the unfavourable opinions of the CNIL and the National Digital Council, has recently illustrated this trend. Thus, the Snowden affair does not invite us so much to a debate on geostrategic balances, as to a reflection on our relationship as citizen users to technology, and to IT in particular. Because if we cannot completely trust our governments, can we at least trust our smartphones, our computers, our applications, and centralised hosted services? Here too, unfortunately, the answer is "no". The information revealed by Edward Snowden shows that the countless intrusions by the NSA were only possible because of the weak resistance, or even vulnerabilities deliberately installed in large proprietary programmes. Our IT has therefore behaved unfairly towards us, often deliberately, communicating without our knowledge information that we considered to be private. That said, what would a computer system we could trust look like? The mechanism that establishes a computer system of trust is no different from that which governs a modern democratic society. It is essentially based on the right to vote, associated with access to objective information. Free software, which is gaining momentum in a global computer system dominated by Microsoft Windows, is the only one to obey these principles: the code that composes it is accessible to all and its modifications are decided collegially by a community of developers. The installation of a backdoor by the NSA in the source code of free software is not theoretically impossible, but it will always remain much more improbable than within a proprietary program whose code is kept secret. This guarantee of the integrity of our computer systems is the first stage and by far the most vital for the preservation of our private lives. Because as Edward Snowden himself admitted, in a recent chat with Guardian readers: "Encryption works [...]. Unfortunately, the security at the point of origin and arrival [of an email] is so dramatically weak that the NSA very often manages to circumvent it." There is therefore no point in encrypting a message during its journey from A to B, if A and B are proprietary systems incapable of guaranteeing against intrusion by a third party. The Web is 25 years old, personal computing, 30. Not without a certain nostalgia, we can consider the generation that has just passed, ours, as the adolescence of computing, an era where the abundance of inventions, the novelty of processes perhaps allow us to understand - if not excuse - the disorder that reigned in terms of the protection of fundamental freedoms and consumer rights. In those heroic times, the big bosses of software and the Web argued - without laughing - for self-regulation (sic) of the sector in order, they said, "not to nip in the bud the creativity of a nascent industry." The bitter fruits of this "self-regulation" can be picked today in the Snowden files, the most gigantic enterprise of profiling and surveillance of ordinary citizens ever seen on this planet, including the KGB. Thus, a quarter of a century after the fall of the Wall, we can ask ourselves in favor of which model of society the latter collapsed: democracy or Orwellian police regime? If Edward Snowden teaches us anything, it is that it is high time to take back control of our IT. The ball is in our court: we can ignore the warning he has just given us by putting his life on the line, or we can begin a new, more adult relationship with our IT than that of the passive consumer. A relationship of trust. Trust would mean, for example, knowing in real time with whom and why our computer communicates. This pact of trust with the citizen user, only free software has the arguments to guarantee it. It alone offers total transparency of operation, certified by the permanent audit carried out by its community of users and developers. No proprietary software whose source code is hidden can, by definition, provide the same guarantees. Free software is certainly not the ultimate and unique solution to this problem, but it constitutes an essential and necessary building block in the fight for freedoms. That being said, technological solutions have their limits. What we need is a political awareness, at the level of States as well as at the individual level. Individually, this choice will require some effort from us: proprietary software has for years been trying to infantilize our relationships with IT, based on the principle that the less we know, the more we will behave like captive customers. Taking back control of our IT is not easy, but it is an essential civic approach, everyone should try to give priority to free software. It is also up to us to raise awareness of this choice of free and fair computing among our elected representatives so that they support, for example, the approach of the gendarmerie, which switched its entire computer equipment to free software in 2002, rather than that of the army, which has just renewed a onerous contract with Microsoft under conditions that are, to say the least, opaque. Richard Matthew Stallman, who founded the free software movement in 1983, said: "I am often asked to describe the 'advantages' of free software. But the word 'advantage' is too weak when it comes to freedom." It seems to us that this is the main lesson we should take away from Edward Snowden's heroic gesture.

## ###ARTICLE\_START### ID:2612

"We do the interview via Skype, it's easier." René Trégouët, former senator for the Rhône, lives with the times. He almost finds it a shame that holographic TV is not yet ready. At 74, he has not abandoned his hobby of being a futurist, a fan of new technologies. "Always working on the future, the present doesn't really interest me." In one of the last editorials of RTFlash, the letter he created in 1998, the columnist enthuses about the new generations of robots, those of the Airbus Asimov project, "cobots", aka collaborative robots... When did this Breton originally from Roc-Saint-André but adopted by Lyon develop this vocation for the future? A former research director and ex-business leader, he has always been passionate about innovation. In the summer of 1970, in the Pottu, a local newspaper, he was already imagining the future of computing, with the arrival of the microcomputer. "This word 'computer' still seems a bit magical and even a bit foreign to many of us [...], he wrote at the time. In a few years, this machine will inexorably arrive in its terminal form on our desks, in our stores, in our workshops and even on our farms." Far from sticking to speeches, the man showed a pragmatic spirit: foresight can be put at the service of reality. This is how the vice-president of the Rhône general council played a major role in 1989. "I made a bet to wire my entire department with fiber optics. Today, all the villages in the Rhône have a 200 megabit connection." When signing the contract with Time Warner, he included a clause stipulating that all uses other than television would be free for local authorities and related establishments. Today, they have free high-speed Internet. In January 1997, the Prime Minister at the time, Alain Juppé, gave the parliamentarian a mission to measure the impact of new technologies on French society. This 2,000-page work, published the following year (1), remains, according to him, unsurpassable. "Problems that are happening to us today were largely anticipated at the time. When you think that France Télécom said at the time that images would not arrive on the Internet before 2020..." Free software. From the beginnings of the general public Web, René Trégouët is impressed by the strategic sense of Bill Gates. "The boss of Microsoft came to see us in the Senate in July 1995 to present Windows 95, saying: "With this, I'm going to kill the Internet." Free software seemed to him at the time like a filthy beast. In December, his priority had become Internet Explorer. In six months, he had the ability to move 180 degrees." Decidedly avant-garde, René Trégouët, Pierre Laffite and Guy Cabanel tabled a bill on free software in 1998, amended by Internet users for the first time in Europe. With the complicit approval of René Monory, René Trégouët also founded a prospective group in the Senate, mixing sensibilities, and created RTFlash, a newsletter specializing in scientific and technological knowledge. His job as rapporteur of French research allowed him to establish links with laboratories. With the expansion of the Internet, online monitoring has strengthened human networking. "We have placed intelligent agents on the global network, "computer slaves" at the door of each laboratory, we sort through the publications, without claiming to replace the media. In two hours, we have about 1,000 readers, high school seniors, moles [preparatory classes], researchers, engineers, teachers." Around 750 letters have been published since the birth of RTFlash, which has nearly 20,000 subscribers. The initial principles have not changed: no advertising and independence. A grant of 10,000 euros in total (Inserm and CEA) ensures its operation. Urban. On some of his predictions, René Trégouët would not change a word. Thus he proudly quotes an editorial from September 1999 on the urban transport of the future. "I was not mistaken in imagining automatic cars. They will eventually be managed by the community." On the evolution of technologies and uses, he is inexhaustible. About the city of tomorrow: "[It] will create its own climate, like an immense Center Park, with plants that do not freeze and sunshine all year round." Connected objects: "Each citizen will carry one on them. They will make it possible to anticipate a heart attack, for example." On the Internet: "The future Twitter will not be copyable and will naturally be forgotten like human memory." Far from the simpleton utopian, the former senator always includes a primordial parameter: citizen resistance. Since 2004, René Trégouët has put his political career aside to get more involved. He has for General de Gaulle the admiration of the futurist for a master. "Without him, we would not have had Airbus, the Caravelle. There would be no nuclear power plant, no TGV. He had a real sense of the future." He concedes that it is increasingly difficult to live twenty years ahead so dizzying is the acceleration. "By 2024, humanity will have acquired as much knowledge as it had accumulated until 2014..." This does not prevent him from giving lectures in high schools, from advising companies concerned about their future. From sniffing the air of the times to come. "All the greats of this world are preparing virtual worlds, while the political world speaks a language of the Third Republic." Representative systems seem to him to be totally worn out when intelligence is found in networks, outside of pyramidal systems. "It is only when the political system takes these networks into account and questions Internet users that democracy will regain its place." (1) "From the pyramids of power to knowledge networks, How new information technologies will help France enter the 21st century." Photo Félix Ledru CV General councilor at the beginning of his political career, René Trégouët was senator for the Rhône from 1986 to 2004. This convinced Gaullist created the Senate's prospective group in 2000. In 1997, he submitted a 2000-page parliamentary report on France's place in new technologies. In 1998, he created the RTFlash newsletter, which he still hosts.

## ###ARTICLE\_START### ID:2613

The online currency bitcoin raises many questions. Is it a speculative bubble? Is it really as anonymous as its proponents claim? Can you really use it to buy the marijuana strain White Widow or to hire a hitman? These are interesting questions, but the most important one is whether bitcoin can spur innovation in the financial sector. Bitcoin is so innovative that it brings together the most opposing partisan ideologies. 2008 Nobel Prize winner in economics Paul Krugman and Tea Party idol Ron Paul, who are diametrically opposed on almost every issue, both hate the digital currency. But opponents should ask themselves whether bitcoin’s revolutionary ideas could lead to real reform of the global financial system. For while the 2008 financial crisis exposed the system’s deep institutional flaws, the response of the 2010 Dodd-Frank Act in the United States and the Basel III banking standards failed to bring about the necessary transformations. Similarly, protest movements such as Occupy Wall Street, which sought to reform the culture of finance, have had mixed results. The fact is that no one—except perhaps the small coterie of financial insiders who have benefited from taxpayer-funded bailouts—can be satisfied with the current system. If only because of the risk of another crisis, which can be expected in the not-too-distant future, and which will surely be accompanied by even larger bank bailouts. But the technology underlying bitcoin could not only help reduce systemic risk by shielding the system from useful but unpredictable financial activity, but it could also enhance economic growth. Indeed, financial institutions act essentially as intermediaries, connecting investors, borrowers, and savers, and recording the assets and liabilities of each. In exchange for these services, financial professionals are paid large sums. So asking whether bankers’ huge salaries are justified is like asking how much value is created by financial intermediation: there is no simple answer. What is certain, however, is that by allowing a greater proportion of wealth to be channelled into investment and productive economic activity, more efficient financial services would boost growth. In other words, the financial services sector can be seen as a kind of tax on the rest of the economy. Everyone would benefit from keeping it as small as possible. In London, for example, paper checks are physically sent from one bank to another, which means that it takes five to six days for the funds to be transferred. Community Approach The inefficiency of the global financial system is not simply the result of outdated rules and structures: the profit motive is also a major factor. While the British authorities recently announced the end of physical check transfers, the two-day check clearing delay will remain in place. Given that digital images of checks are processed almost instantly, the only explanation for maintaining this delay is the interest generated by holding the money for as long as possible. This is just one of the many ways the financial sector extracts resources from the economy. The 3% to 5% charge levied by credit card companies represents hundreds of billions of dollars in profits per year for companies like Visa and MasterCard. Fees on wire transfers and currency exchanges can climb to 10% or more per transaction, with interruptions and complex procedures making these services even more expensive. With bitcoin, the late fees and other charges that line the pockets of financial services can be largely eliminated. But one of the most exciting innovations the currency offers is Blockchain: software that keeps track of all transactions and produces a tally of who owns what. Blockchain thus fulfills the function of the “ledger” offered by banks, but at a much lower cost for consumers and businesses. Powered by an open-source (“free”) algorithm and managed by anyone who chooses to download the free software, bitcoin marks a return to a community approach to money and banking, with financial services more closely tied to the people who use them. The monolithic management by a third party, of the type of today’s too-big-to-fail banks, could be stopped dead in its tracks. Indeed, with software like Blockchain serving a new financial architecture, the individual could become the bank! Bitcoin and its ecosystem have yet to mature, and only time will tell whether current price levels are the result of a speculative bubble. But the innovations pioneered by bitcoin can and should play a pioneering role in building a safer, cheaper, and more efficient financial system.

## ###ARTICLE\_START### ID:2614

Protecting French people's emails by encrypting them. This is the idea put forward by Jean-Marc Ayrault on Thursday, February 20. The Prime Minister's initiative is a response to the scandal surrounding the surveillance of communications by the American National Security Agency (NSA). While it may seem like common sense, it does not, as it stands, appear likely to guarantee the confidentiality of French Internet users' exchanges. "Our objective is to guarantee the inviolability of correspondence, an old republican principle that must be reaffirmed and updated in the digital world," declared Mr. Ayrault, speaking at the National Agency for the Security of Information Systems (ANSII). "This initiative will initially concern the electronic messaging services offered by Internet access providers - these operators who provide the boxes," added the Prime Minister. This would therefore concern Orange, Free, Bouygues, Numericable or SFR, but also the Laposte.net messaging service, cited by Mr. Ayrault. Concretely, this would involve "encrypting" emails and having the messages processed by infrastructures on the national territory, according to the speech of the head of government. The initiative is reminiscent of the one announced in August 2013 by the German operator Deutsche Telekom, called "E-mail made in Germany". However, in both cases, the solutions put forward do not seem to allow for complete security of correspondence. In France, it is not specified how the government intends to impose encryption on operators. The initiative is being carried out "in agreement" with the latter, assured the Minister of the Digital Economy, Fleur Pellerin, but it seems to be based on volunteering. It is then difficult to conclude that emails will be encrypted at the different levels of the correspondence system: during storage on the access provider's servers, during transit between the servers and the user's computer and during transit to other messaging servers. In principle, they will not be encrypted in the event of exchange with unencrypted messaging services such as Hotmail or Gmail. The confidentiality system proposed by Deutsche Telekom does not use the most recent techniques, denounces for example the Chaos Computer Club. According to this powerful German association for the defense of freedoms on the Internet, the operator's solution is well-intentioned but resembles a "tale". And it would pose, according to it, a philosophical problem: "The NSA scandal showed that centralized services could not be considered reliable to prevent access by intelligence agencies. The technologies used do not exclude the installation of listening infrastructures within the system." The club advocates a decentralized solution that encrypts correspondence "from end to end" with free software. Beyond the technical limits, advocating secure email is, for the French and German governments, a way of sending a political message. Personal data was on the agenda of the Franco-German Council of Ministers on Wednesday, February 19. A few days after the wish expressed by the German Chancellor, Angela Merkel, to see the birth of a "European Internet", Mr. Ayrault had placed his visit on Thursday under the banner of national "cybersecurity": "The effort that we are deploying in favor of the security of information systems is also one of the keys to the protection of public freedoms and private life", he argued.

## ###ARTICLE\_START### ID:2615

On Tuesday, thousands of Internet users wanted to take back control. Many organizations around the world announced "The day we fight back". The adversary is the global surveillance orchestrated (mainly) by the United States and its National Security Agency, whose acronym NSA has seen a resurgence in notoriety since June and the revelations of Edward Snowden. This day comes one year and one month after the death of the brilliant hacktivist Aaron Swartz, who campaigned (among other things) for a free Internet, and two years after the blackout day that saw thousands of sites close their doors in opposition to the Sopa bill. At the end of the day, the operation's site had collected nearly 245,000 signatures and several web giants, such as Google, Facebook and Yahoo, no doubt anxious to redeem themselves, have given their support. These citizen mobilizations are important to avoid falling into an overly easy fatalism. "Nothing new, we suspected it for a long time", "I am not a terrorist, I have nothing to hide", "Yann invites you to play Candy Crush Saga", so many phrases read or heard far too often. A video posted online by the Quadrature du Net on this occasion reminds us: "Even the things we do not think it is useful to hide today could be used against us later. An attack on our privacy also threatens that of the people with whom we communicate." The objective of this movement is also to promote the text entitled "International Principles on the Application of Human Rights to the Surveillance of Communications". It establishes thirteen principles that States should follow if they wanted to set up a communications surveillance system while respecting the privacy of its citizens: public legislative system, legitimate objective, proportionality, judicial authority, etc. Citizen lobbying is more than necessary. La Quadrature insists, for its part, on the fact that each Internet user can act by refusing the centralized systems of data collectors like Google and preferring free software in decentralized environments. A welcome reminder: we always have the choice of our tools.

## ###ARTICLE\_START### ID:2616

Can sick students stay in touch with their class, through a robot? This is the challenge of the pilot experiment that will be launched by the Rhône-Alpes region, in three high schools in Lyon, Saint-Etienne and Bourg-en-Bresse, from the start of the next school year. Three QB robots from the American company Anybots, marketed in France by the company Awabot, will be made available. "This robot will have a social role above all. It will make students and teachers more aware of the fact that a student is absent, and their behavior will be modified," comments Yves-Armel Martin, director of Erasme, a living-lab in the Rhône department. The QB robot consists of a base mounted on casters, connected to a head by a telescopic arm. It is equipped with a loudspeaker, two cameras, a video screen and is connected to the Wi-Fi network. The child can control it remotely from their computer keyboard and interact in real time by voice and video data. Funded to the tune of €490,000, the project will allow, in addition to the purchase of robots (unit cost of €12,600), the development of an open source interface for the creation of software adapted to school use. The Ecole Normale Supérieure de Lyon, Lyon-1 University, the learning lab of the Ecole Centrale Lyon and EM Lyon are involved in this project. QB robots can be controlled remotely on the website www.anybots.com

## ###ARTICLE\_START### ID:2617

In January, Yves Lapierre organized the Innovation Trophies of the National Institute of Intellectual Property (INPI). The opportunity for this polytechnician to point out that France is not so much lagging behind in this area. The organization that records the number of patents filed each year attests to this. But this measure is insufficient: in France, we are still struggling to transform innovation into a product. How do you define innovation? Innovation is the ability to transform an invention into a product or service that meets the needs of the market. Innovation is the economic impact of a discovery. It sometimes leads to the creation of a market, as was the case for Apple's iPhone and iPad. It is therefore not limited to a technological breakthrough. With the 34 sectors that the Minister for Industrial Recovery, Arnaud Montebourg, launched and the seven themes of Anne Lauvergeon's Innovation 2030 commission, two forms of innovation are clashing. Montebourg is wondering how to improve the efficiency of the sectors and increase its presence on the market; Lauvergeon, for her part, defends disruptive innovation in individualized medicine or big data. She relies heavily on what comes from research laboratories and on a distant market, set for 2030. The two logics coexist. Is France lagging behind in terms of innovation? Fortunately, no. In 2013, 16,908 patents were filed in our territory. This is 1.6% more than in 2012. Worldwide and over ten years, France has even progressed. But it has fallen in the ranking of the World Intellectual Property Office (WIPO): we have fallen to sixth place in recent years, overtaken by China, an emerging country that has become a major player in research. According to the Top 100 of the world's largest innovative companies, produced by the Thomson Reuters group and also based on the number of patents, France is the third country, behind the United States and Japan, thanks to nine companies ranked as Alcatel-Lucent, EADS or L'Oréal. In other rankings, such as The Global Innovation Index 2013, France is ranked twentieth among innovative countries. Our problem: we have difficulty transforming a creation, an idea, into a market object. Our entrepreneurs cannot cross this "valley of death". Filing a patent is only one of the elements for measuring innovation. Can we see brands as a second measuring tool? Yes, because they are both the culmination of the process, the way to highlight the product and market the innovation. When you want to promote a new service or product, you try to identify it. Steve Jobs understood this well. In 2013, 86,000 trademarks were registered with the INPI, a figure that has been stable since last year. Which companies stood out this year at the Innovation Trophies that you organize? We can draw up a composite portrait of innovative SMEs. They are on average thirty-five years old, have around 150 employees, a turnover that has quadrupled in recent years and generate more than 40% of it through exports. This year, we decorated Minima, an eyewear manufacturer that innovates incrementally in a very competitive sector with ultra-light frames, practically invisible fastening systems, etc. We salute Devialet, an audio amplifier company that relies on a breakthrough innovation: mixing digital and analog to obtain a sound twenty times better. Their product is currently aimed at the professional market. Finally, Fermob, a manufacturer of brightly colored outdoor chairs, is our latest winner. The manufacturer innovated by optimizing the production line and took the risk of investing in an industrial painting tool. It paid off. How do you want to democratize intellectual property among companies? The first objective of our 2013-2016 objective and performance contract is to meet the needs of large groups, i.e. to develop more effective intellectual property protection processes, encourage the dematerialization of procedures and simplify access to patent portfolios. Secondly, we are going to inform innovative SMEs that are unfamiliar with intellectual property. They must ask themselves whether their industrial process can be copied and how they are going to deploy it. If we produce in France in a closed factory, secrecy can be a sufficient protection tool. If we manufacture on other continents with local partners, we must protect our innovation, license our partners. Same reflection on the brand policy. We want to reassure entrepreneurs: registering a trademark only costs 225 euros for ten years. Is this the right time to promote intellectual property, when the time is right for open source? This is not the time, it is much too late! (laughs) Property is not contradictory with open source, if we understand it as the ability to make an innovation available to others, and to have it enriched by others. As proof, the free Linux operating system was created by the company Red Hat, which has since launched licenses. It is possible to make discoveries using these innovation methods, then to protect them in accordance with past agreements. Competitiveness clusters also follow this mode of operation. On closer inspection, industrial property is the best way to share innovation. Because the counterpart of the exploitation monopoly is the sharing of information for free on our sites. Photo Fred Kihn Yves Lapierre. CV Born in 1954 in Paris, Yves Lapierre is an engineer graduated from Polytechnique. In 1994, he joined the Atomic Energy Commission (CEA), then in 2001, he joined Areva. Since August 2010, he has headed the National Institute of Intellectual Property (INPI). On January 21, he presented the Innovation Trophies to three French SMEs: Fermob, Minima and Devialet.

## ###ARTICLE\_START### ID:2618

Tick tock, tick tock! Soon the first hundred days will be up. There are many promises, and the deadline is approaching. The fact remains that on the morning of the hundred-and-first day, the mayor will have to define new priorities. Including that of information technology, smart city obliges. As we know, bringing about change is an undertaking that requires both tact and firmness. Because change is scary. As evidenced by this week's mayor who reprimanded Jean-Yves Hinse, his director of the human capital department, for his remarks (insert your qualifier), while the latter was worried about the supposed burden that the upcoming changes would impose, without worrying about the benefits that said changes would bring to citizens and employees. How do you say it? "He who wants to kill his dog accuses him of having rabies?" In short... Let's talk about free software and open data. If the mayor intends to create his smart city, he will have no choice but to take an interest in it. Contrary to popular belief, it is not enough to outsource the creation of this "three-letter" smart city, invest in mammoth software and hope that everything works. Unless we aim to reproduce the GIRES and SAGIR disasters. Aside from the traditional argument related to the acquisition costs of "open source" software, free software and open data offer practically only advantages to the city. Indeed, free software allows infinite adaptation and customization, due to the availability of the source code. In addition, the data generated by free software is open and reusable. It could therefore be taken up by the IT industry and ordinary citizens who, in return, would offer Montrealers new practical services. A smart city is above all a city modulated by its citizens and not an amalgam of software and hardware. Citizen organizations like Montréal Ouvert have shown us how possible it is to design services adapted to the needs of Montrealers... without it costing them much. Also, this ease of opening up data and cross-referencing it would allow us to quickly see the good moves of managers... and the little sleights of hand that some hoped to hide. It seems that this is linked to a new post-Charbonneau concept called transparency. I like it. And to think of jobs and software engineering created here, in Montreal, while firms specializing in free software would be called upon to adapt free software tools. Paid jobs, and expertise that would stay here. Obviously, we can invest in closed proprietary products and watch almost all of the money invested in their acquisition cost cross the border... without much impact for the city and the province. It depends. The fact remains that changes are necessary. Already, in the small world of technology, many (and I am one) no longer hesitate to call for a Charbonneau commission on technologies. Things don't always smell good in IT. Until that day comes, it's high time the current administration and opposition parties come together and make a big change and embrace free and open data.

## ###ARTICLE\_START### ID:2619

The Entrepreneurship Centre of the UQAM School of Management invites student entrepreneurs of all ages, from all disciplines and from all universities to participate in a 48-hour entrepreneurial marathon, Mission 48H. This event, which will be in its first year, will take place at the Pierre-Dansereau Science Complex from March 14 to 16. This is a competition where participants will have 48 hours to bring to life a business project based on the theme of open source software and open data. Experts will be on hand to advise the teams and a jury will determine the best project at the end of the marathon. Unlimited coffee and all meals will be provided to the competitors. The winners will share $3,500 in prizes. Details: http://mission48h.uqam.ca/

## ###ARTICLE\_START### ID:2620

It's a revolution for "Big Pharma". Ten of the world's largest laboratories, including the French Sanofi, announced on Tuesday, February 4, that they would join forces to develop new treatments for Alzheimer's disease, diabetes and arthritis. They will pool their data and researchers. This initiative was unimaginable just a few years ago in a sector where research secrecy is at the heart of business. "We need to join forces to better understand the complex puzzle of these diseases and accelerate our ability to provide new treatments," says Dr. Elias Zerhouni, in charge of research and development at Sanofi. This partnership is orchestrated by the powerful American National Institutes of Health (NIH), which is the leading source of funding for biomedical research in the world with a budget of 30 billion dollars (22 billion euros). He negotiated for two years with the laboratories before obtaining their agreement. The investment is $230 million over five years, shared equally between the NIH and the manufacturers. Pfizer, Merck, Sanofi and GSK have agreed not to develop their own drugs based on the discoveries obtained before they have been made public. An approach comparable to that of "open source" in IT, which is based on the principle that sharing data is an accelerator of innovation. "We spend a lot of time and money exploring avenues that turn out to be dead ends while patients and their families wait," says Francis Collins, director of the NIH. "The challenge is beyond the reach of a single player. It is time to work together to collectively increase our chances of success." Four major trials The project should allow us to refine our understanding of disease mechanisms in order to identify therapeutic targets and precise biomarkers. Researchers will be able to work on more precise hypotheses and focus on a limited number of molecules. In many areas, they move forward by trial and error, spending hundreds of millions of dollars on trials that end in failure because the initial hypothesis is wrong. Alzheimer's disease is emblematic of this. Over the past fifteen years, there have been more than a hundred attempts to develop a new treatment, all of which have failed. Despite the billions invested, the drugs on the market only manage to relieve symptoms for a few months without stopping the progression of the disease in the brain. Two years ago, the American groups Pfizer and Johnson & Johnson decided to end one of the last major research programs in progress by announcing that their molecule was no better than a placebo. Chris Viehbacher, CEO of Sanofi, acknowledged that his laboratory was giving up on research in this area because the state of the science was not advanced enough to justify the risks and costs of developing a drug. As part of the project called the Accelerating Medicines Partnership, the labs will pool blood and brain samples from deceased patients to try to identify common markers. They will also participate in four major NIH clinical trials aimed at identifying biological and genetic similarities among patients. Some 35 million people worldwide already have Alzheimer's disease, and that number is expected to double by 2030 to 115 million by 2050. The potential market for treatments is estimated at $20 billion. Enough to please all the partners. Chloe Hecketsweiler

## ###ARTICLE\_START### ID:2621

COMPUTING Bill Gates turns the page. The last of the IT moguls is leaving his position as chairman of the board of directors of Microsoft, a group he created thirty-nine years ago with Paul Allen. Along with the duo William Hewlett-Dave Packard and the guru Steve Jobs, Bill Gates is the third hero of the IT adventure that has been constantly revolutionizing the world since the 1960s. Driven by an unwavering will since his adolescence, Bill Gates has never hidden his ambitions. "Napoleon transformed his era. So have I," he said. Today, his empire is global, his fortune colossal (in 2013 he regained the title of richest man in the world with 78.6 billion dollars, according to Bloomberg) and his mark indelible. The man contributed to the transition from the industrial economy to the dematerialized economy. That of software. His invention, Windows, democratized access to personal computing, then to the Internet for 2 billion people worldwide. He paved the way for the famous "software companies" Apple, Google and Amazon, which are building a moving galaxy of monopolies. Like his role models John D. Rockefeller, Henry Ford and Napoleon, he held his empire with an iron fist until 2000 and then with a velvet fist, through Steve Ballmer, his oldest accomplice. All in grand style At the head of Microsoft, Bill Gates never bothered to consider the competition. He kicked his big brother IBM out of the PC market before neutralizing Netscape, which had the impudence to beat him to the nascent Internet browsing market. At the turn of the 2000s, Microsoft was an arrogant group, hated by computer enthusiasts but revered by the general public. His hold was so strong that his enemies, who saw themselves as true resistance fighters, created free software. The American and European competition authorities joined forces to destroy his dominant position. With no result other than a record fine, quickly absorbed by the group's plentiful profits. Bill Gates has always seen things on a grand scale. In 2000, he swapped industry for philanthropy. No question of being content with chairing charity galas. His ambition is quite simply to eradicate malaria from the surface of the globe. The foundation he created with his wife, Melinda Gates, has a $26 billion endowment, an unrivaled sum for this type of activity. And when he gave in to the temptation of the charity gala, it was to launch the Giving Pledge with Warren Buffett in 2009. The principle was simple: he asked 11 American billionaires who together are worth $130 billion to devote half of their fortune to philanthropy. He set an example, leaving only $10 million to each of his three children.

## ###ARTICLE\_START### ID:2622

The new boss of the world's number one computer company is of Indian origin, reputed to be "cerebral" and loves cricket and poetry. Expected since August, the appointment of Steve Ballmer's successor at the head of Microsoft has been effective since yesterday. Born in Hyderabad, India, and having joined Microsoft in 1992, Satya Nadella, 46, was chosen from a list of candidates that included up to eight names, to become the third boss of this American high-tech giant in thirty-nine years. Cash. After a programmer (Bill Gates) and a salesman (Steve Ballmer), it is therefore an in-house engineer that the recruitment committee has chosen to chart the future of a multinational still sitting on mountains of cash, but seriously distanced in recent years in the mobile Internet by Google and Apple. This arrival is accompanied by the departure of Bill Gates from the chairmanship of the board of directors, a position he had held since 1981. He is replaced by the agitator of ideas John Thompson, a former boss of the leader of antivirus Symantec, who returned to the board of Microsoft in 2012, and who did not hesitate to criticize Microsoft's strategy of presence on all fronts. The largest individual shareholder of Microsoft and second richest person in the world, Gates remains a simple director, but with the title of "technology advisor". He will invest himself alongside Satya Nadella by devoting "more time to the company" and helping him "in the definition of technologies and products". He should devote a third of his time to Microsoft. Well received by the New York Stock Exchange, where the stock rose slightly yesterday in mid-session, Nadella's arrival at the helm of the multinational from Redmond, in the suburbs of Seattle, reflects the technological rather than marketing or commercial option that has been chosen to try to make up for the delay Microsoft has taken in mobile computing. In a first message addressed to Microsoft's 100,000 employees, this man respected internally for his technical skills and appreciated for his "human qualities" explained that "our activity does not respect tradition but only innovation". A polite way of suggesting that Microsoft has not fully grasped, in recent years, the acceleration of the upheavals underway, and that its strategic repositioning in the post-PC world has been far too slow in the face of faster and more agile competition. "A large part of my work will consist of increasing our capacity to release innovative products more quickly", he concluded. Cash cow. His recent career at Microsoft argues in this direction and explains why he was preferred to the boss of the car manufacturer Ford, a favorite at the time. Or to Stephen Elop, who had left Microsoft for Nokia, before returning last year when the American bought the Finnish company's telephones. After gradually climbing the ladder by working in most of the divisions (Online, Office, servers, etc.) of this company that remained present in almost all sectors of professional and consumer computing, Nadella particularly distinguished himself in remote cloud computing services ("the cloud"). While Microsoft had shown itself to be slow to get going in this strategic niche by being left behind by Amazon, Nadella managed to fill it. With him, the publisher of Windows, which remains the group's cash cow, has become one of the main players in this dematerialized computing that allows a company to relocate its servers and rent its software rather than buying it. Satya Nadella did not hesitate to shake up certain taboos, by opening Microsoft to free software and Linux servers. A collaborative model long considered the supreme threat by a group that has based its entire fortune on the distribution of licenses and the fierce protection of its intellectual property. The main challenge facing Satya Nadella, however, concerns activities with which he is unfamiliar: mobile on the one hand, in which Windows is completely lagging behind Google's Android, delivered free, and Apple's iOS; tablets on the other, whose sales continue to gain ground on the good old PC, down again by 10% in 2013. "Microsoft, which is no longer in the monopoly situation it was for a long time, will probably have to make drastic choices in the coming years, estimates an analyst. Steve Ballmer did not succeed and ended up paying for it. Nadella will have to show more audacity and it will be difficult."

## ###ARTICLE\_START### ID:2623

Driving a car you assembled yourself, in your garage, and in less than an hour will soon be possible if you are not too fussy about performance and options. The Italian start-up OSVehicle has been developing a small kit car project called Tabby since 2006. Behind this idea are two engineers, Francisco Liu and Ampelio Macchi, former employees of the sector. To get people talking about them, they present themselves as "automotive industry hackers". "R&D is increasingly going through open source, it is a current trend, it had to be applied to this old industry. This also allows you to get help from many collaborators all over the world, people motivated by the project, often volunteers", explains Ampelio Macchi. The Tabby is therefore under Creative Commons license. Any Internet user can download the plans and reuse them for a personal or commercial project. The company should make money by selling the main parts on its site: a chassis assembly kit (500 euros), a lead battery (698 euros), the engine unit (electric at first) for 1,520 euros, the seats (80 euros) and the wheels (338 euros). All the parts needed to assemble the Tabby only cost around 3,000 euros. At this price, "OSVehicule is not a competitor for existing manufacturers," says Ampelio. It is aimed more at DIY enthusiasts and assemblers in emerging countries. Pre-orders have started, but the project, which is behind schedule, should not be marketed before the end of the year. Don't dream of a five-door sedan with leather seats, the Tabby will rather play in the category of ultra-compact urban vehicles. At first glance, the prototype, presented in December, does not really resemble the cars that crisscross our roads since it is built on a simplified two or four-seater chassis, streamlined but without a body. Currently undergoing approval, the machine is considered a limited-speed quadricycle. Not made to let loose on the highway, the Tabby will only display 75 km/h on the speedometer. But it should be possible to drive it, after technical inspection, with a B license in your pocket. The exterior design remains to be done. Moreover, the duo of entrepreneurs has launched an appeal to designers and manufacturers. With such a technical sheet, the possibilities of the Tabby are limited. Its inventors therefore imagine it as a small 4 × 4 mountain, golf cart or mini-utility. This concept is not new. The Local Motors community designed, in 2010, the Rally Fighter, an off-road vehicle whose price climbs to 74,900 dollars (54,800 euros). The vehicle had its moment of glory in the United States on the TV show Top Gear. In the same vein, Wikispeed is preparing its kit car, the STG01. At once modular, fuel-efficient and mass-market, the price of this roadster should be around that of a Toyota Prius. Not to be outdone, some manufacturers are testing new manufacturing methods inspired by open source. In Brazil, in 2009, the Italian Fiat invited a community of Internet users to participate in the development of a concept car prototype. They were invited to make their suggestions on the propulsion, safety, design, materials, marketing and even the name, before the results were shared in Creative Commons. "It's a paradigm shift, because no manufacturer in the world has so far opened up the development process for a car," said Peter Fassbender, director of the Fiat Style Center Latin America. Fiat also used this kit car idea for a marketing stunt with its Fiat 500. Before the launch, Internet users could invent the model of their dreams and the most popular elements were included among the vehicle's options. In France, PSA Peugeot Citroën has been timidly opening its innovation policy for a few years. In October, the manufacturer launched a challenge with the Ecole Polytechnique de Lausanne to imagine the interior of the car of the future. But the idea remains in its embryonic stage because the industry is obviously keen on its manufacturing secrets.

## ###ARTICLE\_START### ID:2624

TECHNOLOGY It’s a tiny entrance on a busy thoroughfare in downtown San Francisco. You have to look up to see the blue and red sign hanging above the door. Welcome to TechShop, a paradise for tinkerers of all kinds. You don’t come here to buy, but to make. Upstairs, sewing machines and assembly tables sit alongside 3D printers and oscilloscopes. Downstairs, milling machines, welders and band saws sit next to a major laser cutter. $125 a month A million dollars’ worth of equipment is housed in a few hundred square metres. This goldmine is accessible to students, tinkerers and entrepreneurs for a subscription of $125 a month. Enough to make prototypes to validate an idea or advance R&D. This was the case for the first bank card readers for the mobile payment service Square, launched by Twitter co-founder Jack Dorsey. TechShop is the latest incarnation of the continuing decline in the cost of innovation across the Atlantic. More and more platforms and services are reducing the barriers to entry by lowering the cost of launching and developing. Launched in 2002 by the online commerce giant, Amazon Web Services, which includes a supply of servers, online storage and authentication infrastructure, have simplified the life of many websites. Social networks have become machines for acquiring users without spending too much. Open source software is abundant and the cost of hardware has plummeted. The Behance and oDesk platforms allow you to hire subcontractors paid at the Bengali minimum hourly wage. No need to worry about distribution - the App Store and the Android Market are the Leclerc of new digital services. Not to mention that the number of Internet users has exploded. Innovation theorists write books on the "$100 startup" and praise the lean startup. Reviving "made in America" As if to diminish the merit of today's entrepreneurs, veterans of digital innovation like to claim that it is ten times less expensive and laborious to launch an Internet startup today than it was fifteen years ago. No doubt this explains why entrepreneurship seems to be the new fashionable vocation and why startups are springing up in every corner of the economy. Spaces like TechShop are now accompanying the shift of innovation from the Web to the physical world, which is found under the banner of the Maker Movement. They are producing innovative credit card readers, electric motorcycles or simply iPhone cases made of sustainable materials. A development supported by crowdfunding services such as Kickstarter and Indiegogo, which provide funding for these projects and test market demand. This drop in the cost of innovation for physical products is starting to intrigue beyond the technosphere. At the end of January, Nancy Pelosi, leader of the Democrats in the House of Representatives, took a trip to TechShop. The elected official was reportedly particularly sensitive to the fact that a space like this makes it possible to bring back part of the production and industrial research and development to the United States. In short, to revive the flamboyant "made in America".

## ###ARTICLE\_START### ID:2625

A major call for tenders that Quebec is preparing to launch for the update of Microsoft software for 39,000 public service computer workstations, at a cost of $18 million, has raised the ire of government professionals. According to them, this project once again contravenes the laws that the province has given itself to inject more competition and free software, digital solutions that reduce dependence on the American multinational in the government apparatus. They denounce in passing short-sighted management of the computer equipment, at the expense of citizens, but also a government information system condemned to be less sustainable, according to them. In a confidential internal memo dated January 16, a copy of which Le Devoir obtained, the Syndicat des professionnels du gouvernement du Québec (SPGQ) vilifies the Centre de services partagés (CSP) and accuses it of once again contravening, with this call for tenders, which it read before its publication, the Act respecting the governance and management of government information resources, we can read. In essence, this law stipulates that government calls for tenders can no longer favour a specific IT product and must consider so-called free software as an alternative solution in the future. The document, produced by the Direction des orientations, de la transformation et de la sécurité of the CSP, evaluates the call for tenders that the government will launch shortly for this IT update. The union party is invited internally to comment on the matter. The SPGQ's commentary essentially recalls the adoption on September 24 by the National Assembly of a motion aimed at encouraging the distribution of this same free software within the government and public administration. The group of government employees is thus seeking to highlight the inconsistency of the call for tenders that the CSP is about to launch. Unavoidable This computer update is ordered, claims Quebec, by Microsoft and especially its intention to no longer offer the government technical support for its Windows XP and Office 2003 software. The installation of the new versions is therefore unavoidable, believes the government. It will be spread out until October 2016, and begin on April 1. Despite numerous calls, it was not possible to speak to those responsible for this modernization plan or the call for tenders to the CSPs. "In terms of IT, there are fine principles that the government likes to present, but fails to apply," summarized Richard Perron, the president of the Union, on Wednesday. "We are facing a vicious circle, a dependence on a single IT supplier, which will have to be broken by bringing back expertise in this field to reduce subcontracting." Not linked to costly operating licenses, free software is increasingly embraced by public administrations around the world in order to reduce their dependence on so-called proprietary software, but also to set up a more sustainable and secure IT framework. This software is one of the components of open data, itself a prerequisite for the establishment of digital governance, digital citizenship, as well as smart cities.

## ###ARTICLE\_START### ID:2626

Mechanical engineer and designer Charles Bombardier has had an interesting life so far. These days, he’s not exactly sure what the rest of his professional life will be like, but he’s making sure it’s interesting, too. Let’s get one thing straight about his surname first. Yes, Charles Bombardier is a “Sang jaune” from Valcourt. He’s the grandson—and heir—of the Quebecer who conquered winter, J.-Armand Bombardier, father of the Ski-Doo, genius inventor, legendary entrepreneur, and ancestor of one of the country’s greatest industrial families. During the 2000s, Charles Bombardier led three development projects at Bombardier Recreational Products (now BRP). He did retail with two BRP dealerships (now sold). He made three attempts at entrepreneurship, all of which were unsuccessful so far. Today, he publishes concepts (about two per month) of cars, motorcycles, planes, and boats of all kinds on the Internet. His site charlesbombardier.com already contains about forty ideas for futuristic vehicles, but all of which have in common that they are designed based on recent technologies. He doesn't know what or how, but a project and a tangible product will come out of it sooner or later, he says. The site provides an outlet for his "strong need to produce" and allows him to connect and discuss with designers, engineers, inventors and other creative people like himself. "Publishing non-patented ideas is completely contrary to the logic of an industrial company" like his former employer, Bombardier recreational products (now BRP), in Valcourt, says Bombardier. "In business, when you have an idea for a product, it's very secret, and the discussion is very closed. You validate it with three or four fellow engineers, it then goes up the hierarchy and nothing comes out or is even patented unless there is a possibility of going into production." That's not what Charles Bombardier needs right now. Development of the Spyder At Bombardier recreational products, he led three projects destined for production. First, the Traxter XL, a utility version of the popular four-wheeler. Then, the Elite 30th Anniversary, a luxury two-passenger side-by-side snowmobile, a commemorative project commissioned by Laurent Beaudoin (chairman of the board, his uncle), he says. "We had to use only standard parts, we took a four-stroke Sea-Doo engine, put two tracks underneath and assembled them by hand in a parts warehouse in Sherbrooke," he says. The mandate was to make only 500. We finished the 500th on December 24, 2004." Finally, he led the Spyder project, Bombardier's first road vehicle. "It was a landmark project, there was the hottest engineering team in the company, road standards to meet, with a view to homologation. Since it's a three-wheeler, we needed a stabilization device to counter the tendency to roll over. We were given the mandate to reduce the estimated cost of the parts by 20%, otherwise, it wasn't profitable." It was a great project, but something happened along the way: Charles Bombardier signed the final approval of each of the 3,000 parts to be sent to production or ordered from subcontractors, then submitted the project for approval to the company's large board of directors, which was done. Separation And that's when Charles Bombardier left Bombardier. He doesn't want to give too many details, but the separation was painful. “I didn’t find my place at Bombardier, I didn’t feel welcome there anymore,” he says. He says this objectively, like an engineer describing the elastic limit of a material. But without speaking about it with complete detachment. He doesn’t blame anyone at Bombardier. In fact, he talks about himself when asked what happened: “Look, basically, I lacked patience. And then, senior management, I’m not cut out for that. I thought I was invincible, so I left.” He left Bombardier and worked with Japan’s Kawada Robotics on a humanoid industrial robot project. The deal fell through when Kawada ran into trouble in Japan. Charles Bombardier still thinks the project was a good one, but the window of opportunity has closed for him. He also worked at an internet company, dabbled in motocross electrification and Segway distribution. But he still hasn't found the right vein. So he went back to the source: "Before studying mechanical engineering at ETS [École de technologie supérieure de Montréal], I started with a technical engineering program at Cégep de Lévis-Lauzon: I'm a manual worker." He electrified four small Kawazaki Mule 4X4s with his engineer friend Yves Bergeron, whom he describes as "a kind of J.-Armand." This project will remain in limbo: "The risk and cost of developing the electric market are enormous; tens of millions of dollars." But Charles Bombardier liked the creative aspect as well as the speed at which he and his friend got around the issue. Producing ideas, lots of ideas So he decided to produce a concept in rapid succession every time he had an idea for a machine. "I'm not a designer, so I found designer collaborators, all over the world, on the Internet. I make the estimate, a series of specifications in writing. Sometimes, it's detailed, sometimes, it can fit on a page." He knows that what is published and distributed can no longer be patented, but he says he doesn't have a specific business plan at the moment and that he's not there yet. "My father [JR André Bombardier, vice-chairman of Bombardier Inc and former head of R&D at Ski-Doo] keeps telling me that I give my ideas to everyone. But I don't see it like that. I see my website as a kind of open source project. First, it allows me to satisfy my strong need to produce. I produce a lot, these are pretty raw ideas, I don't always take the time to check if everything makes sense from an engineering point of view, it would take me weeks for each drawing. I want it to come out." He also wants to build a sort of "internet scrapbook," make himself known, develop technical contacts everywhere, and perhaps one day interest investors in financing an idea, a good one. This one, he says, will not have been put on his website. In the meantime, how would he describe himself? He hesitates: "Artist-engineer?" he answers with a smile. His approach to creativity is precisely that of abundance, like that of the sculptor Armand Vaillancourt, who once said: "I don't believe in poverty as a means of creativity. If you do a lot, a lot of things, you risk doing good ones, at some point. But if you do just one a year and it's bad, you're screwed." What is true for sculptures must also be true for machines.

## ###ARTICLE\_START### ID:2627

Chicoutimi - The regional PQ delegation intends to hold a new regional economic summit. According to Treasury Board President Stéphane Bédard, the Regional Administrative Conference, which brings together senior government officials in the region, has been given the mandate to develop a project that would identify and review development niches. According to the Chicoutimi MNA, economic summits held in the region have always generated development projects by building consensus. The Regional Conference of Elected Officials is also participating in this process since its director attends the work of the regional administrative conference: "During the Dubuc Bridge crisis, we were able to see that there was great expertise in the regional public service. We want to take advantage of this expertise to identify interesting projects." In terms of the achievements of the past year, the PQ MNAs took stock of each riding. They mainly mentioned the improvement projects in the school network, the opening of a Bell Canada call centre in Jonquière and the creation of the Centre d'expertise en logiciellibre which already has about thirty civil servants while its director will be appointed in a few weeks. The President of the Treasury Board would like to see a government service opened in La Baie in the coming months to help this district which is going through a difficult period.

## ###ARTICLE\_START### ID:2628

MUSIC Robben Ford - Soul on Ten Robben Ford is not just any blues guitarist. He has played with Joni Mitchell, Rickie Lee Jones, Miles Davis, Yellowjackets. In my opinion, he is one of the best there is. I discovered this virtuoso during my university studies in Sherbrooke. The fluidity of his playing, where technique serves the melodic line, and not the other way around, had greatly impressed me. With rare exceptions, I like everything he does. Unlike jazz, the blues prefers simplicity of the subject, of the harmonic structure. Within this narrow framework, Robben Ford finds a way to dazzle us while respecting the visceral character of the blues. Each solo is a small masterpiece. Ah if only the Summer Festival... COMPUTING Linux and free software I know, it's not at first glance an artistic category, but somewhere between books and music, there are the tools that allow us to satisfy our pleasures. I installed my first system (one of the Ubuntu versions) almost ten years ago. I knew absolutely nothing about it at the beginning, but my curiosity was piqued. I discovered an operating system that gave me full control over my computer, but above all a spirit of collaboration, of community that produces hundreds of quality software. I have fun recording music with Ardour, Hydrogen and Jack, professional quality audio software. Personally, I think we should teach Linux to all children, before they touch Windows and Apple. It opens horizons. FILM AND DOCUMENTARY Contact and I know What I Saw Two for the price of one, but only one theme: extraterrestrial life. In Contact, Jodie Foster movingly conveys this exciting quest for another civilization. The film is directed by Robert Zemeckis (Forrest Gump) based on a book by Carl Sagan, two big names who deliver a well-crafted story and a serious reflection. Contact oscillates between fiction and philosophy, but I Know What I Saw, produced by Leslie Kean and James Fox, tells the story of real life. The film revolves around a conference that brings together, at the National Press Club in Washington, army officers, military and civilian pilots, and civil servants from seven countries. A serious and credible production. One of these days, I will tell you the story of two Quebecers who also know very well what they saw... BOOK The great novel of quantum physics: Einstein, Bohr... and the debate on the nature of reality If the title hasn't already knocked you out, there is still hope. This book does indeed have the appearance of a novel. It tells a pivotal episode in the history of science, those few decades during which our understanding of the world exploded, giving us a glimpse of a universe stranger than all the science fiction novels. The author, Manjit Kumar, introduces us to all the players in these successive revolutions, in chronological order, the common thread of the book being the chess game between Albert Einstein and Niels Bohr, the long duel they waged over quantum physics and the nature of the material world, and which took us from the phonograph to the computer. YOUTUBE Jack Conte/Jarle Bernhoft Two musical creatures little known to the general public. Jack Conte, first, a multi-instrumentalist from the San Francisco area who stages his remixes and his own creations, using just about anything he can get his hands on, flat screen, pieces of cardboard, effects pedals, Launchpad keyboard. Under his fingers, all these objects come to life, in real time. Can we talk about special effects, because everything is filmed with a hand-held camera? Impossible to describe, go see for yourself: jackconte.com; Daft Punk - Doin' It Right - Conte Remix and the very strange Pedals Music Video. I would be remiss if I missed the opportunity to introduce you to Jarle Bernhoft, a Norwegian musician who now lives in New York. A powerful and warm voice, lots of groove and a clever use of loopers: bernhoft.org and see Streetlights on YouTube.

## ###ARTICLE\_START### ID:2629

Speculative bubble? Parallel economy? Experimental bank for the mafia and tax evasion? Recently, several traditional businesses and online sites have announced that they accept payments with bitcoins, so much so that major financial regulators and governments are starting to take a closer look. In 2013, the dizzying rise of this cryptocurrency reached valuation peaks, demonstrating impressive dynamism. Also worrying. HOW DOES IT WORK? WHAT IS A BITCOIN? Decentralized currency and payment protocol, without any central authority. Designed in 2008 by Satoshi Nakamoto (pseudonym). HOW ARE BITCOINS PRODUCED? Their emission is managed by a computer algorithm, programmed to regularly generate bitcoins at a decreasing rate. This mechanism is secured by a known cryptographic process called proof of calculation (or proof of work). HOW TO OBTAIN BITCOINS? On the market By purchasing them on exchange marketplaces, such as MtGox, Bitstamp or Bitcoin-Central. Bitcoins are then stored on a digital wallet to which a unique bitcoin address is associated. By mining They are awarded for solving proofs of calculations, complex mathematical equations. By providing computing power to the network, that is to say by letting free software that secures transactions run continuously on their computer, a user acquires bitcoins. Transferring bitcoins During a transaction, an electronic signature (key) is incorporated into a block of transactions (a grouping of recent transactions). Validation Each computer on the network must verify part of the block of transactions to ensure that the user actually owns the bitcoins. Recording the transaction Once authenticated by the network participants, the transaction takes place and the electronic signature is stored permanently and anonymously. Bitcoin Exchange Rate (in US Dollars) 2009 APRIL 25, 2010 Bitcoins are listed for the first time (1,000 for 0.3¢) 2011 JUNE 1, 2011 Wikileaks accepts bitcoin donations 2012 2013 APRIL 9, 2013 Hacking attack on MtGox exchange causes price to plummet in hours $230 $123 2014 NOVEMBER 19, 2013 Hearings before the US Senate Committee $1,203 $912

## ###ARTICLE\_START### ID:2630

After construction, it will be the turn of information technology to attract attention in 2014 as a major clean-up of practices is being prepared, in the hope that Quebec will regain control of IT spending. These IT contracts have reached $3.2 billion since 2008, sometimes for next to nothing in the end. A project that goes from $83 million to $1 billion, a private consultant that the government pays $2,355 per day, a computer thief named an executive in a Crown corporation, a call for tenders targeting a single supplier that is cancelled after our reports, a firm that wins the calls for tenders that it itself prepared: our Bureau of Investigation has revealed several examples of messy situations in recent months. (Other examples opposite.) While some say that civil servants change their minds too often during a project, others say that there are too few firms sharing the government pie. DEPENDENT ON THE PRIVATE SECTOR The Marois government admits that Quebec had developed too great a dependence on the private sector in IT. In any case, there is big money in the world of information technology and this will now interest the Permanent Anti-Corruption Unit (UPAC), as Robert Lafrenière, the big boss of the police squad, has just announced. "The common denominator," he said, "is the sums of money, and they are gigantic in IT." The last year broke records for IT contracts: $880 million, of which nearly 90% was in consulting services. "That's the Liberal legacy," defends the President of the Treasury Board, Stéphane Bédard, in an interview with our Investigation Bureau. "Politicians had lost interest in IT [...]. He wondered what these bugs were and only managed the hellish cases,” he explains, adding that he took the bull by the horns to “exercise better control.” “WE MUST IMPROVE” “Our big challenge,” he says, and we’ll announce it in January, is the review of contractual practices. We want to improve our performance, encourage greater competition. Even we have to improve internally to better control our risks.” In addition to bringing expertise back in-house and focusing on open-source software, Mr. Bédard mentions that the government will try to “slow down the pace of investment.” In other words, it wants to reduce contracts with the private sector to better monitor projects. “Before,” adds the minister, “there was a lot of pressure to deliver and little to control. When you push on one side, it disrupts the machine.” NOT LIKE IN CONSTRUCTION? Mr. Bédard assures, however, that nothing allows him to conclude that this is a phenomenon that resembles construction. "What we have here," he says, "is a lot of contracts and few companies. We need to encourage better competition [...]. When there is only one bidder, it is not their fault. It is up to us to look at how to attract more." He also intends to continue to demand greater transparency. Pressure from the media and better monitoring of projects have their effects on the government apparatus, he emphasizes. DO YOU HAVE INFORMATION CONCERNING THE COMPUTER PROJECTS IN DISRUPTION? Contact our journalist Jean-Nicolas Blanchet in complete confidentiality. 418 473-5246 jean- nicolas.blanchet @ quebecormedia.com UPAC and the government are looking into Contractual practices in the IT field - - - "Savings by working differently" Information technology (IT) experts believe that Quebec must take matters into its own hands quickly to be more successful with its IT projects. "There are some great failures elsewhere than in Quebec too. But we have a problem with a lack of skills and we are forced to hand everything over to external suppliers... who take advantage of it," explains Daniel Pascot, professor at the Faculty of Administration Sciences at Université Laval. According to him, Quebec has not gotten its money's worth with the billions spent in recent years on IT. "Yes, we got had. There would be savings by working differently," he believes. MORE TRANSPARENCY "There is a tendency to shirk responsibilities by giving everything out to contract," he continues. But if the government misdefines what it wants, it is not the fault of the private sector, which did what it was asked to do. We need a more collaborative approach than always a contractual one," he continues. Without talking about embezzlement, Mr. Pascot believes that the sector must be more transparent and that the system must change. "We have gradually developed a way of doing things that is difficult to escape. [...] We must force transparency. We must follow what is happening," added the man who poses as a defender of free software. - - - A boring commission of inquiry? Jacques Topping, the chairman of the board of directors of Réseau Action TI, also believes that the government can improve its practices, but he is convinced that the sector is not affected by collusion. "The competition is fierce, companies look at each other askance," he illustrates. And if there were a commission of inquiry, he has the impression that the public would fall asleep, he adds. Mr. Topping attributes IT abuses, in particular, to the contracting mode of the lowest bidder. Some suppliers aim low and cost overruns can occur. "We don't take the best [...] we get what we paid." The musical chairs of government stakeholders also harms the proper development of projects, in his opinion. WE TAKE BIG DETOURS The CEO of Réseau Action TI, Patrice-Guy Martin, deplores the poor definition of needs. "We ask IT people to build a vehicle to go from Quebec to Montreal. But, in the end, we come back to tell them that we have to go through Beauce, and then, through Chicoutimi, at the same cost," he illustrates. - - - Sagir The monstrous IT project "SAGIR", dubbed "ça chire" by several of the civil servants working on its implementation, remains one of the biggest IT abuses in Quebec. It involves the IT modernization of the management systems of departments and organizations (accounting, human resources, payroll, etc.). The project was supposed to be completed in 2007 and cost $83 million. Today, our sources estimate it at over a billion dollars. Its final schedule is unknown. Phase 2 of 7, which was supposed to be completed in 2010, has not even been completed. We also revealed that $134.7 million had been spent completely unnecessarily, after the government decided to cancel the project and relaunch it differently. So far, $502 million has been spent on consulting services alone in the project. Our research also showed that the government was paying $2,355 per day to have a private consultant help with the project. - - - Call for tenders for a single supplier A $13 million call for tenders from UQAM was cancelled by Quebec after our Bureau of Investigation revealed that it targeted a single supplier of computer equipment, namely Cisco. Industry players called it "bogus" and "directed," adding that it was necessary to "bring down a well-established system" of irregular IT practices. UQAM justified its approach with an external study that it never wanted to show us. The university issued a press release to "set the record straight" and criticize our journalistic approach. But a few days later, the call for tenders was cancelled at the government's request. Several other public organizations have also revised and modified their contractual process in the wake of our report. - - - Computerized clinical record in Montreal It was supposed to be completed this year. That is not the case. It will cost at least $131.9 million, or $121 million more than in Quebec City, where the same IT project is already well established. Costs have climbed by $14.5 million. One year before the deadline, implementation had not been completed for 36 of Montreal's 42 health care institutions. Thanks to a controversial clause, TELUS can implement this project anywhere in Quebec without a call for tenders. The call for tenders launched in 2004 was initially supposed to link the CHUM and the CUSM with TELUS. But a clause then allowed the contract to be renewed in Montreal, Saguenay, Lanaudière and the Laurentians. - - - Big bill, little competition An analysis by our Investigation Bureau revealed that a third of the 121 largest public IT contracts in the last two years were awarded when only one company had submitted a compliant bid. Two-thirds of the calls for tenders attracted only one or two compliant bidders, even though Quebec has more than 2,000 information technology companies. Several companies indicated that they did not want to contract with Quebec because the calls for tenders seemed "arranged" and "directed" toward a restricted circle of companies. - - - Computerization of health This is the largest IT project in Quebec's history, and it seems incomplete. The computerization of Health was promised for 2011 at a cost of $543 million. The government is now targeting 2021 and a cost of $1.6 billion. The computerization concerns in particular the implementation of the Dossier santé Québec, which was to be completed in 2010 and cost $563 million. Nearly $450 million has already been spent, the schedule has been revised for 2015 and the government does not know what the final cost will be. During 2013, for the sixth time in seven years, a new civil servant was placed in charge of the project. In an interview, the deputy minister of Health pointed out that private firms "took advantage" of the project and that the government had maintained too great a dependence on the private sector. This year, our Investigation Bureau revealed that only 61 clinics out of 2,220 were connected to the Quebec Health Record to date. - - - Computerization of Justice The project, which began in 2001, was promised for 2007. It was then suspended in 2012, then returned to square one this year. More than $75 million has completely vanished from the project, including more than $40 million that is definitely not recoverable for a relaunch. The same goes for the fiasco that cost $340,000 in “file closure” fees. Justice Minister Bertrand St-Arnaud himself admits that it was “pretty terrible.” The inability to complete this project has an impact on the justice system, which is still drowning in paperwork. The Auditor General also noted that the lack of computerization caused "risks of inappropriate court decisions or administrative errors."

## ###ARTICLE\_START### ID:2631

in the IT mess after construction, it will be the turn of information technologies to attract attention in 2014 as a major clean-up of practices is being prepared, in the hope that Quebec will regain control of IT spending. Bédard, in an interview with our Investigation Bureau. "The politician had lost interest in IT [...]. He wondered what these bugs were and only managed the hellish cases," he explains, adding that he was taking the bull by the horns to "exercise better control." "WE MUST IMPROVE" "Our big challenge," he says, "we will announce it in January, is the review of contractual practices. We want to improve our performance, encourage greater competition. Even we must improve internally to better control our risks." In addition to bringing expertise back in-house and focusing on open-source software, Mr. Bédard mentions that the government will try to "slow down the pace of investment." In other words, it wants to reduce contracts with the private sector to better monitor projects. "Before," adds the minister, "there was a lot of pressure to achieve and little to control. When you push on one side, it disrupts the machine." sTéphane béDaRD Treasury Board RobeRT lafreniere UPAC NOT LIKE IN CONSTRUCTION? Mr. Bédard assures, however, that nothing allows him to conclude that this is a phenomenon that resembles construction. "What we have here," he says, "is a lot of contracts and few companies. We need to promote better competition [...]. When there is only one bidder, it is not their fault. It is up to us to look at how to attract more." He also plans to continue to demand greater transparency. Media pressure and better project monitoring have their effects on the government apparatus, he emphasizes. DO YOU HAVE INFORMATION CONCERNING THE COMPUTER PROJECTS IN DISRUPTION? Contact our journalist Jean-Nicolas Blanchet in complete confidentiality. 418 473-5246 jean- nicolas.blanchet @ quebecormedia.com THE COMPUTER MESS UPAC AND THE GOVERNMENT ARE LOOKING AT CONTRACTUAL PRACTICES IN THE COMPUTER SECTOR

## ###ARTICLE\_START### ID:2632

Information technology (IT) experts believe that Quebec must take matters into its own hands quickly to have greater success with its IT projects. "There are some great failures elsewhere than in Quebec too. But we have a problem with a lack of skills and we are forced to hand everything over to external suppliers... who take advantage of it," explains Daniel Pascot, professor at the Faculty of Administration Sciences at Université Laval. According to him, Quebec has not gotten its money's worth with the billions spent in recent years on IT. "Yes, we got had. There would be savings by working differently," he believes. MORE TRANSPARENCY "There is a tendency to shirk responsibilities by giving everything out to contract," he continues. But if the government does not define what it wants well, it is not the fault of the private sector, which did what it was asked to do. We need a more collaborative approach than always a contractual one," he continues. Without mentioning embezzlement, Mr. Pascot believes that the environment must be more transparent and that the system must change. "We have gradually developed a way of doing things that is difficult to escape. [...] We must force transparency. We must follow what happens," added the man who poses as a defender of free software. \* \* \* Daniel pascoT \* \* \* Professor

## ###ARTICLE\_START### ID:2633

At the end of September, Microsoft closed the MSn TV service, born in 1996, Web TV, without fanfare. That was the end of the first internet TV box to have been marketed. Today, Apple and several other companies are trying to break into this market. Like the Chinese Jynxbox and its Android micro box. Undeniably, the thing has a lot of potential, but it will take time and effort. "TV is dead" proclaim the gurus (who in the past, have assassinated many other technologies without much success). Fine, but while waiting for the publication of the obituary, the small screen retains its power of attraction with the public. And, with the screen that multiplies the pixels and becomes gargantuan and cinemascope, we are looking for content that will highlight the beast. And said content is no longer limited to the country. The bulimics are looking for content from all over the planet. Once connected to the Internet, the Jynxbox is precisely one of those boxes that, using open-source technologies, allows TV, movie and music fans to create a "media center" that is physically discreet as anything, but not stingy when it comes to possibilities. Imagine a device the same size as a small pack of cigarettes, with three USB ports, a Micro SD port, an HDMI connector, an Ethernet port (network), an audio/video output and WiFi connectivity. Not to mention the wireless controller that lets you control it from the couch. And all powered by the Android operating system and the XBMC Media Center software. That's what a Jynxbox is. Since the Jynxbox is an Android device, identical to your tablet or multifunction phone, you can visit Google's Play Market and download several movie/TV applications like Netflix or Illico.tv. Once the program is launched, you can watch the programming or movies to your heart's content. However, it is when launching XBMC that this box becomes the most trippy. XBMC is a media center that manages different types of files, audio, images and video. So, you plug in an external hard drive full of files, and presto! XBMC takes care of the rest. A delightful experience when everything is connected to an audio system. But XBMC is also an evolving tool, to which you can add hundreds of add-ons. And there, happiness. Thousands of TV sets around the world. Specialized channels. Movies. Music. But also, let's not be afraid to say it, several add-ons available for download are swimming in illegality. Many encrypted channels become accessible. And if you also add a paid VPN that will allow you to simulate an American, French or British IP address, it's the whole package. But that said, to access all this, you will have to tinker, read and occasionally ask for help. Because we are far from the perfect software/hardware integration signed Apple even if, well tinkered, the Jynxbox offers a little more than the Apple TV. WE LIKE THE LILIPUTIAN DIMENSIONS OF THE JYNXBOX THE GENEROUS CONNECTIVITY XBMC INSTALLED AND CONFIGURED BY DEFAULT EASY TO TINKER CLEAR USER INTERFACE OPTIONAL USB HD TV TUNER WE LIKE LESS THE DEVICE HEAT UP AFTER SEVERAL HOURS OF VIEWING THE ANDROID/XBMC COMBINATION RATHER THAN LINUX/XBMC ANAMIC PERFORMANCE IF YOU USE ANDROID GAMES THE WIRELESS THAT OCCASIONALLY DROPS OTHER GADGETS > Apple TV THE MOST KNOWN TV BOX IS THE APPLE TV. IF YOU'RE WILLING TO LOCK YOURSELF INTO THE APPLE ECOSYSTEM, THE APPLE TV IS WITHOUT A DOUBT THE EASIEST DEVICE TO USE. NO FIDDLING HERE, YOU TURN IT ON AND IT WORKS. HOWEVER, IT IS POSSIBLE TO "HACK" THE DEVICE AND OPEN IT UP TO OTHER ECOSYSTEMS. > Chromecast FOR THOSE WHO HAVE ADOPTED VOLUNTARY SIMPLICITY, THE GOOGLE CHROMECAST HDMI KEY COMBINES SIMPLICITY AND PERFORMANCE. BUT THERE ARE NOT MANY CHROMECAST INTEGRATING APPS.

## ###ARTICLE\_START### ID:2634

Fed up with the creaking subway. This daily grind of out-of-tune noises: crackling loudspeakers, screeching wheels, shouting voices... The traveler comes out with a buzzing head and sawed-off eardrums. Nicolas Judelewicz is a composer and musician. It is easy to guess that he has sensitive hearing. Even if the founder of the Bretzel Lab studio (1) does not present it that way, Underground Sound Trip seems to be his response to the cacophony played by the RATP. The idea for the project came to him following his collaboration with the photographer Chantal Stoman on Lost Highway, a sound and photographic installation created in the corridors of the Châtelet station for the Nuit blanche in 2009. Noting the difficulty of creating a sound ambiance in the underground space, Nicolas Judelewicz returned to the charge during the Nuit blanche 2013 with a different process. With headphones on and smartphones in hand, visitors to line 1, La Défense-Château de Vincennes, could scan a QR code (a sort of square, pixelated barcode) posted at the entrance to the metro. A soundtrack was then downloaded onto their mobile phone, intended to accompany them during part of the journey. Marlène at George V The extracts, composed of a selection of archives taken from the INA's collections and original music created for the occasion, establish resonant links between the journey taken under the city and the history of the places crossed on the surface. For example, upon arriving at the George V station, we hear part of an interview with Marlène Dietrich and Jean Marais, recorded in the square near the Champs-Elysées. The QR codes have been removed since the Nuit blanche but the project remains online. To reproduce the experience, all you have to do is download the extracts at home and transfer them to any mp3 player. Which is what we did, devouring in one go the 16.5 kilometers of the oldest line of the Parisian metro, a musical stroll from east to west of exactly 36 minutes and 49 seconds. With, in the back of our minds, the echo of a quote stolen from the Algerian situationist Abdelhafid Khatib, who opens his Essai de description psychogéographique des Halles with these words: "The world in which we live, and first of all in its material decor, discovers itself narrower by the day. It suffocates us. We are deeply subject to its influence; we react to it according to our instincts instead of reacting according to our aspirations. In a word, this world commands our way of being and, in so doing, crushes us." Sade and the apricots By appropriating Guy Debord's dear technique of "urban drift", a method of "movement without a goal", we temporarily renounce submitting to the dictates of the metro, conceived as a tool for rationalizing travel. So, is it impossible to drift on rails? Not so sure. Ambient temperature around 10°C on the platform of the Château de Vincennes station, at the eastern end of line 1. Three bald men and two shorn men are waiting for the first train: a woman and her child, a runner with shoes muddy from her trip to the nearby woods, and a student. A growing screech announces the arrival of the machine, which stops, then opens, in a formidable concert of slams and whistles. The belly of the beast is wide, compared to some of its peers. The seats are rainbow-colored. The floor orange and brown. A dull hum warns of the imminent closing of the doors. On the way. The headphones in our ears emit a cascade of metallic and round notes. A warm voice cuts through the music: "I hate your mother," he often writes to his wife from the depths of his dungeon in the Fort de Vincennes. I hate your cripple mother who never knew how to swallow her ugly buttocks from an armchair. Ah, the monster! Oh, the abominable creature! Yes, how I hate her!” The letter is signed by the Marquis de Sade. Sitting on the bench opposite, a graying guy is munching on a packet of dried apricots. The gluttonous way he stuffs the fruit into his mouth suddenly becomes obscene. The treats between his fingers take on a vaginal appearance. A glance around. The other passengers are mostly absorbed by their cell phone screens. Some are playing or sending text messages. Still others are leafing through the newspaper or a book. Bodies are here, but all minds seem elsewhere. The present place is as if annihilated by its function as a vehicle. A space of transition from one place to another, the metro does not seem to be considered a habitable place, even temporarily. Probably the effect of speed. Because we can see when the system goes haywire, when a breakdown occurs, that conversations start more easily between passengers. But these start to fray as soon as the incident is resolved, everyone returning to the daily worries that we see passing by in wagons in the depths of their eyes: I'm late for my appointment... I won't have time to do the shopping... did I close the door properly when I left?... Damn, Christmas presents! At the Nation Casse-pipe Between Saint-Mandé and Nation, the train leaves Val-de-Marne to enter Paris. The voice of Jacques Tardi takes over from Sade. Against a backdrop of soaring electro music, the comic book artist talks about his adaptation of Léo Malet's thriller, Casse-pipe à la Nation. The interview is interspersed with excerpts from a radio play inspired by the same book. In our dreams, line 1 appears to us like an immense groove on the capital's record. Every time a train passes, it reveals, like a gramophone needle, the secret music of Paris' memory. Meanwhile, more and more people enter the train. The way each person finds their place sketches a psychochoreography of the crowd compressed into a small space: hesitant waltz around the vacated seats, brushing against each other, slipping past, losing their balance... It's an improvised dance, on the theme of every man for himself. We could devote a book to the choices of placement of individuals in the metro, in which we would analyze the influence of psychological determinisms on positioning in public space. The train plunges into Paname. Relentless race. We meet Robert Doisneau at Hôtel de Ville, the former first lady Claude Pompidou at Châtelet, the ghost of Proust at Concorde, where the writer had his quarters at the Ritz, and a page from Flaubert on the Champs-Elysées: "At times, the lines of cars, too rushed, stopped all at once on several lines. Then, we stayed close to each other, and examined each other. From the edge of the armorial panels, indifferent glances fell on the crowd; eyes full of envy shone in the back of the cabs; denigrating smiles answered the proud bearings of the heads." The tyranny of the spectacle still prevails today. The luxury brands that are displayed up there in the windows engage in a war of war all the way to the metro. The windpipe of the train is transformed into a podium. The passengers show off their outward signs of wealth, with a sullen expression like in fashion shows. The passengers' clothing highlights the socio-geographical trajectory of line 1, which runs through the wealthy neighborhoods along its entire length. A recorded female voice warns tourists about pickpockets in five languages. Harp and carpet of violins The horizon is blocked. We can barely see two meters. The forest of legs and nodding heads that stands in the carriage hides the ends of the train. At the moment when the crowding reaches its peak, a human tide pours onto the Charles-de-Gaulle-Etoile platform. The Arc de Triomphe, placed up there like an immense magnet turned towards the earth, attracts the passengers who are returning to the surface. In our ears, the score unrolls a carpet of violins and harp chords. We breathe. We will not reveal the many other surprises that Underground Sound Trip has in store. The road to the Arche de La Défense is still long. Better to do it yourself. And perhaps get used to this new way of using RATP trains. Because Nicolas Judelewicz does not intend to stop there. Line 1 is "a pilot" that he wants to extend to the other lines of the network thanks to the future installation of 3G underground. "All the mixes could be contained in a free app. With geolocation, the user will choose their route. And updates to the INA documents will make it possible to echo the cultural news of the city", explains the composer, who thus hopes to "offer an entertaining and informative sound journey, far from the Facebook or other habits that metro users mechanically indulge in." In the long term, he even aims to extend the concept to buses and trams. While waiting for such a project to see the light of day, other free applications exist to experience the city differently. Designed in open source, Tactical Sound Garden allows you to create and access geolocalized sound oases, which are triggered when a user of the app passes nearby. Serendipitor is directly inspired by urban drifting. The app lets the user choose a starting and ending point on a Google Maps map. Then it generates a random and twisted path, during which the walker is invited to "follow a person wearing a blue t-shirt" for a few minutes, or to walk behind a pigeon until it flies away, so that the path oscillates according to the terrain's demands. Finally, if you don't have a state-of-the-art toy to test the apps, know that the situationists used to drink wine before drifting. During the holiday season, it's done. Drawing Laurent Lolmède (1) http://soundcloud.com/bretzel-lab

## ###ARTICLE\_START### ID:2635

Software for finding a lost or stolen computer, tablet, or smartphone has proliferated, regardless of platform. All suffer from the same major, unavoidable vulnerability: the lost device must be turned on and able to connect to the Internet for them to be useful. This is usually not such a problem with a smartphone, as long as you act quickly, before the battery dies. It can be much more complicated with a laptop or, especially, a tablet. Ironically, password-protecting your device, a highly recommended method, can hamper recovery efforts. If someone finds your iPad but is unable to access it, for example, they won’t be able to connect to the Internet, and you won’t be able to see their location or send them a message to call you back—unless, by chance, they happen to be near a wireless network known to your iPad. The problem is similar with Windows or Mac laptops, where you have the advantage of being able to create guest accounts. These accounts don't give you access to your personal information, but they still allow a good Samaritan, or a thief, to connect to the Internet and thus activate, voluntarily or not, the protection measures. Generally speaking, despite its popularity, the iOS platform is the least well served in this area, mainly because of the restrictions imposed by Apple on access to certain functions, like the camera, by third-party applications. Find My iPhone, iPad or Mac > Apple > Free > Mac, iOS Provided free with the purchase of an Apple device, this service is based on iCloud. After activating it the first time you use your computer, tablet or phone, it allows you to see the location of the lost device on a map, make it ring, display messages like your phone number, protect it with a password if it was not already done or erase it remotely. A new feature in iOS 7 continues to protect and locate your mobile device even if it is completely erased and reset. Android Device Manager > Google > Free > Android Google followed Apple in adding anti-theft features to its Android mobile operating system earlier this year. These features are very similar to Apple's solution, except that they don't allow you to remotely display messages, but can change your password if you already have one. You can also find a device without any prior activation. However, activation is required to remotely lock or wipe a device. Prey > Prey Project > Free > Windows, Mac, Linux, iOS, Android A solution created by the free software community and offered for free, although an annual subscription adds features. The list of its capabilities varies by platform. It is more limited on iOS, but can still, in certain circumstances, obtain photos captured by one or the other of the cameras of your missing device. Can be controlled remotely by text message on Android. On computers, it can also take screenshots. Its interface could do with an additional layer of polish, at least on iOS. Undercover > Orbicule > $53.76 > Mac A very complete solution for Apple computer owners. Tracks your device, takes photos with the front camera, captures screenshots, records everything the thief types on the keyboard and even lets you simulate a hardware failure to trick the thief into taking the computer to a repair shop. All in an interface that will be familiar to Mac OS X users. Norton Anti-Theft > Symantec > $30 per year (3 devices) > Windows, Mac, Android A simple solution from a well-known security company that lets you manage up to three devices at once, even if they use different platforms. Allows you to track, alert, lock and take photos remotely. Absolute Lojack > Absolute > $40 per year (computer), $30 per year (mobile) > Windows, Mac, Android In addition to the inevitable features of remote location, locking and wiping, it gives access to a specialized team that will try to gather the necessary evidence to allow the police to take action. A more expensive version gives you money to buy a new device if yours is not found. On Android, it only works with certain Samsung models. CWTA Blacklist of Lost and Stolen Devices This is not an application or software, but a database from the Canadian Wireless Telecommunications Association (CWTA) of all mobile devices - tablets and cell phones - that have been reported as stolen. By entering the IMEI (International Mobile Equipment Identity) number of a lost or stolen device on this list, it will not be able to use it on any Canadian network, which should discourage thieves. Consumers should contact their service provider to report a lost or stolen device, to have it deactivated and blacklisted. On the website protectyourdata.ca, buyers of a used device can enter its IMEI number to check if it has been stolen.

## ###ARTICLE\_START### ID:2636

16 years old, that's the age of Winamp, star of computer music at the beginning of the Internet, which disappeared this weekend. After several years of agony, its owner, AOL, finally pulled the plug. Created in 1997 by the company Nullsoft, Winamp primarily allowed you to play MP3s and build playlists, well before the appearance of iTunes. It was also fully configurable, which allowed you to spend hours changing the color of the smallest of its buttons... Bought for 80 million dollars in 1999 by AOL, who never knew what to do with it, Winamp quickly fell into disuse despite improvements. Internet users launched a petition to request that its code be released as open source. S.Fa.

## ###ARTICLE\_START### ID:2637

The Dow Jones and S&P 500 soared to new highs yesterday on Wall Street, emboldened by U.S. growth data that reinforced investor confidence in a solid economic recovery. According to final results, the Dow Jones gained 0.26% (or 42.06 points) to 16,221.14 points and the S&P 500 gained 0.48% (8.72 points) to 1,818.32 points. The NASDAQ gained 1.15% (46.61 points) to 4,104.74 points, its highest level since 2000. The market enthusiastically welcomed the U.S. growth figures released before the opening, as “they reflect an economy that is getting better and better,” noted Peter Cardillo of Rockwell Global Capital. The country's gross domestic product (GDP) grew by an annualized 4.1% from July to September, after growing by 2.5% in the second quarter. That's a much stronger pace than analysts had expected. The indices also benefited from a more technical element: several financial products expired yesterday, forcing investors to unwind their positions and causing an increase in trading volumes. Nike falls Despite a better-than-expected quarterly profit, sporting goods maker Nike fell 1.18% to $77.34. The results of Red Hat, a provider of open source software such as Linux, delighted the market: the stock jumped 14.49% to $56.10. The Jones Group, which oversees several ready-to-wear brands, climbed 5.24% to $14.87. It has agreed to be bought by the investment fund Sycamore Partners for around US$1.2 billion or $15 per share. Another major acquisition operation: the IT group Oracle will further strengthen its position in cloud computing by purchasing its compatriot Responsys for US$1.5 billion. Its share price fell 0.63% to US$36.37. In the aeronautics sector, Boeing rose 1.11% to US$136.67 after an order for 21 units of the 777-9X, the future long-haul aircraft of the American manufacturer, by the Hong Kong company Cathay Pacific at a list price of US$7.48 billion. Slight gain in Toronto The Toronto Stock Exchange saw a gain of more than 100 points melt like snow in the sun to close with little change. The S&P/TSX Composite Index jumped 112 points before ending the day up 7.40 points at 13,399.60 as investors took advantage of a week of strong gains. The Canadian dollar closed up 0.15 cents US at 93.91 cents US. Light crude oil for February delivery settled at $99.32 US, up 28 cents US, on the New York Commodity Exchange. Gold for February delivery settled at $1,203.70 US, up $10.10 US, in New York.

## ###ARTICLE\_START### ID:2638

Berlin Special Envoy - An inconspicuous building at the end of a courtyard, on a small street in the centre of Berlin. During the day, everything is quiet, but at nightfall, the ground floor becomes very lively: this is where the Chaos Computer Club (CCC), the largest association of computer hackers in Europe, is located. In the vast hackerspace, a little neglected but comfortable, a dozen adults and teenagers are bent over their computers, helping each other or chatting. A 12-year-old boy has come to learn about free software, accompanied by his grandmother: Berlin hackers are not lone wolves, they participate in the life of the neighbourhood. The cellar has been transformed into a well-equipped electronics workshop - a real hacker must also know how to make his own equipment. The decor is telling: Anonymous masks, bundles of cables emerging from the walls, an axe stuck in a computer keyboard... The drinks dispenser is decorated with a very official-looking poster: "Device monitored by the NSA", with the logo of the American intelligence agency. A man who calls himself "Nobody" claims that the poster has been there for years: the CCC did not wait for the recent press revelations to suspect the NSA of spying on the entire world. In Berlin, the Chaos Computer Club has a thousand members, including 150 active activists - mostly computer security experts who have decided to get involved in politics, in their own way. Their mission: to preserve the free flow of information on the Internet, ensure the protection of citizens' personal data and impose complete transparency of public data on administrations... While retaining its rebellious spirit, the CCC has established itself as a recognized institution. Its members are regularly consulted by local and federal authorities. One of the Club's leaders, "Erdgeist", a cryptography specialist, is proud of this new role: "We even testified before the Constitutional Court, the highest authority in the Republic", for bills on the retention of computer data or electronic voting. The CCC also intervenes in schools, to introduce young people to free software and Internet security. Inspired by the CCC, a dozen independent hackerspaces have opened in Berlin, ensuring the movement's presence in all neighborhoods. In the north of the German capital, the Raumfahrtagentur group has set up its workshops in the old tanning booths of a disused swimming pool. Further south, the hackerspace c-base alone has nearly 500 members. There, computer, audio and video equipment coexists with a jumble of extravagant artistic works. Above the bar hangs a portrait of Edward Snowden, with a single-word caption: "Asylum" - calling on Germany to grant political asylum to the former NSA employee who leaked thousands of secret documents from the American agency, who is currently a refugee in Russia to escape justice in his country. One of the managers of c-base, known by his pseudonym "e-punc", says that in this case, the hackers are in tune with public opinion: "In Berlin, no one has forgotten the Stasi, the political police that spied on everyone in East Germany. In reunified Germany, we were very proud to know that this kind of thing did not exist in our country. And suddenly, we discover that in fact, it does exist. It is unbearable. » At the back of the room, a large screen shows a cartoon explaining the NSA surveillance system on a loop, then a sequence of computer-generated images, produced by an Asian television, summarizing the Snowden affair... Thanks to this unique atmosphere, hackers from Europe feel a bit at home in Berlin. Similarly, many American activists for the free Internet like to stay in the German capital, where, moreover, life is cheap and people know how to party. In the 2000s, links were formed between the CCC and American hackers around the TOR project, a network of clandestine servers allowing people to surf the Internet without being detected. Then the collaboration was strengthened with the appearance of WikiLeaks, the site for publishing Julian Assange's secret documents. Very quickly, the CCC began to discreetly provide WikiLeaks with essential material and financial assistance. At the same time, a few Americans decided to become WikiLeaks' spokespeople in the United States. The most famous is Jacob Appelbaum, one of the main architects of the TOR project. Because of his commitment to WikiLeaks, this gifted hacker - and talented orator - has been subjected to increasingly intense police harassment since 2010. In 2013, he decided to go and live in Berlin, alongside his friends from the CCC: "I consider myself an exile," he explains. "American agents contacted me to advise me not to return to the United States." There was no question of him giving up the fight. In Berlin, Jacob Appelbaum met up with a compatriot: the documentary filmmaker Laura Poitras, famous since she went to Hong Kong to meet Edward Snowden and obtain the NSA documents. She then chose not to return to the United States and to settle temporarily in the German capital. She devotes her time to editing a documentary on "whistleblowers", shot partly in Hong Kong, and to writing articles on NSA wiretapping for various media outlets, including the weekly Der Spiegel. The two activists often join forces and co-sign certain articles. Appelbaum has just obtained a press card and a residence permit. He is also working with the team responsible for organizing the thirtieth congress of the Chaos Computer Club at the end of December - a festive event at which he will be a prominent figure. Berlin has also welcomed the British Sarah Harrison, Julian Assange's closest collaborator in London since 2010. In May 2013, when Edward Snowden announced that he had leaked the NSA documents and that he was in Hong Kong, Sarah Harrison immediately went to join him. When he had to leave Hong Kong in June, she accompanied him on his escape. She stayed with him at Moscow airport for thirty-nine days, then in a secret residence in Russia. When she left Russia at the end of October, it was not to return to the United Kingdom, an unconditional ally of the United States, but to a refuge in Berlin. As soon as she arrived at the airport, she was taken care of by activists close to the CCC and has since been as discreet as possible. In fact, Edward Snowden's companions and those working on the NSA documents can count on the support of a vast network of sympathisers in Berlin, beyond the hard core of hackers. For example, the Green MP Hans-Christian Ströbele, a very popular elected representative from the Prenzlauer Berg district. When he wanted to meet Edward Snowden in Moscow - the interview took place on October 31 - his colleague Malte Spitz, a member of the Greens' national executive committee, had no trouble contacting Snowden: "All he had to do was contact the Berliners close to WikiLeaks, everything happened very quickly. In Moscow, Mr. Ströbele asked Mr. Snowden if he would agree to come here to testify before the German courts in the NSA wiretapping affair." The risk is significant, because the United States would immediately send Germany an extradition request, but according to Malte Spitz, the extradition treaty between the two countries provides for an exception for political cases, which could be invoked. The support network also includes the Pirate Party, which has fifteen members of the Berlin State Parliament - elected on a radical program, including the protection of personal information and the transparency of public data. The Pirates have made it known that if needed, they will be ready to help foreign activists living in Berlin. Despite everything, the "exiles" do not feel completely safe, and fear that one day they will be expelled from Germany: "I have had discussions with European elected officials, particularly German ones," explains Jacob Appelbaum. "They all recognized that in the face of the United States, no European country is truly sovereign." Germans who know the ins and outs of Berlin politics are more optimistic. This is the case of Pavel Mayer, head of a computer security start-up, whose personal trajectory illustrates the establishment of the free Internet movement in the German capital. Active in the Chaos Computer Club for twenty years, he is also a Pirate Party member of the Berlin Parliament. Thanks to his technical skills, he was chosen by his peers to sit on the parliamentary committee for the control of the Berlin state counter-espionage service, which has more than 200 agents. Pavel Meyer is also a member of the federal commission G10, responsible for validating requests for interceptions filed by intelligence services in espionage and terrorism cases. A hacker at the heart of the system... "I can't explain the new measures taken by our services," he says with a smile, "it would be punishable by five years in prison. But I can say that Edward Snowden's friends have nothing to fear here. If the United States put pressure on Germany to expel them, it wouldn't work. The Americans have managed to get everyone against them, no one wants to please them." True to the Pirate spirit, Pavel Mayer refuses to become a full-time politician, and remains a man in the field. His start-up has just launched a free smartphone application for sending anonymous and encrypted messages: "When we started the project, we didn't have the NSA in mind," he explains with a laugh. But in the current atmosphere, I feel like we're going to be successful."

## ###ARTICLE\_START### ID:2639

In October, the Italian company OSVehicle presented its prototype of a customizable vehicle that can be assembled in one hour, Tabby. The record is even around forty minutes. It is not strictly speaking a car for homologation reasons, but rather a quadricycle with limited speed. The main innovation is that the machine is open source, that is to say that the complete plans are freely downloadable and that modifications are possible. "We wanted to be able to customize the vehicles. Tabby provides a common base to drive the vehicle of your choice," explains Carlo De Micheli, the company's spokesperson. Pre-orders have started for deliveries from May 2014 in four packages of 100 kilograms each and for less than 6,000 euros. The homologation, currently underway in Italy, will depend on the country (number of seats, speed, etc.). The economic model is that of the Arduino computer component, well known to tinkerers for performing all sorts of functions (robot, sensors, video, etc.). Like him, Tabby is a platform with transparent operation that everyone, after purchase, uses as they wish. The target markets range from individuals to larger-scale production (for developing countries, for example), including training. Other projects of such free vehicles exist, such as those of Wikispeed, Riversimple, OScar or Velocar (French).

## ###ARTICLE\_START### ID:2640

Among the collateral damage of the crisis of confidence that the Prism affair (the surveillance of Internet users) has installed is the fragile skiff of digital social sciences. Internet Studies, Web Science or Digital Humanities, new territories, new ways of practicing research, new generations of researchers have opened up in recent years for the human and social sciences. Increasingly, historians, sociologists, ethnologists, psychologists have made the Web both an object and a means of understanding our societies, of studying the way in which they are transformed by the great digital conversion. However, it is important to make the specificity of the relationship that these disciplines have with digital data heard in the din surrounding Big Data. From everywhere, the promise of a paradigm shift is announced, inviting public authorities, companies, researchers, journalists and citizens to make all kinds of profits from the "new gold" of digital data. Predicting the success of a film, personalizing customer relations, making predictive marketing, mapping mobility, modeling alternative public policies, visualizing the dissemination of information on the Web, measuring feelings on the network, etc., all it would take is a good data set for them to "speak for themselves". Fueled by science fiction films and series, the idea that, with a click, "the-data-is-the-result" has contributed to making invisible the work and data workers, coders, statisticians, modelers, algorithm designers and all the professions, including those in the social sciences, whose task is to extract meaning from them. Unlike the exact sciences which exploit massive and decontextualized digital data sets, the social sciences maintain a more demanding, realistic and critical relationship with the information they use. Firstly because of the conditions of their extraction. Considering the Web as a public space, many studies have shamelessly sucked up large packets of data to study the mechanisms of information dissemination, interactions on social platforms, the organization of sharing systems or the regulation of Web collectives such as the communities of free software or Wikipedia. But today, platforms are increasingly closing access to their data in order to sell them, as Twitter does, or are entering into cooperation agreements with American university research teams, as Facebook does. Above all, the growing sensitivity to privacy issues, the creation of increasingly nominative databases, the massive and asymmetrical nature of extraction, the demonstration that techniques for cross-referencing databases make it possible to deanonymize the best-protected data sets raise legitimate ethical questions. The gradual transition from a Web of documents to a Web of people where "public" personal data is flowing is transforming the conditions in which the social sciences can use Web data without scruple. Whereas previously they would go to the library to get information, it is as if researchers who exploit data from the Web were now going to the archives, where protections relating to the time limits for communicating documents are intended to protect the individuals whose actions have been recorded. This is why, as part of the ANR-Algopol project, which brings together computer scientists and sociologists, we have undertaken, in cooperation with the National Commission for Information Technology and Civil Liberties (CNIL), to develop a survey application on Facebook that makes explicit the consent of the user and their friends to participate in the survey and guarantees the confidentiality of data processing. Taking the map for the territory is the second difficulty. Contrary to what some discourses on Big Data would have us believe, data is never raw. It is constructed and categorized by the platforms according to perspectives that are rarely those of researchers. It is massive but its number does not guarantee its representativeness. It is incomplete and decontextualized. If the social sciences want to use the Web to talk about society, they cannot use the methods of large numbers and the argument of the completeness of data put forward by computer scientists with statistical learning methods. The reminder of the constraint of sampling and the necessary control of representativeness operators remain an essential condition of scientificity. Also, to establish intelligible relationships between the map and the territory, it is often necessary to have personal data on the respondents that the Web, however indiscreet it may be, does not provide. For social science researchers, the absence of context often makes algorithmic interpretations very risky. To produce knowledge, it is necessary to interact and share data and interpretations with the respondents themselves. It is therefore this unwavering tendency towards realism in the social sciences, this concern to "explain the social through the social", which leads researchers in these disciplines to take an interest in personal elements of the lives of those surveyed, which risks assimilating their work to that of the police, digital marketing or spies of the American National Security Agency (NSA). While it is necessary to support initiatives aimed at ensuring the sharing and pooling of data between researchers who are not very forthcoming (especially in the social sciences), while it is necessary to give the public the widest possible access to raw research data that does not involve risks of personal identification, it is also important to be very vigilant about protecting the identity of those surveyed, because part of the interpretative quality of the work of the social sciences will always be based on this contract of trust, confidentiality and secrecy, which binds it to its respondents.

## ###ARTICLE\_START### ID:2641

Bertrand Diard can't believe it. Seven years after creating his software company Talend in 2006, he is now at the head of a company that is important in Silicon Valley, attracts investors and thinks very strongly about the stock market. "The growth has been very impressive, it's taken off very strongly. And it's not easy to control this rise," admits Mr. Diard, who embarked on the adventure with a partner, Fabrice Bonan. Their credo from the start has been to homogenize data to allow application developers to offer the services we all know, from Facebook to online banking. "Databases are increasingly large, and increasingly heterogeneous. There are texts, images, numbers, social network notifications... We make data consumable by applications," analyzes Mr. Diard. It's not very sexy, I grant you, but the good news is that everyone needs us. A bit like plumbers." In fact, the vein is promising. According to the American firm IDC, business spending on "Big Data" will increase by 30% in 2014, to exceed 14 billion dollars (10.2 billion euros). A cake that makes the French green with envy. The latter can also be greedy: despite competition from IT giants like IBM, Oracle or SAP, Talend has already attracted more than 2,500 customers. Heavyweights like Google, Yahoo!, Groupon, eBay, Walmart, Orange or BNP. And while Mr. Diard prefers to keep the company's turnover quiet, he announced on Wednesday, December 11, a fundraising of 29 million euros, from the public investment bank Bpifrance (for 12 million euros), Iris Capital (the Orange and Publicis fund, which puts in 5 million), the balance being provided by the French fund Idinvest, the Anglo-Saxon fund Balderton Capital, the famous American fund Silver Lake and the two founders. Since the beginning of its adventure, Talend has raised nearly 100 million dollars. Beyond the figures, it is above all the success of a method: offering open source (free) software to developers, and letting them convince their manager to pay for an improved version. With this model, Talend would now be profitable. Another factor is the founders' desire to set up a subsidiary in the United States from the start, in Los Altos, California. Bertrand Diard currently lives there with his family, right next to his major clients. The French Big Data herald now has more than 400 employees worldwide - including 120 in Suresnes (Hauts-de-Seine), at Talend's headquarters, where the company houses its engineers. "France is a real tax haven for research and development thanks to the research tax credit and the status of Young Innovative Company. Engineers are three times cheaper than in California. Plus, they are very good," emphasizes Mr. Diard. This nice fundraising is just one more step towards an IPO. Recently, he has ticked some essential boxes in the eyes of Nasdaq investors, the American technology stock exchange: a few acquisitions to give more visibility on the company's future growth, prestigious shareholders capable of talking about the company and the recruitment of a few seasoned employees. In September, Bertrand Diard handed over his position as CEO to Mike Tuchen, the former head of SQL Server, Microsoft's database software, to become director of strategy. A way of taking a step back in order to take a better leap.

## ###ARTICLE\_START### ID:2642

During the Arab revolution, since the beginning of the Syrian conflict or to circumvent Chinese censorship, activists communicate through a portion of the web that is not visible to the "ordinary" Internet user. It is called the invisible web or deep web, a section of the Internet where nothing is indexed and where anonymity is the order of the day. There are no official statistics on this submerged part of the www. Some estimate that there are more than 200,000 sites there. Others report 400 or 500 times more sites than on the traditional web. Unfortunately, it is impossible to verify this information. "The web that we know represents only about 10% of what exists," says Benoit Dupont, researcher and director of the International Center for Comparative Criminology at the University of Montreal. The remaining 90% is the hidden part of the iceberg, sites and files that cannot be located with traditional search engines like Google, for example." A few years ago, only insiders had access to the invisible web, but the Snowden affair and media coverage have exposed this dark side to the general public. Today, anyone can download software that allows them to wander around this lesser-known part of the web. Navigation is different and the sites are not as polished as on the traditional web. It feels like the web of the early 90s, when FTP formats still reigned. In fact, you have to have a little idea of what you are looking for because you rarely come across an interesting site by chance. "Previously, the deep web was used by people who wanted to protect their communications, such as governments, human rights activists, etc.," notes Benoit Dupont, who also holds the Canada Research Chair in Security and Technology. But in the last two or three years, because of the illicit activities that are the subject of media attention, more and more people are going there." Tor, the gateway The best-known software for accessing the hidden web is called Tor, an acronym for "The Onion Router," a software created by the U.S. Navy research laboratory. Why "onion"? Because the software provides several layers of protection. When you browse Tor, your computer's IP address is not identifiable because the software covers its tracks. Very practical when you are an activist in a totalitarian state... or when you want to exchange photos of a pedophile nature. "There are other protocols like Freenet or Python, developed in Canada by researchers at the University of Toronto, but Tor remains the easiest to use because it reproduces the web interface," says Benoit Dupont. The shadow of the shadow The invisible web is therefore frequented by people who wish to escape all forms of surveillance: anarchists, hackers, web libertarians... But it is also a refuge for those who engage in illicit activities. Indeed, in an even darker corner of the web called the darknet, you can get credit card numbers, fake passports, weapons, heroin, hitmen, photos of little girls... According to Benoit Dupont, criminal activities represent around 10% of activities in the deep web, but again, this is an approximation. There are no official statistics to support these figures. In 2011, the cyber-activist group Anonymous launched Operation Darknet, a computer attack against the servers that hosted pedophile sites like Lolita City. Anonymous also made public information about the users of these sites. Then, last October, the FBI arrested Ross Ulbricht, a 29-year-old man who operated Silk Road (see box), a transactional site where, among other things, people could buy hard drugs that buyers paid for in Bitcoins (a virtual currency that will be discussed in the rest of this article to be published tomorrow) without anyone ever being able to identify them or find their traces. Is the deep web marginal? Without a doubt. But since Edward Snowden's shocking revelations about the NSA's spying operations, more and more suspicious Internet users are eyeing this protected territory. "As long as web giants like Google or Twitter have not restored trust among Internet users, the number of people who will want to take refuge there will increase," notes Benoit Dupont. Open Letter Just last Monday, the biggest names on the web - Apple, Google, Microsoft, Facebook, Yahoo, LinkedIn, Twitter and AOL - published an open letter addressed to the President of the United States, Barack Obama, as well as to the American Congress. In this letter, they demand measures to restore public trust in the internet. Their commercial interests, say these stars of American tech entrepreneurship, are threatened. "People will not use technologies in which they do not have confidence," said Brad Smith, general counsel at Microsoft. "The government has put this trust at risk, it must help restore it." Otherwise, there will always be the invisible web.

## ###ARTICLE\_START### ID:2643

Jérémie Zimmermann is the co-founder of La Quadrature du Net, an association that defends citizens' freedoms on the Internet, based in Paris. How does a free Internet activist feel today? Having alerted public opinion to this problem for years now gives us a great responsibility, because society as a whole is looking to us to find solutions. We are at the forefront of this battle, and we are going to fight it. It is the mother of all battles because, if we lose the freedom to have a private life, we will lose all the others. How should the countries targeted react? The first step is to admit that the problem exists, which is not easy, and the second to want to solve it. In some countries, such as Germany or Brazil, public opinion is in the process of going through these two steps. The third will consist of imagining an alternative. This is the business of experts and free Internet activists. First, we need to audit the services and applications used by the general public. Anything that comes from large American companies is irrecoverable in terms of security: straight to the trash. The same goes for closed proprietary software, whose internal workings cannot be inspected. But it goes further. We also need to examine free software and encryption systems, to see if some have not been compromised. Then, we will need to design alternative solutions - impose free software everywhere, build decentralized networks, install automatic encryption systems for all communications... And in the longer term? Finally, we will need to apply our solutions in the real world, this will be the business of society as a whole. We will need to start with countries that have the political will to launch this project. We will also need to make up for our delay in the field of "free hardware". Until now, hackers have focused on free software, and have not been able to offer a credible alternative in terms of devices. This is a mistake. We have not fought enough against the arrival of new devices offered by major manufacturers, whose business strategy is entirely based on information collection and control. Today, we can say that a smartphone is a spying machine that also allows you to make calls.

## ###ARTICLE\_START### ID:2644

They have names that are not well known to the general public. Who knows, for example, visceral leishmaniasis, also called kala-azar? Almost always fatal within two years without treatment, this parasitic disease affects 300,000 people per year, mainly in six countries: Bangladesh, Brazil, Ethiopia, India, South Sudan and Sudan. Countries where, admittedly, treatments are not easily accessible. But there still have to be some. The pharmaceutical industry was not interested in insolvent markets and therefore not in visceral leishmaniasis, nor in sleeping sickness, or African trypanosomiasis, and its American form (Chagas disease), which also cause high mortality. Malaria, with its 600,000 to 1.2 million deaths per year, was no better off. No money, no research. No research, no treatments. Ten years ago, starting from this sad observation, Médecins Sans Frontières (MSF) took an initiative extending its campaign for access to medicines. The humanitarian organization contacted public and private research institutions to form a North-South network to meet these unmet needs. Thus, in 2003, seven partners created the Drugs for Neglected Diseases Initiative (DNDi): MSF, the Pasteur Institute, the Oswaldo Cruz Foundation (Brazil), the Indian Council of Medical Research, the Kenya Institute of Medical Research, the Malaysian Ministry of Health, and the World Health Organization's Special Programme for Research and Training in Tropical Diseases. The objective of DNDi was to develop new drugs or new formulations of existing molecules by inviting pharmaceutical companies to cooperate, either by working together on projects or by opening their collections of molecules so that DNDi researchers could test them in neglected diseases. The idea was far from obvious for several reasons. Why would manufacturers, who had not done so until then, work in a disinterested manner? And the pharmaceutical multinationals repeated over and over again that they were the only ones capable of developing effective and quality drugs. Above all, the "open source" philosophy at the heart of DNDi's approach was to offer drugs at cost price or almost and not to protect new drugs with a patent. Enough to give nightmares to manufacturers, who are increasingly faced with competition from generic manufacturers. Ten years after its launch - the anniversary of which was marked by a conference on Thursday, December 5, at the Pasteur Institute - DNDi has won its bet and invented a new model of public-private partnership. Since 2007, six new drugs have been developed - two against malaria, two against visceral leishmaniasis and two against African and American trypanosomiasis - and twelve new chemical entities are under development. The first fixed-dose combination, in a single tablet, against malaria is the result of a partnership between DNDi and Sanofi. The manufacturer played the game and more than 200 million treatments have been distributed worldwide. The influence of the Gates Foundation This change has several reasons. First, there is a new discourse from the pharmaceutical industry and the intervention of other players. The model, based on the discovery of "blockbusters", drugs capable of generating more than 1 billion dollars in turnover, is no longer suitable. The need for corporate social responsibility has become stronger. Finally, in emerging countries - India, China, Brazil, South Africa, etc. - affected by neglected diseases, the local pharmaceutical industry is booming. Faced with these enormous growing markets, what better calling card for an industrialist from the North than to be the one who has contributed to fighting a scourge that strikes these southern states? This aggiornamento also results from the moral and economic influence of the Gates Foundation. Moral, because the American philanthropist regularly brings together the CEOs of major laboratories to discuss how to respond to the major scourges that threaten global health. Economic influence too, since the powerful financial resources of the Gates Foundation contribute to covering part of the costs of developing new treatments or vaccines against neglected diseases. Especially since the cost of research and development of molecules by DNDi remains far from that displayed by multinationals: from around 40 million to 150 million dollars, compared to often more than 1 billion dollars, according to Big Pharma. A lot of ground has been covered thanks to DNDi, but the road will still be long before we no longer neglect the major global killers. Currently, only 3.8% of new drugs put on the market concern these pathologies that are little known to the general public and which represent 10.5% of global diseases.

## ###ARTICLE\_START### ID:2645

(RELAXNEWS) At a time when the big names in home consoles, Sony, with its PS4, and Microsoft, with its Xbox One, are engaged in a merciless battle, another home console is arriving at just the right time for Christmas, the MoJo by Mad Catz, and running on Android. Available starting tomorrow, for those who haven't pre-ordered it, the MOJO runs on version 4.2.2 of Android. The choice of this operating system ensures players a much more extensive catalog of games than its two big sisters, via Google Play and NVidia TegraZone. The mini console consists of a case with 16 GB of internal storage (but expandable up to 128 GB via the microSD port), a 1080p HDMI output and WiFi. To play, it is paired with a CTRLR controller, but Mad Catz completes the set with optional accessories such as keyboards, headsets, etc. COMPETITION The MOJO is not the only one of its kind on the market. The UNU from Sunflex is an Android tablet coupled with a wireless mouse and a game controller, in its Pack Gaming Edition version. More confidential, the Ouya mini-console has turned to a proprietary but open source system. Developers thus have free access to the machine to create or adapt games.

## ###ARTICLE\_START### ID:2646

Unsurprisingly, digital technology in all its forms is massively introduced into the associative world, just as it is infiltrating that of businesses and administrations, and into the daily lives of each of us. Some effects of this phenomenon are well known: the possibility of massive communication at low cost, simplification of interactions between members of the association, the capacity to carry out large-scale initiatives (as in world social forums), impromptu mobilizations around an event ("smart mobs")... But these contributions do not reflect the depth of the possible recompositions of the associative fact when its actors seize digital technology. Four changes seem to emerge from this new socio-technical arrangement. The first concerns the internal governance of associations. Historically, it is built on a delegative model, with a clear separation between elected volunteer members, endowed with decision-making power, and permanent employees. Digital culture, as it exists in the world of free software and "hacktivist" communities (like the Telecomix collective, which intervened in Egypt in 2011 to re-establish Internet connections), tends on the contrary to favor consensus-based decision-making and a meritocratic mode of recognition. Decisions are subject to open debates that value those whose actions are recognized by their peers. Some even speak of "do-ocracy". This horizontality and this bonus for "those who do" can bring a breath of fresh air to the way associations are organized. Thus the Colibris movement, which defines itself as "individuals who invent, experiment and cooperate concretely, to build models of living together, respectful of nature and human beings", has chosen a new governance, characterized by operating in circles, decision-making by consent and elections without candidates. A second change concerns the possible sources of funding for associations. Crowdfunding, by allowing the massive collection of donations through online networks, has opened up a complementary - and still tenuous - source of funding previously reserved for large emergency non-governmental organizations (NGOs). Platforms for financing solidarity projects are multiplying, some specifically intended for associations, such as Easycoz, others more general, such as Arizuka. In the Netherlands, thanks to the Windcentrale platform, citizens collected the funds needed to purchase their own wind turbine in less than a day. A diversification that we can only welcome, but which also risks changing the choices of commitment of associations, encouraging them to choose "causes" likely to appeal to the crowds, which does not necessarily coincide with the criterion of general interest. The question of a risk of State disengagement is also raised when we observe the functioning of a platform like Citizinvestor, on which municipalities submit to the generosity of Internet users the projects for which they are struggling to secure funding. Another transformation, to be classified without hesitation on the good news side, digital technology allows a change in the scale of associative action and opens up the fields of possibilities for social creativity. This is of course true in terms of knowledge sharing, as illustrated by the contributory encyclopedia Wikipedia or the participatory cartography Open Street Map. But also of local actions in the territories, with projects carried out between neighbors on a neighborhood scale, through an online platform like that of Change by Us, in New York. The wiki of "free recipes" of Brest, ou@-brest, aims to make these local initiatives visible and to share their "instructions for use" to inspire other collectives and spread to other cities. Let us also mention Safecast, born in Japan after the Fukushima disaster, and which asks Internet users to collect radioactivity data and create independent maps. While these projects integrate digital technology from their design, others are supported by "pre-digital" associations, which seize technologies to carry out new projects. Thus, ATD Quart Monde has relied on tools such as video or Skype to help individuals in great vulnerability to rebuild their self-esteem and re-establish social ties. Ultimately, digital technology makes it possible to increase and diversify social and civic innovation. Finally, the fourth major change is that digital technology contributes to a "blurring" of the boundaries of the associative world. Organized into networks, according to logics of power rotating between peers, fueled by volunteer energies, many groups prefer to remain informal, the associative status appearing superfluous to them. This is the case, for example, of Savoirscom1, a collective committed to sharing common knowledge assets. This also facilitates networking with other collectives, according to variable geometry articulations. This is how large international mobilizations can be organized, as we saw in 2011-2012 against the draft anti-counterfeiting trade agreement (Anti-Counterfeiting Trade Agreement, or ACTA). The associative status was created to protect and legitimize informal actors. Today, we are witnessing the opposite phenomenon, without having evaluated the consequences on the "school of democracy" character of associations. However, these active communities participate very precisely in the associative spirit and, in fact, they amplify its scope "outside the walls". By shaking up the associative world, digital technology preserves its ascendant character, as close as possible to the needs of a world in full transformation.

## ###ARTICLE\_START### ID:2647

Free software is not a fad reserved for the geek or alternative movement: it is a "concrete utopia", a "social ideal" capable of changing the world. A sociologist at the Centre d'études des techniques, des connaissances et des pratiques at the Sorbonne, Sébastien Broca is so convinced of this that he has written a fascinating book on the subject. Born in the early 1980s from the refusal of a handful of computer scientists to see the world of the PC privatized by Microsoft, free software is based on four "freedoms": "They can be freely used, copied, modified or distributed", the author immediately recalls. And they are most often free. A heresy in the light of our capitalist system. And yet, these software programs, whose source code is open to all, have spread to every corner of the digital world. Linux, Firefox, Apache and other VLC have invited themselves into the computers of Mr. Everyman. They "power the services of the big names on the Web", like Google and Facebook, and "have integrated the computer systems of large companies" and administrations. They are even nestled in our smartphones and internet boxes... and are used by the military. A strange paradox. But to exist in the face of the proprietary world of Windows or Apple, free software has precisely chosen to come out of the underground to open up to the consumerist world, says Sébastien Broca. Not really what the founding fathers of free software, like Richard Stallman, had planned. But the movement has deliberately taken the "realistic turn" of open source. And the result is there: free software has successfully invested in the economic field in the face of software giants, forcing the latter to distribute some of them for free. And it is changing our "fetishistic" relationship with technological objects, by encouraging users "to control their machines instead of being controlled by them". Better still, it is on the way to acquiring a real political scope by going beyond the boundaries of computing: from the Indignados to Occupy Wall Street to the zone to defend at Notre-Dame-des-Landes, the "hacktivism" of free software is everywhere. And it gives strength and hope to those who want a more libertarian world. When you close this book, you want to say: "Long live free software!"

## ###ARTICLE\_START### ID:2648

QUEBEC - QUEBEC -- The development of the SAGIR project has made the government "prisoner" and "its balance of power is unbalanced" with the private sector, assesses the minister and president of the Treasury Board, Stéphane Bédard. Even if the CSPQ insists that it is not dependent on the private sector, the success of SAGIR depends largely on these nine Oracle specialists since they are the only ones authorized to intervene on the source code. Copyright prevents government managers from having access to it, thus ensuring the continual use of the interventions of these consultants. "This demonstrates the need for the government to repatriate internally," reacted Mr. Bédard. "Oracle has the intellectual property and they are the ones who can make changes to the source code," he explains. This is why he wants to rely more on free software that allows the source code to be modified without having to resort to private sector specialists. COMPLETELY DEPENDENT "I can't come along and decide to bring SAGIR down. If we decided to choose a new technology, it would cost even more in transition costs. We literally become prisoners of the technologies" chosen in the past, continues Mr. Bédard. "The balance of power is not very great," he adds. "It's the work of the Liberals. [...] We are completely dependent." Coalition Avenir Québec MNA Christian Dubé is also concerned. "It's a lot of money," he says. "It's becoming embarrassing to pay them this price if they are there on a regular basis." "Since only these consultants can intervene in the source code, it's like saying that they are holding the government prisoner and forcing it to pay. The day we start playing too much in the source code, we become dependent," he adds. "Initially, we should perhaps have chosen a software package closer to our needs to avoid intervening too much in the source code. That's where the government got sucked in." The Quebec Liberal Party, which launched SAGIR in 2005, declined to comment.

## ###ARTICLE\_START### ID:2649

Polite and clean-cut, pink shirt over gray suit, Guillaume Decitre is a cool-headed fortysomething. Also, we note the hint of irritation in his voice when he suddenly says: "Did you know that for a while Largo Winch and XIII disappeared from the iBooks Store catalog because Apple considered certain scenes from these comics too licentious? And Amazon erased several "fuck" from the English version of Hemingway's For Whom the Bell Tolls! This is pure and simple censorship and no one is saying it." The third bookseller of the name in a century, Guillaume Decitre, 46, is leading a crusade: he has decided to offer French digital book enthusiasts a complete solution - platform and e-reader -, totally independent of the two American giants that dictate their conditions to publishers and readers alike. Decitre wants "a free reader" and above all the owner of his personal electronic library. Monopolistic. Today, he argues, Kindle customers can only buy from Amazon, and would lose their e-books if they were to switch to the competition. The same "proprietary" ecosystem at Apple: a book purchased from the iBooks Store is unreadable anywhere other than on the iPad... The bookseller, who lived in the United States for a long time, was himself the victim of another aberration of this monopolistic system when he returned to the country: "To become a customer of iBooks France, I had to abandon iBooks US and therefore lose all my books in English!" This great anger is at the origin of his TEA project, for "The Ebook Alternative". Launched in 2012, this start-up produces software that allows most e-books to be read on all e-readers. The first to be equipped was the French e-reader Bookeen, which Decitre and TEA's partners (Cultura, Système U, independent booksellers, etc.) decided to market. Since July, tablets running Android have also been compatible with TEA. And Guillaume Decitre intends to convert iPad and Kindle owners. Well, if Apple and Amazon let it happen... The TEA application is of course completely free. It is the spirit of Linux free software against the domination of big corporations. "For Guillaume, it is a real fight. He is marked by a ten-year experience in the United States: he saw the Amazon steamroller there, their long-term strategy to swallow up all the content in order to eventually impose their commercial law", explains Gauthier Picquart, co-founder of Rueducommerce.com (also part of the TEA adventure). Ten years in Silicon Valley changed everything in the destiny of the heir to a dynasty of booksellers that now has nine stores in the Lyon region. At the time, not believing much in the future of "paper", he left to pursue a career in venture capital, wearing out his moccasins from California to South Korea. Having rushed back to France to take over from his father, who was ill, in 2007, it was the turning point: "I told myself that we absolutely had to find a solution to preserve the strength of the book in the digital format that was going to progress irresistibly. This is the case, and what's more, it's incredible, we can already see in the United States that it is reviving reading!" With 10,000 e-readers sold and 100,000 e-books sold in one year under the TEA banner, the Lyon native has proven that he is not just an agitator. "We have a tradition of innovation at Decitre. It is disturbing. When my father launched the first bookstores relocated to the suburbs, he was already told that he was no longer a bookseller," he jokes as he shows visitors around his new store in Confluence, in the south of Lyon. The place is organized like the American bookstores he loves so much. Here, customers are obviously greeted by the TEA project's e-readers and a "design" space, inspired by the corners of the MoMA in New York, sits alongside traditional shelves... His first feat as a digital bookseller dates back to 1997: when he discovered the first "information highways" (under Clinton), the young Decitre recommended to his family that they launch a website: decitre.com was created a year before Fnac.com. Today, the brand is the third largest online bookseller in France. If Decitre is doing well (72 million euros in turnover last year), it is, according to him, thanks to the company's ability to constantly reinvent the business. Decitre sells or rents, for example, its precious bibliographic databases to its own competitors, including Amazon. In danger of death. The company also lives off its income from the "institutional" market - libraries, town halls, etc. - who order a significant number of books per year (25% of the group's activity). The man is multiplying himself in order to save this bookselling profession that he considers to be in danger of death but which, paradoxically, "has never been so essential in view of the editorial avalanche". He created Entrée Livre, a sort of Facebook for French-language books, where 10,000 members already exchange reading recommendations. He is also preparing the first combined "paper book-ebook" offer. And is thinking of launching The Ebook Alternative in the United States... not even afraid of Apple and Amazon! The offer of his digital platform is also opening up to music (he has just recruited the legal download site starzik.com). But Guillaume Decitre has not forgotten the historical heart of his profession: he has decided to open a good old brick-and-mortar bookstore in Paris, his first in the capital. But here again, the book is a struggle: "We had found a location under the Opéra-Bastille [a former Fnac store]. They preferred to put a sports club there. Can you imagine?" Photo Félix Ledru CV: Born in 1966 in Mazingarbe (Pas-de-Calais), Guillaume Decitre is the heir to the Decitre bookstores, founded in 1907. He took over as president of the group in 2007. Holder of an MBA from the University of Santa Clara (California), he lived in the United States for fifteen years. In 2012, he created the company TEA.

## ###ARTICLE\_START### ID:2650

With digitization, universal knowledge is just a click away. Better still, it levels the playing field for the world's universities, with the smallest, generally poorer, being able to draw from the same pool of knowledge as the world's giants. Harvard University in Massachusetts has 15 million volumes that constitute a sort of museum of knowledge that digitization will one day soon make available to everyone. However, this great revolution, which concerns all stages of the production and dissemination of knowledge, also leads to the question of the control of digitized information. Basically, university libraries face the same threat as bookstores or record stores that see their market disappear in favor of megacompanies, especially American ones. A slippery slope on which publishers have already taken a good head start, for prices as well as for rights. Digital is expensive In North America, it is estimated that the cost of documentation in university libraries increased by 402% between 1986 and 2011. Digital is not unrelated to this enthusiasm. Overall, the digital edition of an academic book costs "significantly more" than the printed version, explains the director of the library at Université Laval, Loubna Ghaouti. "This is completely contradictory to the fact that there is no printing and that the publishing process is, all in all, lighter with digital." For articles, the matter is more complicated, continues Ms. Ghaouti. "Before, we could buy magazines one at a time. Over the last ten years, publishers have been operating more in consortiums. So, we now buy in bundles. While it is true that in the end, we end up with more choice, it also costs us more since we buy more without having the assurance that all these documents will be useful to us." However, the increase in the prices of these bundles goes well beyond indexing, deplores Ms. Ghaouti. "With license renewals, which are also very costly, the room for maneuver of university libraries continues to shrink." Even more pernicious, large periodical publishing firms resell to universities what their own professors produce, recalls Lucie Laflamme, Vice-Rector of Studies at the Université de Sherbrooke. To get around this, many universities favor the use of free software like Moodle, which allows documents (texts, audio, video, etc.) to be distributed online, thereby stimulating the transition to digital. "We are trying to impose open access deposit," continues Ms. Laflamme. It is an ambitious project, for the medium and long term, which affects the organization of research, grant funds, the criteria for promoting professors through publications in prestigious journals, collective agreements, etc. " Ultimately, it is the model itself that must be rethought, believes the Vice-Rector of Studies. "The global movement is underway. We are being challenged by other universities and everyone must get involved to form a common front." With Lisa-Marie Gervais

## ###ARTICLE\_START### ID:2651

A light autumn rain has soaked the hammock. On the balcony, it barely sways in the wind that slides over the foliage of the trees. From the bay window, the view is relaxing and peaceful. A soft light reflects on the lacquer of the Yamaha grand piano that sits in the middle of this uncluttered office. But this decor hardly suits the restless master of the place who works in this glass and concrete building in Sagurakucho, a chic and trendy district in the southwest of Tokyo. Keiichiro Shibuya is the creator of The End, the first virtual opera that will be performed in mid-November at the Théâtre du Châtelet in Paris. A composer dressed all in black, with a frontal gaze, clashing images, post-chaotic associations of ideas. A child of electronic culture raised on classical music. Who unfussily summons Pierre Boulez, J-pop, Mozart's Magic Flute or the intact memory of Alan Berg's Wozzeck staged by Patrice Chéreau in 1992. Keiichiro Shibuya is a strange hybrid who escapes every time we think we've caught him. So, when we write that The End is an opera about death, the impermanence of things and the possible ends of a presence in the world, we will lift a veil on a "tragic story and its possible hopes", according to Shibuya's improbable summary. We will have formulated the essential. But we will have said nothing about this experience that plays with the boundaries of reality by starting with a generic phrase: "Am I dead or just asleep?" Union of opposites It's as if words are slipping away to tell the virtual odyssey of a diva. "The End immerses the audience in an incredible amount of information through music, script, images, scenography and a whole sound environment that is experienced with the whole body," describes the writer and subculture editor Shiba Tomonori. The melodic line unfolds at the same time as the projection of 3D images, stimulating the brain continuously." As an iconoclastic matchmaker, Keiichiro Shibuya has chosen to unite opposites: reality-abstraction; darkness-light; sensation-intellect; nature-machine; master-slave. And, above all, he has decided to stage an opera stripped of any human character. If Shibuya appears on stage as a composer, his presence is limited, counted, soon erased by the diva. Because the heroine of The End is a unique creature. A voice that has become a woman at the same time as a true cultural phenomenon in Japan. Her name is Hatsune Miku. She is 16 years old, has turquoise eyes and long pigtails, weighs 42 kilos and is 1.58 meters tall. But if this young girl has an appearance, she has no existence. Originally, it was a voice synthesis software, a banal voice bank, a "vocaloid", according to the jargon of cyberculture and karaoke, which created this expression by mixing the words vocal and android. When the invention was born in the early 2000s at Yamaha Corporation in Tokyo, no one suspected the echo that it would arouse and the potential of this discovery. "The software allows users to record words and melodies in order to synthesize singing, they explain at Yamaha. In other words, with this technology, singing can be done without a singer." Effects, rhythms, tones can be added, developing a virtual universe and participating in the creation of an icon of Net culture. At Crypton Future Media, we quickly understand the interest of the invention. Based in Sapporo (northern Japan), the company specializing in music software and online community management launches its first vocaloids designed as real characters. Hatsune Miku was born on August 31, 2007. Her name means "first sound of the future." Crypton presents its android diva as the one who embodies "a world to come where songs are lost." The voice of the "Net Age Diva," as she is soon nicknamed, is sampled from that of Saki Fujita, a young actress. Very quickly, Hatsune Miku participates in her first concerts, all of which are sold out in Los Angeles, Tokyo, Taipei, Singapore; she takes shape on stage, online. And in a consumerist Japan, always on the lookout for novelty, Miku also becomes the all-round icon of advertising and major brands from Toyota to Domino's Pizza, via Google Chrome, Sony or Sega. Even the Japanese Space Exploration Agency is in on the act, taking her on one of its missions. At the same time, Crypton opens a Hatsune Miku channel on YouTube, which has 114,000 subscribers. And creates Karent, an online sales site for vocaloids. Polyglot and mutant Above all, he perfects the software, enriches the range of possibilities, makes the diva an international star capable of singing in English, Korean, Chinese, Spanish. Then she dances, evolves in 3D and changes shape. Video game enthusiasts, young idols, all the otaku, geeks and virtual virtuosos that the archipelago has seized upon the "first sound of the future" and create songs by the hundreds of thousands. A vast community is taking shape. "Hatsune Miku is both software and an open source character that can be modified, mixed, and enriched," recalls Hiroyuki Itoh, the boss of Crypton Future Media. By this nature, its range of creation is wide: it goes from electronic music to dance, including classical music. And its creators are both high school students and famous artists. "To be able to use the name of Hatsune Miku, they are just required to respect a few codes of color and physical appearance (facial features, turquoise eyes, long hair styled in pigtails) and to credit their work. They thus participate in the "training" of the character, which is enriched and made more complex by the intervention of users. Challenges, brainstorming Eager to animate the community created around its vocaloids, Crypton opened Piapro, a platform to federate the interventions that number in the hundreds of thousands. The creators inspire each other, exchange, multiply and challenge each other. The very fact of creating no longer becomes the prerogative of a few but of a network of dedicated and interconnected individuals around the diva's pigtails. Hatsune Miku's success comes largely from there. "This phenomenon changed after 2012," notes the writer Shiba Tomonori. Until then, amateurs represented the majority of creations around Hatsune Miku. Then artists, professional musicians began to produce works on her." This is the other key to success. The Endy contributed greatly. For the opera, Marc Jacobs, the former artistic director of Louis Vuitton, designed Miku's wardrobe. After getting the green light from Crypton Future Media, Keiichiro Shibuya also took on the android diva. In his own way, with his codes and his shifts. The former student of the renowned Tokyo University of the Arts and founder of the electronic music label Atak created his own vision of Hastune Miku, going against the grain of what she usually is. Often a cheerful icon of J-pop, she gained depth and intensity in Shibuya's hands, to become the messenger of death in this opera. "The first time I heard Miku, I felt like I was dealing with a ghost," remembers Keiichiro Shibuya. Her voice is very interesting, not sweet, not too romantic or too emotional. It is ultimately Japanese, very close to what is evoked by ukiyo-e, the prints and representations of the "floating world" characteristic of the Edo period. The comparison is astonishing, almost convincing in a Japanese cultural universe, where kawaï (cute, nice, adorable) is too often used as a standard qualifier. Hatsune Miku therefore imposed herself immediately. Artistic director and visual designer Masaki Yokobe, aka YKBX, recalls “long brainstorming sessions” prior to the creation of The Endau Arts Center in Yamaguchi (southern Japan) in 2012. “Keiichiro Shibuya came with this character in mind. Then, we decided to make an opera without a human being, to propose something new to change the concept of tragedy.” Palette of emotions YKBX, who can be found in Tokyo at the offices of A4A, the production company he collaborates with Shibuya, begins to create dense and vaporous images, aerial and closed, lively and dark, to capture the range of emotions in the diva who begins a journey like no other. As a director, he multiplies the fields and screens, the projections and apparitions that mix, overlap, suggesting the confusion of boundaries, pushing back in vain the limits of life. "We worked with a single keyword: death," sums up YKBX. Without being autobiographical, The End draws on the world of Keiichiro Shibuya. "This opera is inspired by my life and my philosophy," agrees the author. He presents it as an extension of the piano compositions of For Maria, an elegiac and tense album, recorded in 2009 in homage to his wife who died a year earlier. "Death, the end are at the heart of my work," sums up this forty-year-old for whom the difficulties - if not the impossibility - of communicating also reflect the "void, despite social networks and the explosion of new technologies." This variation on disappearance and erasure staged by a child of the digital world then becomes a catchy refrain.

## ###ARTICLE\_START### ID:2652

Historically, software was born (invented) free, because the cost was not in the creation of software but in the hardware. Towards the end of the 1970s, with computers having growing market shares, some manufacturers sought to create additional income by adding constraints based on copyright on their software. It was to free the user, hostage to these constraints, that the decision to create a new GNU operating system - often called "Linux", after the name of its kernel - was taken. This first free operating system, whose thirtieth anniversary we have just celebrated and which has been improved throughout the years, is today one of the most used on servers. Over the last three decades, many free software have been developed for all types of use, whether by volunteer enthusiasts (Audacity, Gimp, Inkscape, OpenSSH, VLC...), by companies (CubicWeb, ERP5, Maarch, Rudder, Squash...), public research laboratories (BonjourGrid, Coccinelle, Frama-C, Morse, OCaml...) or even communities (I-Parapheur, Lilie, Lutèce, OpenMairie, S²Low...). Thus, free software has become of major importance in our digital life. Not a computer, not a business information system without free software. Even companies producing non-free software rely on works under free license. We are talking about freedom, because a free license guarantees real individual freedoms to the user. It frees it from the restrictions of use, study and adaptation (including secret) that non-free software players impose on their customers. Free software allows collective freedoms to be used by authorizing the distribution of copies and the sharing of its modifications without requesting prior authorization from anyone. Paradoxically, although the distribution and production of code under a free license is growing rapidly, free software has never been so much in danger. By the confusion that some lawyers maintain between "free license" and "public domain" or "free of rights" which disorients the companies they advise. But above all by certain practices that user companies suffer, from players promoting open source ("open code") while they do not respect its spirit. The software industry, including the historically most reluctant players, has integrated working together on a common basis and the sharing of certain innovations. Peer review improves the quality of the code, and this so-called "open" development mode, governed by a free license, allows for faster and less expensive results in research & development (R&D). This is the basis of the open source movement: allowing manufacturers to come together for large-scale, often complex projects, and thus share know-how. But this development mode, while certainly commendable in a software engineering context, is not enough to guarantee user freedoms. We are moving away from the virtuous model when service providers lock their customers in, by including constraints in so-called "freemium" or "hybrid" commercial offers, which de facto excludes users from the value co-creation ecosystem. Too often, features or improvements that are absolutely necessary in the context of an industrial deployment are not returned to the project under a free license, but sold in a derivative product under a non-free license "based on open source", de facto losing all the benefit provided by free software to the customer. Free software is thus contaminated by non-free code, in a context of openness marketing which tends to claim that it is more important to be "open" than "free". This insidious threat slows down innovation under free license. Indeed, as long as there is an economic interest in avoiding adding value-added code to the project under free license, the impoverishment of free code is almost inevitable. If this practice becomes an "industrial standard", the impoverishment of free software as a whole is to be feared. Another way of locking in the customer, rarer but observed by the members of the French-speaking Association of Free Software Users (AFUL), is to lock him contractually. While he does have free software, the customer cannot exercise the freedoms granted by the license as long as he is bound by a business contract with prohibitive exit terms. It is therefore important, before signing a contract with a service provider, to check not only that the software delivered is indeed free, but also that no clause in the contract contradicts the freedoms granted by the initial license, in particular the right to modify. It is often when we want to exercise our freedoms that we realize that we have lost them (for example, to urgently correct a security flaw ourselves). Faced with the rise of these dangers, there are answers. Answers that do not harm companies and communities producing innovative code under a free license, and at the forefront of which is the active support of users. From the AFUL's point of view, it is the responsibility of users of free software (companies, associations, administrations, communities, individuals, etc.) to protect innovation under a free license. Whether through financial or human involvement in software R&D, through the support of commercial players whose economic models truly respect and protect the freedoms of their customers, the user must take his place to guarantee the sustainability of free software. It is also the responsibility of users to make software specific to a profession exist. The little economic interest for a commercial player to invest in the R&D of such a product under free license does not prevent them from being created by mutualization (like MedinTux for the medical profession or openCimetière which manages cemetery concessions). In summary: become an important player in the ecosystem, a craftsman of the safeguarding of one's own freedom, in short a little more than a simple paying customer. To do this, there is no need to become a computer scientist or to have a very specialized IT department to become an actor and (s')invest in free software. AFUL, a non-profit association composed entirely of volunteers, has the precise aim of helping and supporting users of free software to overcome their organizational and legal problems.

## ###ARTICLE\_START### ID:2653

Laurent Séguin is president of the French-speaking Association of Free Software Users (AFUL - CC BY-ND 3.0) which aims to help, by supporting them, free software users to overcome their organizational and legal problems.

## ###ARTICLE\_START### ID:2654

The visitor quickly notices that this scientific conference is original. No program: those who want to speak write their name on a sheet that circulates in the lecture hall. Not really long presentations either. Just three-minute passages. The gray heads are not legion; the average age of the 70 participants must be under 40. Is this what explains their endurance? The exchanges, presentations or discussions, lasted four days and especially three nights (until three in the morning for the most assiduous!). But what did these voluntary cloistered people talk about at the International Center for Educational Studies in Sèvres (Hauts-de-Seine) between October 23 and 26? The name of this event, self-designated anti-conference, does not help much: "Brainhack". Or literally the hacking or piracy of the brain. Despite these words, there is no trepanation, electronic chipping or fraudulent mind reading, but rather attempts to change certain modalities of neuroscience research. And, in particular, magnetic resonance imaging (MRI). "We realized that what we liked best about conferences were the coffee breaks during which we really interact with colleagues," explains Daniel Margulies, head of the neuroanatomy and connectivity group at the Max Planck Institute in Leipzig. He is also one of the co-founders of Brainhack, the first edition of which took place in Leipzig in 2012. "We were annoyed at having to stop these moments of exchange to go listen to presentations," adds Pierre Bellec, another co-founder and researcher at the Research Center of the University Institute of Geriatrics of Montreal as well as in the Department of Computer Science and Operational Research. "Hence this more "uninhibited" concept designed to get people talking to each other and meeting each other," specifies Pierre Bellec. At Brainhack, there are therefore no new results presented, but rather embryos of collaborations and projects, or refinements of current subjects as well as "improbable" encounters. An artist asked how to connect the recordings of her dreams with the memories she notes when she wakes up. Computer scientists suggested to biologists to use distributed computing capacities to increase their efficiency. Another would like brain data to be not only visible but audible. A major common point of all these works is the link between biology and computer science (the discipline that inspired the somewhat crazy concept of Brainhack). Neurosciences are becoming, like genomics before them, greedy for resources and computing tools to process images, but also to represent the results, sort them, compare them, and even share them. Hence the "hacker" spirit of the conference, which defends a very open conception of science. Which is not without clashing with usual practices, in particular concerning the sharing of data. A first advantage of sharing is to increase the number of images available for an experiment, because a study is generally based on less than twenty brains. "By recovering data from laboratories in Cambridge and Beijing, we were able to obtain 400 MRIs for free and publish our article," recalls Salma Mesmoudi, from the Laboratoire d'imagerie fonctionnel de la Pitié-Salpêtrière (LIF) and co-organizer of Brainhack. The statistical flaws of a large number of MRI-based studies involving too few cases are also often highlighted. "Sharing is also a way of avoiding wasting data because, often, the researchers who performed the MRIs do not have time to use everything," recalls Michael Milham, from the Child Mind Institute in New York, and a major promoter of free data sharing. "Sharing can also "return" because when we use a set of images for an article, we will cite those who provided them. "The most sharers will therefore be the most visible," adds Yves Burnod, from LIF. Other advantages are highlighted, such as the ability to better reproduce results, to detect errors, to accelerate knowledge... However, there is resistance to openness. Such as the necessary protection of patients in the case of clinical data. Or the expectation of a "return on investment", because launching a study is expensive and involves various types of funding. Or the fear of being overtaken by competitors. To this, hackers respond that it is possible to set deadlines before sharing and also criticize the "rents" that some build up by demanding to be authors on articles using their data. "Neuroimaging is at a turning point," insists Michael Milham, confident in the new generation, which he sees as more open. Not to mention that major funding agencies in the United States are pushing in this direction.

## ###ARTICLE\_START### ID:2655

Dale Dougherty is co-founder of O'Reilly Media, a publishing house specializing in IT, which launched Make magazine in 2005, which gave rise to Maker Faires. What is a maker? Maker is above all a state of mind, halfway between the tradition of doing it yourself, inherited from the past, and new technologies that offer a multitude of possibilities for creating and inventing. Today, the plethora of offers has transformed individuals into consumers. Makers, for their part, also want to be producers. What could be more natural than making objects! It's in human nature. Three motivations push individuals to join this movement. First, a personal desire, that of having fun, of doing something fun and creative. Then, the desire to share, to participate in a social project. And finally, for some, a commercial issue. What is the goal of Maker Faires? At the beginning, when we launched the first maker faire [the first tinkering fair, editor's note], in 2006, we wanted to allow makers to meet. In these fairs, the craziest personal initiatives meet the most serious projects. The goal is to encourage people to get started, to be curious and to be inspired by the projects of others. You launched a program, "Maker Education", which targets the youngest. Why? Raising awareness among the new generations is a central issue. In the education system, whether in Europe, the United States or Asia, the maker spirit has disappeared. It's tragic! Teachers teach knowledge, but they no longer teach children to do things for themselves, to experiment. However, there is a huge difference between knowing how to do things and having already done things yourself. We need to transform schools on this point, add more projects, more experiments to the school curriculum. The new economy needs the creativity of future generations. A revolution of minds is needed. To do this, we must, as early as possible, explain to children that they can have a hold on the physical world, carry out projects, and why not become entrepreneurs one day. The challenge is economic. But also democratic: everyone must have access to technologies, and be able to control them, so as not to remain simple dependent users. So from maker, we can become entrepreneurs? Of course! Let us ask ourselves a question: Where do inventions come from? They do not fall from the sky. Most of the time, they emerge from a long process of creation. First there is an idea, that of a maker, who will share it with others, develop it, and then, why not, decide to market it. The transition to the industrial dimension is not systematic, but it is developing more and more. And open source in all this? Our roots are in open source. In the past, inventors had no choice, they had to protect their discoveries, at the risk of having them stolen. Today, sharing is compatible with commercial development. It is a new economic and social challenge. Open source, by multiplying interactions, strengthens capacities. At the same time, technologies - such as 3D printers, microcontrollers, sensors - are becoming more financially accessible. By sharing the costs, creators can equip themselves with cutting-edge equipment. Suddenly, everyone can innovate. No more need for special skills, tools or money. It's allowed: all you need is an idea!

## ###ARTICLE\_START### ID:2656

"Soldering is easy." A soldering iron, an electrical circuit, components, tin, and off we go. At the soldering stand, Corentin starts making a light-up badge. The goal: to make the object all by himself, from A to Z. "I haven't done that since middle school," he explains, his gesture clumsily. As a student, he came on October 12 to discover the Mini Maker Faire in Saint-Malo (Ille-et-Vilaine). A gathering in honor of do-it-yourself, which brings together "all types of knowledge and all projects without divisions, from amateurs to professionals," explains Jean-Baptiste le Clec'h, project manager at FabShop, the organizing start-up. These fairs were born in California in 2006, under the impetus of Make magazine. Now duplicated all over the world, they attracted more than 330,000 people last year. "In the United States, Barack Obama goes there every year," emphasizes Jean-Baptiste le Clec'h. For this "first Mini Maker Faire in France," the American Dale Dougherty, co-founder of O'Reilly Media, which publishes the magazine Make, and revered father of makers, made the trip. In a T-shirt and sneakers, the master walks the aisles and raves about the "fun" and "cool" projects he discovers. "Our goal is to reach a wide audience and to trigger vocations in adults and children alike," he explains. At the entrance, four boys assemble milk cartons and rolls of cardboard. An airplane takes shape. The principle, recalls the workshop leader, "is to find the idea and make it." Further on, a chemist strives to dust off his discipline by multiplying experiments in front of middle school students. His molecular cuisine workshop is a great success. "It's easier to explain chemistry using everyday things," admits the host, who is preparing liquid nitrogen meringues in a cloud of smoke. In a jumble, visitors learn how to program, screen print in an artisanal way, make radio equipment, and design a homemade digital camera. In one corner, a young woman has set herself a challenge: transforming an old Minitel into a TV screen. Further on, the designer of the P2P Food Labune, a connected greenhouse to build at home to grow and monitor vegetables remotely, sums up his project: "Wood for the structure, electronics and a bit of programming." Crafts are also represented. The Corderie royale de Rochefort (Charente-Maritime) exhibits its traditional hemp knots. "You have to dare to meet disciplines. This type of event opens doors and generates know-how through exchange," rejoices Marie-France Poletti, marketing manager. Filaments. At the robotics workshop, Juliette, a young visitor, tests the little animated humanoid she has just assembled. "Amazing," enthuses her father, who regrets that his children do not practice such activities more often. "The kids have video games and do not have the reflex to use their hands," he laments. An entrepreneur in cosmetics, he came above all to "see the 3D printers that offer revolutionary perspectives for prototyping and sampling." Permanently plugged in, they draw, in plastic and in three dimensions, figurines, bracelets and other superfluous objects. "It's additive manufacturing. The part is formed by adding material," explains an expert to curious onlookers who crowd in front of the American machines, resold in France by start-ups. "Today, they cost almost nothing. In the pro range, the first price of the MakerBot brand is less than 3,000 euros." Buying consumables imported from the United States or China is more expensive: "Plastic filaments of 1.75 millimeters in diameter that can only be manufactured on special production lines." "Toy." Further on, the Tobeca 3D printer, fluorescent green, stands out. By its color and its history. "All open source, from software to hardware, it is 100% made in France and transportable," insists Adrien Grelet, its creator. A pure product in the maker spirit that he designed all by himself, with his knowledge of electrical engineering and his "penchant for tinkering", inherited from his grandfather, "a handyman who built microlights all by himself." Since then, he has created his small business and sold a few printers, 900 euros each. Renaud Iltis, a former engineer, has also decided to turn his passion into a profession. "I gave up everything to concentrate on my project," he explains, in front of his hot wire cutting machine. At the stand of Trimble, an American company, tinkering gives way to business. "Drones allow us to know the yields of open-pit mines," explains Omar-Pierre Soubra, the group's techno-marketing director. "But it's mostly a toy," he admits. The price? "50,000 euros," all the same. The three teenagers who already saw themselves at the controls are disillusioned. Especially since "in France, you need a pilot's license," adds the representative who continues with a "3D scanner, precise to the millimeter, used by surveyors and video game designers." Budget: 75,000 euros... "Here, we find quite a few companies that come to present objects or services," notes Mathilde Berchon, a specialist in digital manufacturing and author of the book 3D Printing (Eyrolles editions, 2013). "In the United States, it's different, there are more amateurs," she comments. Nicolas Huchet, aka Bionicohand, is one of those novices who learn on the job. This thirty-year-old, who lost his right hand in an accident, dreams of making his own electronic prosthesis controlled by muscle contractions. "The most innovative prostheses are prohibitively expensive: between 20,000 and 60,000 euros," he explains. "Hand amputees are not of interest to companies, the market is too small." A member of the Rennes Fablab, a collaborative manufacturing laboratory, he learned to program a 3D printer. Based on an open-source model, he managed to make a first prototype. "I proved that I could do it," he says. His goal: to offer a cheaper model of device for everyone. A perfect illustration of the notion of empowerment, claimed by makers. Or the art of understanding how things work in order to regain power “by reappropriating the means of production,” as an old bearded prophet of the first industrial revolution predicted.

## ###ARTICLE\_START### ID:2657

Anger, disappointment, betrayal... Behind the indignation sparked by Marie Laberge and Arlette Cousture's digital shift lie deep questions that deserve reflection. The multiple reactions this week to Marie Laberge and Arlette Cousture's decision to publish their works via their websites will at least have had the merit of making a concrete observation: digital publishing is upon us. And of opening the debate: but what approach do we want to favor? A few clarifications are necessary first. The approaches of the two writers are different. Arlette Cousture has chosen to publish her next collection of short stories, Pourquoi les enfants courent-ils toujours après les pigeons, directly on her website, with no intermediary other than a PayPal account to purchase each short story as it is published. "This is not a denial by a bookseller or publisher, it is a writing experience. Rather, we should congratulate her," said Gilles Herman of Septentrion, the first publisher in the industry to digitize its catalog, even before the digital warehouse came into play. Marie Laberge, for her part, announced the imminent sale of her first 10 novels via her website, under an agreement between her own Martha editions (which had published the epistolary novel of the same name, the author's first semi-digital experiment) and iBooks. Her latest title, Mauvaise foi, which has just been released, will follow the same path after allowing a grace period for paper sales, and therefore for booksellers. "Already, as a traitor, we will come back to that," wrote Mr. Herman on his blog on Wednesday. Where the shoe pinches most is in the agreement with Apple, indicated various players in the book industry. Because Apple cultivates "walled gardens," says Josée Plamondon, an analyst in digital content exploitation. To read its content, you need an iPad. "Why offer your books only on this technology, why not on all technologies?" asks the librarian by training, a fan of open data and free software, who favors a standard digital format accessible on all media and shares the disappointment of the book industry. She is also co-organizing the third edition of Bookcamp (November 8 at the Théâtre des Écuries), an event that brings together professionals and amateurs around the changes in books and reading. Disintermediation But it is difficult to judge Marie Laberge's choice at this point, since we do not know the details of the said agreement. "Everything is not finalized," Marie Laberge's public relations officer, Patricia Huot, tells us. The fact remains that the decision of two writers to turn to digital outside the book chain has nevertheless caused a stir among public libraries and booksellers. They felt excluded from the distribution of works that they had nevertheless helped to make known. Because the approaches of Arlette Cousture and Marie Laberge eliminate the traditional intermediaries between the author and his readers: publishers, printers, distributors, bookstores. We have seen it in music and cinema, new digital uses naturally favor this "disintermediation", as Josée Plamondon, a trained librarian and digital content analyst, who followed the Laberge and Cousture affair with great interest, calls it. "It's certain that it shakes up the entire ecosystem. To say that we absolutely must maintain the current system because otherwise, there will be no more books is to be afraid." Gilles Herman puts a damper on the question of disintermediation. "When we say that we are cutting out the intermediaries, it is mainly that we are changing them," he says. It is true that even for digital books, there is also some editing work to be done. Someone must reread Arlette Cousture and Marie Laberge. Several authors have also argued in La Presse this week that they do not consider self-publishing for this reason, among other reasons. The modus operandi No legislative provision currently exists regarding digital publishing. But several book stakeholders (library associations, authors, publishers, distributors, Bibliothèque et Archives nationales du Québec) have agreed, with government authorities, on a modus operandi that respects the spirit of the book law that applies to paper publishing. This law distributes the roles and obligations of each link in the book chain, ensuring a wide variety of titles available. Why did you choose to transpose the paper model to digital? "We also wonder if it's a good idea," replies Gilles Herman. "But the only other known model is the Anglo-Saxon one. And Amazon and its ilk have killed the bookstore in the United States." A handful of industrial giants that are now rushing to fill the void they created. Josée Plamondon is willing to hear the protectionist argument linked to the current global ecosystem of digital publishing in order to defend the regulated price, currently under consideration in Quebec. A measure that she supports in the current context, to ensure that the author is fairly remunerated and that the reader pays a fair price. "It's difficult to negotiate with large retailers. And what is a fair price for cultural content? There are people behind the books and we can't have them written in China..." As for the development of Quebec digital publishing, defending the book chain at all costs makes no sense, according to her. "What is the point of protecting an aging model, if not to protect what has been achieved? In the meantime... Stakeholders [in the book industry] will have to review their positions; everyone can be useful somewhere, but it must be redefined." And for that, "we must experiment", and therefore encourage the multiplication of approaches like those of Arlette Cousture and Marie Laberge and others. Because who knows what variations the book of tomorrow will have? Who knows if the child of tomorrow will not tell his stories "by writing a bit, singing it and also giving it the form of a game?" says Ms. Plamondon. We must not confuse the book as an object and creation itself. "The digital file can support sound, images, text. But in the end, "digital is one of the tools", reminds Ms. Plamondon. "It must multiply the options, it doesn't prevent having paper books and bookstores..." Digital publishing in Quebec Digital sales represent about 4% of the book market in Quebec. It's 10% for the rest of Canada and 25% for the United States. But be careful, says analyst Josée Plamondon, "the figures are always one or two trains behind actual usage." Already, Pascal Assathiany, CEO of Boréal, notes that this share can increase to 10% for his company's genre literature (thriller, science fiction, erotic literature, etc.). Most publishers publish new releases simultaneously in paper and digital versions. Some resist, mainly for fear of piracy. Others like Boréal and Septentrion have even digitized a large part of their catalog. Avoiding digitization does not slow down piracy, says Mr. Assathiany. Three digital warehouses (aggregators) are responsible for "distribution": Entrepôtnumérique.com, Messageries ADP numériques, and Prologuenumerique.ca. Online bookstores: in addition to Renaud-Bray.com and Archambault.ca, independent bookstores are united under Ruedeslibraires.com. The Prêtnumérique.ca platform is implemented in more than 40 libraries or library networks for 500 service points across Quebec. There have been 390,000 loans to date. Some 85,000 people have connected to date.

## ###ARTICLE\_START### ID:2658

The fight against collusion in construction has brought in big, very big money for the Quebec Treasury, about $1 billion, says Nicolas Marceau. "It's paying off, it's paying off for Quebecers," insisted the Minister of Finance. Yesterday, at a press briefing to take stock of public finances in 2012-2013, the Minister was keen to highlight the "good news of the day." "The bill for our fixed assets has been reduced, and this is explained by the effect of the fight against corruption on the prices of our fixed assets," continued the Rousseau MNA-Minister. Mr. Marceau is saving the details on the exact figure for the amounts saved and their origin for later. He confirmed that Transport, the architect of several infrastructure projects, will be on the list of beneficiaries. "Listen," continued Nicolas Marceau, "we [the government] are purchasing infrastructure in several departments." He reported that in total, Quebec's gross debt has fallen "by almost $2 billion." Half of it is on "accounts payable and receivable"; the other half on fixed assets, where "the tangible impact of the fight against corruption on the prices of fixed assets" lies, he commented. "Very different reality" The effects seem less clear when it comes to the provision of IT services. The President of the Treasury Board, Stéphane Bédard, admitted that the "reality [there] is very different. "Often, the public administration is a prisoner of the technological choices it makes, which sometimes leads to a lack of competition." The minister added that this is one of the aspects underlying the decision to "leave more room for free software [...] and to repatriate internally [in the departments] many more resources." Earlier in the day, the Coalition avenir Québec (CAQ) unveiled a compilation of companies that continue to receive government contracts, even though they have pleaded guilty before the Charbonneau Commission. According to the CAQ, 503 contracts were awarded by Transport, for a total value of $207 million. Four firms received more than $10 million: Dessau and a subsidiary, $17.5 million; CIMA +, $13.4 million; GENIVAR, $12.2 million; and, above all, Sintra, $94 million. In the House, CAQ leader François Legault accused Premier Pauline Marois of “dragging her feet” by not trying to recover the $207 million that “was stolen from us.” The head of government reiterated that her government is preparing to adopt a law that will address this problem. His Minister of Justice, Bertrand St-Arnaud, reiterated that the legislation aims to "ensure that firms that wish to reimburse a certain amount themselves [...] can do so completely legally."

## ###ARTICLE\_START### ID:2659

Ten years ago, Ronald Brisebois reluctantly agreed to sell Cognicase, the company he founded in 1992, to the CGI group as part of a takeover bid. The entrepreneur, who was known for his passion at the time, has calmed down considerably since then. Ronald Brisebois launched Cognicase about twenty years ago. The firm, which developed software, quickly distinguished itself by developing a solution that would allow computer systems to survive the dreaded Y2K bug. "I started Cognicase from scratch and when we sold it in 2003, the company had 4,800 employees. I wasn't keen on the idea of selling, but in hindsight, I recognize that it was a good thing for our shareholders," the CEO notes today. Shortly after the sale of Cognicase, Ronald Brisebois founded Isacsoft, a developer of library management software that was renamed Mondo-In following a transaction. Mondo-In is now the leader in library management software throughout the French-speaking world. The company has 1,500 clients in 11 countries. The 78 libraries in Paris use its technology for managing books and digital publications. Mondo-In (the In for innovation) has 150 employees, including a team of software designers and developers in its Montreal offices. "We have expanded Mondo-In's activities into the development of free software. This year, we acquired the company Révolution Linux, in Sherbrooke, which has 25 technical specialists in free software. "We have also developed a new division, Coach-In, which specializes in the health, wellness and motivation sector," explains Ronald Brisebois. When we met, the entrepreneur had just arrived from Vietnam and was preparing to return there in the coming days. "I went to meet Mondo-In clients, but I also made a trip to China where I gave a conference on mobile health. This is the subject of my doctoral thesis in computer science that I have to defend next March," says Ronald Brisebois. A health turn While it is quite rare for a fifty-year-old to decide to enroll in doctoral studies, Ronald Brisebois explains that, in his case, this interest came naturally. "Three years ago, my doctor noticed that I had the beginnings of cholesterol and he wanted to prescribe Lipitor. There was no question of me taking medication. I don't like it. "So my doctor suggested that I get a personal trainer, a kinesiologist and a dietitian to correct my problem. Which I did," he explains. After 4 months of extreme dieting, he saw his doctor again who confirmed that he was in the best shape he had been in 17 years of consulting. He had become the healthiest of all the patients in his office... "In life, you need coaches. And that's why I decided to enroll in a doctorate in mobile health to develop a concept that falls under "persuasive technology". "I am developing a virtual coach, an automaton capable of contextualizing the life of the person he is supporting. A coach to eat better, train better, better manage stress and emotions", summarizes Ronald Brisebois. He also hired his personal trainer and his dietician who now work in the Coach-In division which publishes a monthly magazine and a digital version of advice to feel better about yourself. "I am healthy and I realize that, to be healthy, you have to be happy. And the search for happiness is a daily job. The immune system is about believing in it", he says. His pace of life is no longer the same as when he was in a perpetual race for growth. "I polished myself. At the time, I was often impatient and abrupt, but intelligence is not abruptness. I work as much as before, but I do projects that are close to my heart. You can't stop working. You have to make yourself useful," says the entrepreneur in search of wisdom. During his career, Ronald Brisebois has made 108 acquisitions, including three in the last year. There was Révolution Linux in Sherbrooke, but also a natural products store in Quebec City and a producer of natural medicines, Champs de vie products, in Beauce. "The placebo effect accounts for 30% of the success of a pharmaceutical drug, while it is 70% for a natural product that, moreover, has no side effects. That's why I became interested in natural products. "Marketing is an important element of prevention, so we might as well sell products that will not have harmful effects," he observes.

## ###ARTICLE\_START### ID:2660

Like many people, I followed the Apple show as an amateur. "Oh, a new Mac Pro. Really, Mac OS X will be free? What's going on at Apple? Are they crazy or what?" That's why at the end of the presentation, a bit too optimistic I admit, I announced to my colleague that my column would be about the return of "fun" at Apple. Old fart. We'll admit, "fun" wasn't really there during the last presentations. With simple variations of multifunction phones or an upgrade of the mobile operating system, there was nothing to write home about. In short, with the debauchery of announcements this week, I imagined writing today's column in two spoonfuls. With the title "The "fun" is back". Let's face it, it was good to see Apple move away from the "phones-tablets-iOS" troika and go back to its roots by presenting us with traditional computer products, namely desktop computers, laptops, applications, an operating system and all that. The fact remains that all this was just a good smoke show that masked a harsh reality: since Steve Jobs left, the innovation that Apple has accustomed us to is no longer Apple's trademark. Right now, Apple is taking advantage of its achievements in order to satisfy its shareholders. You only have to read the Twitter tweets of "trader" Carl C. Icahn to see that right now, Apple is under pressure to offer a better return on investment to its shareholders. When he was alive, by his sheer prestige (and his pig-headed nature), Jobs could resist such pressure. For Jobs, it was innovation above all else. But Tim Cook is not Steve Jobs, far from it. That said, you don't need to be a prophet to decode Apple's current business strategy: by offering its operating system and its iLife and iWork application suites to consumers for free, Apple intends to inflict new blows on Microsoft. As we know, the firm founded by Bill Gates has had better years, while in the past, it raked in billions of dollars with the marketing of its Windows operating system and its MS Office office suite. However, already in 2003, in the daily newspaper Le Devoir, I observed that Microsoft's future was very uncertain. By suggesting a possible solution: counter the competition by embracing the free software movement (Bill, you didn't listen, too bad for you). In short, with this brilliant gesture by Apple, one can wonder how Microsoft will be able to justify the current prices to its customers, when Apple gives away its software products. But back to Apple and innovation. Apple engineers must be working on potentially revolutionary technologies. Maybe they have even found the secret of Caramilk, namely this famous process making it easy to use the TV with technologies, mainly current and future Apple technologies, as described in Jobs' biography. We hope so, because, honestly, we can't wait to see the real "fun" be back.

## ###ARTICLE\_START### ID:2661

Richard Matthew Stallman, trained at Harvard and the Massachusetts Institute of Technology (MIT), an internationally renowned computer programmer, helped create the first free software (called GNU) in 1983 - then, in 1985, the association that popularized it, the FreeSoftwareFoundation. Opposed to patents protecting software (Microsoft, Apple, etc.), he campaigns for a free operating system, with copyleft source code (the opposite of copyright) and improved by users. Today, he fights for freedom of digital rights and against technical protection measures that restrict computer uses: restriction of reading to a manufacturer, limitation to a geographical area, locking when changing machines, etc. On the occasion of the thirtieth anniversary of free software, he wrote a long column on September 28, on the site Wired.com: "Why free software is more important than ever". What does he say? Commercial software can spy on you remotely and limit your usage, its owners can sue you. Only free software allows you to use its services as you wish. To transform it. To redistribute it to your loved ones. Only it gives you back control over the machines - and therefore over your lives. The article was translated into a blog on the Framablog site on October 5: www.framablog.org.

## ###ARTICLE\_START### ID:2662

Albanian Prime Minister Edi Rama, son of sculptor Kristaq Rama, was a painter in his youth. When he was elected mayor of Tirana in 2000, he made a name for himself by having many of the capital's facades repainted in bright colours and by redeveloping the banks of the Lana River. On 9 October, Edi Rama congratulated the police forces who, after a four-month investigation, found in Tirana more than 1,000 stolen religious works of art dating from the 15th to the 20th century. These are mainly icons and frescoes stolen from churches in southern Albania and the Republic of Macedonia. Estimated at several hundred thousand dollars according to Top Channel TV Albania, they were to be resold in the Balkan countries and Europe. According to the Associated Press, cultural authorities have explained that the country's religious heritage is particularly threatened, as Orthodox churches were abandoned under communism. Prime Minister Edi Rama added that he and his government have a "moral obligation to leave intact" to new generations the country they have "inherited." The recovered works will now be kept at the National Art Gallery in Tirana. Lars Von Trier and the Nymphomaniac Pornographic cinema can be disturbing, but it is boring and repetitive. However, because of the ghetto in which it is confined, it alone shows sexual passion in all its crudeness. But for how long? Filmmaker Lars Von Trier intends to show several explicit love scenes in his next film, Nymphomaniac (scheduled for release on December 25). In early October, he unveiled the posters: it shows 14 actors simulating an orgasm, including Jamie Bell, Sophie Kennedy Clark, Willem Dafoe, Charlotte Gainsbourg, Udo Kier, Christian Slater and Uma Thurman. Lars Von Trier, who has said he wants to tell the story of the turbulent love affairs of a woman aged 18 to 50, seems to be going even further than all the directors who have already included sex scenes in a film: Catherine Breillat in Romance (1999), Larry Clark in Ken Park (2002), Vincent Gallo in The Brown Bunny (2004), John Cameron Mitchell in Shortbus (2006), Ang Lee in Lust, Caution (2007), Jean-Marc Barr in Sexual Chronicles of a Modern Family (2011) or Maja Milos in Clip (2011). According to the Blouin ArtInfo website, doubles shot the sex scenes, and a hard and soft version were produced. Thirty years of free software Richard Matthew Stallman, trained at Harvard and the Massachusetts Institute of Technology (MIT), an internationally renowned computer programmer, helped create the first free software (called GNU) in 1983 - then, in 1985, the association that popularized it, the FreeSoftwareFoundation. Opposed to patents protecting software (Microsoft, Apple, etc.), he campaigns for a free operating system, with copyleft source code (the opposite of copyright) and improved by users. Today, he fights for freedom of digital rights and against technical protection measures that restrict computer uses: restriction of reading to a manufacturer, limitation to a geographical area, locking when changing machines, etc. On the occasion of the thirtieth anniversary of free software, he wrote on September 28, on the Wired website. com, a long column: "Why free software is more important than ever". What does he say? Commercial software can spy on you remotely and limit your usage, its owners can sue you. Only free software allows you to use its services as you see fit. To transform it. To redistribute it to your loved ones. Only it gives you back control over the machines - and therefore over your lives.

## ###ARTICLE\_START### ID:2663

SHERBROOKE - Mayoral candidate and leader of the Comme une eau Terre party Hubert Richard believes that there is currently a confrontation between very strong ideological forces. On the one hand, society has never been so loyal to the car. On the other, there are more and more innovations all over the world to develop sustainable cities. And between the two, there is the man in green who is trying to plant ideas in the minds of citizens to bring these two worlds together a little. Free public transit, cooperative buildings, healthy rivers and lakes, development of community gardens, complete transparency of the city council thanks to an open source site... Hubert Richard has no shortage of ideas to transform Sherbrooke. "Desperate times call for desperate measures! These days, we sell the dream of the car, of the single-family home that is ever further from the city center, etc. At the same time, we present reports on the pitiful state of the planet. And after all that, there is a municipal election that allows us to get our messages across," explains Hubert Richard from his convenience store on King Street, which is also the campaign office for this colorful character. While he admits that his chances of winning the mayoral race are rather slim, the candidate does not hesitate to talk about revolution if he manages to get a single candidate from the Comme une eau Terre party into city hall. "The big thing is that the party can get in. If people don't want to vote for me because it's too much to ask of them to put me in the mayor's office, they at least have the possibility of voting for a councillor. And if only one of them manages to get elected, that will already be a revolution. The other hope I have is that people will discuss the ideas we're bringing forward, for example free public transit, and that it will grow in their minds," says the party leader, who is notably responsible for the creation of the community garden located on Bowen Street. The ideas I'm bringing forward in this campaign are the same ones I proposed the last time I ran for mayor in 2005 and as a councillor in 2009. We need more social housing and access to water. We're making some progress, we're making efforts to clean up our rivers, but there are still boats cruising on the Magog River. "There is still a lot to do, and if I am not elected, I will carry the same message in four years," he promises.

## ###ARTICLE\_START### ID:2664

Is there any need to remind you how much digital technology has changed the way we watch TV? New tools allow connected citizens to consume their TV as they want, at the time of their choosing. Four television sets: that was the television offering in the 1960s in Montreal. For the lucky ones with an antenna, one or two American channels could complete the television offering. Video recording? That would be two decades later. Hop! A leap into the future: today, hundreds of channels are offered to consumers, in addition to new on-demand TV services. And online competitors. Because now our TV is also connected to the Internet. Video recording on tape? Who remembers it? Recording on optical media? A technology that has never been successful. From now on, we record on magnetic media, hard disk or RAM. With instant access. But the personal digital recorder, although practical and firmly established in our homes, is on the verge of experiencing the decline of its predecessors. Some tinkerers, using software from the free software community, have built their own file recorder/server. Well-established manufacturers have even used these tools as a basis to build their own small proprietary server. TRANSFORMATION The fact remains that TV viewing is in full swing. The iTunes/Apple TV combination is enjoying some success, due to the strength and ease of access to the Apple ecosystem. But anyone who puts their finger in the Apple gear will have a hard time getting out. Not stupid, Steve 1st disciples. Others, more adventurous, and above all, not necessarily inclined to be locked into the world of the Holy Apple, are finding that new solutions exist. They might as well do their part. For example, Google's new HDMI key, the Chromecast, bridges the gap between a tablet, a smartphone or a computer and the TV. For just a few dozen dollars, a consumer connected to Netflix on their tablet will be able to stream their favorite movies on the big screen via Chromecast. And for those who want to bypass the middlemen and be masters of their destiny (and their TV), nothing beats these little Android keys that we see appearing on the shelves of technology retailers. A small key like the Mini-TV MK808B (to find it, Google is your friend) is a tablet without the screen. All you have to do is plug the key into the HDMI port of the TV, connect to the home Wi-Fi signal, and explore the applications in the Google Play Store. Do you like Netflix and are you perhaps already a customer? Hop! on the key. And hop again! on the TV. And what about the arrival of Canal + in Canada via Dailymotion. I know several who have put together a TV offer in their image, at little cost. And all this is only the beginning, because TV is still called upon to change. Holy digital, go!

## ###ARTICLE\_START### ID:2665

With the accumulation of revelations about the surveillance of the Internet by armies of crooks, spies and advertisers, many Internet users want to better protect their privacy - provided that it is not too complicated, too expensive or too restrictive. To meet this new demand, a French start-up based in Reunion Island and called Ansamb ("together" in Reunion Creole, www.ansamb.com) offers a new and free solution. Code name: "Places". Motto: "Speak up, you are at home" - safe from prying ears. Welcome to Internet 3.0, where everyone will finally take control of their personal data. Places is a peer-to-peer network (peer to peer, i.e. offering the possibility of sharing files) entirely horizontal. As soon as the software is installed on a computer, it becomes a server, in other words a fully-fledged network node - and not a simple "client" attached to a command center. The user will then create a private virtual space (a "place"), to which only his guests will have access. Then, with a click, the members of the group will exchange messages and files of all kinds (text, audio, video, photos), in complete discretion. Confidentiality is ensured by the encryption of files, which is done automatically with each sending - as is the decryption upon arrival. Vigile Hoareau, a psychology graduate and co-founder of Ansamb, emphasizes the practical side: "In the past, to encrypt documents, I used the PGP software, well known on the network. It was long and tedious, it's a thing for geeks. Hence my desire to create a system that could be used by everyone, without learning. » He claims that Ansamb uses a very powerful, dual-key system: "Unlike current cloud services, particularly American ones, we will not store the encryption keys. So no one will be able to come and take them from us." Furthermore, Places is free software: programmers around the world will be able to examine it and check that it does not contain any flaws or backdoors. For the general public, Vigile Hoareau illustrates the usefulness of his system with an example: "Today, if I want to give 70 holiday photos to 50 friends, I have two solutions: either spend hours sending them by email, or post them on a social network like Facebook - and then I lose control of my images. The social network will appropriate my content, exploit it in all ways. In addition, each time Facebook changes its confidentiality rules and certain private data suddenly becomes public, it causes a series of divorces. » To avoid this kind of catastrophe, Vigile wants to establish the concept of privacy on the Internet: "Give what I want to who I want, and to no one else. This does not mean that we must live in secrecy all the time, but that the network will be built like a house: a living room to receive people we know a little, and a bedroom for more intimate guests." Places users will be able to choose to store their data on their personal computer, or to use a secure server in the cloud. Ansamb's other co-founder, Didier Hoareau, a computer science professor (Vigile and Didier are not related), displays his technological ambition: "We are going to combine the power of peer-to-peer and that of the cloud." Despite everything, Places needs a centralized directory, which will allow users to find each other. In order to best guarantee the confidentiality of each individual, Didier Hoareau set up a complex system: "For each member, we create a unique identifier, known only to us, and coupled with a personal address. Then, once two users are in contact, they communicate directly, without going through the directory again." Later, Ansamb would create a "distributed" directory, i.e. split across different computers making up the network, according to the principle of full peer-to-peer. Beyond the private sphere, Vigile and Didier imagine that their software could be used by political, union and humanitarian groups, or by journalists wishing to work on the Net without being spied on. However, the launch of Places coincided with the revelations about the mass surveillance set up by the United States secret services, and about the collaboration between American private Internet services and the National Security Agency. An "anti-Facebook" tool therefore de facto becomes an "anti-NSA" tool. At first, Ansamb surfed the scandal a bit. Thus, its original logo, printed on T-shirts, showed two silhouettes gathered in a protective yellow square. To match the new media buzz, a third character was added: located outside the square, he tries to listen to what is being said inside, using an ear trumpet... In this context, Places very quickly attracted the attention of geeks: "The community of Internet professionals is hungry for new things in this sector", explains Didier Hoareau. But the result exceeded his expectations: "Places has been commented on, dissected, criticized excessively." He would like to calm things down, and reposition himself in a less controversial niche. In September, Vigile Hoareau and Didier Hoareau went to San Francisco to present Places at a trade show. They say that the reception was good, and that Californian investors seem interested.

## ###ARTICLE\_START### ID:2666

After Cloud Computing, the IT giants (HP, SAP, IBM, Microsoft and EMC) are now swearing by Big Data. Processing disparate and large-scale data requires specific technologies in terms of storage, sorting and analysis. For the moment, the market is barely stirring: "Companies do not yet know how to exploit Big Data, especially in France," admits Bruno Buffenoir, General Sales Director of HP France. But the outlook is promising. Revenues, which include sales of hardware, software and services, are expected to reach 18 billion dollars (13.3 billion euros) this year (+61% compared to 2012), and 47 billion dollars in 2017, according to the specialist site Wikibon. To gain a foothold in this sector, specialists have started by equipping themselves with "Datawarehouses", these famous new generation data warehouses installed on dedicated machines, and capable of supporting the load. Microsoft has acquired DatAllegro, and HP, Vertica. IBM spent $1.7 billion on Netezza, and EMC an estimated $200 million on GreenPlum. In a sluggish economy, IT groups see Big Data as an opportunity to gain market share over competitors. Having jumped in at the deep end, IBM has decided to cast its net wide. "We've invested up to $17 billion," insists Patrice Poiraud, head of IBM France's Bid Data division. In eight years, Big Blue has acquired around a hundred companies in all fields (data analysis, e-commerce, design, etc.). This strategy has made it number one in Big Data with $1.3 billion in sales in 2012, far ahead of HP, according to Wikibon. Specializing in hardware manufacturing (servers and PCs), HP is taking advantage of Big Data to extend its expertise to software, thanks to Vertica. "A process that used to take a week takes fifteen minutes on Vertica. And the prices are equivalent to generic technologies, such as those from Microsoft or Oracle," boasts Laurent Ridoux, Big Data manager at HP France. The American giant had also bought Autonomy, which analyzes, among other things, videos from surveillance cameras on the London Underground. But it was less fortunate. A year after the operation, the company, which had cost it 12 billion dollars, was depreciated by 8 billion dollars. SAP, for its part, decided to strengthen its position in the software chain. The German publisher developed its own SAP Hana database, "which merges the two types of databases, the one dedicated to transactions and the other to analysis. With SAP Hana, we can analyze events in real time," explains Didier Mamma, director of Data & Technologies activities at SAP France. Previously, at Faurecia [a French manufacturer of automotive equipment], production rescheduling took twenty-three hours. Now, they've gone down to one hour. » With SAP Hana, the publisher is competing with its historic partner, Oracle, whose databases accompany its management software packages. "SAP is trying to move back down the value chain. Databases are a multi-billion dollar business!" says Olivier Rafal, from the consulting firm PAC Online. Now it's up to IT groups, which derive at best 1% or 2% of their sales from Big Data, according to Wikibon, to convince people to invest in their technologies. Because there is a less expensive alternative, OpenSource ("open code"). "Google, Yahoo!, and then LinkedIn and Twitter, have created, with Hadoop, a platform that allows large volumes of unstructured data to be stored and processed at low cost," explains Olivier Rafal. These large consumers of Big Data are therefore the first to escape traditional IT groups and their services billed at exorbitant prices. Companies could decide to follow suit. "SAP Hana, Oracle or Microsoft licenses cost millions. While Hadoop has become a standard," adds Olivier Rafal. In software infrastructures, Oracle, whose specialty is databases, "is the one that has the most to lose," according to Benoit Flamant, fund manager at FourPoints. But EMC, Cisco, HP, or Dell, which derive between 36% and 71% of their revenue from hardware sales (servers and storage) thanks to companies, are also threatened by Hadoop, which runs on standard, less expensive hardware. "Today, two out of three servers in the world are OpenSource," recalls Benoît Flamant. Aware of the stakes, SAP and Microsoft have taken the bull by the horns by integrating the Hadoop brick into their offering, even if it means lowering their margins. But only IBM, which benefits from a great tradition in free software, is doing well. "They got on the Hadoop horse very early," indicates Benoît Flamant. Fortunately for IT groups, companies are traditionally very cautious, and do not abandon their service providers and the technologies they know so easily.

## ###ARTICLE\_START### ID:2667

Jean-Nicolas Blanchet - -- A leader in the free software industry in Canada, Savoir-faire Linux officially opened its offices in Saint-Roch yesterday. "We are making Quebec a world leader in free software," said Cyrille Béraud, president of the company, accompanied by the president of the Treasury Board, Stéphane Bédard (left).

## ###ARTICLE\_START### ID:2668

In inaugurating its new premises in Saint-Roch in addition to the official accreditation of its Red Hat training and certification center, Savoir-Faire Linux president Cyrille Béraud revealed that the company had just won a $1.4 million CAD contract with the International Organization of La Francophonie (OIF). The project based on open source software will consist of the design, development and implementation on an international scale of a set of applications for the OIF's project management. For Cyrille Béraud, this major contract strengthens the company's position in North America, especially since the development will be done in Quebec. Savoir-Faire Linux has about fifteen employees. They should number 35 by the end of 2014. The Montreal head office has nearly 80 employees. Mr. Béraud estimates that the company should have 300 people within three years. Present at the inauguration, the President of the Treasury Board, Stéphane Bédard, said he was convinced that Quebec could become a hub in the free software sector.

## ###ARTICLE\_START### ID:2669

If Hubert Richard is elected mayor of Sherbrooke, he promises to demonstrate exemplary transparency to citizens. City council meetings would now be broadcast in their entirety, as well as preparatory meetings, where "real business is discussed." All working documents used by city employees would also be available online. The mayoral candidate for the Comme une eau Terre party also promises to set up a social network to allow citizens to exchange and research on the municipality's files and projects. This network will be developed by the city's IT department in open source and Internet users will also be able to participate in its implementation. Citizens will be able to publish proposals, projects, etc. In addition to these projects, Hubert Richard wants to transform Sherbrooke's real estate portfolio. "We need to establish a new social contract that will challenge tenants regarding the transformation of their homes. First, by including in the municipal charter an article emphasizing the importance of promoting housing for the very health of the municipality. We are going to work to have governments adopt a new housing policy that would see more than 65% of housing buildings transformed into housing cooperatives," explained Mr. Richard yesterday during his weekly press briefing.

## ###ARTICLE\_START### ID:2670

Three flat screens, in the style of a home cinema or control room, continuously broadcast syncopated fragments of films. A shattering flow where Tom Cruise in Oblivion, the scantily clad singer Miley Cyrus in her chic porn video Wrecking Ball, the two clumsy geeks from the sitcom Big Bang Theory or the latest episode of Breaking Bad collide. This audiovisual collage is not arranged by an epileptic editor but generated automatically by the peer-to-peer network. The Pirate Cinema, an installation by artist Nicolas Maigret, with developer Brendan Howell, reveals the invisible activity of peer-to-peer file sharing and the geography of these globalized exchanges. The images that follow one another, sometimes in high definition, sometimes very degraded, show the data as they are intercepted. For each sample, sequences of numbers corresponding to the IP addresses (identification number assigned to each device connected to the network), the country of origin and its destination are displayed. We watch, fascinated, the dizzying circulation of data, the global dissemination of content, corresponding to the 100 most shared films. The installation gives a strange presence to this usually abstract and underground activity, which takes place in the shadow of the pipes. We observe the links that are woven between the machines, that of the user from Saudi Arabia, Romania, Russia or Japan, what they are looking for and watching. This listening to the flows also creates a sort of default aesthetic. The fragmentation of the "P2P" media results in a fragmentation of the film material and its narration, an automatic mash-up cinema, interwoven films whose random editing is carried out by the users without their knowledge. Nicolas Maigret talks about his network listening device presented until mid-December at the Maison populaire de Montreuil (Seine-Saint-Denis) and at "Show Off", from October 21 to 23 at the Espace Pierre-Cardin in Paris. Your previous works, such as "Internet Topography", seek to make these immaterial spaces of information tangible. Why this interest in peer to peer? For ten years, I have been trying to make these internal dynamics of the network, their logic and formal quality, perceived within the Art of Failure collective. In 2006, I worked with the audio art research laboratory Sonus Locus on an installation that consisted of asking users around the world to provide a microphone open to their environment that would broadcast permanently on the network. But what was given to hear, more than the ambient sound, was the reality of the network itself, an MP3 stream, often mediocre. These sounds that were intended to be the portrait of a distant reality spoke to us above all of the roads and pipes that separate us from the place where they were intercepted. This listening to distances has become the heart of several projects. But there is an aspect that I had not yet addressed which is the place of the human at the ends of the network and which makes its dynamics. The Pirate Cinema also evokes a surveillance device... There is obviously listening, in the sense of spying. Particularly at a time when many legal devices have been put in place to monitor illegal downloading and copyright infringements. One of the limits of P2P is to make users' IPs visible, allowing you to see which machine is currently owning or downloading a given file at a given time. With Brendan Howell, we recreated a prototype of a P2P exchange surveillance system. The installation is deliberately ambiguous: immobile journey through exchanges at the global level or generalized surveillance process? How does your system work? The installation is based on an automatic system that continually downloads the top 100 of The Pirate Bay, or about 100 gigabytes of the most viewed films, clips and series. It listens precisely to these files and intercepts the data in transit. The program allows you to instantly view each snippet during their transmission in the order in which they are sent or received by peers. It's like a cross-section of the network. P2P is the preferred target of the anti-piracy fight. Aren't you afraid of getting into trouble? We have taken precautions so that the system can operate independently of the legislation in force in the different countries. Our machine is hosted on a server in Sweden and the exchanges go through a virtual private network, in order to protect the exhibition site. The file fragments are encoded and only remain temporarily on our machine. Most of the techniques we use (open source, remix, P2P exchange) come from the culture of the free. In the top 100 are mainly blockbusters, products of the film industry. The files we show are in fact those that catalyze all the controversies around downloading. But P2P also has a positive impact, by increasing access to culture. A torrent art like the late KaraGarga, which made available art films, rarities and artist films, was a real goldmine. P2P is more than just file exchange. Its horizontal, distributed architecture, its reduction of intermediaries, is also an alternative to the evolution of the Web towards very centralized forms. Its contributory model is used by the open source community, but also by academic research. The peer-to-peer logic has spread, including to car or household appliance sharing sites, to pool resources. The Pirate Cinema goes beyond the question of copyright, it is at the crossroads of many fields: social, legal, political, aesthetic. The Pirate Cinema: Your device also reveals the aesthetic qualities of P2P architecture. During the 80s, the VHS medium brought cinema into the living room, P2P and the Internet bring it to the personal computer and the telephone. With these modes of diffusion, a whole reflection on the support, the medium and what it conveys that is specific opens up. The P2P protocol is based on the fragmentation of files into small samples. Downloading is not done in a linear manner, a file is recomposed in a disorderly and irregular manner, from fragments emanating from different users, until it is complete. In the installation, the film is recomposed by the machine in the order in which it is exchanged, causing a complete rearrangement of the original video. Suddenly, we see the film again through the logic of the pipes, as it transits on the Internet. This preliminary cutting of the medium brings new formal potentials. The device does not produce anything, it simply brings together the conditions for the appearance of a form that is already there but difficult to perceive. To show the nature of the digital film, which is a flow disseminated on a global scale. You draw a parallel between your installation and Dziga Vertov's "cine-eye" from 1923... Yes, it's the idea of seeing the world through the eye of the technology of our time: "I am the machine that shows you the world as only it can see it." We can reread his 1923 manifesto by replacing the initial "camera" with "networked video streams." In The Pirate Cinema, the form, dynamics, rhythm and even editing are direct results of the properties of the medium in question. It's a way of rethinking a contemporary cut-up work. By deconstructing and reassembling these films in a non-narrative way, the device highlights the formatting of the image, postures and framing. For example, we realize that the video clip is very close to the porn film. It also fits into the tradition of experimental cinema that explores film material; here, it is not film but digital media, compressed and fragmented, with its shifts in the image that occur when data is missing. Beyond a simple artifact caused from scratch, it is here a signifier of the medium, and of the contemporary film-video medium. What does the device teach us about the geography of exchanges? In the exhibition, we have configured the program on the most exchanged torrents, it is a deliberately reductive vision, allowing us to navigate through what is consumed in the world at a particular time. But we can also focus the device on a specific file. We then obtain a sort of portrait of this file through its geographical dissemination, we can see how a cultural product is diffused. If we focus on porn films, we observe that they circulate a lot in North Africa. If we choose to trace a TV series like Homeland, we could observe the diffusion of ideological propaganda. Your installation was also presented in China, where the network is closely monitored. How was it received? In China, we adapted the project to listen to Wi-Fi transmissions, in the installation Aether Mash-Up. Invited to an artists' village in Beijing, we scattered small boxes that suck up Wi-Fi exchanges on a neighborhood scale, web pages, images, chats and emails sent and received in this area. Intercepted fragments were instantly broadcast in a sort of control room full of screens that report on the residents' exchanges in real time. A way of showing the uses in a given area, and of representing a sort of unconscious of the urban digital space. No doubt the installation would be more shocking here than on this side of the "great firewall". The Chinese are very aware of state surveillance of the network, they are on their guard and have developed circumvention strategies, while we ourselves tend to consider the Internet a little naively as a tool of public interest. Until December 14. Maison populaire, 9 bis, rue Dombasle, Montreuil (93). Info: 01 42 87 08 68 and www.maisonpop.fr.

## ###ARTICLE\_START### ID:2671

D id the holidays go well? And the start of the school year? ", he asks one. "Ah, you skate," he says with a smile to another, who has just entered the office, skateboard under his arm. This Wednesday afternoon in September, Professor Bruno Falissard is holding his weekly consultation at the Robert-Debré hospital (Paris). In his waiting room, children and adolescents with more or less battered souls: hyperactive, autistic, depressed... The child psychiatrist takes his time, checks medical information on his smartphone, discusses therapeutic choices with his young patients and their parents. His demeanor is relaxed, his words simple, the confidence he inspires is palpable. When he was a psychiatry intern, the choice to take care of children was not an immediate one. "Let's be honest, when you're a young doctor, adult psychiatry is more attractive. The clinical pictures are clearer, like in books. Child psychiatry is chaos, you can't find your little ones there," says this Bordeaux native with a hint of a South-West accent. In any case, he ended up finding what he was looking for. "I like talking to a child," he continues. "It requires being completely honest with yourself and with the other person. When you ask them how they are, you really have to be interested in them. It's a life lesson." Clinical practice is, however, only a minor part of the activities of this child psychiatrist, father of three children, with an atypical background. Professor of public health and biostatistics, head of Inserm unit 669 (Maison de Solenn - Maison des adolescents, Paris), i.e. six research teams specializing in mental health and public health issues, Bruno Falissard was first a polytechnician. X before a psychologist? "I loved maths, but I lacked openness to others," explains the doctor, who completed both courses in the 1980s. "Maths and psychiatry have things in common; they are two disciplines of introspection. And then, there is a real synergy: the more complex a subject is, the more it needs formal support." The world of engineers has lost a humanist, while that of mental health has gained a rigorous and innovative researcher. "Bruno is one of those who have most developed the qualitative or mixed approach in psychiatry, which finally allows this discipline to take subjectivity into account and to move away from the systematic "averaging" of individuals," emphasizes addiction specialist Henri-Jean Aubin, who works with him in unit 669. The qualitative approach also helps to counter the biases introduced by traditional measuring instruments, which push researchers to always explore the same aspects of the problem, functioning like blinders. » With his students, Professor Aubin asks him to frame his projects on a methodological level and, each time, he comes out "with confidence". "Whether you ask yourself a specific research question in child psychiatry or on any mental health subject, Bruno Falissard will find a method to answer it, adds psychiatrist and philosopher Marie-Rose Moro, head of department at Maison de Solenn. Thanks to him, we have built tools to study the mental health of adolescents internationally and transculturally, to detect psychological suffering in babies... He is a daring researcher in the noble sense of the term, always available, and willing to go and share his knowledge in the field." A state of mind also perceptible when consulting the website (Bruno.falissard.pagesperso-orange.fr) of this supporter of free software. About ten years ago, he conducted a study that was unprecedented in its scope to assess the frequency of psychiatric disorders in French prisons, demonstrating that they are much more widespread than in the general population. In association with other teams, mainly in Canada, his unit is now exploring multiple themes concerning adolescents and adults: developmental disorders, addictions, eating disorders, evaluation of therapies in psychiatry, etc. At the request of the Ministry of Health, Bruno Falissard has also produced several expert reports on unconventional care, such as mesotherapy and osteopathy. "Research in psychiatry should not be different from that practiced in medicine; the two can learn from each other," the researcher modestly notes. One might have imagined him to be fascinated by neuroscience, given his background as an engineer. This is not the case. "What I criticize about major projects like the Human Brain Project is that they model a brain, not a thinking subject," he notes. "Today, at conferences, mental processes are always represented in the form of task accomplishment. These are well-done works, but when I ask their authors: "Giving meaning to one's life, where is that?", I don't get an answer." Conversely, he is irritated by the "bad faith of psychoanalysts who claim that their discipline cannot be approached with a scientific perspective." He himself would like to see himself as a bridge between these two worlds, which he proposes in one of his books, Cerveau et psychanalyse. Tentative de reconnaissance (L'Harmattan, 2008). Another challenge awaits him. On October 17, his 52nd birthday, he will start the Diagonale des fous, the major raid organized on the island of Réunion. A 163-kilometer race, 9,900 meters of elevation gain, that the former marathon runner, converted into a trail runner, would like to finish after two unsuccessful attempts. "Running for that long, alone in nature, has a little animist side to it," he says. Another way to explore the limits of the human mind.

## ###ARTICLE\_START### ID:2672

France is a well-known tax hell but with lesser-known cool oases, where the taxpayer crushed by taxes but well advised willingly comes to recharge his batteries. This is the case with the famous research tax credit, aka CIR, the biggest tax loophole ever created in the country and which is regularly the subject of a fierce battle between companies and public officials, who are alarmed by its uncontrolled skidding. Like very recently the Court of Auditors, which has just issued scathing conclusions and re-asks the nagging question. Is this considerable expenditure really useful? Created in 1983 to help innovation, this mechanism for reducing corporate tax (IS) based on research expenditure has been constantly relaxed. Until 2004, only those who had increased their effort over the last two years benefited from it. But then, in the summer of 2007, the President of the Republic, Nicolas Sarkozy, changed the rules: the gift was no longer granted on the increase, but on the volume. With unparalleled generosity: the reduction in IS amounts to 30% of expenses up to 100 million euros, and 5% beyond. Better still: it was no longer capped. Two years later, to compensate for the cash flow shortage of companies in 2009, it was even reimbursed. Thus, for those who bet on the future, the State opened its checkbook wide. Message quickly received: the rush to the oasis was spectacular. From 10,000 beneficiaries in 2007, the number rose to nearly 20,000 in 2011. And their claim on the State increased from 1.8 to 5.2 billion euros, to reach 6 billion in 2014. This is a long way from the cost announced in 2007 by the Minister of the Budget, Eric Woerth: 2.7 billion "at cruising speed"... thus underestimating by 2 billion the Treasury's forecasts, which, at the time, predicted a cost of 4.6 to 5.1 billion in 2013. "This major reform was poorly anticipated," summarizes, in severe laconism, Patrick Lefas of the Court of Auditors. In any case, it has made France a tax haven for research, with the arsenal of public aid, direct and indirect, the most generous in the Organisation for Economic Co-operation and Development (OECD), absorbing 0.4% of the gross domestic product (GDP). This is four times more than in Germany, which does not have a CIR. And to what effect? On the macroeconomic level, it is almost invisible: private research has barely progressed in four years. Worse: between 2008 and 2011, an average of 3 billion euros of additional public money was injected under the reform. However, declared research expenditure has only increased by... 3 billion euros in four years, to 18.4 billion. Knock-on effect: zero. Pointing to the crisis, PS senator Michel Berson, author of a report on the subject, believes that "the stability of expenditure is due to the CIR, without which private research would have declined further". Perhaps. But it has not led to any acceleration in the recruitment of young doctors, although it grants, for one year, a tax credit of 120% of their loaded salary... That is to say, ultra-qualified work free of charge for the employer. However, these 3 billion euros have made many people happy: twice as many SMEs have applied for the CIR. And their average reduction in IS has increased by 40%. "It is a fantastic system, which has made it possible to create renowned companies in the digital sector", rejoices Guy Mamou Mani, president of Syntec numérique, which brings together SSII and software publishers. "It has allowed us to compete in calls for tender against American giants like Google", assures Alexandre Zapolski. His company, Linagora, which specializes in "open source" software (open source code), has increased its R&D team from 10 to 40 people. "In 2008, I wanted to go to Canada because we weren't competitive enough. But the reform made me change my mind." The CIR finances half of its payroll. Specializing in targeted advertising on the Internet, the start-up Criteo moved to Silicon Valley (California) in 2010. However, it was in Paris that it inaugurated, in 2012, "the largest R&D center in the capital with 200 engineers," according to its founder, Jean-Baptiste Rudelle. "We preferred Paris to Silicon Valley, because French engineers are not mercenaries, and the CIR was interesting. Without it, we would not have gone this far." In fact, since 2008, there has been more investment in R&D centers from foreign companies, according to the French Agency for International Investment (AFII). However, it does not monitor the closures, which are very numerous... And it has not heard of any relocations. Clearly, the CIR has not increased the attractiveness of France. In fact, it is the very large French groups that have benefited the most from the removal of the cap. An unexpected jackpot: according to our information, in 2009, the top 25 beneficiaries shared 1.4 billion euros of CIR, out of the 4.7 billion created during the year. The list is eloquent: it includes the most profitable groups (Sanofi, Total and L'Oréal), those that live off public orders (Thales and Dassault Aviation), former glories (Alcatel and Peugeot), those that abused the system (Servier), and our public groups (EDF, Orange and Areva). No one is forgotten. But the French taxpayer, for his part, would perhaps have liked a slightly more discriminating system. Because while the amount of aid received by companies with more than 5,000 employees increased by 130% between 2007 and 2011, they did not increase their research efforts. In the automobile and pharmaceutical industries, it even decreased in France. They therefore used it as a simple tax optimization tool. It is true that the CIR has also helped prevent the worst for ships in distress, such as Alcatel-Lucent, which benefits, depending on the year, from 84 to 93 million euros of CIR. "Although our costs are crushing, we preserve employment in France out of patriotic fiber, says a senior executive of the equipment manufacturer. The CIR, like the tax credit for competitiveness and employment - CICE - compensates for the lack of competitiveness of the territory." According to our information, the R&D workforce in France still fell by 11% between 2008 and 2012, to 3,050 engineers, compared to a 13% increase in China, to 5,300 people. "The CIR allows us to maintain one of the most important centers in France," says Gabrielle Gauthey, director of public affairs at Alcatel-Lucent. But it should not prevent a new bloodletting in the French teams, during the implementation of "Shift", the group's next savings plan. The example of Sanofi, the first beneficiary of the CIR in 2009 and which obtained another 130 million euros of tax reduction in 2012, also deserves to be considered. Because with its 8 billion euros of profits per year, its need for public aid seems less obvious. Before the reform of the CIR, the group held thirteen research centers in France for its pharmaceutical activity (excluding Pasteur). At the end of 2012, after closing the sites in Rueil-Malmaison, Bagneux (Hauts-de-Seine), Evry (Essonne), Labège near Toulouse and selling the Porcheville site to Covance (Yvelines), there were only six left, where only 4,900 people worked on permanent contracts, compared to 6,300 people in June 2008. So did the CIR only serve to finance the closure of these centers? Response from Christian Lajoux, President of Sanofi France: "We grouped the small centers inherited from the acquisitions, and which had not released a new product for ten years, on a few large sites in France." But, he specifies, "this restructuring had been decided upon as soon as Synthélabo was acquired in 2000 and then Aventis in 2004." So did the CIR have no effect on Sanofi's research strategy? "If our presence in France is primarily due to the existence of high-level researchers, favorable ecosystems, and a good hospital network, the CIR has helped to anchor our research there. While France now only represents 8% of our sales, we invest 1.8 billion euros per year there, or 37% of our global R&D expenditure." The interest in the Sanofi case also lies in the fact that pharmaceutical research is undergoing a revolution: it is moving from a model of patents developed internally to "open innovation" in partnership with third parties. This phenomenon is not specific to Sanofi. Outsourcing, which is on the rise, already represents 13% of expenditure declared to the CIR. However, this pooling leads to a pooling of costs, and therefore reduces the fixed cost of research. "However, swears Mr. Lajoux, in this revolution, arithmetic logic is secondary. It is the strategy of opening up that counts." As a result, it is perhaps no longer relevant to measure the effect of the CIR by the amount of expenditure: "The only indicator of effectiveness that counts is the share of new products and services resulting from research in turnover," says Pierre Bitard of the National Association for Research and Technology (ANRT). In the meantime, large companies are defending their cake tooth and nail against the desire of a few public officials to shave off the expensive system. For months, Medef, ANRT, the French Association of Private Enterprises, professional organizations, industry circles, big bosses, everyone or almost everyone has been on deck or in presidential planes to convince people of the benefits of the CIR. With a shock argument repeated over and over again: the CIR lowers the cost of researchers in France by 30%. Eliminate it, and all research will leave the country! Forgetting that, CIR or not, research is now global: it is in India and Brazil that L'Oréal, two thirds of whose researchers are still in France, is opening its new centers. Clearly, no country will capture all of the research anymore. On the contrary, there is no reason why France, and its scientific excellence, should disappear from the global knowledge network. Especially since valuing our researchers with a bac + 8 at the price of a pizza delivery man, in public laboratories as, now with the CIR, in private labs, is the surest way to reduce added value. But there is nothing like blackmailing people with jobs to silence such questions. It did not take long for François Hollande, yesterday convinced of the need to recap the system, to announce in June that he was protecting it. Over the years, the CIR has become a competitiveness credit that does not say its name. However, there are ways to control the CIR, the Court of Auditors has assessed them: reduction of the rate, accounting by group and no longer by subsidiaries, re-capping, simplification of the tax base. The simplest would probably be to replace the CIR, which is equivalent to 3.3 points of IS, by a reduction of the rate to 30%. But for CAC 40 companies that see their IS drop by 6 points thanks to the CIR, there is no question of sharing the cake with SMEs. Sandrine Cassini and Valérie Segond

## ###ARTICLE\_START### ID:2673

Putting free services back at the heart of our social pact. And first at the municipal level. Whether this free service concerns public transport, funeral services, vital water or urban parking. And whether it is for everyone... Political scientist and writer, Paul Ariès calls on the left to engage in this process of reappropriation. Director of the monthly Les Z'indigné(e)s, this self-proclaimed growth objector is organizing the 3rd National Forum for Citizen Disobedience on October 26 in Grigny (Rhône) on the theme "Seventy years after the program of the National Council of the Resistance, what new happy days?" Last year, he published Le Socialisme gourmand, le bien-vivre, un nouveau projet politique (La Découverte). Under Nicolas Sarkozy, you pointed to a society of fear. Is it in decline with the return of the left to power? This society of fear is much more than a personal matter. Today, we are afraid on a global scale: for ourselves, for our children, for our grandchildren. We are afraid of unemployment, terrorism, junk food, the end of oil, foreigners, etc. All these fears are not equivalent, but they combine to feed the worst excesses. Power has everything to gain from fear because it makes it a mode of government. The bosses have everything to gain from fear because it causes resignation and regression. At the end of fear, there is never revolt, but submission to order, there is hatred of others, the return of the extreme right. Fear does not recede with the Solferinos in power. "Hollandréou" does nothing to secure citizens economically and socially. He rejects any idea of an income even without a job and of sharing work to work for everyone. This false left is powerless because it is a second right. It does not understand that we must put an end to any idea of sacrifice. The Church promises heavenly paradise, we have known the Inquisition, fundamentalism, and extremism. Stalinism promised earthly paradise for the day after tomorrow morning, and we had the gulag. The spirit of sacrifice always presupposes a device to manage this sacrifice. It is time for the left to move from sad passions to joyful passions and to reject any idea of sacrifice, of sacrificed generations. It is not by making people feel guilty that we will change the world, it is by making them want it. To regain political control, we must first regain hope. You are a great proselytizer of free education, a notion that you would like to see rehabilitated... Free education is both a response to fear and the foundation of a new social pact. I am told that free education does not exist, that free education is paid for by taxes. I am of course talking about a constructed free education, economically, culturally, and politically. I like these mayors who challenge the population and say: given our limited means, would you prefer to keep free parking for cars or free water, public transport, school meals, funeral services, etc.? I am horrified to hear part of the left say that they want free, but for those who have been shipwrecked by the system, for the unemployed. There are in fact two totally opposing conceptions of free. There is a free system that accompanies the system, the one for the poor, but it never comes without condescension: are you a deserving poor person? It also never comes without policing: are you a real job seeker or a lazy bastard? There is also a free emancipation: what is beautiful with public school is that we do not ask the kid if he is a rich or poor kid, he is admitted as a child. Why would what is true for education not be possible for the other four major pillars that allow us to live: health, housing, food, energy? What conclusions can be drawn from the first local reappropriations of public services? Since the organization of the first National Forum on Free Education in 2009, things have progressed a lot. This debate is now a right of the day in all left-wing and ecological schools of thought. Some right-wing cities have even come to it out of social and economic realism. I can assure you that the cities that launch this debate fill the rooms. It is a way of doing politics differently, starting from the ordinary, from people's daily lives. It is a way of giving back the feeling of competence to those who have been deprived of it. Free transport is no more irresponsible: since 2009, the city of Aubagne (Bouches-du-Rhône) made its public transport free, never have the buses been so full and so quiet. In view of the 2014 municipal elections, resistance must be organized: the new metropolitanization law is a war machine against all these local experiments. We already know that the Marseille metropolis will attack free transport in Aubagne. But if we eliminate free transport, we will see the cobblestones flying against the buses again! An analogy between free transport and theft is often made when we talk about access to digital cultural goods... This is proof that free transport is not old-fashioned, it is an experience common to all young people in the world, it is the exchange systems, it is the free software. The left is not living up to history by continuing to criminalize free Internet and to decriminalize an entire generation. Free is not opposed to property, but to its lucrative nature. Free is what allows us to begin to de-economize our existences, it is the possibility of inventing transitions outside of capitalism and productivism. How can we reconcile low growth and an increase in the pleasure of living? The objection of growth is an observation - this world is over - and a call to invent solutions outside of economic growth. We feel powerless because the system has blinded us. Let us listen to the poor - not only those in the South, but those who live hidden among us - and we will rediscover other ways of living. We accept as self-evident the definition that the rich give of the poor. We always define working-class environments in terms of lack: lack of purchasing power, education, political participation, social capital, etc. All of this is only partly true. There is also a potential positivity of working-class environments, other ways of living, consuming, conceiving time and space. A poor person is not a rich person who only lacks money. A poor person has another wealth, other relationships with oneself, with others. To rediscover this otherness, we must put an end to the lie about consumer society. No, it is not first and foremost a society where we consume more than in any other, it is first and foremost the destruction of rural cultures, of working-class cultures. I bet that these cultures have not disappeared, but have been made invisible. I bet that pre-capitalist or post-capitalist ways of living still exist. This is why degrowth is not austerity - this is the concept of rich kids. This is why poverty is not misery. Society's lack of consideration for the poor, that annoys you! I'm tired of hearing that the poor are abusing when we know that the amount of fraud is much lower than that of unused rights in terms of social assistance. It's a political and legal scandal, because it means that this system is no longer capable of enforcing rights, therefore the standards that it set for itself after the Liberation. It's also a social and ecological scandal, because millions of poor people are forced to live badly, to eat junk food, to take poor care of themselves. I'm also tired of hearing that you have to be quite rich to start worrying about ecology. The ecology of the poor exists all over the world. I think of the South American "buen vivir", of the "plus vivre" of the black African philosophy of existence, of social ecology in India. We are more concerned about ecology at Emmaüs than at Medef. Our social pact is running out of steam, while France has never been so rich. We must therefore rebuild a new pact, as we do every half-century. It must be more protective and more emancipatory. Is ecology soluble in capitalism? We cannot have a capitalist system without growth and without profit. It is therefore not out of malice that capitalists are ruining the planet, it is simply because they cannot stop pedaling for a single moment, that is to say, producing more and more, otherwise the system collapses. Nothing is worse than a capitalist society without growth, because it is misery! This is the Greek future of Europe if a real left objecting to growth does not develop! Ecology is therefore not soluble in capitalism, but saying this is not enough, because I am afraid that after capitalism we will have hypercapitalism. The left does not take seriously enough what is called green capitalism, which has nothing ecological about it. We would like to believe that it is only greenwashing when it is about the will to adapt the planet and humanity itself to the needs of productivism. There will be no spontaneous collapse of capitalism on the scale of our lives. Drawing Yann Legendre

## ###ARTICLE\_START### ID:2674

Between the debates on the Council on the Status of Women and the zero deficit, the members of the National Assembly took a few minutes yesterday to adopt a motion - unanimously - in favour of the use of free software by the public administration. Like most of my colleagues, the subject probably leaves you perplexed. What difference does one software or another make? It changes quite a few things, in reality. The Institut de recherche et d'informations socio-économies (IRIS) has just published a note in which it dangles the savings of $264 million that would have been possible with the use of free software, if Quebec had chosen this solution instead of migrating its thousands of workstations to the latest versions of Windows. But the importance of free software goes well beyond the savings in licensing costs that these tools, most often free, allow. If throughout the world the majority of websites operate using the Apache server, free software, it is not just because it is cheaper. It’s because it’s stable and, more importantly, because it can be shaped to suit your needs. That’s why Google, Twitter, Facebook, and Amazon all rely on Linux. Even NASA has migrated some of the laptops that run the International Space Station’s systems from Windows to Linux. Not to save a few hundred or thousand dollars, but because the station’s operators want to be able to modify the system themselves, whenever they want, something that “proprietary” software doesn’t allow. This is nothing new; free software is as old as computing. What has changed in the last year or so is the concrete actions taken by the government to ensure that it is used. This is new, because just last year, when it came time to replace MNAs' workstations, the National Assembly turned to Fujitsu, a "Microsoft Gold Certified Partner," to find out whether to buy Windows or install Linux... Fujitsu ruled out Linux before even launching the call for tenders, preventing any free software provider from even submitting a proposal. An aberration. The current shift dates back a little over six months, when Quebec announced eight measures to develop its expertise in this area, starting with the creation of the Governmental Expertise Centre for Support and Development of Free Software (CELL), with a budget of $4 million. Up until then, the hopes fueled by the Act respecting the governance and management of information resources, by former Treasury Board President Michelle Courchesne, had remained in vain. She still has the merit of having provided a foundation on which her successor, Stéphane Bédard, was able to build. The surprise yesterday, beyond the motion itself, was to see members from both sides of the House applaud two accomplices who have been preaching for years for this shift: businessman Cyrille Béraud and Laval University professor Daniel Pascot, who attended the session. For these two, who have mostly found themselves confined to the role of troublemakers, this tribute is very significant. Daniel Pascot invites us to consider software as a heritage, an essential good, just like food or energy. He likes to quote Lawrence Lessig's motto: "Code is Law," because without computer code, there is no Internet, no telephone, no cars, and no electricity. That is why the State needs free software. For our digital sovereignty.

## ###ARTICLE\_START### ID:2675

An error in the scale of values unfortunately crept into the text entitled "Quebec would save millions by switching to free software, argues IRIS" and published in our September 21 edition. Software spending by 26 government departments and agencies was estimated at $1.3 million by IRIS. The adoption of free software for the simple office suite could have, as a result, generated theoretical savings of $6.2 million, rather than billions.

## ###ARTICLE\_START### ID:2676

A professor at the Faculty of Geosciences and the Environment at the University of Lausanne, philosopher Dominique Bourg analyses the transition from a production economy to a usage economy. You believe that society will migrate from an ownership economy to a functionality economy: companies will sell products, but also and above all the use of these products. Users will therefore no longer be owners but renters of objects. Do you think this movement will be radical? A system never becomes absolute. But I think that the functionality economy, which aims to favour use over ownership, will gain momentum, because it is a response to tensions over raw materials. When Michelin, for example, no longer sells tyres to a fleet of heavy goods vehicles, but their use per kilometre - which is the case with its Michelin Fleet Solutions offer - it has an interest in the tyre wearing out less quickly. Because the longer the object lasts, the more profitable it is for its producer, who also provides its service. The manufacturer maximises use; he seeks to sell as many functional units as possible. Ultimately, Michelin produces fewer tires, but sells more tire kilometers. The interests of the manufacturer and the preservation of the environment are then convergent. This is the opposite of planned obsolescence. We must therefore be interested in this economy of functionality, without expecting miracles. Because no technology, no process can solve the problem of the rebound effect, which consists of using a good more, when it becomes cheaper, less energy-consuming, for example. And, as a result, its environmental interest disappears. But what about the future of industrial societies? Industrial societies will evolve in two directions. They will continue to produce, but less. And they will sell a service linked to the object they produce. They will also have to adapt to the development of open-source. Tractors and open-source cars are sold, i.e. made by people themselves [according to a design made available to all, not protected by patents]. The manufacturer will provide the spare parts or the necessary materials to small communities of individuals who make or maintain the objects they need in fablabs (see glossary). These movements will spread. Because environmental constraints, due to climate change and tensions over materials, on the one hand, and the emergence of small communities, on the other hand, will reinforce each other. Their interests converge. Will this economy of use not be disastrous for employment? No. Production jobs are already in sharp decline. On the other hand, this new model will require a lot of maintenance. In the case of tires, it takes many more hours to maintain them, i.e. to check their condition during the six to eight annual visits made to each fleet, then to regroove and retread them. Intuitively, we can think that more jobs will be created in maintenance than will be lost in production. The balance should therefore be positive. As for the shift towards production by small groups, the results are not clear. But we must see that this new form of self-organization gives a part of the population, in disarray, outside the job market, the possibility of taking back control of its existence, of giving it meaning, and makes it possible to prevent it from resorting to violence. Homo is more faber than sapiens.

## ###ARTICLE\_START### ID:2677

TRUST At the origin of all economic dynamism: trust, the key word in entrepreneurial management. It is a question, through transparency, of finding the right balance between social ties (trusting others) and freedom of individual initiative (self-confidence). COOPETITION Contraction of "cooperation" and "competition". It is better to cooperate than to waste time being wary and competing. Hence the term "coopetition", to define opportunistic collaboration between competitors. CRADLE TO CRADLE Key concept of eco-design and label, sometimes abbreviated to C2C (literally, "from the cradle to the cradle"). Four pillars underpin this approach: the transformation of waste into reusable materials, the use of renewable energies, the preference given to diversity, and the systematic search for "doing well" rather than "doing less badly". CROWDSOURCING Literally, "sourcing by the crowd". All you need to do is rely on the skills of citizen-experts, anywhere on the Web, to find new content and solve complex problems. COLLABORATIVE ECONOMY Economic model based on sharing (of goods, services, information), bartering. LATERAL ECONOMY It defines the decentralized industrial revolution, described by economist Jeremy Rifkin in The Third Industrial Revolution (Les liens qui libèrent, 2012). According to him, if people collaborate, it is mainly out of pure pragmatism, in order to carry out actions both faster and less expensively. ETHICS Within the framework of the principles of sustainable development, ethical codes or charters represent new duties that the social body of the company assigns to itself, beyond its strictly legal or economic obligations. FAB LABS Contraction of the English fabrication laboratory, "manufacturing laboratory". These object prototyping platforms, a kind of 3D photocopier, represent the ultimate in collaborative industry in the digital age. Any amateur can design, manufacture or repair a unique object: lamp, speaker, cake mold, etc. SOLIDARITY FINANCE Activity carried out by financing organizations with specific statuses that provide loans or capital investments to other structures of the solidarity economy (associations, cooperatives, etc.), or to people excluded from traditional banking and financial circuits. SUSTAINABLE MOBILITY As urbanization expands, travel intensifies. This is not without consequences. Sustainable mobility consists of promoting travel that consumes less energy, pollutes less, and avoids urban congestion. OPEN DATA The "fuel of the 21st century". This is how the pioneers of free software describe the free opening of data. More access to precise information (rates, budgets, contacts, networks, etc.) means more new services, therefore more innovation and contribution to growth. PEER-TO-PEER. Computer technology that allows entrepreneurial Internet users to communicate in a network, to be both servers and clients and to share multimedia content. VENTURE PHILANTHROPY Investment in companies with high growth potential, with a view to optimizing the social or charitable service provided, and not the profit.

## ###ARTICLE\_START### ID:2678

QMI AGENCY -- The Quebec government could save hundreds of millions if it decided to opt for free software, according to the Institut de recherche et d'informations socio-économies (IRIS) in Montreal. In an economic note published yesterday, IRIS states that the government is currently taking an ambiguous position regarding software whose user license allows its use without restrictions. Thus, while the Marois government decided to renew a decree allowing the government apparatus to purchase new proprietary software without a call for tenders, it was at the same time creating a Centre d'expertise en logiciellibre (CELL) to support public bodies in the use of such software, also called "open source." For IRIS, if the public authorities are "sometimes interested (in free software) in terms of discourse, they constantly postpone concrete adoption projects or relegate them to pilot projects." Difficult to assess However, although it is difficult to assess software expenditures for the public sector in Quebec, IRIS estimates the cost of migrating several hundred thousand workstations to a more recent version of Microsoft at nearly $1.4 billion, including $264.7 million or 19% devoted to purchasing licenses. Adopting free software would save this $264.7 million. "Assuming that the life cycle of a Microsoft product varies from five to ten years, we are then talking about a minimum expenditure of $26 to $52 million per year that could be avoided, and this, only at the provincial government level and only with regard to certain Microsoft products," writes associate researcher Stéphane Couture in his note, written in collaboration with researcher Simon Tremblay-Pepin. Bédard defends the government The Minister responsible for Government Administration and President of the Treasury Board, Stéphane Bédard, defends the government's record on free software. In addition to the creation of CELL, "the government announced a series of measures such as the development of flagship projects, the publication of open standards, the launch of a call for tenders for electronic mail and the evaluation of administrative mechanisms that hinder the use of free software," argued Mr. Bédard.

## ###ARTICLE\_START### ID:2679

Free and more economical. If the Quebec government had opted for free software during its most recent update of its computer systems, for which the contract was awarded by mutual agreement to the American multinational Microsoft, it could have made savings estimated at $265 million. In any case, this is what is indicated by a socio-economic note published Friday by the Institut de recherche et d'informations socio-économies (IRIS), which also invites Quebec to look more in the direction of "free" to reduce its expenses and ensure the "digital sovereignty" of the provincial administrative apparatus. To mark International Free Software Day, celebrated this morning all over the techno planet, the group of thinkers, radically on the left, calls for the demarginalization of free software, these applications whose license allows unrestricted use, unlike so-called proprietary solutions - such as those offered by Microsoft - which are accompanied by recurring costs and usage constraints. Free software, as evidenced by several adoptions around the world, leads to substantial reductions in public spending. $265 million in savings IRIS cites as proof the recent renewal of the computer systems of 738,000 public service workstations. The education and health sectors were also included. All for a total bill of $1.4 billion paid mainly to companies specializing in proprietary software, such as Microsoft. "If it had opted for free software," Quebec would have opted for a lower bill of $265 million, "or 19% of the total amount" directly linked to the payment of licenses, indicated Stéphane Couture, researcher at IRIS and author of the note. "This is a very conservative assessment, by the way, because in Finland, a transition to free software [at the Ministry of Justice] allowed savings of more than 70% compared to the cost of proprietary software." In its analysis, which acknowledges its own weaknesses - the government's lack of information on the subject and the lack of large and comparative studies of the costs of free versus proprietary software - IRIS nevertheless points out that 26 Quebec ministries and agencies had software expenditures totaling $14.3 billion in 2012 and 2013. However, based on a feasibility study commissioned in 2008 by the City of Quebec, simply switching from a proprietary office suite like Office to a free version would allow a public body to reduce its software expenditures by 44%, taking into account equipment and workforce training. Applied to the government's total software spending, this mathematical rule could result in a theoretical saving of $6.2 billion in public funds. Technological dependence "Proprietary software contributes to perpetuating the government's technological dependence," continues Mr. Couture. Governments that choose free software contribute to the digital sovereignty of public institutions by breaking the cycle of dependence on proprietary technologies developed abroad and whose specifications remain opaque to the public interest." Last April, Quebec committed to making more room for free software in its IT ecosystem. A pilot project is currently underway at the Ministry of Immigration, where 40 workstations have been upgraded to free software, representing 0.005% of the workstations recently placed under Microsoft's control for the next five years. In the process, the government, while having created a Centre of Expertise in Free Software that aims to facilitate the integration of this type of software into the government apparatus, launched a consultation this fall to identify "the obstacles" to the use of free software in public administration. On Friday, through the voice of its Minister responsible for Government Administration, Stéphane Bédard, Québec gave a positive assessment of its slow appropriation of free software.

## ###ARTICLE\_START### ID:2680

On the eve of International Free Software Day, while Minister Stéphane Bédard is giving an initial positive assessment of the measures announced by the government to increase the use of free software in public bodies, a note from the Institut de recherche et d’informations socio-économies (IRIS) highlights that in addition to making significant savings, the government could reduce its digital dependence on large IT companies if it adopted free software. "In 2012, the government chose to renew a series of over-the-counter licenses, for a total cost estimated at $1.4 billion. If it had instead opted for free software, it could have made savings of at least 19%, or $265 million. This is a very conservative assessment, because in Finland, a transition to free software resulted in savings of more than 70% compared to the cost of proprietary software," emphasizes Stéphane Couture, associate researcher at IRIS and author of the note. The note also highlights the Quebec government's lack of transparency on the issue of its software purchases. For the author, the government should take this turn, because "proprietary software contributes to perpetuating the government's technological dependence." In his opinion, "the use of free software would break the cycle of dependence on proprietary technologies, often developed abroad and whose specifications remain opaque to the general public. This would also help to boost the IT sector in Quebec and recreate internal government expertise in this area." Cutting-edge expertise But on the government side, Minister Bédard maintains that the measures adopted six months ago are producing results. "We are already able to offer public bodies cutting-edge expertise to take full advantage of the benefits of free software. Other actions will follow to allow them to explore all possible options to make the best choices at the best cost," Mr. Bédard stressed. The government has announced eight measures, including the establishment of the Centre d'expertise en logiciellibre (CELL). According to the press release from the minister's office, since April 2, "departments and organizations can count on the experience and diverse expertise of 20 developers and specialists who have the mandate to support and advise them in their exploration or use of free software." The IRIS socio-economic note can be found at this address: tinyurl.com/myrenej

## ###ARTICLE\_START### ID:2681

The Bibliothèque de Québec and the LinuQ association of Québec are holding a Free Software Day on Saturday, September 21, at the Gabrielle-Roy Library. This day is an annual global event where the general public is invited to discover the world of free software. There will be several conferences and workshops during the day, notably on Linux and Open Office. For details and schedule: tinyurl.com/q7vkkc4

## ###ARTICLE\_START### ID:2682

SAN FRANCISCO - SAN FRANCISCO -- In search of contacts, Mayor Labeaume and the delegation of Quebec technology entrepreneurs on a mission to Silicon Valley visited a number of accelerator companies yesterday, in addition to stopping at Twitter. The mayor of Quebec City first stopped at San Francisco City Hall, where he was received by his counterpart, Ed Lee. The two elected officials found several things in common to initiate their friendship. They first discussed their employees' pension plans. In San Francisco, the problem of pension plan deficits was resolved two years ago, said Régis Labeaume. "Palo Alto is in the process of resolving it too, everyone is on it," said Mr. Labeaume. Mayor Lee is also passionate about major events. "He invests a lot in culture," noted Mr. Labeaume. While Quebec City is hoping for the big ships in 2017, San Francisco will be hosting the prestigious America's Cup this year. Investing in entrepreneurship With an unemployment rate of 5.9%, 1% higher than Quebec City, San Francisco is looking to attract new workers. "We have the same problem," noted Mayor Labeaume. "They want to invest in entrepreneurship, that's what we're doing." The technology business incubator project in Quebec City quickly became the focus of discussions. The delegation was treated to a quick tour of Twitter's headquarters, taking a souvenir photo on the roof of the new headquarters, with Sylvain Carle, a Quebecer who has been working there for over a year. He spontaneously offered some advice to entrepreneurs who want to see the business accelerator project come to fruition in Quebec City. “For this to work, each city really has to find its identity, its essence, what it is, but that’s a process that’s hard to accelerate,” explained Mr. Carle. While the mayor took the road to San Jose for a private meeting, the delegation visited other technology incubators in San Francisco. After RocketSpace, which collaborates with prestigious brands like GM and Lego, the group stopped at Matters, a new media accelerator tucked away in a space hidden behind a garage door, where Post-it notes and shared workspaces reign. Agreement The day ended at Industrial Light & Magic -ILM, a company of the Lucasfilm group. In the evening, the mayor highlighted the signing of a memorandum of understanding between Le Cercle de Québec and the IFOSSF (International Free and OpenSource Solutions Foundation). TODAY 7:45 a.m. Lunch with local media 9:30 a.m. Visit to the Google campus in Mountain View Visit to the Samsung accelerator by part of the delegation 11:15 a.m. Visit to the 500 Startups accelerator 12:15 p.m. Visit to the Plug & Play Center PM accelerator Series of private meetings for the mayor Return to Palo Alto 5 to 7 with Quebec workers from Silicon Valley

## ###ARTICLE\_START### ID:2683

Parisian urban artist Invader is probably one of the first to have extracted an element from a video game to disseminate it in public spaces. His small tiled vessels in the image of the legendary video game Space Invaders (1978) proliferate on street corners, under bridges and on sidewalks, from Paris to New York, from Kathmandu to São Paulo. On August 20, 2012, he even sent one of his mosaic creatures into the stratosphere, attached to a balloon. "My whole program can be summed up in these two words: invaders of space or of space," explained to Libération the artist born in 1969, who claims to be a "child of the computer" rather than of television. His vessels reproduce the aesthetic of aliens in large pixels inspired by the Japanese shooting game Taito, one of the first hits on arcade machines. But unlike their electronic counterparts, Invader's are made of basic materials, pre-assembled bathroom mosaics ready to be stuck with homemade glue. Futuristic objects made using an archaic technique, like a snub to technology and speed. The younger generation has always been immersed in the technological cauldron and the Web is its second home. Online and offline practices now tend to converge, to respond to or complement each other, as the Internet leaves the screen for the cloud and the city itself becomes the interface. Street art shares a number of common points with the countercultures of the Net: claiming public space, criticizing its privatization, practice on the border of legality, rejection of copyright, free, anonymity, ease of creation and sharing. From graffiti to “GIF-iti” For urban artists, the Web has become a permanent showroom, allowing them to exhibit their ephemeral feats of arms to a global audience, to the point that the electronic trace is becoming as important as in situ graffiti. Faced with this somewhat depressing observation, Insa, a London graffiti artist, has radicalized the trend by inventing a graffiti made to be seen exclusively on the Web in the form of an animated GIF. He calls it “GIF-iti”, a contraction of GIF - a favorite format of digital folklore - and graffiti. Following in the footsteps of Blu (the Italian graffiti artist who created sumptuous animations patiently painted on city walls), Insa paints and repaints facades with slight modifications. Then photographs them, frame by frame, before making an animated loop that he posts on his site. He spent a week sweating under the Los Angeles sun to repaint a building from top to bottom several times in a row. A titanic work that systematically ends up as a 600-pixel wide animated GIF. This was the case for one of his recent projects, in collaboration with Stanley Donwood, author of the cover of Atoms for Peace (Thom Yorke's new band). Insa animates the black and white scenes depicting the destruction of Hollywood under a meteor shower on the facades of XL Recordings in Los Angeles. The gigantic murals only come to life when they are put online. An effort that seems disproportionate, but "the work will be seen by hundreds of thousands of Internet users, and not just the few thousand walkers who walk along the wall before it is repainted," he says in an interview with the blog The Creators Project. For the British artist, who did graffiti before the Banksy era, it is also a way of protesting against the commodification of street art that has migrated from the leprous walls of the city to the immaculate ones of galleries. "Graffiti was a free art form that anyone could enjoy, but it has been transformed into a commodity, sold to the highest bidder. My GIF-itis cannot be hung on a gallery wall. Once downloaded, they are free to travel and be seen by the greatest number of people." Other artists are doing the same kind of hybridization, but in reverse this time, pouring the Web into the street. They download the online to the offline, recoding digital universes in hard copy. In New York, Jilly Ballistic puts computer error messages on advertisements to ridicule them. Mathieu Tremblin, a French urban artist, plays with the analogy between physical tags, these signatures scribbled on walls, and virtual tags, these keywords associated with images, and replaces anonymous calligraphy with clouds of keywords ("Tag Clouds"). Or declines the principle of the hyperlink in "Hypertag", a tag that leads to another that leads to another, etc., transposing the serendipity (1) of the Net into its urban equivalent, the drift. As for the Berliner Aram Bartholl (2), in Are You Human, he disseminates among the tags of the city Captchas, these sequences of random letters and numbers generated automatically and difficult to decipher, used on the Web to verify that you are a human and not an automatic script. Like Captchas, tags are a form of coded language, understandable only by the initiated. Coming from digital arts, Bartholl works to rematerialize bits into atoms, for example by migrating familiar signs of the Web into the physical space of cities, such as planting the giant marker of Google Maps in their center. A way of questioning the friction between digital information space and public space, at a time when the perception of the city is increasingly influenced by geolocation services. The city itself is now covered in multiple layers of invisible information that we connect to via our smartphone. Anyone can, using a suitable application, “tag” comments on a restaurant, pin a word to the place of a first kiss, a souvenir photo or a video... As early as the 19th century, hobos, migrant workers in the United States, left messages drawn in chalk or charcoal on the pavement, intended for those who would follow in their footsteps. They had developed their own coded hieroglyphs, to indicate a nice lady, a mean dog or an unsafe place. The digital artist Golan Levin has updated this signage for the era of nomadism 2.0 by developing a series of stencils for drawing QR codes (2D barcodes) indicating all sorts of practical information that can be deciphered using any mobile phone: an unpleasant owner, surveillance cameras or even a good coffee. The works of Berliner Sweza are also hidden behind QR codes. With him, street art becomes interactive and requires a smartphone to play. Such is the case with his graffiti cemetery, Graffyard. Sweza photographs them before they disappear, then sticks a QR code on the exact spot where they were so that the walker who flashes the code can see the graffiti erased, like a journey through time. These codes, which are supposed to provide additional information to consumers, abound on the advertisements that Sweza enjoys hacking, substituting his own humorous codes for commercial codes. Interested in these abstract signs that allow virtual and real spaces to be linked, he has also integrated them into another symbol of hip-hop culture, the ghetto-blaster ("QRadio"), where the QR code refers to a cassette playing his playlist. A virtual goddess of democracy in Tiananmen Square But these QR codes are already a little old school compared to augmented reality, which is completely invisible to the naked eye. Unless you have Google Glasses or, failing that, a geolocated smartphone with a specific application (like Layar), it is impossible to read this subliminal data placed in your perimeter, superimposed on the physical space. An international collective of artists, Manifest.AR, has chosen to occupy this in-between, this "substratosphere" between online and offline as it calls it, placing ghostly images or deploying imaginary architectures on the real world. These "space taggers" have thus installed on Tiananmen Square a virtual version of the statue of the goddess of democracy erected by the revolting students in 1989. The statue of democracy has also been installed on Tahrir Square in Cairo. In Paris, John Craig Freeman has piled up barrels of toxic waste near Beaubourg, the Eiffel Tower and the Louvre, dumping his landfill in countries fueled by atoms. In Lausanne, Lalie. S. Pascual has installed a ghost subway station that allows you to teleport to another city, and Mark Swarek has invited people to an “augmented occupation” of New York’s financial district. These actions are technically limited to static images that align with the urban topography, not exactly the stuff of rousing crowds. But the medium offers, according to their promoters, new ways to infest and reshape the reality around us. “AR [augmented reality] art defies gravity, it is hidden and must be found. It is unstable and inconstant. It is and becomes real and immaterial,” the artists write in their manifesto. In the same way that graffiti aims to change our jaded view of the urban environment, these interventions are a way of “Reclaiming the Streets” of cities, but also of “Reclaiming the Screens.” Public space is covered with digital advertising screens, and it is becoming difficult to compete with these illuminated signs. In this David versus Goliath fight, the VR/Urban collective is sharpening its weapons with its “SMSlingshot”, a slingshot that can splash the walls of the city with text messages. Messages can be typed on the mini-keyboard that equips the wooden slingshot. Once the message is written, all you have to do is aim it at the place where you want to send it, pull hard on the elastic and the text will appear in a colored spot. A weapon that they have put in the hands of passers-by, especially those in Tahrir Square. The ephemeral splashes of light, like the augmented reality tags, do not dirty the walls, and are therefore easier to accept than the paint vomit, which reduces the radicalism conveyed by this rebellious gesture. Nevertheless, the figures of the writer and the hacker, the vandal and the pirate, the urban artist and the Network activist tend to converge. As in the Graffiti Research Lab, founded in New York in 2005 by artists James Powderly and Evan Roth, the latter now living in Paris. Wearing a hooded sweater, closely cropped red hair and a face riddled with freckles, Roth, 35, is not a spray can pro, as he readily admits, but rather a keyboard pro. After studying architecture, followed by a thesis on "Graffiti and Technology" at Parsons, the New York school of design, he launched the Graffiti Research Lab, which will renew this urban art by hybridizing it with technologies "to make graffiti ever higher, ever bigger." Among his inventions are Throwies, LED lights coupled with magnets and batteries, which are thrown and stuck to street furniture, or Laser Tag, which allows monumental laser graffiti in public spaces. "What I like best about graffiti is tagging. It's the purest form of graffiti, the most abundant, but also the most unloved," says the American hacker artist who is passionate about these calligraphies, express signatures scribbled on walls. And more precisely for what we don't see, that is to say the furtive gesture of the tagger that he has decided to capture. Evan Roth developed the first version of "Graffiti Analysis", his movement analyzer, in 2004. He spots familiar tags on his journeys and asks graffiti artists to reproduce their signature with a marker topped with a light, tracked by a camera. A software of his own design retrieves, analyzes and records the movement data, archived in a free database open to all. Graffiti artists are invited to share their manual style, which several stars such as Seen, Twist, Amaze and JonOne have already done. During events or guerrilla operations with generators and projectors, these giant luminous tags are written on the walls surrounded by a cloud of particles that pulse according to the surrounding sounds and the architecture of the facades. Warhol's prophecy In a guide to help people create their own Graffiti Research Lab, whose concept has spread since there are now cells in São Paulo, Vienna and Paris (3), Roth, who has since disengaged from it, invites hackers and taggers to unite. "The streets and the Internet are full of opportunities for ordinary people to alter the course of dominant systems. Hackers built the Internet by sharing ideas, and writers hacked a billion-dollar transportation system to get their art around town for free." Creative disobedience, open source, and knowledge sharing are invoked, which he sums up in the phrase: "No patents, no copyrights, no ownership... Just fame." In 1986, when asked about the role that computers could play as an artistic tool by Amiga World magazine, Andy Warhol, who had already prophesied that everyone would have their fifteen minutes of fame (a commonplace in the age of YouTube and social media), declared: "When the machine is fast enough, the graffiti kids will definitely take it over." The links between geek culture and graffiti actually go back much further. The first "digital graffiti" can be found on pirated video game disks. In the early 80s, cracking groups appeared, competing to see who could pirate and circulate new video games the fastest. Those who had broken the locks preceded the game with a small introduction where their nickname was displayed, called cracktro or crack intro, to mark their feat. Just like the tagger who signs his name in inaccessible places to impress the gallery, the cracktro had to have allure to impress the players, but also the peers. The simple names of the beginning became increasingly complex animations, digital graffiti left inside the traffic of electronic products. These feats of coder, constantly pushing the limits of the machine, ended up becoming an art in themselves: the demos. Graffiti has developed in a similar way, from tagging (where the artist's name becomes a logo that colonizes the city) to artistic calligraphy, 3D frescoes, to contemporary electronic graffiti, where digital and street arts intertwine, like Antonin Fourneau's Water Light Graffiti, a wall studded with LEDs on which people paint with water bombs. One may nevertheless wonder whether electrograffiti retains the subversive power of its illustrious predecessor, itself largely recovered by advertising and tainted by its compromise with the market. "When you don't damage anything, you interest a much wider audience. You manage to capture the attention of people who are against vandalism. [...] Our job is to make tools that will allow citizens to have a voice in the face of advertisers," says Roth, who is currently showing his work at the Parsons School gallery in Paris, which has just opened its doors (4). A member of the French branch of the Graffiti Research Lab, Benjamin Gaulon is also one of these "tinkerers" who electrify urban art. Among his creations, the PrintBall, a graffiti robot armed with a paintball gun that machine-guns the dripping letters on the walls, or a giant Pong projected onto facades and whose balls ricochet off the roughness of the architecture. Gaulon passes on his expertise during workshops where people learn to solder LSD (Light to Sound Device) components. This sound graffiti, a strident electronic cricket stuck on illuminated signs, transforms light into sound and ubiquitous advertising screens into a noisy symphony. During the Mal au Pixel festival in November 2012 in Paris, Gaulon, armed with a video receiver like a modern-day dowser, tried to intercept images from wireless surveillance cameras (2.4 GHz), a cheap electronic product used by shops or individuals. A snowy image appears on the monitor, which becomes clearer as it gets closer to the signal: an apartment interior with men ironing. Further on, a deserted corridor appears... Through this little game of wall-crawling, consisting of watching what the cameras are watching, Gaulon tries to raise public awareness by organizing walks in search of these signals. "Most people who use them think they are securing their home, they don't realize that they are broadcasting their signal into the street. Anyone outside can receive it. It's not very different from Facebook, where people reveal their lives online." Gaulon maps their locations, he makes boxes, which he fixes in the street to reveal the presence of these cameras and expose the views to the public. USB sticks cemented into the walls Camera, geolocation, sensors, facial recognition... The passerby becomes as traceable in the city as on the Web. The last bastion of freedom, the Web is like cities in the process of privatization and under heavy surveillance. In response, Aram Bartholl designed the "Dead Drops" project, a peer-to-peer file-sharing network, but instead of being deployed online, it manifests itself in hard public spaces in the form of USB sticks cemented into the walls where anyone can deposit or download files completely anonymously, simply by plugging in their laptop. Since then, Dead Drops have sprouted up in the walls of cities around the world, spreading like a weed. In Toulouse, the collective La Moustacherie used the device to organize a street exhibition. With "Street Ghosts", Paolo Cirio worries about the dataization of the world by Google, in particular through its panoptic mapping service Street View. The Italian hacker chose 80 silhouettes from around the world, at random from Google Street View, to make life-size replicas on posters that he sticks on the walls of cities at the exact place where the lens of the Google car captured them, ghostly silhouettes questioning the boundary between private and public and the abusive appropriation of private information by the Internet behemoths, the four knights of the infocalypse, Apple, Google, Facebook and Amazon. "Being on Street View is much worse than being on a poster in the street, which is not permanent and can always be removed," says the artist. "While our ghosts will forever haunt the servers of Facebook, Google or Twitter, all the information we leave on the Net is stored and commercialized." By extracting these silhouettes and devirtualizing them, he puts these disturbing questions back in the public square. "The notion of what is public has changed a lot, people are no longer so concerned with physical space. Everyone has their eyes fixed on their smartphone screens when they walk in the streets," Paolo Cirio told Libération. My project has become popular and provocative, not because I put these images in the streets, where they are barely noticed, but because the images of public interventions have been reposted online." (1) Serendipity is "the art of finding what you are not looking for by looking for what you cannot find." (2) Aram Bartholl is currently exhibiting in Germany. “Hello World!”, until October 10. Kasseler Kunstverein, Kassel. Info.: http://www.kasselerkunstverein.de/ (3) GRL France conference at the Gaîté Lyrique, September 24 at 7:30 p.m., to discover graffiti printers. (4) “Evan Roth: New York to Paris,” until September 27, Galerie Parsons in Paris, 45, rue Saint-Roch (75001). Info.: http://paris.parsons.edu/