eSIM takes off

In 2020 e-sim technology will become common in both consumer electronics and company related IoT. Users will be able to activate and change subscriptions without having to wait for a new sim-card to arrive by mail or go to a store to pick it up. While digital distribution of mobile subscriptions is available today, the commercial introduction of e-sim will start to speed up the transition from physical to digital retail, and we can expect to see a number of new eSIM services and apps launch in the market in the coming year.

Charge rage

There is no escaping the place of the electric car. And in 2020, almost every large car manufacturer will enter the market with larger family cars built for longer distances. It's not enough anymore to offer the sideshow of a city car. With a host of new cars in a range of sizes, models and charging capacities, prices will drop, and consumers will respond well. Because of this, 2020 will also mark the first backlash against electrical cars as governments are reducing incentives to protect their revenues and as charge station demand outweighs supply.

Sleep tech

How'd you sleep? The question is as commonplace as "How are you doing?" And though every decent fitness tracker has sleep monitoring, sleep isn't something most of us really analyse beyond when and how long we've slept – and the accuracy and quality of current sleep tracking tools still varies greatly. In 2020, we will begin to see a new generation of fitness devices that measure not only pulse and movement, but also blood oxygen levels and maybe even brain activity. With newfound capabilities, we expect watches to do for sleep apnea what they did last year for heart arrhythmia. Sleep tech won't be perfect, but it will make a difference in our ability to measure, monitor and optimise our sleep. Could 2020 be the first year we see consumer devices approach medical-grade accuracy? Let's sleep on it.

Clash of the streaming giants

Once upon a time, broadcast TV shows like "Friends" dominated our social routines and water cooler chats around the world. Since then, HBO and Netflix have moved into our living rooms, supplementing the still-robust broadcast and cable offerings. They're now followed closely by the new AppleTV+ and Disney+ platforms and probably others soon, all of whom are offering content featuring our favorite stars, powered by cinematic production budgets, and distributed on native interfaces and owned devices. 2020 will bring us a battle of these streaming giants – and with it, more and better content than ever.

Gaming gold rush

For gamers, 2020 is going to be a great year. Apple has already launched its Arcade, and Google wasn't far behind with Stadia, both representing a renewal of the gaming industry. Apple Arcade gives subscribers access to all their exclusive offerings for download and offline play. Google Stadia is based on streaming and replaces local computational power with cloud computation. 2020 will see them both broaden the footprint of gaming, but also offer Microsoft (X-Box) and Sony (Playstation) new, tough competition. Expect to see multiple industries (including telecommunications) make aggressive plays to take pieces of the lucrative gaming pie in the year ahead.

DIY AI

AI is in high demand but is being held back by a significant shortage in AI talents and skills to build and train modern AI for production. AI platforms with automated Machine Learning features will become more and more popular as they provide convenient user-interfaces that make AI available to non-experts. This will help more people and organisations develop their own AI technology. The promise is that general business users will be able to make use of AI without assistance from experts, but rather, from AI that trains itself.

Deepfake for the masses

While the use of new AI methods such as Generative Adversarial Networks (GANs) has caught attention through deep fakes, use of similar technologies in creating digital content and fun apps is increasing in sophistication and popularity. In 2020, AI-powered filters will no longer be enough, and the use of AI-generated content for video creation will fuel new must-have apps. A similar development goes into smartphone photography where AI used for computational photography will bring digital content to a new level, e.g. by stacking several pictures together to create a picture that isn't possible to be captured in one shot.

Bringing Big Tech down to size

The power and influence of 'Big Tech' will reach a tipping point in 2020. It is becoming apparent that a few global online companies are controlling information, disrupting job markets, and eating an increasingly large chunk of the global economy. This position gives them close to unrivaled market power on precious data needed to develop powerful AI algorithms for our automated future. We will see a stronger push for regulations from governments and consumers. This could include taxation, data privacy and security, restrictions on political advertising and possibly company break-ups.

Ethical AI gets in gear

The ethical AI movement is now in full swing among political, business and research elites, primarily in Europe but also in other parts of the world. Technology companies will experience a push from regulators, investors, their own employees and society at large to develop and commercialize AI that prevents harm and advances humanity, increases

societal and environmental well-being and respects human rights. 2020 will bring concrete policy actions in this area and real efforts from companies to connect AI ethics to value creation. AI governance frameworks will become a new normal in the tech industry, including but not limited to voluntary ethical codes, ethics-by-design principles in software development, new governance structures and employee training programs.

Digital Twinning is digital winning

Digital twins will go mainstream in 2020, as they become common collaborative tools for planning, developing, operating and maintaining assets and infrastructure. A digital twin is a replica of a particular physical entity such as a car, building, road, or city. The twin is continuously updated with real-time data, and relies on widespread adoption of sensors and other software tools. Artificial Intelligence (AI) and Machine Learning (ML) are then used to predict conditions and prescribe action that can be taken on the physical twin (e.g. the real road, the real building, etc.).

Fight phone scams with Machine Learning

Phone scams are on the rise in 2020. It could be a Wangiri call, or “one ring” call, which just rings once and drops, leaving a missed call from an international or unusual number. Users may be tempted to call this number back (at a premium price) and be forced to pay huge fees. People may also receive robo-calls saying that their bank account has been blocked and they need to call a scam number to reactivate it. To protect their customers, mobile operators are putting a deal of work into detecting and blocking these scams. In 2020, Machine Learning techniques will be an efficient tool for operators to prevent these phone scams and protect their customers.

The gig’s up: Labour rights for Gig Economy workers

The Internet created a platform for companies like Uber, Lyft, AirBnB and Foodora to create a new kind of economy. The Gig Economy, as it is sometimes dubbed, has also created labour relations issues, as most of these internet companies do not offer a full employee contract to their deliverers and drivers, the backbone of their operations. They are brought on as contractors to provide labour and capital, but share next to none of the gains and fall outside many of the employment safety nets. They’re already starting to demand their fair share. We expect this tension to make more news around the world in the year to come.

“Second-hand” is the new “smart”

More people will become increasingly tuned into the runaway cost of new high-end smartphones and the climate impact of making a new one. Extracting precious metals to make the phones has a significant carbon footprint. Though there isn’t a lot of data on the environmental impact of smartphone production, the UN claims that 80 percent of a

smartphone’s carbon footprint comes from manufacturing, around four percent from transportation, and 16 percent from a lifetime of use. For climate conscious people, keeping the smartphone you have - or even buying a slightly used one – will be increasingly attractive in 2020.

2020 takes us to the stars

Since the 1960s race, space has only been accessible using expensive, non-reusable rockets. Now, however, the industry is booming with optimism, as companies like SpaceX have slashed costs by pioneering reusable rockets. Less expensive access to the stars and the continued march of Moore’s Law making electronics smaller and less energy-hungry will enable new innovations, including commercial travel to space stations and the moon, and a planned release in 2020 of space-based broadband to unconnected areas. The development brings both huge opportunities and significant regulatory and commercial challenges. As space becomes ever more accessible, its role in connecting us will grow in importance.