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Unleashing the Potential of Web3: A More Viable, Responsible and Inclusive Future

Special Report for 2022 Singapore Fintech Festival

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Research and Insights

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Executive Summary

- **Web3 promises a new era for the Internet of Value** that is more open, decentralised, and gives more ownership to the end user.
- **Blockchain technology is a key enabler of Web3, and could help to bring about a more viable, responsible, and inclusive future** through three main areas:
    - Building more **viable** business models by
        - Emphasising security and compliance;
        - Innovating core technologies;
        - Encouraging growth in the ecosystem via investment and partnerships.
    - Growing in a more **responsible** manner by
        - Managing and, where possible, reducing the carbon footprint of the industry and providing solutions to environmental challenges;
        - Investing in community educational initiatives.
    - Developing more **inclusive** financial systems by
        - Lowering entry barriers and broadening access to minority groups in a secure way.
- This report will explore how companies in the blockchain industry, such as Crypto.com, can support and advance the focus areas of this year's Singapore Fintech Festival: viability, responsibility, and inclusivity.

1. Introduction

Web3 promises a new era for the Internet of Value.

We are witnessing global concerns that Web 2.0 (Web2) has significant limitations, such as the risk of violating user privacy, where individuals' time and data are being collected and used for profit without their knowledge or consent. Web 3.0 (Web3) solves these challenges as it is built upon individuals' personal ownership of data, and the core mission of Web3 is to provide an open Internet that is more aligned with the end users' interests and their privacy. Web3 is:

- **Decentralised**: Ownership is distributed among builders, creators, and end users, instead of being concentrated among a few centralised entities like banking institutions.
- **Permissionless**: Everyone has the opportunity to participate in Web3 and it is built to be inclusive.
- **Trustless**: Eliminates the need to trust third parties operating between users and users' assets.

Blockchain is a decentralised, permissionless, and trustless technology upon which Web3 use cases are built. It brings new possibilities for how market participants can engage with each other compared to Web2, and a greater possibility to distribute value more equitably among market participants.

The following sections of this report outline the potential of Web3, powered by blockchain technology, to bring about a more viable, responsible, and inclusive future.

2. Building Viable Business Models

In this chapter, we look at how companies can potentially build viable business models that are more resilient to all kinds of market conditions and trusted by users.

2.1 Security & Compliance

The key to building a successful business model is to establish trust with end users, and security and compliance are integral to this trust.

With regards to the blockchain and digital asset industry in particular, it is critical to protect users by having robust security and compliance measures in place, helping to minimise the risks of cyber attacks or hacks. This will reassure users and governments alike that their investments are protected, and the technology is reliable.

Adhering to recognised frameworks and standards on security and privacy builds trust. For example, Crypto.com is the first virtual asset exchange company in the world to be certified with ISO/IEC 27701:2019, ISO27001:2013, ISO22301:2019, PCI:DSS 3.2.1, Level 1 compliance, Service Organization Control (SOC) 2 Type 2, and to achieve the highest maturity levels for both NIST Cybersecurity and Privacy Frameworks. Most recently, it was awarded the highest level of Cyber Trust Mark Certification (Tier 5 - Advocate) by the Cyber Security Agency of Singapore (CSA), the national agency overseeing cybersecurity strategy, operations, education, outreach, and ecosystem development. The achievements in security compliance help safeguard Crypto.com's users and establish its leadership in the industry.

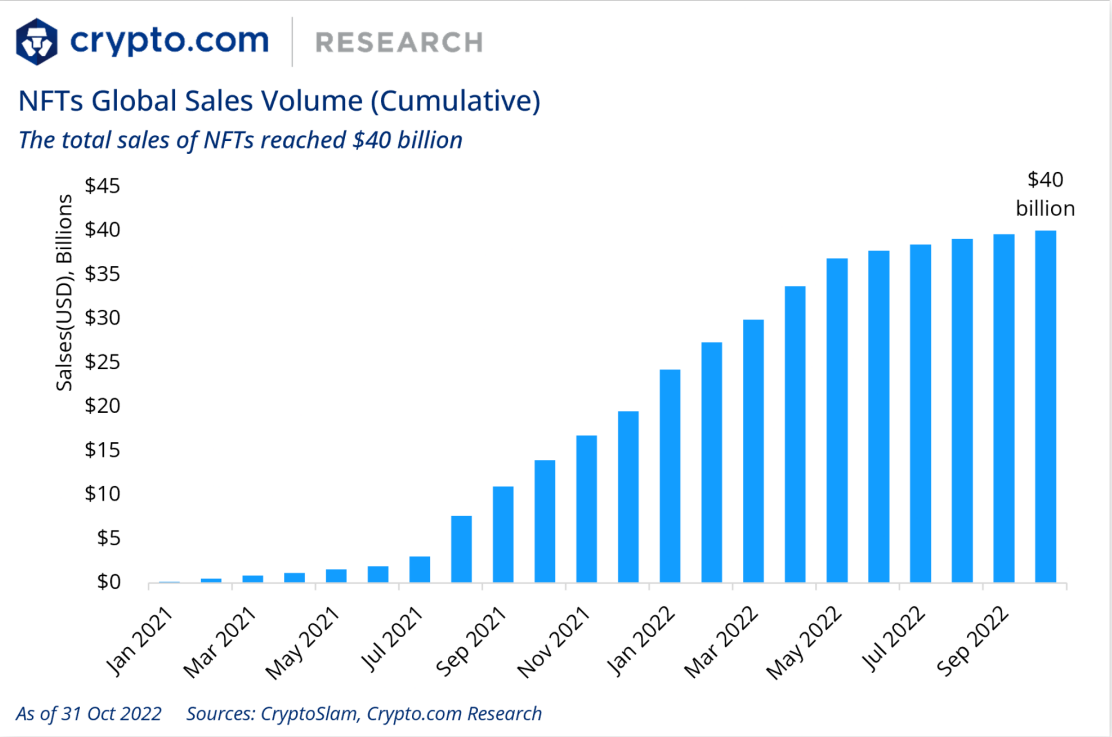
2.2 Innovation

Innovative business models and use cases help companies disrupt competition and find new opportunities to grow and be profitable. A prime example of blockchain-backed innovation is NFTs (non-fungible tokens) and the use cases that are built on top of them.

NFTs are unique proofs-of-ownership that live on the blockchain and can be easily transferred on-chain. Currently, one of the most popular use cases of NFTs is profile pictures (PFPs), which have been integrated into social media. Compared with traditional PFPs, NFT PFPs allow their holders to prove that they are the true owner of the asset. NFTs are also used as in-game assets in

blockchain gaming and for proof-of-identity like with soulbound tokens (SBTs) where ownership cannot be transferred. Combined with the secure and immutable nature of the blockchain they are built on, SBTs have use cases in identity and certification, for example health certificates.

The use cases of NFTs are nascent, but sales have reached US$40 billion globally at the end of October 2022. With more applications being developed, we can expect other innovative use cases of this new on-chain asset class to emerge.



2.3 Technology Advancement

Advancement in underlying technologies could significantly improve user experience, and make business models more resilient.

The advancement of technology has brought about significant benefits, including blockchain scaling, which addresses a widespread challenge for blockchain users: low network capacity (low throughput and high latency). Bitcoin can handle around seven transactions per second (TPS) and it takes on average ten minutes to execute a transaction. Similarly, Ethereum can handle 20 TPS and its latency is around 12 seconds. In comparison, centralised networks such as Visa can easily achieve tens of thousands of TPS. Low network capacity on blockchains leads to congested traffic, resulting in users having to wait for a long time and pay high fees for transactions to be executed.

The scalability of blockchains has improved significantly with the advancement of new consensus models and layer-2 scaling solutions. On the one hand, proof-of-stake (PoS) layer-1 (L1) blockchains, such as Cronos, have much higher TPS and lower latency than proof-of-work (PoW) chains, such as the Bitcoin network. On the other hand, layer-2 (L2) solutions, or scaling solutions built on top of native blockchains, help to improve capacity by taking some computation off of the blockchain without compromising on security, owing to verifiable proof that the computation results are correct.

2.4 Ecosystem Collaboration

A thriving ecosystem will bring greater resilience to the companies that operate within it, and support the development of new and exciting business models. For example, through Crypto.com's principal investments arm Crypto.com Capital, the company is actively exploring and supporting novel business models in Web3. This is a win-win strategy that enables us to grow together with the industry. Examples of novel and resilient business models we have seen from some of our portfolio companies can be found below:

Business Models crypto.com | RESEARCH

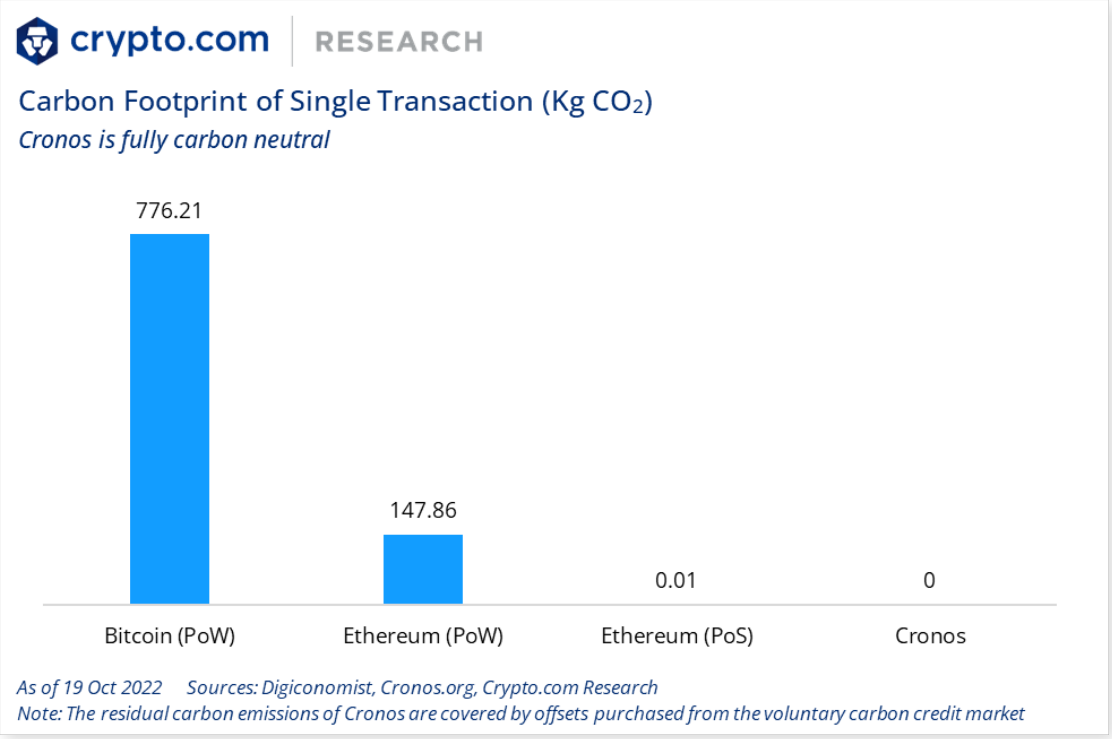
Selected Portfolio Company of Crypto.com Capital	Description
Headquarters	Headquarters addresses important pain points for the growing base of Web3 companies, providing enterprise software for dashboard reporting, wallet management, and payroll.
Oasys	Oasys is a gaming-focused L1 solution offering high speed and low cost transactions for game developers looking to build on Web3.
Ledger	As Web3 continues to grow in the long term, security will be paramount. Ledger provides the hardware and software to protect the assets of both individuals and enterprises as they explore Web3.
Floor	The proliferation of NFTs represents opportunity and complexity. Floor provides tools for users to view and monitor the value of their NFT collections, as well as engage with other like-minded members of the NFT community.

3. Growing Responsibly

3.1 Environmental Sustainability

PoW blockchains, such as the Bitcoin network, are computationally intensive by design, thus producing a relatively higher carbon footprint. In recent times, **the blockchain industry has made good efforts to reduce energy use and its carbon footprint**.

Take Ethereum as an example: it is the second largest blockchain by market capitalisation at the time of writing. **Ethereum successfully completed a network upgrade and transitioned from PoW consensus to PoS in 2022. After the transition, Ethereum saw its energy usage decrease by an astonishing 99.95%.** Similarly, Cronos and other PoS chains have a much friendlier carbon footprint compared to PoW chains. Cronos is carbon neutral as of 2022, and has purchased carbon offsets to cover its relatively small amount of residual carbon.



As a builder of the crypto ecosystem, **Crypto.com is taking a sector-leading approach to offsetting its residual carbon emissions**. Referencing best practices from various sectors, we will concentrate our efforts on financing and

supporting low emission technology that could reduce carbon footprint at the root.

3.2 Community Education

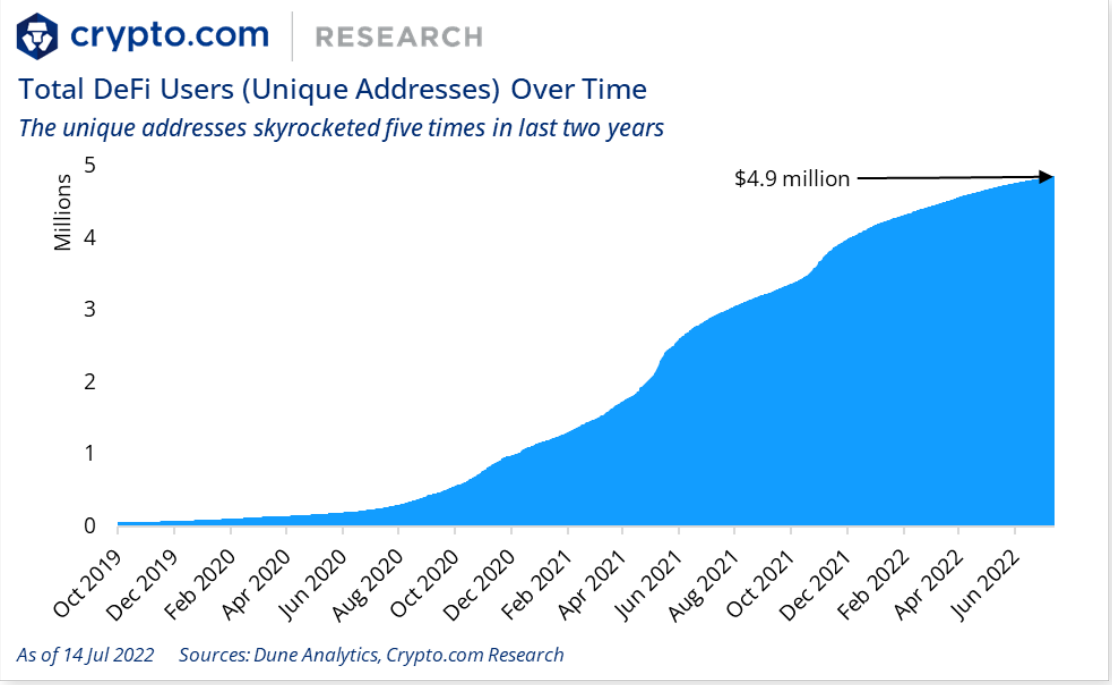
Educating communities goes hand in hand with responsible business growth. According to a joint study by *The Economist* and Crypto.com, **one of the main barriers to greater crypto adoption is a lack of understanding** of the fundamental technology that underpins this new asset class. To help equip the general public with the latest knowledge, including both the potential and the risks of web3 technologies, **Crypto.com develops and publishes educational content that can be read for free on the University website, alongside industry insights via its Research portal**.

In Singapore, Crypto.com works with industry partners to engage and educate the community. For example, Crypto.com COO Eric Anziani serves as the chair of the Web 3.0 Subcommittee of the Singapore Fintech Association. The mission of the subcommittee is to educate the public about Web3; engage stakeholders to co-create the right policies and infrastructure to catalyze the industry's growth, and cultivate the ecosystem through talent development and community building.

4. Developing an Inclusive Financial System

Despite the rapid advancement of financial technology in recent decades, **a sizable global population does not have adequate access to banking.** According to the World Bank, 1.7 billion adults (22% of the global adult population) are estimated to be unbanked. Most of the unbanked population can only use cash, and many do not have insurance, pension, and other safety nets.

Decentralised finance (DeFi) lowers the barrier to entry for access to financial services, enabling a more inclusive financial system. By design, DeFi is borderless and permissionless. Anyone can use DeFi services like exchanges, lending, and borrowing as long as they have internet access. We have seen rapid adoption of DeFi, especially in 2021 and 2022.



Although DeFi is inclusive by nature, users need to be mindful of potential risks, including fraud or cyber attacks. They could lose funds if the underlying DeFi application has bugs or flaws, making it vulnerable to attacks from hackers. Furthermore, as there is a general lack of insurance or regulatory protection on DeFi protocols at this time, it is difficult to seek compensation when fraud or scams take place. As such, DeFi users must do their own research and be congnizant of these risks.

5. Conclusion

Crypto adoption has been growing rapidly worldwide. According to our research, we estimated that there were about 300 million people who owned cryptocurrencies at the end of 2021 (compared to around 100 million at the start of the year). This is roughly 4% of the world's population.

As adoption rises, companies in the industry should collectively build a more viable, responsible, and inclusive future for the Web3 community. At Crypto.com, we are excited to continue working together with the ecosystem, as well as global policymakers and regulators, towards this shared goal.

Further Reading

What is Web3? A Comprehensive Guide

Welcome to Web3: Identity, Soulbound Tokens, and Decentralised Society

What are NFTs? Non-Fungible Tokens Explained

Introduction to Decentralized Finance (DeFi)

Decentralised Finance (DeFi) – Crypto as a New Financial Ecosystem

The Sudden Rise of DeFi: Opportunities and Risks for Financial Services

Asset Management with DeFi

DeFi 1.0 vs DeFi 2.0 – On-chain Insights

Digimentality 2022 – Fear and Favouring of Digital Currency

Crypto Bear Markets – A Detailed Analysis

Ethereum: The Merge

Carbon Neutrality in Crypto: The Crypto Industry and its Sustainable Efforts

Energy Consumption in Crypto: An Overview

Crypto.com Visa Card Consumer Spending Insights 2021

Crypto Market Sizing Report 2021 and 2022 Forecast

Crypto for Payments: Consumers are Hungry – Will Merchants be Able to Fill their Appetite?

Consumer Insights into the Blockchain Gaming Landscape

What is GameFi? 'Play-to-Earn' Gaming Explained

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