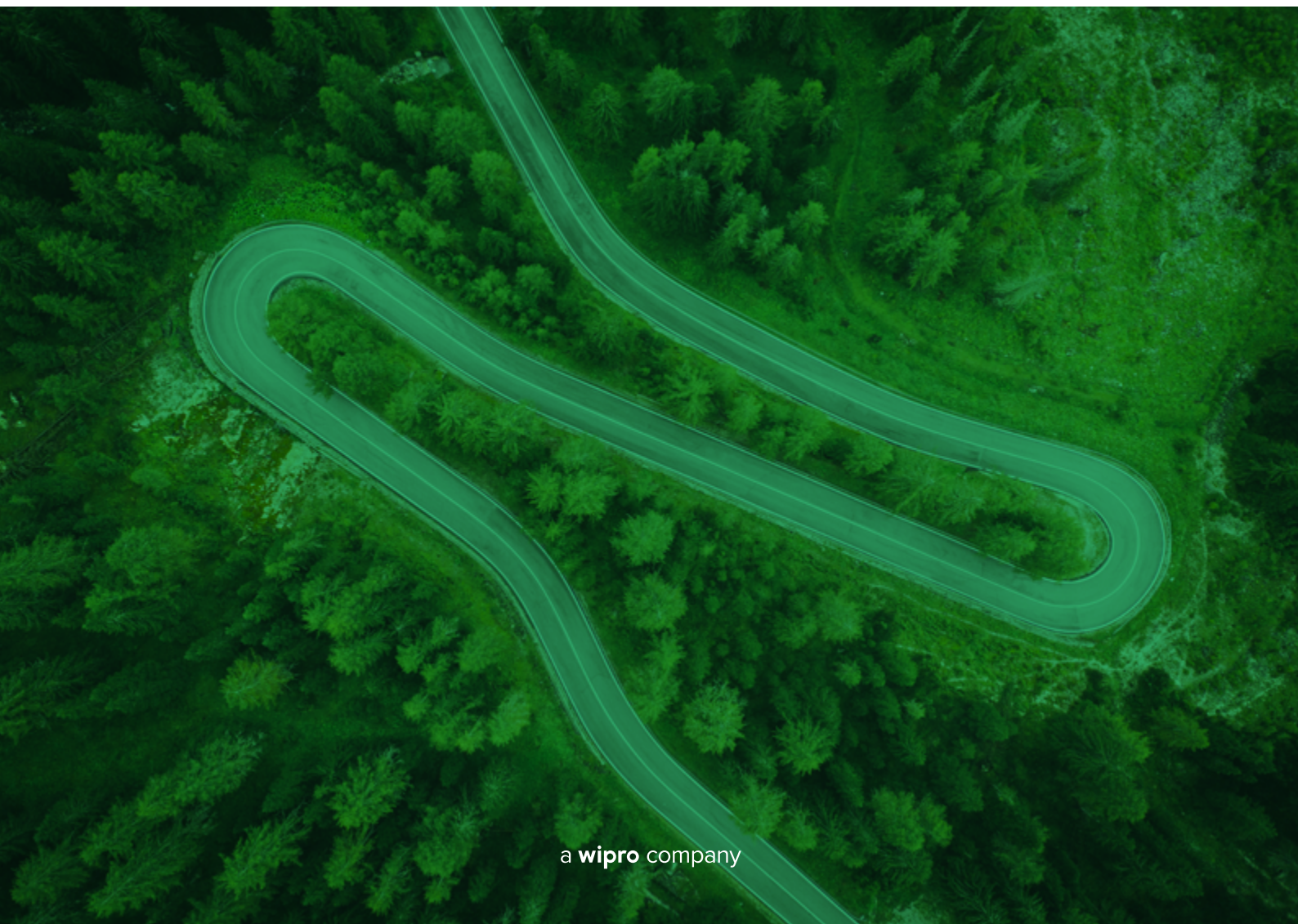


# CAPCO

## RECONCILING ESG COMMITMENTS AND DIGITAL ASSET AMBITIONS

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# INTRODUCTION

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## **In this paper we explore the intersection of the fast-evolving digital assets space and banks with financial institutions' emerging ESG obligations.**

The past two years have seen a radical shift in institutions' attitudes to – and adoption of – digital assets, which have come a long way since 2017 when Goldman Sachs' new digital currency trading desk failed to gain traction and JPMorgan chief executive Jamie Dimon described bitcoin as a “fraud”<sup>1</sup>.

The digital asset space is becoming increasingly crowded: JPMorgan recently launched an in-house bitcoin fund for private bank clients<sup>2</sup>; Goldman Sachs has teamed up with Galaxy Digital to provide bitcoin futures trading<sup>3</sup>; and others, including BlackRock and BNY Mellon, have announced their own plans to embrace this new asset class. Retail and institutional clients are more and more demanding access to such new products, while competition from fintech and neobanks is constantly growing. Younger mobile-first generation were swift to embrace cryptocurrencies and digital wallets may become an important customer loyalty consideration in the future.

The expansion of the global cryptocurrency market has been dramatic. Valued at USD 1,782 billion in 2021, the market is expected to hit US\$ 32,420 billion by 2027, a CAGR of 58.4% during 2022-2027<sup>4</sup>. This has been fueled by astonishing organic adoption: crypto exchange Binance last year put the number of users at 300 million<sup>5</sup>.

At the same time, this digital asset revolution looks to be set on a collision course with another dominant current market dynamic: the ever-fiercer focus by governments, regulators, industry, investors and consumers on Environmental, Social and Governance (ESG) considerations. Moving forward, alignment and compliance with emerging ESG standards will be a critical differentiator for long-term business success across financial, energy and manufacturing markets globally.

One thing is certain about digital assets and the processes and technologies that underpin them, however: they are far from ESG friendly. A 2020 study from the University of New Mexico<sup>6</sup> looked to estimate the value of the damages caused by cryptocurrency mining industry. Results indicate that each one dollar of Bitcoin value created was responsible for 37 cents to an even one dollar in health and climate damages during 2018.

So can a bank's digital asset ambitions be reconciled with its ESG commitments and goals? To answer this question, three aspects need to be considered.

# 1. ENVIRONMENTAL

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The environmental dimension includes how the sustainability of products are being managed, greenhouse gas emissions, the efficiency of natural resources used, together with circularity aspects and impact on nature.

Let's consider Bitcoin. The first and most popular digital asset, Bitcoin uses Proof of Work as its consensus mechanism in the mining process. In recent years, research and reports have demonstrated that energy consumption related to Bitcoin has been spiraling rapidly as the number of miners has increased, given the significant electricity required.

The environmental impact of Proof of Work type digital assets has accordingly come under hostile scrutiny, and the numbers are certainly concerning.

- The annual energy consumption of the Bitcoin blockchain in 2020 according to University of Cambridge accounted to 67 TWh, which is comparable to a country like Bangladesh.
- Oak Ridge Institute for Science and Education has found that Bitcoin mining consumes more than twice the energy required to mine an equivalent value of copper, gold, or platinum<sup>7</sup>.
- To put it more in to perspective, single transaction of Bitcoin has the same carbon footprint as 1,800,000 Visa transactions or 134,809 hours of watching YouTube, according to Digiconomist<sup>8</sup>.

In addition to energy consumption and carbon emissions, the cryptocurrency mining activities also generate a significant quantity of electronics waste as hardware quickly becomes obsolete and ends up as landfill. In the race to be granted the next block award, the competition is increasing to generate guesses faster and miners are accordingly upgrading their machines ever more frequently. Research has shown that average lifetime of the mining equipment is one and a half year after which it become useless as it cannot be repurposed<sup>9</sup>.

With the growing concerns over sustainability, long-term planning with careful holistic consideration of all ESG dimensions are needed for cryptocurrencies to continue to develop. This is harder than it might appear (and it already appears a tough task). Take the example of the usage of hydropower in Sichuan, which is relatively green compared to other forms of electricity generation, given it is a renewable source of energy and thus helps to reduce greenhouse emissions. However, hydropower is itself controversial due to its broader negative environmental and social impacts relating to the damming of rivers, biodiversity impacts, the relocation of local populations and changing the course of water flowing downstream to neighboring countries. Ultimately, one set of problems is merely traded for another.

An alternative to reduce crypto mining energy consumption is to migrate to Proof of Stake (PoS) or other alternate consensus mechanisms. Such a shift from PoW to PoS has been mooted in respect of Ethereum, the second most popular cryptocurrency. PoS has been the next big thing in the industry for a long time, while energy efficiency better by several orders of magnitude is clear the new risks like possible network centralization slowed down the adoption. Since December 2020, the Ethereum community has been testing the PoS workflow on a chain called Beacon. However, it is a long, complicated, and arduous migration process, involving thousands of existing smart contracts on the Ethereum chain and with billions of dollars in assets at stake.

On the other hand, digital assets powered by permissioned DLT solutions like Corda or Hyperledger do not face such a dilemma. The consensus mechanism employed assures energy efficiency while centralized architecture enables swift future upgrades.

## 2. SOCIAL

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The Social dimension around crypto includes consumer protection, financial inclusion, human rights, and diversity.

Digital assets, especially the permissionless variety, promise to break socioeconomic barriers and drive financial inclusivity. From one angle, digital assets can have a positive social impact, especially in developing economies. Globally the average cost of cross border remittances is approximately 6.5% of transaction value according to World Bank<sup>10</sup>, and in some instances can exceed 10%. Digital asset adoption helps to drive this cost down – especially important for developing economies where inbound remittances can account for more than 10% of GDP. Detractors, however, would point to the potential to undermine exchange and capital controls and impact on financial stability. A stark example is the coordinated and immediate answer from different central banks around the world to the Meta plans to launch its own digital currency, Diem.

Certainly, the use of digital assets is gaining traction in developing countries and emerging economies. A World Economic Forum survey<sup>11</sup> found that Nigeria has the highest ranking out of 74 countries, with 33% of Nigerians either using or owning cryptocurrency. According to the 2021 IMF report, unsound macroeconomic policies and inefficient payment systems are among the key drivers of cryptocurrency adoption in emerging economies. Such economies are usually

characterized by weak central bank credibility and a vulnerable banking system with high level of dollarization. The crypto ecosystem helps residents of such countries to overcome disadvantages like exchange rate restrictions and challenges in accessing and storing foreign assets. For example, one can use crypto exchanges to bypass capital management measures and store stablecoins in a private wallet as a substitute for an offshore store of wealth.

Digital assets could also be an efficient way to solve some of the issues around ESG measurement. Tokenization enabled by digital assets could foster impact investing, where investors seek to generate financial return through investment in projects with positive social and environmental impact.

With the demand for digital assets growing more rapidly around the world, clear threats have emerged. The characteristics associated with many cryptocurrencies – pseudo-anonymity, speed, and accessibility – make them attractive to and exploitable by cybercriminals. Ransomware attacks are on the rise and becoming more common – and cryptocurrencies are commonly demanded as payment. Cybercriminals can receive funds with a high degree of anonymity and irreversibility. In the first half of 2020, average ransomware payments increased by 60%, with Bitcoin used for most ransomware payments<sup>12</sup>.

### 3. GOVERNANCE

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The OECD<sup>13</sup> has noted that features of digital assets present an opportunity for better anti-corruption compliance. Manipulation of the information stored in some of the DLT solutions is almost impossible due to high costs and their distributed nature. This model enables unprecedented insight of past actions, making the entire audit process for a transaction much smoother. The irreversible history of all previous transactions makes it easy to trace and prove illicit actions of bad actors. Additionally, programmability offers another groundbreaking advantage in the compliance space. Smart contracts – computer programs/transaction protocols stored and executed directly on a distributed ledger – could facilitate compliance checks automatically, bringing another level of security to the ecosystem.

New approaches are being created to address regulatory compliance as well, specifically Anti-Money Laundering and Counter Terrorist Financing (AML/CTF) issues on the public blockchains. A real-life example is RegTech company Elliptic, which has been combatting financial crime on the chain since 2013. With their platform, Elliptic is helping other market participants – crypto exchanges, custodians, DeFi liquidity pools – to screen counterparties for money laundering, terrorism financing, fraud, darknet market activity and other risks on the blockchain. Another example is Confirm which, with the launch of their AMLT<sup>14</sup> token, is looking to go further. The token serves not only as the means to pay for their platform's services but also a reward for others who contribute to the ecosystem by providing identification and verification information as well as flagging suspicious activities on the blockchain.

The nature of digital assets also opens the door for new governance approaches. In the traditional finance world, individual small investors typically do not have as much of a voice in decisions as those with larger holdings. Uniswap<sup>15</sup> protocol, however, is an example of how active community owners may command influence in respect of key decisions and strategic directions in the longer term. A leading crypto exchange, Uniswap has chosen to embrace community-led decentralized governance. The company issued their UNI token to customers on their platform rather than selling it to investors. The UNI token is a governance token – everyone who holds it has control over protocol decisions, creating a mutually beneficial community-based governance framework. The token design assumes perpetual 2% yearly inflation rate, which encourages active participation in the ecosystem at the expense of passive UNI token holders.

Significant part of the UNI supply is retained in governance treasury smart contract and will be released on ongoing basis over next years. It will be distributed to the community, team, investors, and advisors. Once it unlocks token holders can decide what to do with these funds. This approach aligns the interests of all participants – users, investors and ecosystem partners. How this approach plays out in the long term remains to be seen, but the rapid rise in popularity of decentralized finance is a bright example of innovation in the governance space.

### CONCLUSION

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It remains to be seen whether digital assets in their current form are here to stay in the long term – but whatever transpires, distributed ledger technology will persist. While

making all digital assets ESG friendly is a challenge still to be solved, the potential of this technology is exciting and potentially transformative.

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## ABOUT CAPCO

Capco, a Wipro company, is a global technology and management consultancy specializing in driving digital transformation in the financial services industry. With a growing client portfolio comprising of over 100 global organizations, Capco operates at the intersection of business and technology by combining innovative thinking with unrivalled industry knowledge to deliver end-to-end data-driven solutions and fast-track digital initiatives for banking and payments, capital markets, wealth and asset management, insurance, and the energy sector. Capco's cutting-edge ingenuity is brought to life through its Innovation Labs and award-winning Be Yourself At Work culture and diverse talent.

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