Deloitte.

Welcome to the metaverse

Welcome to the metaverse | Table of contents
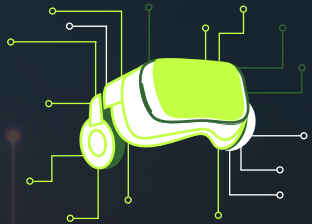
Topic	Page

Metaverse 101

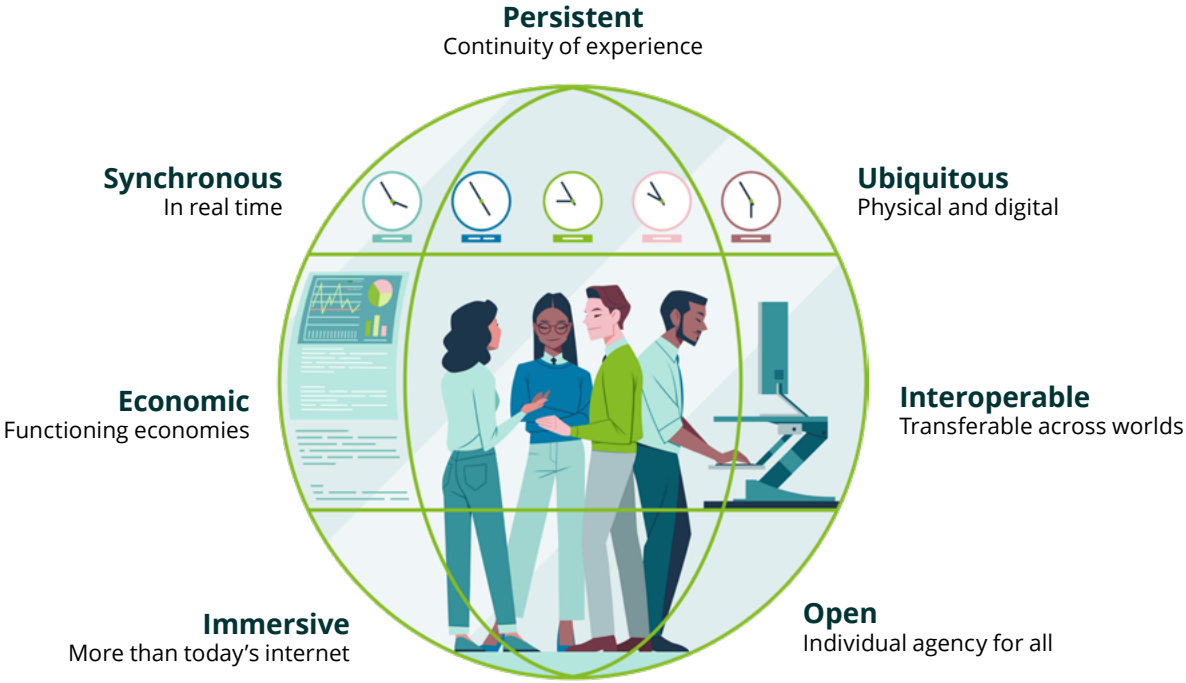What is the metaverse, and why will it change the way we live?

At the highest level, the metaverse is:

A network of 3D virtual worlds, focused on **immersive experiences, digital economies,** and **social connections.**

However, there is currently no single, and aligned-upon view of the metaverse.

Whatever the metaverse may evolve into over time, we believe that in its ideal state, it will encompass the following attributes:

Persistent
Continuity of experience

Synchronous
In real time

Ubiquitous
Physical and digital

Economic
Functioning economies

Interoperable
Transferable across worlds

Immersive
More than today's internet

Open
Individual agency for all

Today, however, the term is used for technologies, platforms, and concepts that may not have all these attributes.

Sources: Matthew Ball – The Metaverse

Metaverse 101 | Clarifying the concept of the metaverse

The lack of a standard definition and evolving understanding of the concept has people confusing it for other technologies. The metaverse is not a single technology, but leverages a collection of capabilities, some of which are listed below.

Virtual/ Augmented Reality

Technologies to access the metaverse, much like current hardware and software allow us to access the internet
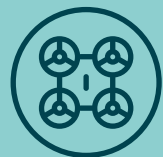
Blockchain

Technology that will enable the metaverse to be decentralized, interoperable, and secure

Web3

Evolution of today's internet giving ownership to metaverse users to create and capture value

Video games/ virtual platforms

Immersive virtual worlds that create social experiences and economies in the metaverse

Digital twins

A real-time virtual counterpart of a physical object or process that can be used to build metaverse worlds

Internet of Things (IoT)

Network of physical objects that communicate with each other and can support physical/ virtual integration

The metaverse is a concept and will not be owned by a single company.
It is also not a replacement for the physical world; rather, it will bring the virtual and physical worlds together in new ways.

Metaverse 101 | Why is the metaverse trending now?

The technology, culture, and market have all come together over the last few years to bring this to life globally.
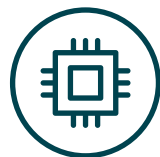
Technology
Readiness of underlying technology

Networks
Rollout of 5G and fibre to more communities

Economic enablers
Rise of cryptocurrencies and NFTs

Digital infrastructure
Cloud, blockchain, etc

Virtual platforms
e.g., Sandbox, Unreal Engine, Roblox, Decentraland

Access technology
AR/VR headsets, browsers, smartphones

Culture
Mindset shift to drive acceptance and adoption

- From online work and education now conducted through video calls, to virtual socials and events on video game platforms, the COVID-19 pandemic has supercharged the role of digital in our lives.

- This has also improved the digital literacy of people across generations, leading to a level of comfort with new platforms and technologies, and an added appetite to try new experiences.

Market
Supporting market activity and trends

Firm initiatives
New products, patents, processes, etc., launched by leading technology, OEM, entertainment and media companies

Immersive experiences
Live sporting games, concerts, and social events broadcasted and hosted by leading sports agencies and platforms

M&A and partnerships
Major partnerships and acquisitions across technology, gaming, and entertainment players globally

Virtual storefronts
Leading luxury and consumer brands providing offerings through stores in virtual worlds across industries and categories

Source: Deloitte Analysis

Metaverse 101 | Benefits of the metaverse

In its ideal state, the metaverse will provide numerous benefits to people, enterprises, and governments around the world.

Benefits to people

Immersive and engaging experiences
- Improve social experiences without geographical restrictions (e.g., live events, concerts, gatherings)
- Immersive education and learning
- Immersive shopping experiences
- Simplified transactions
- Specialized services (e.g., access to remote healthcare professionals)

New job categories
- New metaverse-related and adjacent roles to enable its virtual economy
- Natural evolution of current "gig economy"; no geographical restrictions, work when, where, and how you want

New ways to earn money
- Play-to-earn models based on crypto economies to get customers more engaged
- Investing in digital assets (e.g., NFTs) for expected financial returns

Benefits to enterprise

New revenue streams and business models
- Selling digital assets (e.g., NFTs, virtual goods)
- Building immersive experiences
- Launching new sales channels (e.g., virtual stores)
- Reimaging marketing and advertising initiatives
- Renting out land/storefront space

New ways of working
- Accessing global talent
- Practicing new ways to network and collaborate remotely
- Offering new methods of training/onboarding
- Increasing talent retention

Improved operations
- Improving safety
- Optimizing efficiency (e.g., energy usage, reduce footprint) thereby reducing overhead
- Enabling collaborative testing and simulation

Benefits to governments

Reimagined public services
- Citizen services (e.g., healthcare, driving, etc.)
- Consulate and embassy applications
- Enhancing tourism and hosting immersive cultural events

Enhanced quality of life for citizens
- **Urban planning:** Optimizing city planning in terms of traffic, green spaces, etc.
- **Climate change:** Modelling emissions to understand and plan how to meet set targets

Metaverse 101 | Risks of the metaverse

The metaverse represents a significant evolution of our current digital experience. Key mitigating actions must be taken to prevent potentially amplified risks across data privacy, cybersecurity, fraud, as well as, user health and safety.

Data privacy	Cybersecurity and fraud	User health and safety	Secure identities

Key risks

Data privacy	Cybersecurity and fraud	User health and safety	Secure identities
• Lack of clarity and defined processes for how personal information is stored, accessed and used across metaverse platforms • Concern on how platforms, network providers, and other digital infrastructure players would store, track, use, and retain all types of data	• Increased number of vulnerable touchpoints • Theft of digital identity and assets • Lack of regulations/regulatory body, particularly in open-source, decentralized metaverse models	• Accessibility of immersive harmful content (e.g., inappropriate content for minors) • Unwanted harassment (e.g., racial, sexual, stalking, etc.) in social experiences • Effects of prolonged use of immersive technology (VR/AR) on user health	• Transacting with an individual/ business with an unverifiable identity (e.g., Know Your Customer – KYC) • Interacting with unknown individuals who are potentially bad actors

Potential mitigating actions

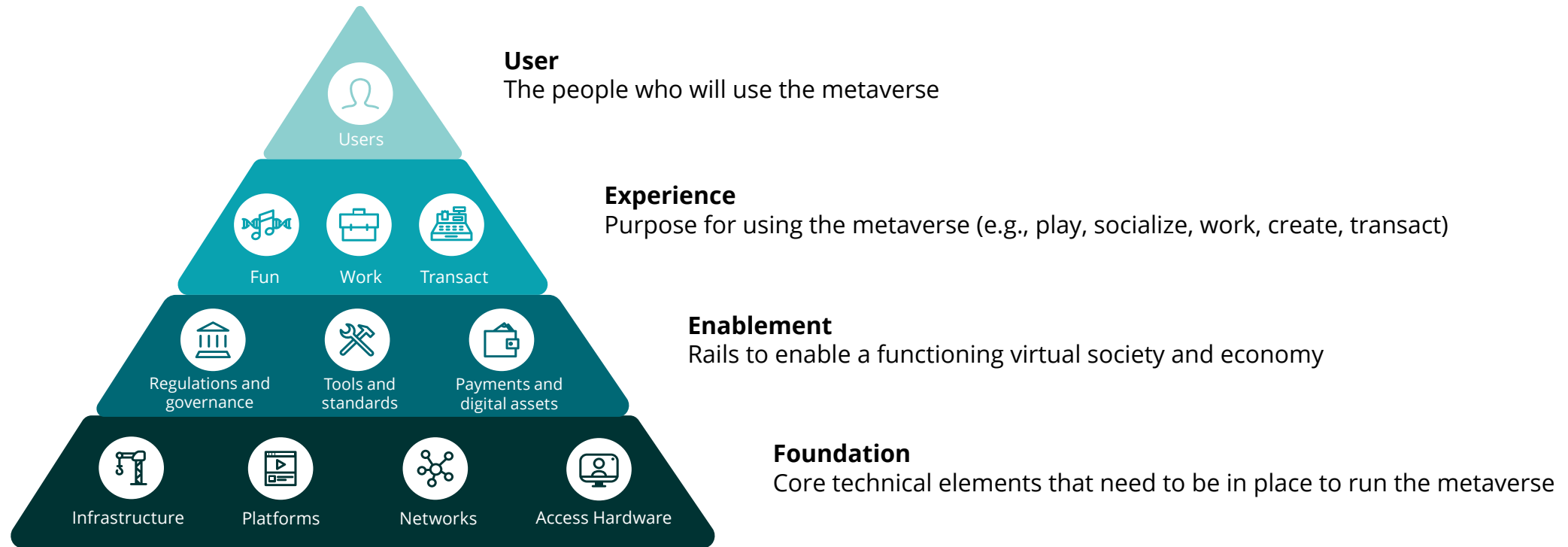| Data privacy	Cybersecurity and fraud	User health and safety	Secure identities
• Stronger regulation to provide users protection and ownership over data • Ability to opt into certain elements of data collection by platform owners	• Development of copyright laws, to include items related to digital avatars • Improvement of digital enforcement, with newer laws to penalize metaverse-related fraud • Continued investment in a national Computer Emergency Response Team (CERT)	• Common set of standards established with respect to metaverse user safety • Unique digital identifiers to reduce anonymity and increase capability of rule enforcement • Incentives to increase positive behaviour, instituted by providers	• Collaboration to coordinate unique digital identities and personal records (e.g., SIN, credit score) • Unique digital identifiers to reduce anonymity and increase capability of rule enforcement
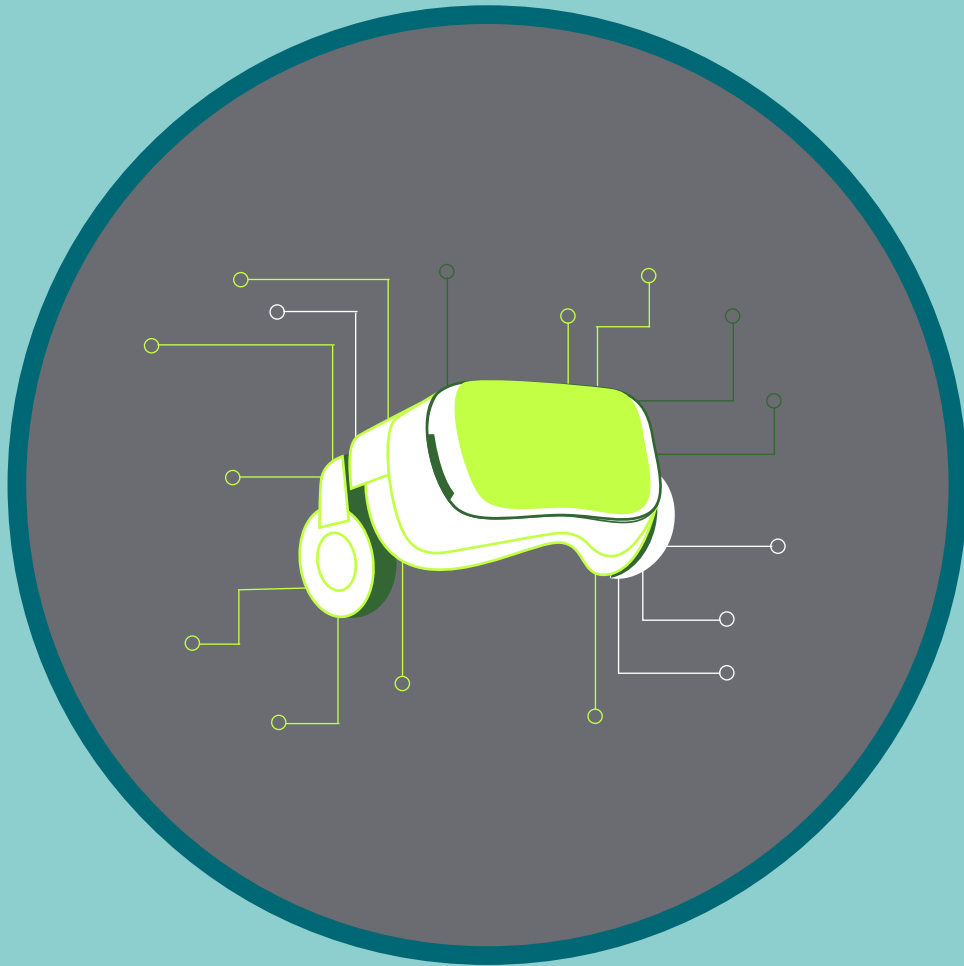
The metaverse ecosystem

How will we experience the metaverse, and what will build its foundations and enable it?

The metaverse ecosystem | Overview

A fully functioning metaverse ecosystem will create new and meaningful experiences for society at large, enabled by a standardized set of tools, processes and digital assets, and underpinned by several foundational pieces of technology.

User
The people who will use the metaverse

Users

Experience
Purpose for using the metaverse (e.g., play, socialize, work, create, transact)

Fun   Work   Transact

Enablement
Rails to enable a functioning virtual society and economy

Regulations and governance   Tools and standards   Payments and digital assets

Foundation
Core technical elements that need to be in place to run the metaverse

Infrastructure   Platforms   Networks   Access Hardware

In the following slides, we will examine how these foundational technologies and enabling rails come together to shape the metaverse experience, which will change how we have fun, work, and come together as users and businesses. However, much is still unknown; we will also examine critical uncertainties that exist today with each element.
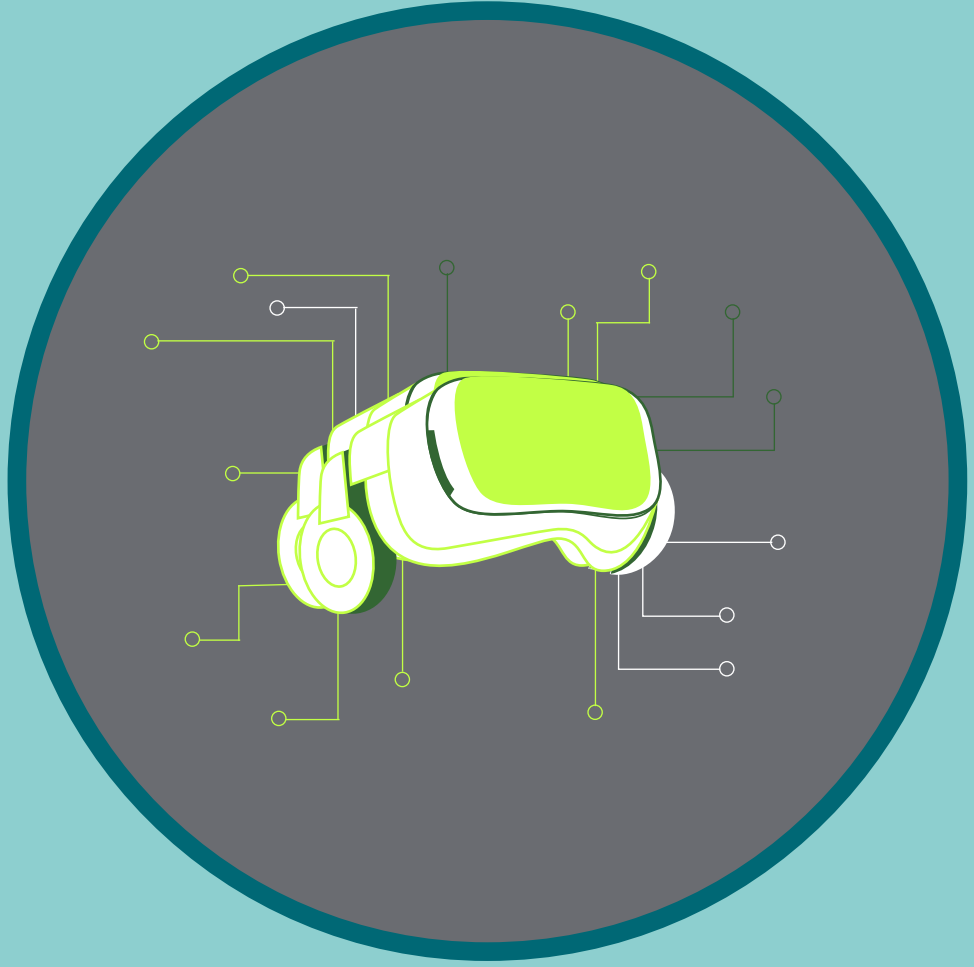
The metaverse ecosystem: Foundation

Infrastructure, virtual platforms, connectivity networks, and access hardware will create the technical foundations of the metaverse.

Foundation | Infrastructure

Infrastructure advancements are required for the metaverse to have the compute required for immersive experiences, as well as the fundamental features for decentralization and interoperability. This will largely be enabled by the cloud and blockchain.[1]

Foundation

Why is cloud computing important?

Cloud computing leverages a network of remote servers to provide computing services over the Internet. Crucially, the compute requirements of the metaverse far exceed the capacity of any readily available consumer hardware. Therefore, cloud computing will be fundamental in providing compute at scale. Beyond computing performance, cloud also offers the benefits of lower costs, flexibility, and security.

How will the cloud enable the metaverse?[2]

Processing power and storage: The cloud will provide the processing capacity capable of delivering high fidelity, persistent, and synchronous experiences, like a virtual world that updates in real-time for millions of users.

Distributed presence: The cloud can also help limit network requirements by offering a distributed system that enables processing closer to the users' physical location.

Why is blockchain important?

Blockchain is a distributed ledger technology that permanently records transactions onto a publicly-owned database. Blockchain is critical to interoperability and decentralization in the metaverse because it enables secure, verifiable transactions without the need for a centralized authority. This allows transactions to be tracked and verified between metaverse platforms, allowing users to seamlessly switch environments.

How will blockchain enable the metaverse?[3]

Cryptocurrencies: Blockchain-enabled currencies can facilitate physical and digital transactions without the frictions of exchange rates, high fees, intermediaries, or legacy payment rails.

Secure digital ownership: Ownership of digital assets can be reliably verified through the blockchain, allowing the sale and trade of unique digital assets that facilitate a decentralized and interoperable metaverse economy.

The cloud and blockchain

In a full-scale, decentralized version of the metaverse, the cloud and blockchain can work together to further their individual impacts. This can be done by enabling individuals and businesses to share excess compute capacity on their devices with others. The blockchain would facilitate this transaction, compensating the individual/business sharing their compute resources with cryptocurrencies, while the cloud will allow the user to access the compute power. This is the same vision of the future that many have for autonomous vehicles; when your vehicle is idle, it can be used for ride-sharing, which the owner is compensated for.

While cloud will likely be the most efficient source of compute, uncertainties exist around the ability for these solutions to process the nearly limitless amounts of data required for the metaverse. For blockchain, it's uncertain whether users will adopt cryptocurrencies at scale or if their volatility limits their value, and/or their complexity creates barriers to entry.
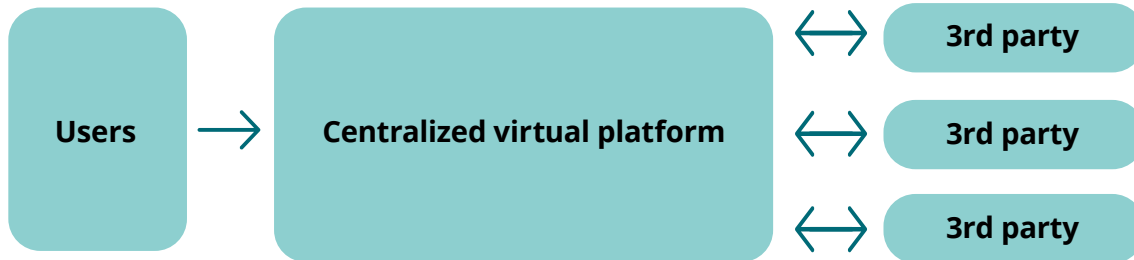
Foundation | Virtual platforms

Tim Sweeney (founder of Epic Games) defines platforms as a place where "the majority of content that people spend time with is created by others."[1] With the metaverse, this can manifest in two ways: centralized and decentralized virtual platforms.

Centralized platforms

Users → Centralized virtual platform ↔ 3rd party / 3rd party / 3rd party

Decentralized platforms

Users → 3rd party / 3rd party / 3rd party ↔ Decentralized virtual platform

Centralized platforms are designed to help users navigate the metaverse, curating the experience. These platforms supply third parties (businesses or users) with the engine, dev tools, asset libraries, and services to create virtual experiences, but the platform makes the rules, controls governance, and owns the user relationship. This means the platform takes a greater share of economic activity.

Compared to today's internet, centralized platforms are most similar to aggregators like Meta/YouTube, as they broker a connection between users and third parties. This model has the advantage of using customer data to create a truly personalized experience and take a lot of the "work" out of the process for users. Replicating this model in the metaverse, however, would mean of many of today's problems relating to Big Tech dominating the internet would persist, and, in fact, be worse as the scope of what the centralized "metaverse owner" would control is alarmingly large.

Today, Horizon Worlds and Roblox are two examples of centralized platforms that enable users to build virtual experiences and socialize with others.
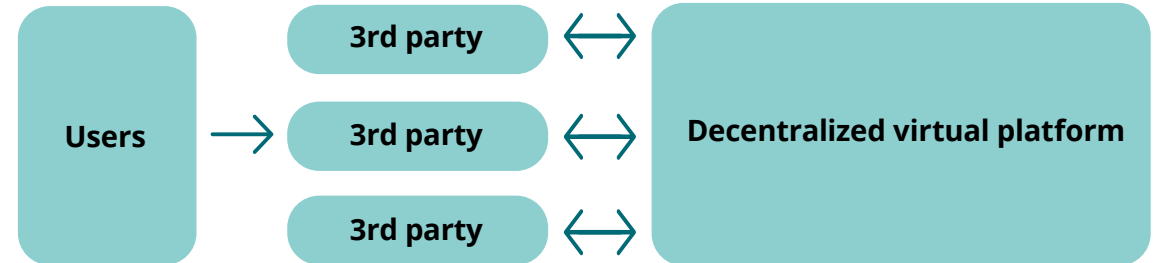
Decentralized platforms are designed to enable third parties with the engine, dev tools, asset libraries, and services required to create virtual experiences in the metaverse. Users engage with the third party platforms directly, with the virtual platform taking a small fee. These platforms are most frequently built on blockchain technology and rely on DAOs for governance.

Compared to today's internet, decentralized platforms are most similar to Shopify, in that they do not seek to control the user experience but equip merchants to have a direct relationship with customers. This model has the advantage of creating a true "meritocracy" where users can pick their favourite experiences; however, demand generation and scaling can be a challenge for any individual third party.

Today, Decentraland and SANDBOX are two examples of decentralized virtual platforms build on the blockchain, enabling users to buy, sell, and trade using their respective cryptocurrency (MANA and SAND).

> Both virtual platforms have critical uncertainties. For decentralized platforms, it is uncertain whether the investment required for success will even be met, and if its users can organize and build. For centralized platforms, there are several tech giants jockeying for position and it is unclear how each will differentiate (or if they will all cannibalize each other).

Foundation | Networking requirements

The networking requirements of the metaverse far exceed broadly distributed capabilities today- so much so that each of the core elements of networking will require drastic improvement.

Bandwidth

This is the data transmission capacity over a given time period; it's typically measured in gigabytes per second (gbps).

Why does bandwidth matter?

The metaverse will require the transmission of immense volumes of data in real-time between millions of devices. For a massively scaled, shared, and persistent virtual world to operate well, it cannot rely on data stored locally as many video games do today. Instead, data must be cloud-streamed as it's needed. This means that we'll require far greater bandwidth than we have now, but what we don't know is how much bandwidth is enough.
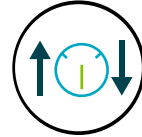
Latency

This is the time for data to be sent, transmitted, received, and decoded; it's typically measured in milliseconds (ms).

Why does latency matter?

The more immersive an experience is, the more critical it becomes to have low latency (i.e., "lag"). Current experiences such as video streaming or online gaming have implemented clever solutions to mitigate against the impact of latency, rather than eliminating it. However, for highly immersive metaverse experiences these "fixes" may not be possible. If facial expressions and body movements cannot be captured, sent across the network, and unpacked instantly, experiences will inevitably enter the "uncanny valley" and limit overall adoption.

Accessibility

This is the ability for users to access high bandwidth, low latency internet in an affordable and reliable manner.

Why does accessibility matter?

Inclusiveness must be a key quality of the metaverse, yet internet accessibility continues to be a pervasive issue. High bandwidth and latency standards need to be consistently upheld, and not just in wealthy urban centers. This will require sizeable investment, but for the metaverse to deliver on its promise, internet connectivity must be available and affordable.

Source: Matthew Ball

Foundation | Networking solutions

The emergence of new networking protocols and technologies are leading to great advancements in each of the core elements of networking. Below is an overview of emerging solutions that will help bring the metaverse to life.

Foundation

5G wireless

5G is the next generation of wireless, capable of 10 Gbps broadband speeds and 1 ms latencies. Today, it is almost exclusively available on low bands, providing limited improvement over 4G. Expanding the rollout to higher bands will facilitate speeds suitable for the metaverse.

▤ Bandwidth   ◷ Latency   📶 Accessibility

Wi-Fi 6, 6e, 7

Wi-Fi 6 is the next generation of Wi-Fi standards capable of providing broadband speeds up to 10 Gbps and latencies as low as 10 ms. While early in its rollout, more and more devices will be Wi-Fi 6 enabled and capable of supporting speeds necessary for the metaverse.

▤ Bandwidth   ◷ Latency   📶 Accessibility

Fiber broadband

Fiber optic cables are 50 times faster than traditional DSL connections and are capable of providing speeds up to 10 Gbps, and latencies as low as 1 ms. Increasing fiber density will be key to supporting increased 5G and Wi-Fi speeds and managing the expected increases in data traffic.

▤ Bandwidth   ◷ Latency   📶 Accessibility

Fixed wireless access (FWA)

FWA is an internet connection provided over a wireless radio network. It is not currently available at scale but will be key to expanding connectivity in rural settings where ground infrastructure can be difficult to set up. FWA can also be leveraged to reinforce reliability.

▤ Bandwidth   ◷ Latency   📶 Accessibility

Low earth orbit satellites (LEOS)

LEOS technology leverages satellite constellations to provide internet. Like FWA, it is not widely available, but will be key to expanding connectivity in rural settings. Major tech players have strong aspirations to expand their LEO satellite networks in the next few years

▤ Bandwidth   ◷ Latency   📶 Accessibility

Converged wireless and wireline

Converged networks facilitate seamless user connectivity between wired and wireless networks, providing users with a more adaptive network to support the metaverse. 5G and Wi-Fi 6 are key to enabling network convergence, meaning its effectiveness is limited in the near term.

▤ Bandwidth   ◷ Latency   📶 Accessibility

The exact networking requirements of the metaverse are largely unknown and it's unclear when current performance will be "good enough." In addition, current market dynamics encourage competition where cooperation may be required to meet these requirements (e.g., building rural networks, sharing network infrastructure to reduce latency).

Foundation | Access hardware

Access hardware is the user's entry point into the metaverse and include emerging technologies such as VR/AR headsets and haptic gloves, along with established consumer hardware such as laptops, smartphones, and tablets.

Foundation

VR headsets

VR immerses users into a fully virtual environment that is 100% removed from the physical world through novel audio and visuals inputs.
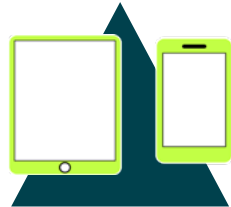
AR headwear

AR blurs the distinction between the physical and virtual environment by overlaying digital information and/or digital objects onto the physical world.

Haptics

Haptics facilitate tactile feedback from virtual environments to increase users' level of immersion and improve dexterity.

Key challenges

Resolution: Pixel gaps are more noticeable the closer a screen is to the eye, creating resolution requirements for more realistic images

Refresh rate: Images must be refreshed at a rate of 120Hz or higher to avoid nausea. Most hardware today is between 60-90Hz

Weight and safety: Extended VR exposure can cause fatigue or nausea. A reduction in weight and battery size are required for comfortable use

Field-of-view: Humans can see an average of 210 degrees; market leaders offer a far lower range of 25-55 degrees

Optics: Optics are necessary to focus images correctly, but this creates brightness demands above the currently available technology

Cost: Pricing currently limits haptic gloves to industrial use with an approximate range of $5,000 to $10,000 per set

Integration: Haptics are not currently integrated into the majority of consumer apps and devices and are limited to specific purpose-built software applications

The development of these technologies is inevitable, but questions exist over how quickly and cost effectively hardware manufacturers can overcome remaining challenges and whether VR / AR adoption is necessary for metaverse proliferation. Computers and smartphones may provide immersive metaverse experiences as well.
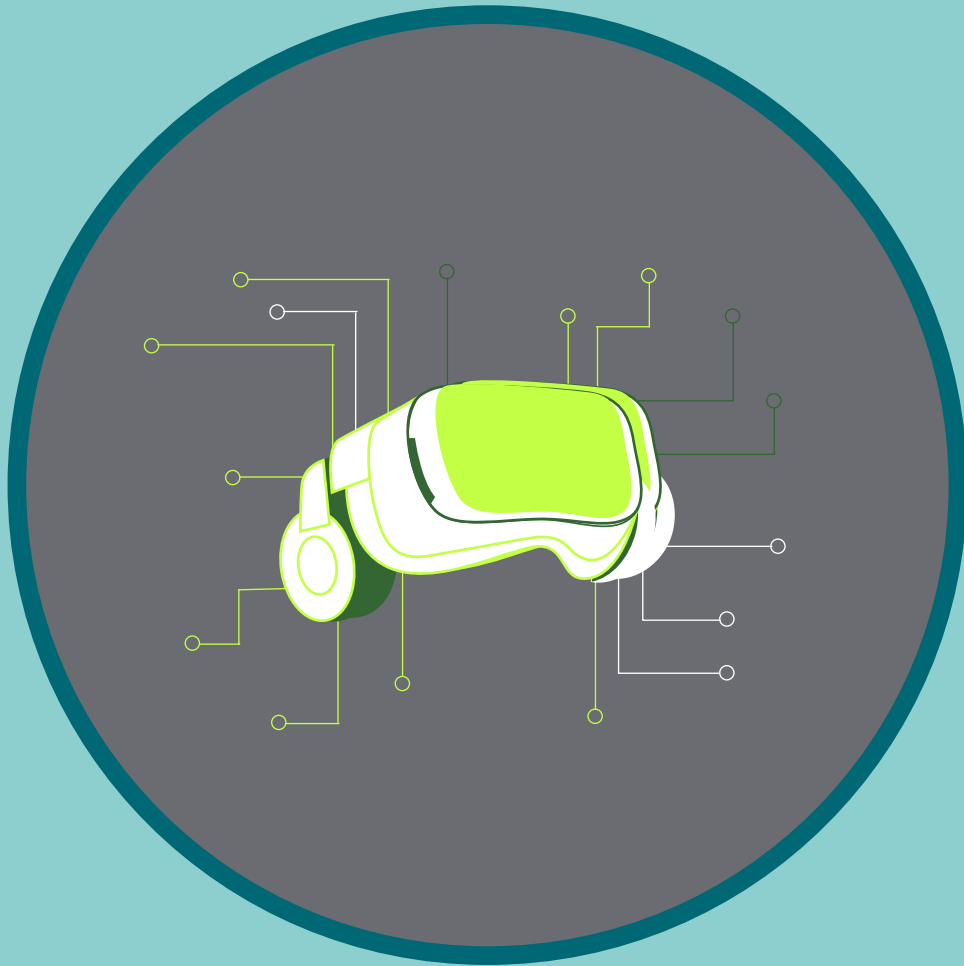
The metaverse ecosystem: Enablement

A functioning social and economic ecosystem will be enabled by effective governance, consistent tools and standards, and a robust payments network.

Enablement | Regulations and governance

Government regulations will inevitably shape the future of the metaverse, but at this time are impossible to predict. What can be assessed today are the differences in governance that emerge from centralized verses decentralized metaverse models.

Enablement

	Centralized governance	Decentralized governance[1]
Definition	The metaverse is controlled by a select group of large entities that operate centralized virtual platforms.	The metaverse exists via fully decentralized virtual platforms built on blockchain and not controlled by any single entity or group of entities.
Current examples	Meta Horizon Worlds, Roblox	Decentraland, The Sandbox
Decision-making actors	Company executives and boards of directors	All participants within the blockchain get a vote in the decision-making process (i.e., all token holders).
Decision-making process	Key executives and shareholders with voting rights decide the outcome of each issue.	Decisions are made through decentralized autonomous organizations (DAOs).
Decision-enforcing mechanism	Unilateral decisions are enforced by the platform in the form of revokable access, fines, plaforms moderations, etc.	All decisions are made through a set of code based on self-enforcing rules implemented via pubicly verifiable smart contracts.
Key challenges	Lack of transparency and excessive control allow platform owners to dictate fees user access, content ownershup distribution, and monetization.	DAOs can be distributed across jurisdictions and geographies, therefore, legal issues are subject to a variety of regional laws.

Decentralized Autonomous Organizations (DAOs)[2]

A DAO is an organization that is owned and managed by its members. Members are either token or share-based, which determines member voting rights and ownership. DAOs are governed against a smart contract that defines the rules of the organization, which can only be changed by a vote.

> Depending on which virtual platform model becomes the pre-eminent customer choice, the corresponding governance model will follow. That said, we are no closer to predicting where on this spectrum we will end up. It will either be dictated by government regulation or by which platforms provide better customer experiences and thus capture demand.

Enablement | Tools and standards

Tools and standards are the components of the ecosystem that can enable stakeholder trust, interoperability, and shape a more user-centric, personalized, and user-friendly metaverse community and economy.

Enablement

Standards and protocols

Web1 was developed by academics, scientists, and the military who intended to create an interconnected web of computer networks. As a collection of protocols, they built web1 with the fundamental belief that no one entity should control or own the internet, which has promoted open innovation and competition.

In web2, "Big Tech" built platforms powered by these standards and protocols, creating amazing digital experiences but with the negative byproduct of creating walled gardens. The fundamental promise of the metaverse will not be met unless it is built with the same principles as web1; without them, the metaverse would just be a more immersive version of web2. The exact standards that define the metaverse are yet to be developed, but they will unlock the true power of the metaverse only by promoting:

Interoperability: User data/assets (e.g., avatar, cryptocurrencies, virtual goods) and virtual systems (e.g., movement, rules, consequences) should be consistent and unified across virtual worlds.

Decentralization: The "idealized" metaverse leverages mutually accepted standards to help realize the web3 vision where users have complete control over their data, assets, and experiences.

Early signs of industry collaboration to facilitate open standards and ecosystems are starting to emerge, with many key technology players from the foundation layer of the ecosystem coming together for initiatives like the Metaverse Standards Forum (MSF).[4] But questions remain around how successful these collaborations can be, and of the players not involved in the forum.

Tools will also play an important role in realizing the promise of the metaverse:

Digital identity[1,2]
Users having a unique digital identity that can verify and protect their likeness, data, and assets will be key to "unlocking" interoperability. It can also help establish trust between users in the ecosystem and limit fraud by holding culprits accountable.

Avatars
Avatars will help users in the metaverse maintain a sense of self, especially with interoperability between worlds. They can be used as a form of self-expression based on their appearance and accessories to establish a representation of our digital identity.
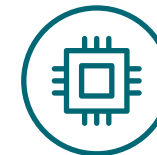
Artificial intelligence[3]
AI will allow metaverse users to interact with avatars that act in very similar ways to humans. The influx of data will also lead to improved user experiences by providing personalized services and offerings that better predict user needs and behaviours.

The determining factor between which metaverse standards become widely accepted and scaled will be where developers can make the most money. While centralized platforms typically take a large commission, they also provide access to a large audience. With decentralization, there are no commissions but it's harder to gain scale.

Enablement | Payments and digital assets: Challenges

For the metaverse to have its own fully realized economy, users must be able to transact, and money must be able to seamlessly flow in and out of the metaverse. Today, there are critical challenges preventing this from being fully operational.

Enablement

Current payment elements

Currency issuers are entities that issue and develop stores of value. Traditionally, this job is owned by the government and central bank of each country.

Payment rails are the underlying back-end processes that enable the flow of money through an economy. This allows the participants within an economy to transfer value among each other.

Wallets are a broad term for an entity that acts as a store of currency. Traditionally these are bank accounts, but there has been a proliferation of private wallets that enable new features for consumers.
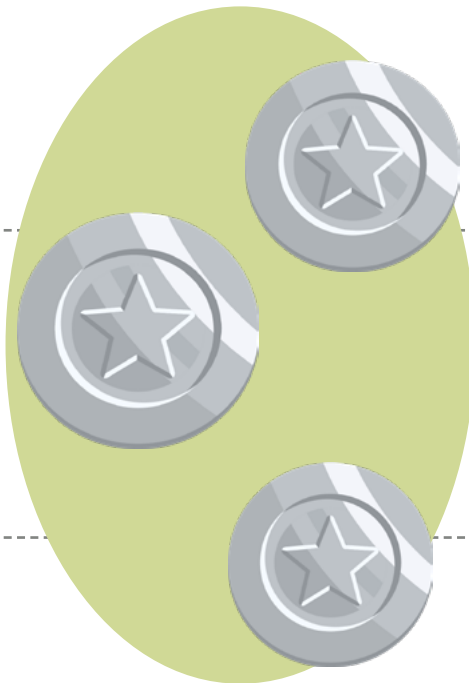
Challenges to replicating these elements in metaverse[1]
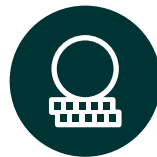
Barriers to decentralization
In proto-metaverses, non-government actors issue currencies. While crypto could be the optimal solution for consumers, those enabling the metaverse (e.g., Big Tech, financing banks, etc.) may restrict the degree of decentralization based on its impact on their profit pools.

Platform access and fees
Users must transact via rails that will have to be fast, secure, and scalable. Platform players today charge high fees on all transactions (e.g., 30% on iOS), which is unsustainable for mass adoption and growth of the metaverse economy.

Interoperability
Bank deposits are insured by government-backed agencies (e.g., CDIC, FDIC). Evolution of consumer wallets to enable currency interoperability (exchange fiat and crypto) and underwrite associated risks will play a large role in the metaverse.

Enablement | Payments and digital assets: Solutions

Fiduciary regulation, user trust, and interoperability will determine the payments solution(s) adopted by metaverse users.

Enablement

High regulation ← → **Low regulation**

	Existing fiat currencies	Central bank digital currencies[1]	Non-gov't digital currencies	Cryptocurrencies and tokens[2]
Definition	This is the currency used to pay for transactions digitally. It is the country's official currency and is backed by the issuing government and financial institutions.	This is a virtual form of a fiat currency, an electronic record, or digital token of a country's official currency that is backed by the issuing government and financial institutions.	This is an ecosystem-based currency, mostly found in games/immersive ecosystems to purchase virtual goods. It's usually purchased with fiat money, but can also be earned in-game.	This is a decentralized, digital currency with tokens built on top of a blockchain, allowing creators to fund decentralized application ventures within a specific blockchain.
Example	All government-issued currencies	China, Nigeria, and the Bahamas have launched CBDCs; 11 countries are piloting it, and 10 have launched PoCs	Fortnite's V-Bucks, Roblox's Robux, etc.	Bitcoin, Ether, BNB, ADA, SOL, MANA, SAND, etc.
Maturity	Widespread adoption across various retail and business users globally	There are two types of CBDCs: • Wholesale: used for interbank payments via existing payment rails • Retail: DTC, enabled by a cash-based access or account-based access	The adoption of specific currencies is highly dependent on the success of the ecosystem it operates in; these currencies are relatively nascent but growing.	Although relatively nascent, with limited use cases, Bitcoin is now legal tender in El Salvador and currencies/tokens like MANA and SAND are enabling purchase of digital assets in Decentraland and Sandbox respectively
Challenge	Centralization, privacy, regulation, and portability	Centralization, privacy, regulation, and portability	Interoperability, pseudo-centralization, and network effects	Volatility, scalability, regulation, and sustainability

Ultimately, the degree to which users trust each of the above currencies and the ability to use the currency frictionlessly will determine the scale of regulation in the market. Without stability in cryptocurrencies or the ability to use non-governmental currencies broadly, governments will intervene and establish CBDCs.
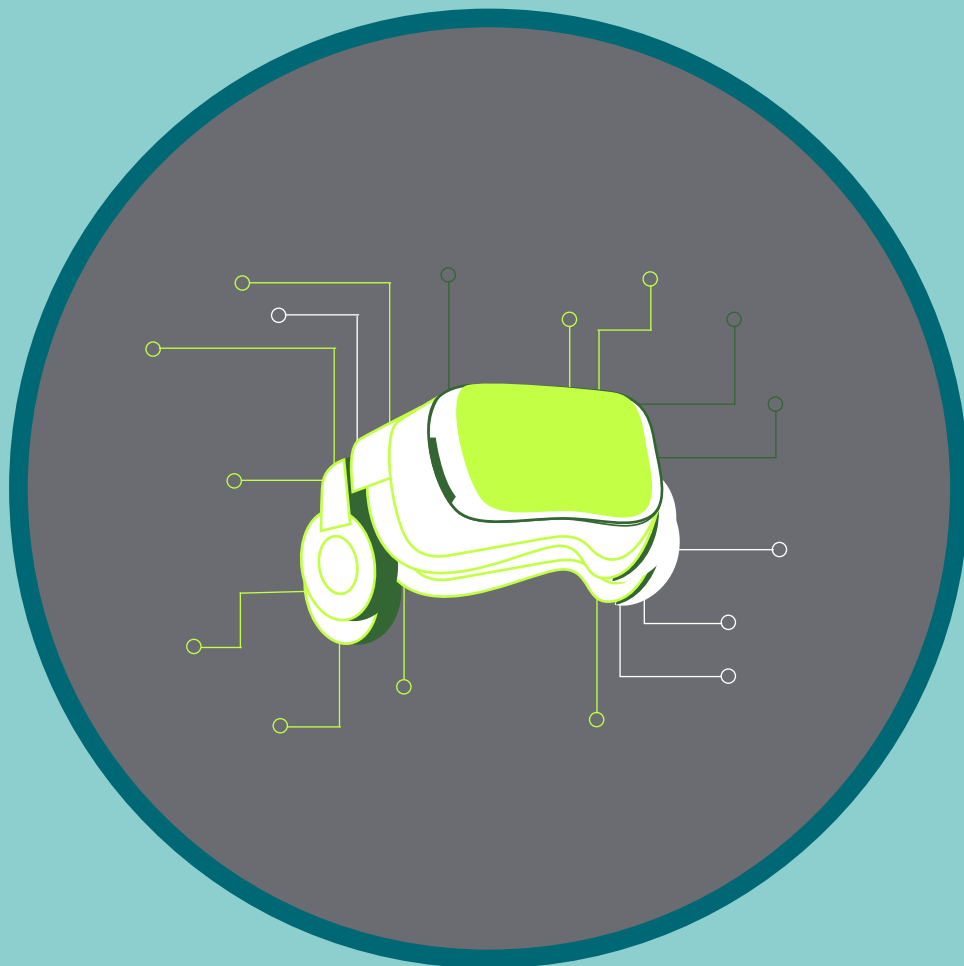
The metaverse ecosystem: Experience
The metaverse will change how people have fun, how people work, and how businesses come together with people.

Experience | How we have fun

The amount of time we spend on the internet having fun has grown exponentially, and the metaverse will continue this trend. It is already leading change in gaming that will be a natural metaverse launch pad for entertainment companies and users alike.

Gaming

Gaming represents the closest experience to the metaverse currently available, but the metaverse will fundamentally shift how we play games, with new models (play-to-earn), more immersive worlds, and more interactive multi-player experiences. Gaming engines will also fuel the evolution of the metaverse as a fundamental tool in real-time 3D graphics.

Epic Games launched its new gaming engine, the Unreal Engine 5, in early 2022. With the expectation to power the metaverse, the new engine features enhanced UI, performance, and visuals.[1]

Live events

Musicians have been early adopters of the metaverse, which will enable persistent venues where artists and audiences can come together from anywhere (e.g., live concerts in Fortnite). Virtual theme parks and sporting events could be other profitable metaverse applications, with VR providing a more dynamic viewing experience and reducing entry barriers.

Disney applied for a "virtual-world simulator" patent in December 2021. Disney intends to develop this technology to project 3D images and virtual effects onto physical spaces in its theme parks.[2]

TV, film, and music

Monetizing the love for characters and stories of a loyal customer base, studios will create immersive stories in 3D. The interoperability of the metaverse will also allow these stories to expand to other experiences (including virtual merchandise). Branded virtual spaces, for example, could allow fans to engage with characters before/after watching a film in the metaverse.

ITV acquired Metavision in mid-2021 to expand its content and IP into the Metaverse. Its goal with the acquisition is to develop its strategy to converge gaming and entertainment in virtual spaces.[3]

Socialization

In virtual worlds, life-like avatars will facilitate more immersive communication, driven by the capture of facial and body expression to deepen non-verbal signals, even while engaging in complex activities. The social experiences in the metaverse will also be far more immersive, with a sense of presence that cannot be matched by today's video calls.

Virtual YouTubers (Vtubers) are content creators across multiple channels that leverage the Unreal gaming engine and real-time motion capture to create 3D-rendered avatars that reflect the user's facial and body expressions.

> Each of the above experiences are already starting to emerge; however, their development depends on consumer adoption and technological capabilities. Potential ROIs on building these experiences today are impossible to predict; consumers may embrace the metaverse for these experiences, or there may be only a niche group of users that adopt them.

Experience | How we work

COVID-19 has accelerated changes in how we work. The metaverse will put these changes into second gear. Developments in how we do our jobs will overcome the challenges of work from home; changes in the jobs we do will be more pronounced.

Experience

The jobs we do

New career opportunities

The metaverse will open the door to a swath of new career opportunities. For example, play-to-earn careers will emerge that allow video gamers to earn money for their in-game achievements. The metaverse's underlying decentralization also create new opportunities for individuals to capitalize on their skills – creating a brand-new virtual gig economy. For example, as more people become metaverse content creators, there will be a need for freelance content editors.

New "side hustles"

The metaverse will also broaden our opportunities to earn from our assets, investments, or our spare time. For example, with P2P networking, users will be able to earn money by "lending" dormant network and/or compute capacity to others. Users can also buy land in the metaverse and rent it to third parties with smart contracts or contribute to a collection of DAOs to earn tokens and/or shares and be rewarded by the success of the organization(s) they contribute to.

How we do our jobs

Collaboration
Most influential to the daily life of the average worker, the metaverse will re-imagine collaboration with existing solutions such as Horizon Workrooms and Microsoft Mesh. The metaverse will help re-humanize the work-from-home experience and allow for better collaboration. The sense of presence in the metaverse will make it feel like you are in the office, without being there.

Simulation
The ability to virtually simulate environments and situations will change our approach to training, testing, and predicting. For example, medical schools will be able to simulate open-heart surgeries virtually to train students. Simulations can also be used to train autonomous vehicles to drive in the streets of a real city, allowing it to predict the best routes and limit the potential for accidents.

Digital twins
Digital twins are real-time virtual replicas that evolve with data being sent back from the physical world. While they are already in use in manufacturing and logistics, the metaverse will enhance their scale and value. For example, digital twins can be used in mining to predict the safety of mines and the location of precious materials to save time and resources and reduce environmental impact.

The metaverse's potential to impact how we work is dependent on three key factors: the ability for metaverse investments to generate sufficient ROIs (which impacts an employer's willingness to invest in requisite technology); the ability for employers to upskill their workforce; and employee willingness to adopt the metaverse in their careers.

Source: Deloitte Analysis

Experience | How businesses and users come together

The metaverse enables consumers to discover and interact with brands in innovative ways and enjoy new and existing products in a virtual world. The specifics will vary by industry and by product, but commonalities exist across the customer journey.

Experience

Brand discovery experiences

The metaverse expands upon common brand discovery tactics in the real world, offering new ways to reach customers and capture their imagination.

Dynamic in-world advertising[1]

Brands can take advantage of new virtual ad units, including billboards in high-traffic virtual spaces, 3D pre-roll ads before 3D content experiences, or more targeted and personalized ads based on user data.

Brand activation in community spaces

Brands can also build brand activations within big virtual events (e.g., concerts) or create their own community spaces where consumers can interact with other fans and experience the brand in a new way.

Product discovery experiences

Virtual worlds add immense value by enabling consumers to experiment with products in ways that are often physically impossible in the real world.

Virtual stores

Brands can build virtual stores that are replicas of physical stores or unique virtual spaces that allow consumers to find and experience products and/or services.

Try now, pay later

Consumers can virtuallly test out how a product looks, feels, and/or works before buying them in real life.

Controlled product exclusivity

Brands can fully control distribution of products through exclusive events that leverage scarcity to create intrigue.

Purchase experiences

Purchase experiences in the metaverse will blur the lines between physical and virtual worlds. Different industries will used different models based on needs.

Buying virtual goods in virtual worlds

The most common model: brands must consider how to convert customers who have entered their virtual store or engaged with their product virtually.

Buying physical goods in virtual worlds
This applies to brands using the virtual world to test physical products (e.g., clothes) or ease of access (e.g., quick service restaurant). It requires real-world operations to deliver products.

Buying virtual goods in the physical world
Brands can create stickiness by augmenting real-world purchases with virtual goods – either virtual replicas, net new virtual products, or access to virtual events.

The degree to which businesses can integrate the metaverse into their marketing and sales relies on the customer experience. Select iterations of AR/VR enabled product discovery experiences exist today but without widespread adoption. There are limitless possibilities for new brand experiences in the metaverse, the above are just the tip of the iceberg.

Notes: [1]Anzu Virtual Reality

The future of the metaverse
What might the metaverse look like in the next 5 to 10 years?

The future of the metaverse | Driving forces and uncertainties

Driving forces

Below are the current trends in the broader market, which will influence the future of the metaverse.

Substantial increase in metaverse investments
Multiple Big Tech firms have committed billions of dollars to grow the metaverse. For example, Meta has invested $10 billion in VR alone.[1]

Emergence of web3
Separate from the metaverse, advancements toward web3 will unlock the potential for a more decentralized internet.

Growth in media attention
According to Google Trends, searches for "metaverse" exploded in 2021 due to the increased coverage from Facebook's name change to Meta.

Proliferation of virtual experiences
With work and education now commonly conducted virtually, the COVID-19 pandemic accelerated the amount of time people spend online.

Commercial availability of technology
AR and VR technologies are no longer prohibitively expensive and are readily available for consumers to purchase.

Younger generations' tech adoption
Each subsequent generation is spending more time with technology, which will fundamentally shape how they see the world and will lead to transformative change.

Uncertainties

The future will be shaped by the outcomes of the following five critical factors, each of which is highly important and highly uncertain.

Critical uncertainties

Degree of centralization

Consumer demand for virtual experiences

Degree of physical and digital convergence

Degree of interoperability

Pace of technological capabilities

The future of the metaverse | Scenario frame

Mass consumer adoption

Big Tech's big dream

In this scenario, a few key players in Big Tech have a large degree of control and responsibility defining and building out the metaverse.

With the continued release of products and services that build a stronger user experience, consumer demand for the metaverse continues to grow. The mass revenue opportunities created by this consumer demand spur continued investment in a metaverse that truly integrates every aspect of our physical and virtual worlds.

Choose your own adventure

In this scenario, the vision of web3 is fully realized: control of the internet is now in the hands of individuals and businesses of all sizes. Regulatory bodies play a role in establishing the underlying protocols and standards.

In parallel, younger generations that grew up with the convergence of our digital and physical worlds continue to embrace the virtual experiences promised by the metaverse. Much of the physical world also exists virtually in a tokenized and decentralized manner via blockchain.

Customer demand

A few players are dominant

Degree of centralization

No individual player is dominant

Cool experiences only

In this scenario, Big Tech heavily invests in the metaverse to realize "Big Tech's Big Dream." However, consumer demand for physical/virtual integration is limited coming out of the pandemic. Frustrated by a barrage of more immersive experiences that require costly hardware, consumers reclaim physical lives and rely less on tech for new experiences.

With heavy investment but limited return, Big Tech players refocus their metaverse investments to develop for more specific use cases where a more immersive experience adds value for a certain segment of the population (e.g., gaming).

Meh-verse

Coming out of the pandemic, the consumer's preference for physical interaction emerges above the hype of the metaverse and immersive virtual experiences are largely ignored. With flat demand, Big Tech's investments in the metaverse slow.

With Big Tech largely out, individuals and small businesses try to build the metaverse themselves. These experiences are hyped and may even make a splash, but are ultimately very shallow and those that invested could come out on the losing end over the longer term.

Niche consumer adoption

Source: Deloitte Analysis

The future of the metaverse | Big Tech's big dream

The vision of metaverse as imagined by a few key players in Big Tech is wholly realized: a fully immersive, virtual world run in parallel to the physical world with mass-scale adoption.

Experience

Play

Gaming will be an integral part of the metaverse with creators and organizations using it to engage audiences and earn revenue, going beyond the scope and limitation of the current gaming ecosystem.

Socialize

The metaverse will ingrain itself in the social norms of society and become fundamental to how we communicate. It will be enabled by fully immersive experiences that foster a deep feeling of presence.

Transact

Virtual economies will thrive with the mass adoption of NFTs and crypto; however, Big Tech players will earn a set commission on the majority of transactions being made in the metaverse.

Create

An amplified creator economy will add to the virtuous cycle between consumer adoption and investment.

Work

Organizations fundamentally integrate the metaverse into their ways of working (e.g., using virtual offices to facilitate hybrid work arrangements).

Enablement

Regulations and governance	**Payments and digital assets**	**Tools and standards**
These are influenced by Big Tech, which takes the lead in setting norms and developing new forms of governance.	Digital currencies will be used as the main payment method in both the physical and virtual worlds.	These are established by Big Tech who builds the underlying tech, but influenced by players across the spectrum.

Foundation
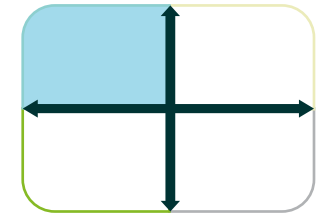
Access hardware	**Platforms**	**Networks**	**Infrastructure**
AR, VR, and immersive experiences thrive and become affordable for wide-scale consumer adoption.	Multiple platforms operate in conjunction; however, Big Tech owns the foundational elements of the platforms.	Heavy investment will lead to important new innovations in networking protocol and technologies.	The virtuous cycle between consumer adoption and investment from Big Tech support and grow the infrastructure.

The future of the metaverse | Big Tech's big dream

What does this mean

- Big Tech invests heavily in developing affordable access hardware and enabling the growth of the creator economy and developer ecosystem.
- Big Tech acts as the integrator and enabler of required technologies (e.g., crypto, blockchain) to build the ecosystem.

Key takeaways

Big Tech extends its prevalence to the metaverse

The metaverse will not be owned by any one player, or the Big Tech players collectively, but since these companies will be deeply entrenched in defining and building the metaverse, they will be the primary creators for the foundational elements of the virtual world.
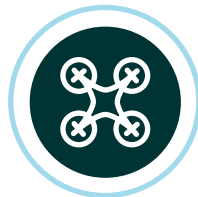
A new "virtual" economy is created

The new virtual economy will seamlessly integrate the physical and virtual worlds, providing endless opportunities for key players to identify new revenue streams and business models in the metaverse. New full-time jobs will also become prevalent in the metaverse.

Select industries and sectors face an existential crisis

As the metaverse becomes an integral part of society, it will create an existential crisis for some industries and sectors (e.g., commercial real estate, travel) that rely on current interaction models. These industries will have to transform with the metaverse to survive.

Use cases

New revenue and business models

The metaverse will provide businesses with novel ways to generate revenue and engage with potential customers (e.g., selling digitals assets or NFTs).

Nike has started selling digital sneakers as NFTs in the metaverse.[1]

Epic Games partnered with **Balenciaga** to bring high-fashion skins into the game, available for purchase.[2]

Immersive and engaging experiences

The metaverse will improve social experiences, provide immersive shopping experiences, and create new travel and tourism opportunities. It will also support access to specialized services (e.g., remote health-care services).

Fortnite organized the "Rift Tour" that featured Ariana Grande.[3]

Decentraland organized Fashion Week in Metaverse in its "Luxury Fashion District" featuring fashion houses, brands, and designers.[4]

The future of the metaverse | Choose your own adventure

The vision of web3 is fully realized: users will be able to create content while owning, controlling, and monetizing it through the blockchain and cryptocurrencies.

Experience

Play
Gaming will grow significantly with the rise of decentralized virtual worlds and play-to-earn models.

Socialize
Users will embrace all virtual and immersive social experiences such as shopping and attending events.

Transact
Virtual economies will thrive through the trade of interchangeable virtual-world cryptocurrencies, NFTs, and other digital assets.

Create
The creator economy will flourish with users having complete freedom on developing, owning, and monetizing content. As sole custodians, they will also have to take responsibility to protect their data and assets.

Work
Users will participate in DAOs to shape how businesses operate. Companies can operate wholly-owned virtual experiences that exist in a broader decentralized ecosystem. Big Tech may play a role, but with open-source code and transparency.

Enablement

Regulations and governance
Regulations are made by the people through DAOs, and community-led governance structures will prevail.

Payments and digital assets
Crypto dominates payments; digital assets represent in-world ownership. Both are stored in self-custody wallets.

Tools and standards
Vision of web3 is fully realized, and a self-sovereign digital identity helps users access services and transfer data.
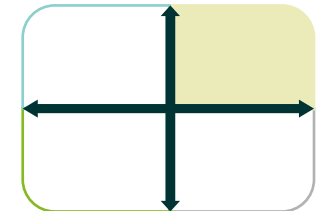
Foundation

Access hardware
The metaverse is primarily accessed through XR hardware technology (e.g., AR/VR headsets, glasses).

Platforms
Decentralized worlds are the dominant platforms leveraged by users to engage with the ecosystem.

Networks
Decentralized P2P wireless networks will take precedence over current networks.

Infrastructure
Decentralized technologies (blockchain, decentralized storage) are used for the governance of data.

Source: Deloitte Analysis

The future of the metaverse | Choose your own adventure

| **What does this mean** ▶	• Users have accessibility to and can afford immersive access hardware that fuels rapid and wide-scale adoption. • Users understand the benefits of decentralization through education and the ability/opportunity to apply it.

Key takeaways

The vision for web3 is realized
People will have complete control over their data, and through decentralized technology, will have the power to directly shape regulations and world order.

Finance is decentralized
The world economy will operate through cryptocurrencies and NFTs stored in self-custody wallets that leverage blockchain-based smart contracts and limit the reliance on intermediaries (e.g., banks).
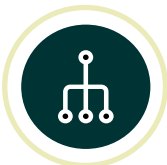
Firms transform into decentralized organizations
Many metaverse-oriented firms will take on new governance models, transforming into DAOs to remain relevant in their specific industries. Some organizations will hold out but offer very specific, centralized services.

The physical and digital worlds amalgamate
Virtual economies and experiences will be as, if not more, prevalent among younger generations in comparison to the physical worlds. But the two worlds will collide and interact seamlessly.

Use cases

Peer-to-peer lending and borrowing
The metaverse will enable individuals to lend or borrow cryptocurrency and decentralized exchanges without the need for banks, exchanges, or other intermediaries.

AAVE: It now has a decentralized non-custodial liquidity market platform.[1]

MAKER: Its decentralized finance protocol allows P2P lending and borrowing on the Ethereum blockchain using smart contracts.[1]
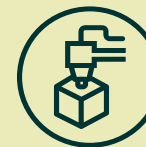
Transparent supply chains
The metaverse will allow for people and organizations to have complete visibility into supply chains to track the movement of products from raw materials to end users

Marks & Spencer: It provides interactive mapping of its food and apparel manufacturers.[2]

Patagonia: It has mapped a subset of raw materials and factories that make its products with focus on vendor operations and staff details.[2]

The future of the metaverse | Cool experiences only

Despite intensive investment, the consumer demand for the metaverse fails to coalesce due to digital fatigue. This results in several tech giants competing for a smaller than expected pie, increasing the level of specialization and centralization.

Experience

Play
Gaming is most disrupted by the limited metaverse, with Big Tech players taking share from legacy gaming systems and manufacturers.

Socialize
The socialization aspect of the metaverse will be muted with most consumers preferring real-world interaction and live events due to pandemic-imposed digital fatigue.

Transact
Purely digital commerce, such as avatar clothing, will be limited; however, there might be potential for brands to increase customer affinity through new and unique experiences.

Create
Interest in community-driven content is minimal, reducing the incentive to curate and create custom content.

Work
Current ways of remote working (e.g., video chat) are preferred to avatar interactions, but there are significant industrial applications for proto-metaverse technologies (e.g., digital twins).

Enablement

Regulations and governance
Regulation does not restrict Big Tech's influence on the metaverse.

Payments and digital assets
Payments are made through the rails currently utilized by Big Tech; NFTs remain popular for collectibles.

Tools and standards
Big Tech players guard their own networks with unique standards that lead to limited interoperability.
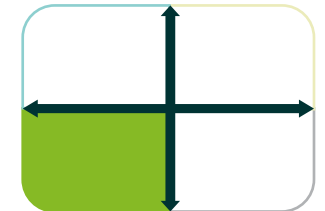
Foundation

Access hardware
Consumer applications are accessed through VR; limitations (e.g., resolution) prevent fully immersive experiences.

Platforms
Platforms are primarily applications centrally maintained by Big Tech. Lack of demand precludes immersive worlds.

Networks
Recent bandwidth and latency improvements (e.g., 5G, Wi-Fi 6) are sufficient to support traffic requirements.

Infrastructure
Lower than expected demand allows Big Tech to maintain sufficient storage and computing power with existing tools.

Source: Deloitte Analysis

33

The future of the metaverse | Cool experiences only

Key takeaways

Big Tech refocuses metaverse investments

Early investments in the metaverse do not go as far as Big Tech would have hoped, leading each to refocus efforts in their areas of expertise in VR headsets, enterprise software and gaming, and immersive social platforms.

"Legacy" media remains king

Media viewed on "traditional" channels wins out. Consumers will prefer to spend more leisure time on their phones, tablets, and televisions than in the metaverse for its accessibility and value. These mediums also leverage pseudo-metaverse experiences to maintain relevance.

Premium brands find value

Brands can more effectively target core audiences with uniquely customized interactions that deepen customer relationships and build brand affinity. These relationships allow premium brands to uphold and expand premium pricing strategies.

Use cases

Immersive gaming

Game designers and console producers leverage the power of connected VR to create more immersive gaming experiences.

Epic Games: It emphasizes the social aspects of gaming through large multi-player experiences.[1]

Beat Saber: This virtual reality game combines immersive visuals with popular music to create a physical/digital experience.[2]

Augmented training / performance

Militaries, heavy-manufacturing companies, and the healthcare industry utilize AR to train personnel in hazardous tasks by overlaying real-time information.

Mercedes: It uses AR glasses to support technicians with real-time assistance.[3]

The US Army: It uses AR glasses to provide improved access to real-time information for infantry in the field.[4]

Source: Deloitte Analysis
Notes: [1]Brittni Devlin – Make Use Of, [2]Beat Saber, [3]DesignNews, [4]Microsoft

The future of the metaverse | Meh-verse

This scenario is a failed metaverse. A meh-verse features significant consumer resistance. Without consumer buy-in, investments in the metaverse are limited and communities form to establish a version of the metaverse that has exciting, but shallow, experiences.

Experience

Play
New gaming experiences (e.g., cross platform avatars, play-to-earn, VR simulations) revolutionize gaming, popularizing a handful of games before major producers adopt these new experiences.

Socialize
Decentralized social media sites are available but lack the network effects of major services. Smaller communities form around these sites but are reserved for a handful of fanatics.

Transact
NFTs and virtual world cryptocurrencies thrive in in-game economies but don't reach mass adoption, limiting their real-world value.

Create
Creators are able to develop projects in the metaverse and contribute to projects developed by DAOs, although they are unlikely to see huge commercial success since they are limited by the lack of large scale audiences.

Work
Small DAOs assemble to capitalize on the virtual economy and play-to-earn gaming models, allowing creators (particularly in developing economies) to earn a living in the metaverse.

Enablement

Regulations and governance
Limited adoption prevents intervention from regulators. Instead, DAOs/community-led governance structures are established.

Payments and digital assets
In-game payments are made through cryptocurrencies; digital assets/NFTs represent ownership of in-world items.

Tools and standards
The scale of consumer adoption and metaverse-focused apps render standardization rather unimportant.
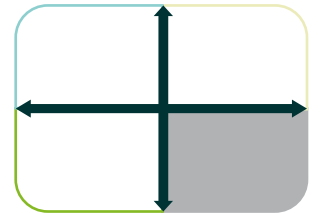
Foundation

Access hardware
The metaverse is primarily accessed through XR hardware technology (e.g., AR/VR headsets, glasses).

Platforms
Decentralized worlds are the dominant platforms leveraged by users to engage with the ecosystem.

Networks
High bandwidth and latency is not broadly required; metaverse users pay premiums for accesssing service.

Infrastructure
Decentralized technologies (blockchain, decentralized storage) are used for data governance.

The future of the metaverse | Meh-verse

What does this mean ▶
- Users create metaverse experiences for themselves with decentralized autonomous organizations (DAOs) to manage them, as needed.
- Niche community groups are established to engage in metaverse experiences with like-minded individuals.

Key takeaways

Big losses for tech players

The significant investments Big Tech players are making in the metaverse yield limited returns, forcing Big Tech to rely on existing revenue streams for growth.

Decentralized communities build the metaverse

With Big Tech not realizing the requisite returns, communities with niche interests (e.g., gaming) come together to build metaverse experiences with the fundamental belief that they should be decentralized.

Shallow experiences define the metaverse

The decentralized communities that build the metaverse will develop it without commercialization in mind. Metaverse experiences will be enticing but lack the depth of experiences built by Big Tech.

Web3 features arise but we never leave web2

Current aspirations for web3 will not be realized but inspire fragmented adaptations to web2 (e.g., artists and creators that individually govern the distribution of their content).

Use cases

Try now, pay later

AR provides consumers the opportunity to see how products would look in their home or on themselves before purchasing them.

Adidas: It's a new AR app allows customers to try on sneakers before buying them.[1]

Ikea: Ikea Place is an AR app that allows users to visualize furnishings in their home before purchasing them.[2]

NFT access passes

NFTs can be used to grant rights holders access to private events where participants are verified through the blockchain, restricting the ability for bad actors to forge fake tickets.

Kings of Leon: This band launched a "golden ticket" NFT that provides special access to concerts.[3]

Coachella: The event now has an NFT collection that allows users to own festival passes, digital collectibles, virtual adventures, and more.[4]

Key considerations and next steps

What must you consider to launch your organization's future in the metaverse?

Key considerations | What questions should your organization consider?

Consumer	Energy, Resources & Industrials	Financial Services	Government & Public Services	Technology, Media & Telecommunications
• Does offering new products or services align with our overall brand and strategy?	• What physical resources and infrastructure will be required to develop hardware for the metaverse (e.g., metals)?	• How do we manage the interoperability of currencies (traditional, crypto, digital assets, contracts) between worlds in the metaverse, as well as in and out of it?	• To what extent do we need to regulate the metaverse to balance competition, innovation, privacy, and security, and the potential impact of the metaverse?	**Technology** • What new products and services can we build to bring the metaverse experience to life?
• Are our customers the type that will use the metaverse?	• How can we leverage the metaverse, digital twins, and simulations to improve on-site safety and enable integrated remote operations?	• What product will emerge as the first broadly accepted consumer wallet to house assets and contracts? Do we want to develop this? How?	• How do we oversee and manage the issuance of government IDs in the metaverse? How can we authenticate these IDs?	• What is the path to monetizing these new experiences and ensuring consumer adoption?
• What new products or services can we launch in the metaverse? How do these align with our current product portfolio?	• How might the metaverse be used to upskill new workforces and create greater talent mobility for the industry?	• How do we properly collateralize lending in the metaverse considering the novelty of digital assets and a lack of established history on price stability?	• How do we ensure that all citizens are provided equal access to high capacity, low latency internet in a cost effective and resilient manner?	• How important is ROI in the short-term? **Media** • How can we make our content relevant to our target audiences in the metaverse?
• What opportunities exist to create converged digital and physical experiences?	• How do we navigate the regulatory processes and approvals to employ metaverse-related technologies?	• Will customers want to interact with traditional financial institutions for transactions in the metaverse?	• How might the metaverse change the way we interact with and deliver services to our citizens? How will governments operate across levels and with each other?	• How can we include new or existing ad inventory in the metaverse and optimize between mediums? **Telecom**
• Does it make sense to have a virtual storefront in the metaverse?	• Given the above, does the metaverse have sufficient value proposition for ER&I companies? If so, what are the risks and barriers?		• How do we upskill our resources and collaborate with tech companies to stay up-to-date on the latest technological developments?	• How can we generate sufficient returns on network investments that support the metaverse?
• How can we leverage the metaverse to build loyalty with current customers or acquire new customers?				• What partnership opportunities exist to differentiate our networking services?
• How can we use digital twins for process optimization, inventory management and, production processes?				

Next steps | How can your organization enter the metaverse?

Envision
Explore and experience the metaverse for yourself to better understand its potential. Set a vision for the future and make a commitment to experimenting with and investing in new experiences for customers and/or employees.

Define
Identify priority use cases to start experimenting with leveraging Deloitte's Metaverse Activation Framework, which helps organizations identify the right experiences to invest in. Define the ideal-state customer experience, and understand the capabilities needed to bring that experience to life.

Build
Invest in building metaverse-enabling capabilities such as data and analytics, cybersecurity, cloud-based architecture, and modern connectivity protocols. These capabilities are fundamental to the metaverse but are also an essential part of modernizing organizational tech capabilities and are "no regrets."

Let's talk.

Michael Corridore
Senior Manager, Monitor Deloitte
Email: mcorridore@deloitte.ca

Special thanks to our contributors

Alex Antonini	Gauraang Dhar	Jenny Qian
Mark Belostotsky	Hillel Katz	Garima Singh
Tara David	Sam Kullar	Rahul Undevia

Deloitte.

About Deloitte

Deloitte provides audit and assurance, consulting, financial advisory, risk advisory, tax, and related services to public and private clients spanning multiple industries. Deloitte serves four out of five Fortune Global 500® companies through a globally connected network of member firms in more than 150 countries and territories bringing world-class capabilities, insights, and service to address clients' most complex business challenges. Deloitte LLP, an Ontario limited liability partnership, is the Canadian member firm of Deloitte Touche Tohmatsu Limited. Deloitte refers to one or more of Deloitte Touche Tohmatsu Limited, a UK private company limited by guarantee, and its network of member firms, each of which is a legally separate and independent entity. Please see www.deloitte.com/about for a detailed description of the legal structure of Deloitte Touche Tohmatsu Limited and its member firms.

Our global Purpose is making an impact that matters. At Deloitte Canada, that translates into building a better future by accelerating and expanding access to knowledge. We believe we can achieve this Purpose by living our shared values to lead the way, serve with integrity, take care of each other, foster inclusion, and collaborate for measurable impact.

To learn more about how Deloitte's approximately 312,000 professionals, over 12,000 of whom are part of the Canadian firm, please connect with us on LinkedIn, Twitter, Instagram, or Facebook.

This publication contains general information only and Deloitte is not, by means of this publication, rendering accounting, business, financial, investment, legal, tax, or other professional advice or services. This publication is not a substitute for such professional advice or services, nor should it be used as a basis for any decision or action that may affect your business. Before making any decision or taking any action that may affect your business, you should consult a qualified professional advisor. Deloitte shall not be responsible for any loss sustained by any person who relies on this publication.