

The Metaverse, Web 3.0 & Digital Assets



US Credit Unions Edition

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**“WE TEND TO OVERESTIMATE THE
EFFECT OF A TECHNOLOGY IN
THE SHORT RUN AND UNDERESTIMATE
THE EFFECT IN THE LONG RUN.”**

Amara's Law

EXECUTIVE SUMMARY



The Metaverse as most commonly defined ... "A massively scaled persistent, interactive, and interoperable real-time environment comprised of interconnected virtual worlds and reality, where people can socialise, work, transact, play, and create" ... is aspirational.

The technological infrastructure does not yet, and may never, exist to sustain a fully immersive Metaverse. Neither does the compelling use case for universal adoption.

However, much of the core technology (AR, VR, AI & Blockchain) does exist and is evolving quickly to offer many discrete applications and virtual worlds – to such an extent that the term Metaverse has evolved to more commonly mean "the future of the internet and Web 3.0".

There has been huge investment in the Metaverse by Meta, Microsoft, Apple, Alphabet, and Amazon in order to gain a foothold in this burgeoning space that has the potential to transform communication in a similar manner to the introduction of the Smartphone (a similar impact is also anticipated).

Virtual Worlds such as Decentraland, The Sandbox, and Somnium Space are creating headlines and interest as frontrunners in adopting Web 3.0 digital assets such as NFTs, native tokens and cryptocurrencies.

The forecast for the Total Addressable Market for the broadly defined Metaverse is very big – a recent Citigroup Report estimates that by 2030, the audience for the Metaverse will be 5 billion with a total addressable market of USD 8 - 13 trillion.

With nearly 300 million cryptoasset owners verified in 2021, up from just 5 million in 2016, the market is currently valued at more than \$1 trillion. The US has the highest per capita ownership which is increasing at approximately 8% p.a.

When entering this burgeoning space commercially, it is prudent to understand there is a lot of hype, to choose projects carefully and to devise a balanced short- and long-term strategy to enhance your likelihood of success:

Short Term Focus: Education of stakeholders within the organisation, Research of the marketplace, the available technology and partners, and Implementation of Low-Risk Use Cases.

Longer-Term Focus: Decide on initial core product offering, dedicate budget and resources, and plan for desired results (a multi-disciplinary effort).

WHAT IS THE METAVERSE?

DID YOU KNOW?

➔ 30 Years

It is now 30 years since the term Metaverse was first coined by Sci-Fi author, Neil Stevenson.

➔ Meta

Facebook's name change to Meta brought the "Metaverse" strongly into public awareness.

➔ Aspirational

A fully immersive, large scale, metaverse (think Ready Player One) is very much still aspirational.



The term Metaverse is a combination of the Greek word "Meta" and the English word "Universe"... and can be understood to mean "beyond the universe".

It was first used by Neil Stevenson in his 1992 science fiction novel, Snow Crash, to describe a cyber world that existed parallel to the real world, where people interacted with each other using digital avatars.

Just under 30 years later, it burst into public consciousness when Facebook announced its rebranding to "Meta" and intention to "build a maximalist, interconnected set of (digital) experiences straight out of sci-fi - a world known as the metaverse".

Meta has shown its commitment to the development of the (its) metaverse by investing \$10 billion in its Reality Labs operation this year. Microsoft is making a \$70 billion bet on a 'metafuture' with its planned acquisition of Activision Blizzard. And Google, Apple and Amazon are also committing billions of Dollars to gain a foothold in this burgeoning space.

Despite the widespread usage of the term, the massive investment in technology and services relating to, or with the name "Metaverse", and the vast array of commentators discussing its relative merits and drawbacks, there is no universally accepted definition/description of what the metaverse is.

The Metaverse as commonly described ... "A massively scaled persistent, interactive, and interoperable real-time environment comprised of interconnected virtual worlds and reality, where people can socialise, work, transact, play, and create" ... is aspirational.

NARROWLY DEFINED METAVERSE

Immersive Media

```
graph TD; IM[Immersive Media] --> VR[Virtual Reality (VR)]; IM --> AR[Augmented Reality (AR)]; XR[Extended Reality (XR) = VR, AR, MR]; Metaverse[Metaverse];
```

Virtual Reality (VR)

an immersive and interactive simulated environment that is experienced in the first person and provides a strong sense of presence to the user.

Augmented Reality (AR)

immersive and interactive virtual content spatially registered to the real world and experienced in the first person, providing a strong sense of presence in a combined real / virtual environment.

*Also called **Mixed Reality (MR)***

Extended Reality (XR) = VR, AR, MR

Metaverse

a persistent and immersive simulated world (VR or AR) that is experienced in the first person by large groups of simultaneous users who share a strong sense of mutual presence.



This purist definition of the Metaverse, and the version in the public consciousness through movies such as “Ready Player One”, “Tron” and “The Matrix”, comes from the Extended Reality (XR) space (encompassing Virtual Reality (VR) and Augmented Reality (AR)) and envisions a fully immersive experience.

Core Characteristics

The core characteristics of a fully immersive Metaverse have been defined:

Ubiquitous and Persistent: it encompasses different aspects of human experience, from leisure to education, finances, political expression, etc... and events take place regardless of whether anyone is logged in

Synchronous: events happen in real-time

Interconnected and Interoperable: allows transition between virtual worlds (identity and digital assets)

Virtual/Immersive: being a digital representation sets the Metaverse apart solely having AR interfaces that add layers of extended meanings and content to the physical world

Collective and Shared: the virtual worlds populated by other beings (question remains if that is solely human, artificial, or both)

Economy: the environment has its own economy either separate to or in tandem with the real world

NARROWLY DEFINED METAVERSE

Key Issues Impacting Adoption & Growth

NARROWLY DEFINED METAVERSE

USD 1 - 2 trillion
Estimated total addressable
market by 2030.

Source for TAM: Citi GPS: Global Perspectives & Solutions:
Metaverse and Money, Decrypting the Future, March 2022

Infrastructure:

The technological infrastructure does not yet, and may never, exist to sustain a fully immersive Metaverse. Latency needs to improve, and faster connectivity speeds are needed. With only 25% of the global population expected to have access to 5G by 2025, network bandwidth needs to be increased and delivered.

The lags and network unreliability witnessed in today's world makes the current state of the infrastructure unsuitable for building an envisioned Metaverse experience.

Interoperability:

Lack of interoperability is one of the major hurdles. It restricts users' access in the Metaverse, limiting their navigation to a specific project – of which there are many - instead of allowing them to navigate freely across multiple virtual worlds.

Cost:

The cost of the hardware required to experience Extended Reality (AR/VR) is prohibitive and further advancements are needed.

Use case(s):

While there are many technology/other hurdles to overcome, one of the key issues is the development of compelling use cases that can command audience/participation on a large scale.

Total Addressable Market

It is estimated that by 2030, the audience for the narrowly defined Metaverse will be 900 million to 1 billion with an estimated addressable market of USD 1 - 2 trillion..



BROADLY DEFINED METAVERSE

USD 8 - 13 trillion

**Estimated total addressable
market by 2030.**

Source for TAM: Citi GPS: Global Perspectives & Solutions:
Metaverse and Money, Decrypting the Future, March 2022


As a result of the issues facing the growth and adoption of a fully immersive Metaverse, and the current existence of technological building blocks to create engaging (if not fully immersive) digital experiences and virtual worlds, the metaverse is now more commonly defined as “the future of the internet and Web 3.0”.

This provides a lot more flexibility as to what can be developed and opens the Metaverse to other forms of access other than VR and AR headsets and devices, including Smartphones, PCs and games consoles. This broader definition significantly increases the market, interest of investors and ultimately the number of users of the Metaverse.

Total Addressable Market

The forecast Total Addressable Market (TAM) for the broadly defined Metaverse is very big.

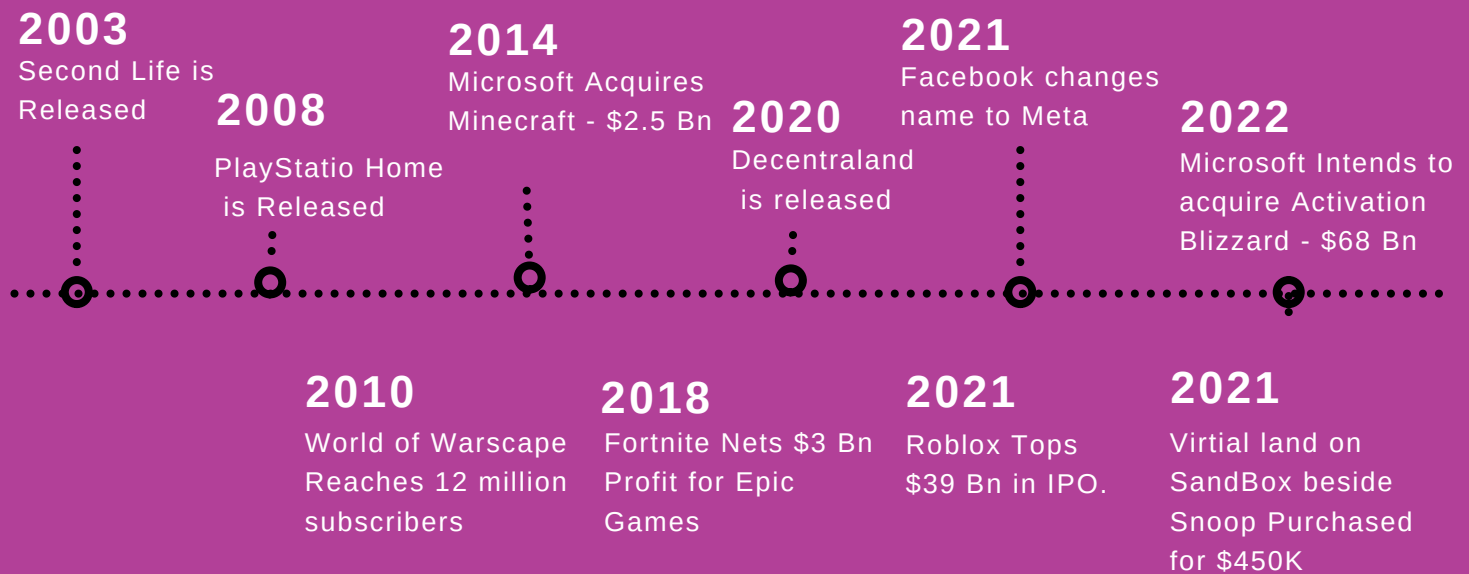
It is estimated that by 2030, the audience will be 5 billion with an estimated total addressable market of USD 8 - 13 trillion.



THE EVOLUTION OF THE METAVERSE

WTFi
DECENTRALIZED FINANCE

Evolution of the Metaverse



Source: JP Morgan: Opportunities in the Metaverse: How businesses can explore the metaverse and navigate the hype vs. reality

Gaming Leads the Way

When Mark Zuckerberg changed Facebook's name to Meta and committed to the metaverse, he said that gaming would lead the way. (In fact, the entire gaming industry's reach is about as big as Facebook's at c.3 billion people.)

Microsoft's announcement that it would purchase game publisher Activision Blizzard for \$68.7 billion, came with a statement by CEO Satya Nadella that "Gaming is the most dynamic and exciting category in entertainment across all platforms today and will play a key role in the development of metaverse platforms."

The Quest for User Engagement

In short, there is a common understanding that technology alone will not drive interest and participation in the "Metaverse" rather user engagement and use cases that appeal to users' needs and wants on a personal and professional basis.

Leaders in the Gaming space like Epic Games (Sony and Lego), Roblox, and Activision Blizzard (Microsoft) have the engine and tools that enable game developers to create engaging content.

Active Users

Companies that are touting themselves as metaverses, such as Decentraland, The Sandbox and Cryptovoxels are reporting relatively "low" active monthly users.

Decentraland has about 300,000 active monthly users. The Sandbox has c. 30,000 and Cryptovoxels counted less than 25,000 visits to its most popular digital land parcel.

When compared to PlayStation (approximately 111 million active monthly users) and Roblox attracts nearly 50 million users every day, the active participation is quite low.

In the Headlines: Web 3.0 Digital Assets

These Virtual Worlds are creating headlines and investor interest, however, by being frontrunners in the Web 3.0 pace and embracing the use of NFTs, native tokens and cryptocurrencies. (With other Web 2.0 based platforms, such as Roblox, looking to embrace this technology also.)

Let's have a look at the differences between Web 2.0 and Web 3.0 ...

		WEB 2.0	WEB 3.0
	Example Virtual Worlds	Second Life Roblox Fortnite World of Warcraft	Decentralized The Sandbox Somnium Space Cryptovoxels
Platform Characteristics	Organisational Structure	Centrally Owned	Community Governed, Decisions based on consensus. Native Tokens Issued
	Platform Format	PC / Console Virtual Reality / Augmented Reality Hardware Mobile App	PC / Console Virtual Reality / Augmented Reality Hardware Mobile App Soon
	Payment Infrastructure	Traditional Payment (Debit / Credit Card)	Crypto Wallet
User Interaction	Digital Assets & Ownership	Leased Within Platform Where Purchased	Owned Using Non- Fungible Tokens (NFTs)
	Digital Assets Portability	Locked Within Platform	Transferable
	Content Creators	Games Studio and / or Developers	Community, Games Studio and / or Developers
	Activities	Socialization, Multi- Player Games, Games Streaming, Competitive Games (e.g., e-Sports)	Play-To-Earn, Experiences, and as per Web 2.0
	Identity	In-Platform Avatar	Self-Sovereign Identity, Anonymous Private-Key Based Identity
Commercial	Payments	In-Platform Virtual Currency (e.g., Robux for Roblox)	Cryptocurrencies and Tokens
Source: JP Morgan: Opportunities in the Metaverse: How businesses can explore the metaverse and navigate the hype vs. reality	Content Revenues	Revenue Divided Between Platform & Developer (e.g., 70/30)	Content Creators Earn Revenue from Sales. Gamers Play-to-Earn

OVERVIEW OF KEY PLATFORMS & CO'S

Decentraland

Decentraland is one of the metaverse companies with the tightest focus on real estate.

On the surface, it is a vast virtual universe that fulfills most people's ideas about virtual reality.

Decentraland also consists of individual virtual plots. Because Decentraland is tied to the blockchain, every new plot of land also becomes a crypto world. And this is also where Decentraland's emphasis on ownership comes in. Decentraland has 90,601 plots of land in the form of the LAND NFT.

The company has been so successful within that market that it's had sales of up to \$2.4 million in cryptocurrency. While that was the largest deal in Decentraland, it's hardly a rarity. The company does massive business with NFTs, virtual land, and its own cryptocurrency called MANA.



JP Morgan became the first bank to enter the Metaverse/Decentraland with its [Onyx Lounge](#).

Somnium Space

Somnium Space is a VR based metaverse world that launched in 2017. It consists of 5,000 land parcels which all support full ownership. However, as with most metaverse virtual worlds, space for land isn't limited. New land can be added to Somnium Space as needed.

One of the system's most essential points stems from the fact that it's tied to the blockchain. This

Somnium Space (Continued)

makes it a full crypto world with easily defined asset ownership. In fact, the system has a strong economy and a native ERC20 token called Somnium Space CUBE. CUBE tokens also make it easy to publish or buy avatars. These avatars are usable in a wide variety of other metaverses.

Somnium Space also makes it easy to buy land parcels (PARCELS). Land parcels can additionally be purchased and sold as a standard NFT on other systems. PARCELS also support new NFT placement within themselves as additional assets.

The Sandbox

The Sandbox began as a standard video game in 2012 but shifted to a complete 3D environment in 2018. This also marked it becoming a crypto world after tying into the blockchain.

In 2021 the system would evolve one step further and become one of the metaverse virtual worlds.

The Sandbox's world consists of a large number of land plots set out into an even grid. These land plots are typically sold on Binance using the SAND currency.

The Sandbox is particularly notable because rapper Snoop Dogg has his own mansion within the system and performs at shows. Virtual land near his estate sold for \$450,000 USD.



OVERVIEW OF KEY PLATFORMS & CO'S

Cryptovoxels

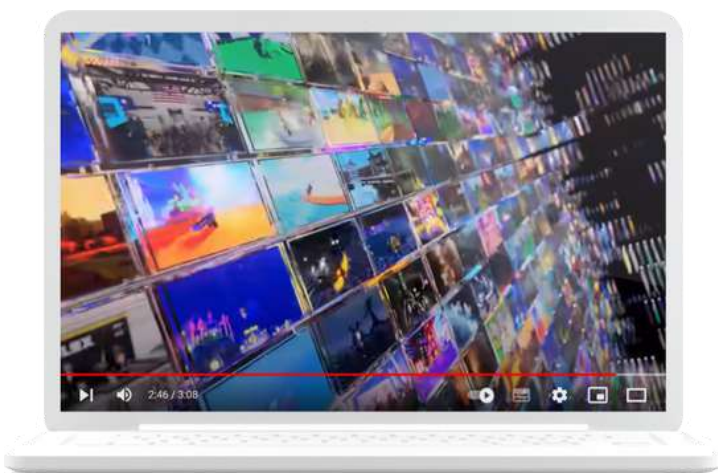
Cryptovoxels has been heavily tied to the blockchain since it was first created. The system's ties to the Ethereum blockchain more than qualify it as a crypto world. And Ethereum can be used natively to buy land and build on top of it. It's one of the metaverse virtual worlds where users are particularly interested in the process of making their own thriving universe.

The building process is aided by the sheer amount of content supported by Cryptovoxels. Users can embed audio, video, standard images, or any number of other media within their landscapes. Collectibles representing real-world objects are also available. But the way that content is accessed is unique to Cryptovoxels.

Cryptovoxels has combined the metaverse with Web 3.0 to create a universe that's available through a standard Web browser or virtual reality headsets.

Roblox

Roblox has a special place among metaverse virtual worlds. It's often thought of as a game, but that's a vast oversimplification. It is a metaverse world focused on game creation.



Roblox (Continued)

All games are made by users rather than the Roblox company. Roblox makes creating your own games easy, fun, and even potentially profitable. An estimated 20 million games have been made within its metaverse.

Many of the games are freely available for anyone to enjoy. But people can also monetize their games. Some game developers have earned up to \$1 million in a year by doing so. The system also has an entire digital economy and currency called Robux.

Meta

The change in the name (from Facebook) shows they're determined to lead the way for other metaverse companies. Meta is working on hardware such as Oculus VR and project Cambria. In addition, the company is also working on a variety of different software projects related to the metaverse.



The most notable examples at the moment are the projects under their Horizon banner. This includes Horizon Marketplace, where users can buy and sell within the metaverse's more extensive economy. Horizon Home and Horizon Worlds offer two different scales of exploration.

OVERVIEW OF KEY PLATFORMS & CO'S

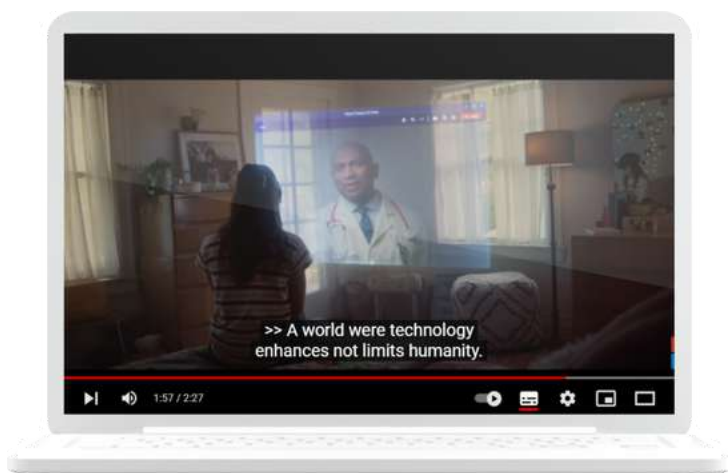
Microsoft

Microsoft's foray into the metaverse has come mainly from the union of two existing projects. Microsoft joined the mixed-reality capabilities of Microsoft Mesh with their Teams productivity software.

The end result is a metaverse enabled productivity package called Mesh for Teams that's primarily aimed at professional spaces. It's one of the most substantial work-from-home solutions offered by metaverse companies.

People can use Mesh for Teams to recreate traditional office experiences. But it's equally feasible to create even more productive work environments. The software suite can essentially provide a complete virtual office that matches almost anyone's individual needs.

The intended acquisition of Activision Blizzard further demonstrates their commitment to the space.



Sony (Epic Games)



Sony's place among the metaverse companies comes from both hardware and software. Their PlayStation VR is an easy entry point into virtual reality for people who own a Playstation.

However, its most considerable presence in the metaverse has come from its Epic Games division.

Epic is best known as the creator of Fortnite. And while it started out as a game, the system has evolved into a full metaverse implementation.

Fortnite has seen everything from live concerts, from some of the biggest stars to special trailers of upcoming movies. The platform currently has over 60 million monthly users.



WEB3.0 & DIGITAL ASSETS

WTFi
DECENTRALIZED FINANCE

	WEB 1.0	WEB 2.0	WEB 3.0
Interact	Read	Read - Write	Read - Write - Own
Medium	Static Text	Interactive Content	Virtual Economies
Organisation	Companies	Platforms	Networks
Infrastructure	Computers	Cloud & Mobile	Blockchain Cloud
Control	Decentralized	Centralized	Decentralized

Most commentators now see Web 3.0 as an integral part of the infrastructure of the Metaverse, and a key component in enabling the growth of its economy using digital assets.

Cryptocurrencies are expected to dominate but will likely coexist with fiat currencies, central bank digital currencies (CBDCs), stablecoins, tokens and NFTs.

As the Metaverse develops, a spectrum of financial services will be needed to support its activities. Metaverse finance (MetaFi) will likely be a combination of decentralized finance (DeFi), centralized finance (CeFi), and traditional finance (TradFi), with new products specifically designed to meet the unique needs of the new ecosystem.

There will be an important role for financial institutions in payments, especially with on-ramp, off-ramp capabilities, as well as supporting a myriad of business and consumer use cases.

It is also anticipated that financial institutions will play an important role in issuance of real-world backed tokens, custody, trading and act as a gatekeeper to DeFi markets by performing KYC and AML services. Through their expertise, brand and client base, financial institution can play a key role in facilitating growth of the Metaverse and, more specifically, the widespread adoption and use of Web 3 digital assets.

Web 3.0: Key Terms Defined

Blockchain Networks

Blockchain networks are the transactional data infrastructure layer of web3. Blockchain networks are a decentralised network of computers running the blockchain software and storing its transactional data.

They are the foundational infrastructure layer of web3. These computers are incentivised to validate the transactions with the use of digital assets that are native to each blockchain. The Bitcoin Blockchain Explained

Wallets

Wallets enable the storage and transfer of Web 3 digital assets. Wallets can be Custodial (an institution is handling the security/privates keys) or Non-Custodial (you are in control of the security/private keys).

Wallets can also be used for identification purposes and to access Web 3.0 platforms and dApps (Web 3 Apps).

WEB 3.0 AND DIGITAL ASSETS

Cryptocurrencies

Many cryptocurrencies have been launched since the introduction of Bitcoin in 2009 - all heavily influenced by the original.

Currently, the next 3 largest by market capitalization are Ethereum, Cardano and Solana. An area of intense growth and rapidly rising and falling prices and market capitalisation. All cryptocurrencies are not the same.

Stablecoins

Stablecoins are digital tokens that are pegged to an underlying asset (such as US Dollars) in order to combine the stability of the underlying asset with the benefits of a digital currency.

The use of stablecoins has exploded in the last two years, coinciding with the rise of DeFi (decentralised finance). Large international banks are now showing interest in this area also with JP Morgan (US) and ANZ (AUS) now issuing and transacting in their own stable coins, the JPM Coin and the A\$DC respectively.

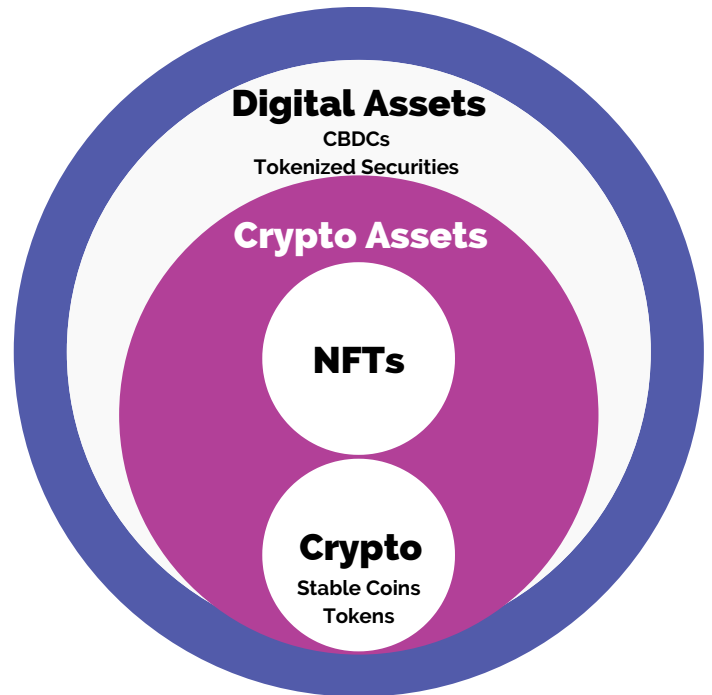
Tokens

Tokens are the digital representations of assets in web3. They exist in the blockchain network and represent value, be it monetary or rights. natively digital or from the 'real world'.

Tokens take two primary forms: Native-network tokens (can only be used on their network to make transactions) and contract-defined tokens (defined by smart contracts, giving them unique utility).

NFTs

A non-fungible token is a token that has some element of uniqueness. It is a contract/record on a blockchain which states the number of the token, indicates its owner, and includes a link to a digital file that resides off chain (e.g., on a website). NFTs are now being widely touted as the key technology for powering ownership in the metaverse.



CBDCs

A Central Bank Digital Currency (CBDC) is the digital form of a country's fiat currency that is also a claim on the central bank.

Instead of printing money, the central bank issues digital money that is backed by the government. 87 countries (representing over 90 percent of global GDP) are exploring the introduction of a CBDC. In May 2020, only 35 countries were considering a CBDC.

DeFi

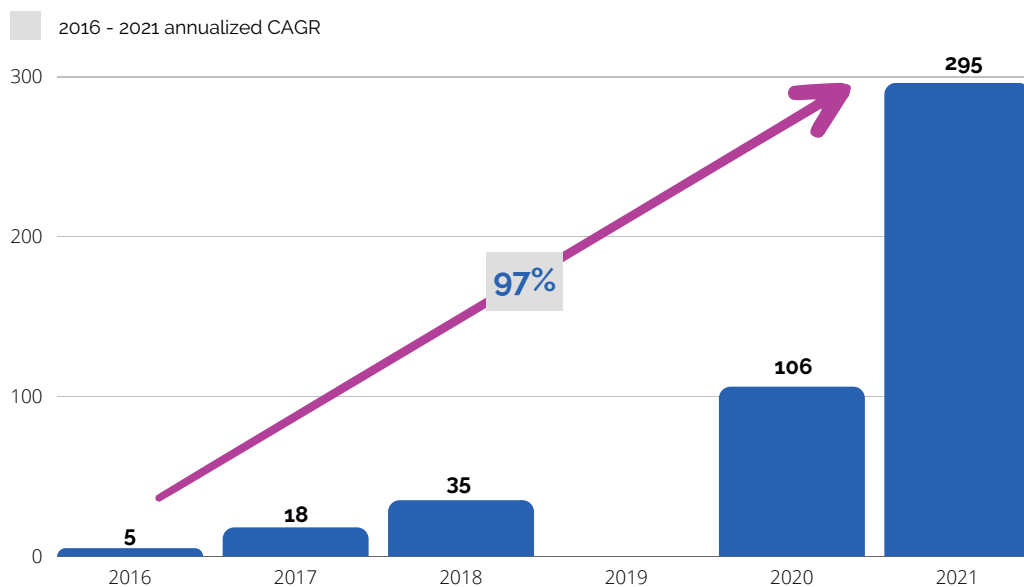
DeFi, or Decentralized Finance, is a loose concept used to describe the digitisation, automation and expansion of traditional financial services (i.e., payments, lending, trading, investments, insurance, and asset management) using blockchain, digital assets and smart contracts.

A milestone in the evolution of digital assets. Expect a wave of innovation and widespread involvement of traditional financial institutions in the coming years through "Permissioned DeFi".

OWNERSHIP OF WEB 3.0 DIGITAL ASSETS

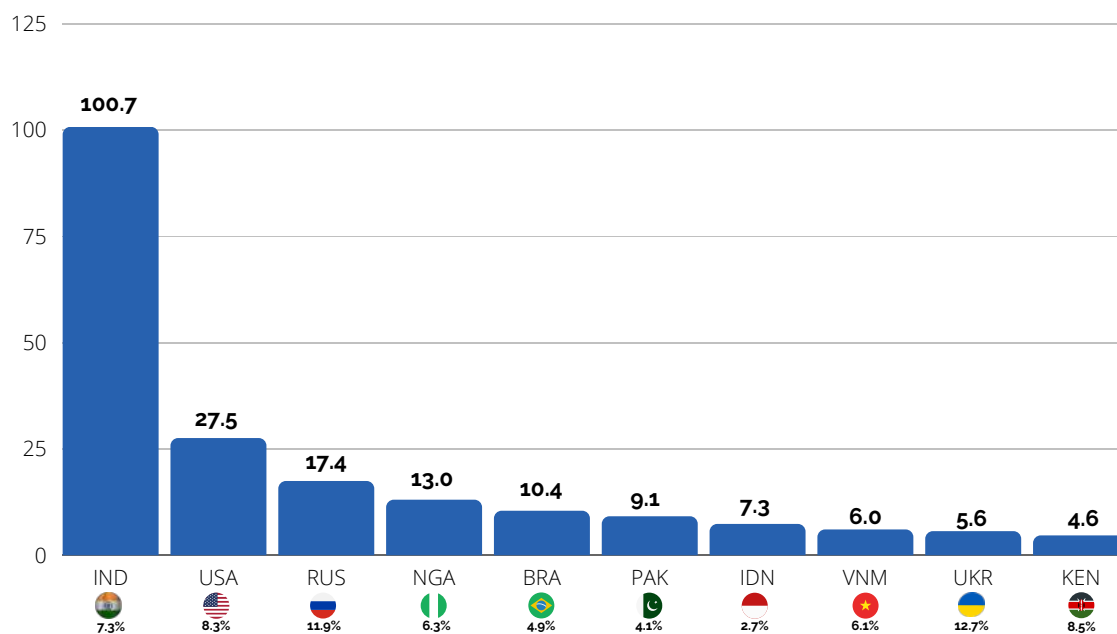
Cryptoassets have grown into a plus \$1 trillion market with 300 million verified owners in 2021 (up from just 5 million in 2016).

The Crypto space has so far experienced a faster adoption rate - twice as fast - than the internet itself.



Source: CJBS (2018) 3rd Global Cryptoasset Benchmarking Study, Crypto.com (2022) Crypto Market Sizing, Oliver Wyman Analysis

The US has the highest per capita cryptocurrency ownership rate and is second only to India in the total number of cryptocurrency ownership.

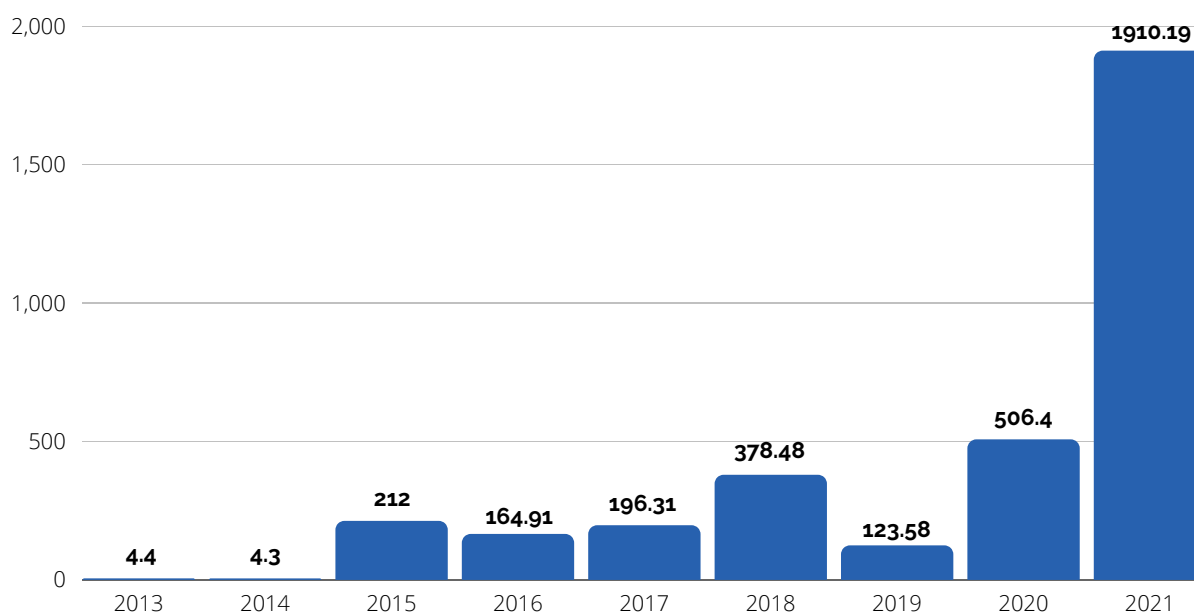


Source: "Global Cryptocurrency Ownership", Triple A, 2021








INVESTMENT IN BLOCKCHAIN

Investment in Blockchain technology has never been higher. The following tables illustrate the investment by the Top 100 Public Companies.

2021 witnessed huge investment in the space – more than the previous seven years combined – lead by Microsoft and Alphabet (Google). Financial institutions including Mastercard, Visa, PayPal, JPMorgan and Citigroup are also very prominent investors.



Source: BLOCKDATA: Top 100 Public Companies Investing in Blockchain & Crypto Companies

	COMPANY	VALUATION	NO. OF ROUNDS	SIZE - FUNDING ROUNDS	BLOCKCHAIN COMPANIES INVESTED IN
	Alphabet	\$1,923B	23	\$601.4M	Alchemy, Blockchain.com, BloomX, Celso, Dapper Labs, Eversend, GiveDirectly, Helium, Kiva, LedgerX, Rentberry, Ripio, Ripple, Smartcoin, Signzy, Talenta, Veem
	Citigroup	\$148B	15	\$394.5M	Chain, Cobalt, Symbiont, Axoni, R3, Digital Asset, SETL, HQLAx, Komgo
	Mastercard	\$351B	13	\$71.9M	AID:Tech, Civic, ConsenSys, Digital Currency Group, Endor, Everledger, Hanzo, Moeda Loyalty Points, SendFriend, Signzy, Silot, Trust Stamp, Uphold
	Goldman Sachs	\$142B	13	\$488.5M	AiLink, Axoni, Blockdaemon, BiUP, BitGo, Circle, Coin Metrics, Digital Asset, HQLAx, R3, Veem
	Samsung	\$432B	11	\$79.24M	Alchemy, Blocko, Dapper Labs, Digital Asset, Filament, Ledger, Theta Labs, ZenGo, ZenGold
	Visa	\$459B	9	\$70M	Anchorage, CelCoin, Chain, Cred, Earthport, IRIS, Ripio, Silot, Unbanked, Wyre
	Microsoft	\$2,253B	8	\$482.5M	Bakkt, BigChainDB, Conflux Network, Diginex, Guardtime Blockchain, KrypC, Nivaura
	JP Morgan	\$487B	8	\$223.5M	Axoni, ConsenSys, Digital Asset, HQLAx, R3
	PayPal	\$327B	8	\$763.7M	Cambridge Blockchain, Chynge, Curv, Paxos, Taxbit, TRM Labs
	Intel	\$219B	6	\$178M	Animoca Brands, Axoni, fuse, StarkWare Industries, R3, Valid Network (61

Source BLOCKDATA: Most Active Investors in Blockchain Companies in the Top 100 Public Companies.

CREDIT UNIONS CURRENT LANDSCAPE

81%

**of crypto users
said they would
rather buy crypto
from their
credit union**

Fiserv Survey Result

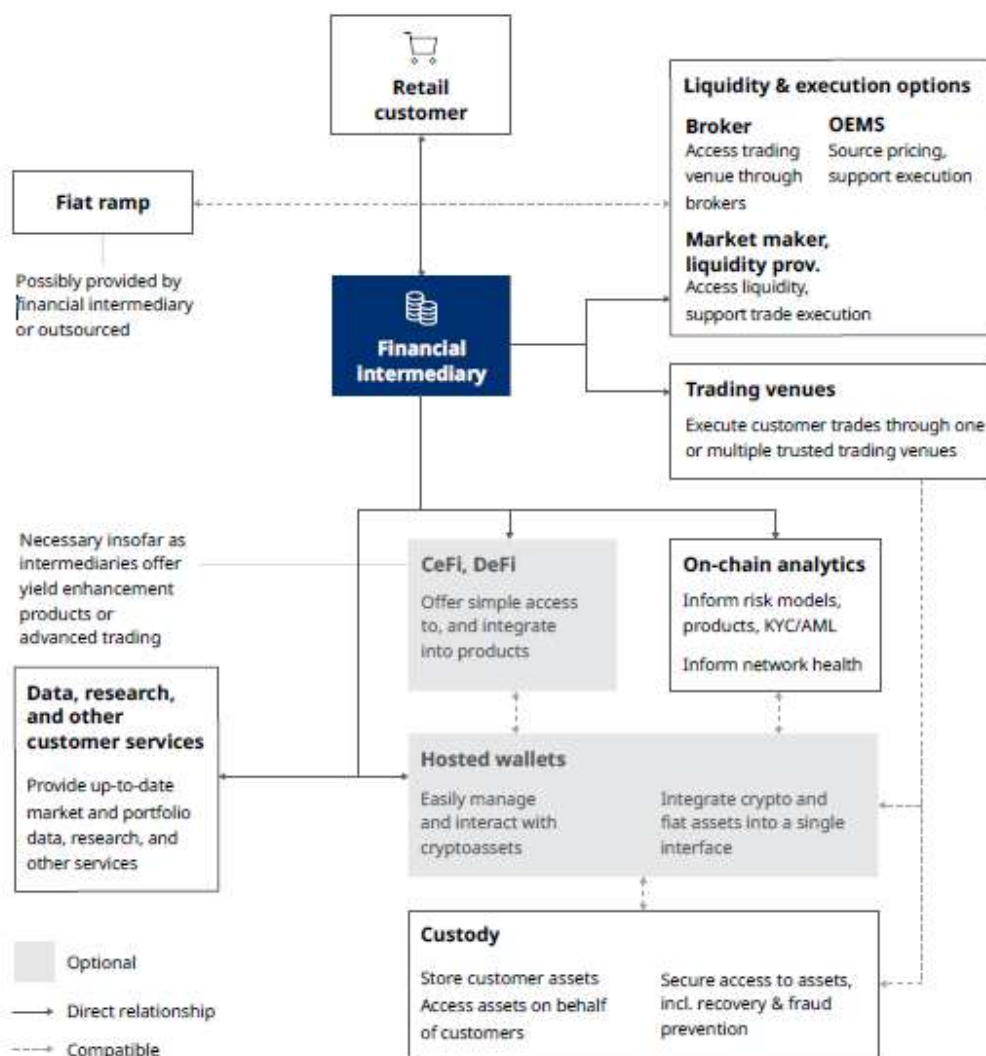
U.S. CREDIT UNIONS - CURRENT LANDSCAPE

The US, as previously indicated, has 27.5 million cryptoasset owners, the highest per capita cryptocurrency ownership rate in the world - second only to India in the total number of cryptocurrency owners.

Last year, Forbes reported that digital account opening was the largest movement in the financial industry. Coinbase opened 12 million accounts digitally and that doesn't take into account the other major players like Robinhood, eToro, PayPal, etc. (Compare that to Navy Fed's 10.6 million accounts opened over the last 30 years.)

Credit Union members are using the services of companies such as Coinbase and Robinhood because they, more often than not, can't receive these services through their credit union, or other similarly regulated financial institutions.

A recent Fiserv study indicates that 81% of crypto users said they would rather buy crypto from their credit union if given the choice. So, rather than losing customers/deposits to Fintechs and exchanges, as is the current situation, Credit Unions could be increasing membership and revenues by offering crypto- and defi- related services, such as custody, issuance, trading, borrowing/lending and staking:



Source: Ripple: Navigating Crypto: How financial intermediaries can integrate cryptoassets

TRUST, EXPERTISE AND ENGAGEMENT

Credit Unions have three very important advantages over the companies and exchanges currently offering Cryptoasset services to the public:

1. Trust

Credit Unions have a long and proven track-record in providing financial advice and services to the American public and have amassed a large community-centred member base..

Trust is at the core of U.S. Credit Union brand and activity - both within their member base, society at large and, indeed, the financial ecosystem.

2. Expertise

As Crypto use becomes increasingly mainstream, in both personal and business life, the need for its integration into broader commercial activity will become obvious. Indeed, the expansion game plan of current Crypto asset service providers is:

- 1. To go broad** - onboard as many customers as possible with baseline buy, sell, hold services
- 2. To go deep** - offer more comprehensive value-add services (replicating traditional services)

While they have the technological infrastructure to implement that plan, they lack the experience and in-depth understanding of financial, legal, regulatory, market and taxation issues that exists within, and is expected of, financial services providers. (Crypto firms are hiring talent from the financial service / other sectors to reduce that deficit.)

Credit Unions as incumbent, compliance-conscious, financial service institutions are ideally placed to take a lead role in the evolution of the space and offer value add services, in addition to the current Crypto buy/sell/'hold' activities of members.

3. Customer Engagement

The relationships and insights that Credit Unions have with their community-centred member base enables customer service and engagement at a level that is not possible for, or presently attempted

U.S Credit Unions Main Advantages

1. Trust
2. Expertise
3. Engagement

by, the Exchanges and Fintechs offering Crypto asset services.

Exchanges do not have a reputation for providing high levels of customer service/engagement or financial advice. Most often the experience is at arms-length and not integrated with customers overall financial needs/best interests.

Five Crypto companies - FTX US, Cryptonews.com, CryptoSec.info, SmartAsset.com, and FDICrypto.com - have recently (August 2022) been issued with cease and desist letters by the FDIC alleging they made false and misleading statements about FDIC deposit insurance and demanding immediate corrective action. [ARTICLE](#).

Coinbase faces a class action suit in which it is alleged to have allowed US customers to trade digital assets which the exchange "knew or recklessly disregarded" which should have been registered with the Securities and Exchange Commission (SEC). [ARTICLE](#)

Credit Unions certainly have the opportunity to bring trust, expertise and real customer engagement to a space which also allows them to effectively compete with organisations of any size.

PRACTICAL, LEGAL AND REGULATORY ISSUES

The NCUA issued a letter in December 2021 stating that it would allow credit unions to hire third-party vendors for cryptocurrency as long as they abided by the same NCUA safety and soundness principles applied in other vendor relationships.

In a subsequent letter in May 2022, the NCUA expanded on the message and told credit unions they can use the technology behind cryptocurrency as long as they follow NCUA principals to ensure compliance with existing regulations and don't create undue risk.

The NCUA listed several steps credit unions should take "at a minimum.":



- ➔ The credit union's board of directors is notified of advancements in the underlying technology, the purposes of the technology, and how using DLT aligns with the credit union's strategic planning objectives and approved risk tolerances.
- ➔ Credit union staff and third parties using and managing the technology are complying with applicable laws and regulations and acting in a safe and sound manner.
- ➔ Effective risk-management practices are followed to identify, assess and mitigate risks associated with DLT and the specific activities for which it will be deployed.
- ➔ Risk assessment and audit functions can validate and attest to the effectiveness of risk mitigation practices in accordance with internal policy and industry leading practices. Credit unions must identify, assess and mitigate risks associated with DLT.

In addition, following a July 2022 vote of the Uniform Law Commission, amendments to the Uniform Commercial Code (UCC) are now heading to the state legislatures for adoption.

Changes to uniform U.S. state law, commercial law rules for transactions in digital assets, including:

- cryptocurrencies,
- tokens,
- electronic notes,
- and electronic chattel paper,

may be adopted in state legislatures as early as this fall 2022.

CONCLUSIONS & RECOMMENDATIONS



Conclusions

A fully immersive, large scale, open Metaverse is aspirational for the time being.

However, much of the core technology (AR, VR, AI & Blockchain) exists (and is evolving quickly) to create discrete applications and virtual worlds - to such an extent that the term Metaverse has evolved to more commonly mean “the future of the internet and Web 3.0”.

There is huge investment in the space as it holds the potential to transform communication, and industry, in a similar manner to the introduction of the Smartphone. That potential is, however, in the very early stages of being realised and understood.

Don't believe the hype: the metaverse is an evolution, not a revolution. And it's one that business leaders should not ignore.

Key metaverse concepts, including digital economy innovations such as Web 3.0 digital assets (cryptocurrencies, NFTs and Tokens) are business-relevant today.

Web 3.0 digital assets offer a way for Credit Unions to serve a profitable and demonstrated demand and differentiate themselves from competitors and compete with larger financial institutions.

The opportunities include:

- Custody
- Issuance
- Trading
- Borrowing/Lending/Staking (DeFi)

Any investment made in the understanding and use of digital assets should help to future-proof the institution against even greater expected changes in the digital asset space – tokenization of real-world assets, the greater use of Stablecoins for low-cost, real-time national and international payments, the introduction of CBDCs and greater use of NFTs.

When entering this space commercially, it is prudent to choose projects carefully and to devise a balanced short- and long-term strategy to enhance your likelihood of success...



Recommendations

Short-Term Focus

1. Education

Assign at least one resource or source of knowledge (such as a group) to understand key concepts such as cryptocurrencies, NFTs and Decentralized Finance (DeFi) and their relevance to your company.

2. Strategy Development

Identify gaps to close and long-term opportunities to build from the metaverse and its key concepts, then work on foundational measures, including research on technology, potential technology partners, the marketplace and establishing the stakeholders within your company who will be involved in bring any product/service to market (technology, sales & Marketing, legal, regulatory, C-Suite, other)..

Many companies will also benefit from hiring digital native employees or retaining the requisite consultancy team.

3. Low Risk/Low Cost Use Cases

Select a few initial low risk/cost opportunities, such as offering tours of virtual facilities, providing educational opportunities in use of Crypto Wallets, or launching an NFT to enhance brand and connection to customers.



Recommendations

Long-Term Focus

1. Trust

The metaverse and its currently existing components offer new challenges for cybersecurity, privacy rights, regulatory compliance, brand reputation and anti-fraud efforts. Companies should, for example, consider security at the services level, so that no matter where your asset goes, security is maintained.

To foster trust among consumers, shareholders, regulators and other stakeholders, communicate their benefits early and detail how you will mitigate any potential risks.

2. Rethink Core Competencies

What offers competitive advantage in a shared, 'decentralized' digital environment may be different from what you have today. Recruit employees, insource intelligence and partner with the appropriate technology vendors to create new services and new approaches to Data and Business Relationships.

3. Align Physical and Digital

If you have added or plan to add digital services and/or assets to your portfolio, drive for a consistent brand experience across both the physical and digital constructs. Just as your web presence needs to match your physical location experience - so should your metaverse / web 3.0 experience.

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