

Web3: Hype or game-changer?

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May 22, 2023



Resilient supply chains, more inclusive and less risk-prone financial ecosystems, data ownership – these are just some of the potential benefits of the emerging incarnation of the Internet, Web 3.0. Coined by Polkadot founder and Ethereum co-founder Gavin Wood in 2014, the term refers to a decentralized online ecosystem based on blockchain. In other words, Web3 could move us beyond the Web2 world in which a handful of centralized tech giants capture and monetize user data, offering nothing more than convenience in exchange for the digital gold they are mining. So, if the promised benefits are so clear and so attractive, why has Web3 remained a much-hyped vision for almost a decade? For one reason: the interests of individual actors and those of the global community are insufficiently aligned. But that can change.

It's no coincidence that senior EU policymakers are increasingly interested in Web3 and its potential, as is reflected in the lineup of participants in the [European Web3 Summit](#) in Brussels, May 23 And 24. By concentrating on down-to-earth Web3 use cases, we can advance to the next level of inclusion and interconnectedness. The emerging paradigm could at last make Marshall McLuhan's vision of a global-village reality.

At time of writing, G7 leaders are meeting in Japan. One of the issues on the agenda is how to foster greater robustness and resilience in global supply chains. Part of this discussion concerns over dependence on China, which the pandemic painfully exposed as a systemic source of fragility. Which is not per se a criticism of China: one-sided supply dependencies are always risk-prone, regardless of the counterparty. While it is currently not clear whether the G7 nations will come to any conclusion on supply-chain reform during the gathering, the dilemma they face can be identified: global just-in-time (JIT) supply chains are cost-effective and efficient, but break down at the lightest hiccup; stockpiling essential goods, as e.g. the US military does with fuel, ammunition, spare parts and other matériel, is prohibitively costly.

Web3 for supply chains

Can Web3 provide a solution that squares the circle and delivers supply chain security without the unsustainable cost? A [2021 study](#) by The Digital Economist in conjunction with University College London suggests that the answer is yes. In a real-life use case cited in the paper, the convergence of distributed ledger technology (DLT) e.g. blockchain, artificial intelligence (AI), machine learning (ML) and radio-frequency identification (RFID) in a holistic Internet of Things (IoT) ecosystem achieved convincing results. RFID, which may not be as familiar as the other terms, is a technology developed during World War II to positively identify friendly aircraft. RFID transponders send out a digital fingerprint via radio waves. It's widely used in supply chains. See [The Antifragility Effect: Deploying Emerging Tech in Medical Device Supply Networks to Rebuild Better](#).

In the pilot project, most manual tasks were eliminated, reducing human error from 60 percent to 2–5 percent. Instead of 32 individual steps, each order now requires eight, which are digitalized and demand very little manual effort. In addition, the project reduced the time between consumption of an item and replenishment from nearly a week down to an average of 36 hours. This use case deployed an enterprise blockchain solution. A pan-European Web3 supply chain architecture would open up possibilities for supply-chain transparency and security on an entirely new scale.

Financial infrastructure

The recent shocks of California's Silicon Valley Bank insolvency and the subsequent Credit Suisse meltdown expose the inherent fragility of the international financial infrastructure, despite its safeguards. Why were regulatory bodies blindsided by the bank's failure? Lack of up-to-date data. The retrospective nature of regulatory sight and intervention runs contrary to what's needed for effective risk assessment, management and mitigation. All this has led to a fragile interdependent system susceptible to cascading systemic crises.

A Web3-based solution that makes (near) real-time data available and supports standardized and low-cost straight-through processing (STP) of securities issuance including ESG standards would level the playing field while limiting and mitigating the impact of future shocks on all stakeholders. As we can observe in weather forecasts (to date, the most accurate sphere of prediction in the history of humankind – think about that the next time the weather forecast is wrong and an economic pundit claims his or her forecast will be right!), the combination of real-time data and retrospective knowledge can offer extremely valuable insights. See [Capital for the Common Good](#).



Energy transition

The urgency to reduce CO₂ emissions and the painfully acute need for energy independence in Europe expose a number of systemic flaws in our energy infrastructures. While there is currently no single silver bullet to achieve a low-emission, autonomous energy economy, solutions that enhance efficiency and reliability of renewable sources are an essential piece of the puzzle. In a joint research project conducted by The Digital Economist and IBM, we propose a blockchain-based system of programmable energy, in which producers/consumers (prosumers) are automatically compensated in real time for the energy they feed into the grid. In a Web3 paradigm, such a solution can be brought to scale across Europe, linking geographies that receive above-average hours of sunshine and/or wind with those unable to cover their needs at a given time. See [The Power of the Many](#).

Decentralized governance: What's in it for me?

At their core, these initiatives all address the economic phenomenon termed “tragedy of the commons,” coined by ecologist Garrett Hardin published in his 1968 essay of that name. He stated that commonly used land (the “commons” in Britain) will be misused and neglected unless its capacity is far beyond the needs of its users. People and organizations will always follow their best interests. This is a central tenet of economics and, in and of itself, nothing wrong – provided certain guardrails are in place.

Elinor Ostrom, who received a Nobel Prize in Economics Science in 2009, showed how small communities can share and maintain common resources without a central governing body. Decentralized governance works if – and only if – all players see greater individual profit in caring for the commons than in simply exploiting it with an attitude of “Après moi le deluge.”

To make this unsustainable stance obsolete, we must reach a critical mass of online service providers that offer users tangible compensation in form of tokens. Mainstream tokenization has the potential to usher in a human-centered digital economy and a new social contract. Only then will exploitative business models become unviable, as users will naturally gravitate toward a good deal. Maintaining a sustainable commons of Web3 users/contributors supported by all stakeholders then becomes a common (self-) interest. See [Centering in on Decentralized Governance](#).

A European angle

Many tech advances are driven by the US and Asian players. That's fine. But Europe has its own needs and interests, which is one reason why events like the European Web3 Summit, bringing together policymakers, innovators and independent analysts, are so important. As Western Europe seeks to decarbonize and de-risk, while at the same time preparing for the massive task of rebuilding post-war Ukraine and integrating a wounded nation into its fold, we will continue to face daunting challenges. We must – and will – overcome them, and Web3 can play an important role.

Stay tuned, Moore to come

According to Moore's Law, data processing power doubles about every two years. As Web3 and Metaverse evolve, we will see many different models emerge. Some will move the ball forward, some won't. In any case, there's no turning back. But overcoming the exploitative data regime of Web 1.0 and Web 2.0 will require a concerted public- and private-sector effort.

About

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