

The Metaverse and its Impact in 2023

...

How to Prepare for the Jobs of Tomorrow

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2023 New Year Special



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Artificial
Intelligence



Cloud



Cyber
Security



Drohnen



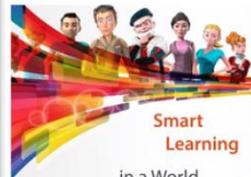
Internet
der Dinge



Virtual
Reality



5G



Smart
Learning

in a World
of Digital
Transformation
Processes

Today was one of several Workshops we run with Ryan



We would love to support you with a workshop or presentation at Audit Research Center:
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Workshop Menu

Half day and full day workshops are customised to provide maximum value to your group

- Introduction to Blockchain Foundations (overview of crypto, Web3, NFTs)
- Introduction to the Metaverse (How we will work, shop, and play in the future)
- Hands on activity - Blockchain Wallets (Mobile wallet set up, play with crypto & NFTs)
- Hands on activity - Decentralised Finance (swapping, borrowing, lending digital assets)
- Deep Dive - Brand building in the Metaverse (Case studies and future directions)
- Deep Dive - Decentralised Finance (Case studies and future directions)

Outline For Today

- Introduction & housekeeping
- What is the Metaverse?
- The Future of the Metaverse
- Emerging tech - prime opportunities
- Wrap up & Questions

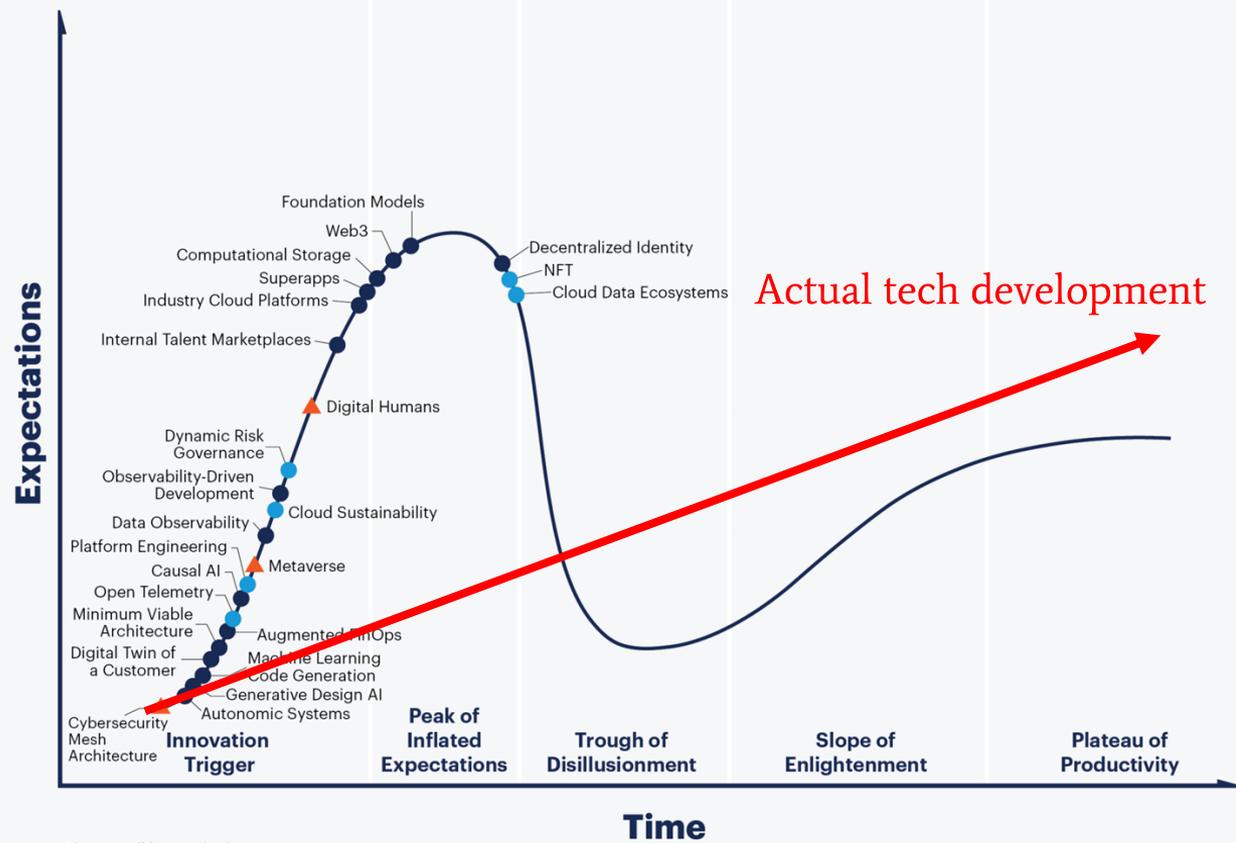
Disclaimer

The content of this presentation is not investment advice and does not constitute any offer or recommendation of any investment product. This content is for informational and educational purposes only.

My company does own a broad basket of digital assets, however any specific tokens or blockchains discussed are for illustrative purposes only and I am not promoting them.

**First: Forget everything you have
heard about the Metaverse**

Hype Cycle for Emerging Tech, 2022

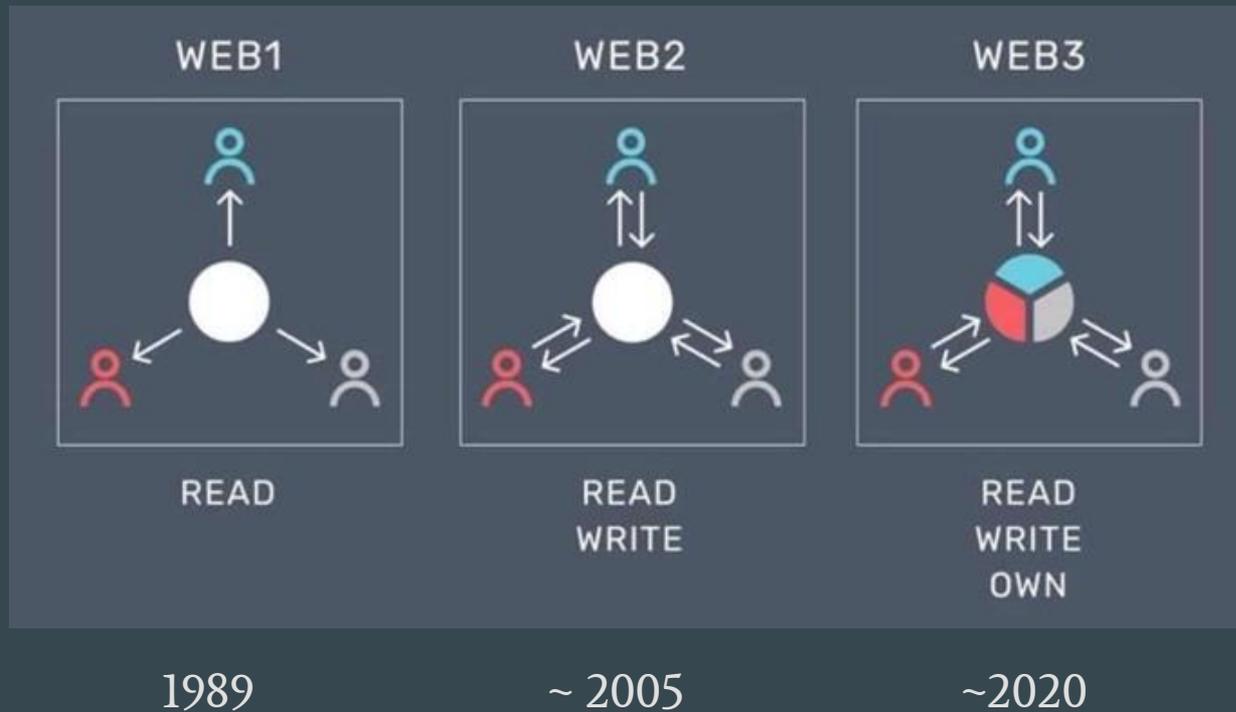


- Cloud computing peaked 2009
- NFC peaked 2011
- 3D printing peaked 2012
- 4G peaked 2015

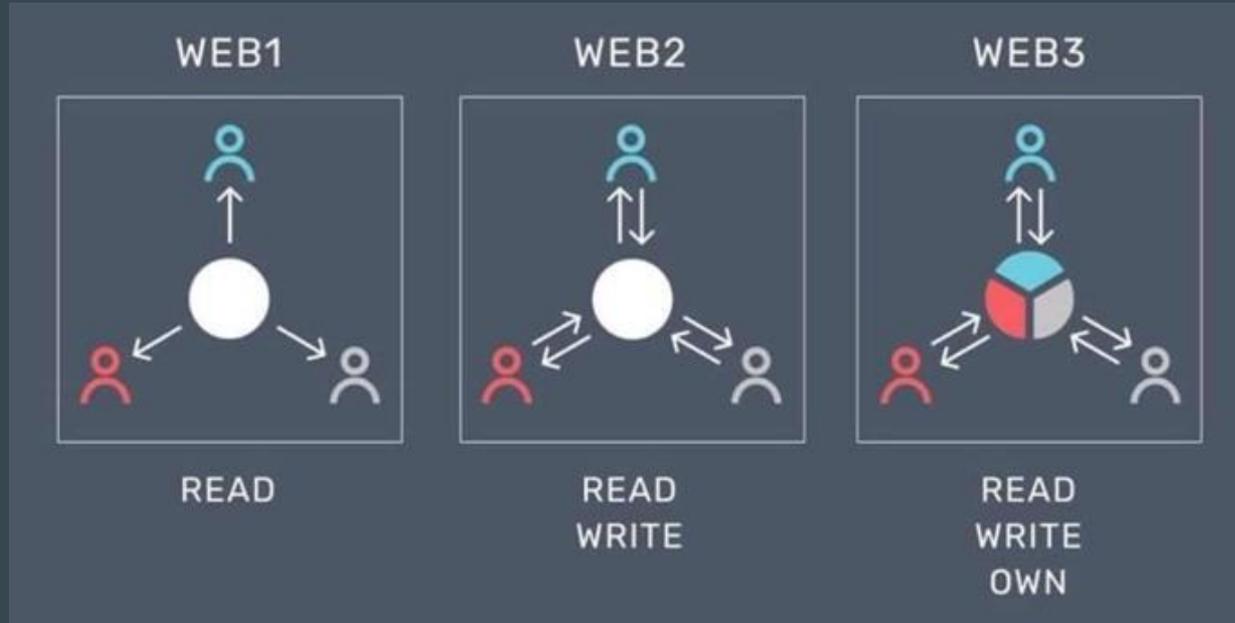
Metaverse - A Definition and History



History of the Internet



Primary Method of Earning

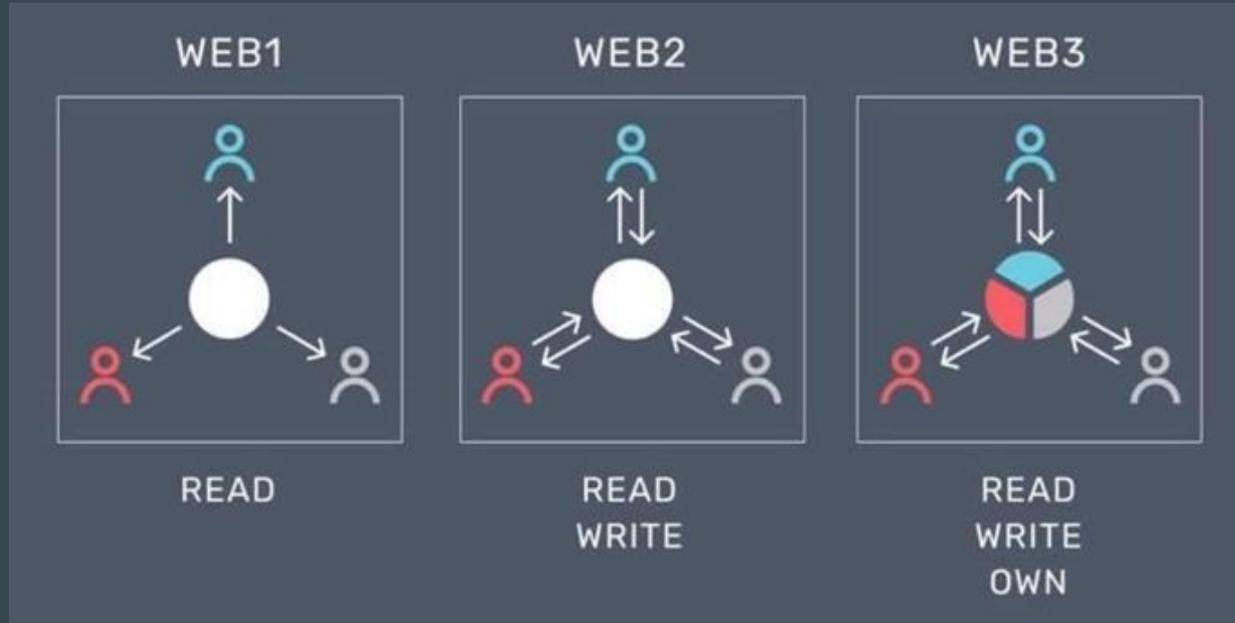


Page views

Cost per click

Use engagement

How User Data is Managed



Not focused

Centrally controlled

User owned

How does Web3 fit into the Metaverse?

Web3 or Web3.0 refers to a conceptual third iteration of the internet

Focus on **ownership** and **decentralization**, runs on **blockchain** rails.

Smart Contracts enable **trustless** function and **permissionless** access.

The so-called “Open Metaverse” is built upon blockchains (such as Ethereum) — and overlaps with Web3.

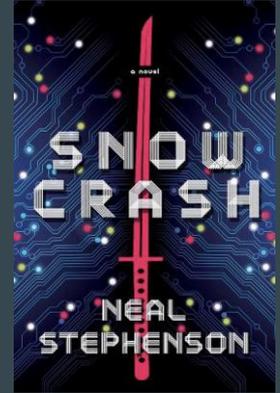
However many Web2 centralised platforms will play an important role in the Metaverse. They will invest in innovation, create experiences, and drive adoption.

Metaverse History

Neal Stephenson coined the term “Metaverse” in his 1992 SciFi novel *Snow Crash*. It was a 3D photo-real digital meeting space, in which humans, represented by programmable avatars, interacted with one another.

'meta,' (Greek for 'beyond') and 'universe'
= a world that goes beyond this universe

Another common reference is Ernest Cline’s 2011 novel *Ready Player One*. The action unfolds in a shared VR environment, called "the Oasis" which functioned as a massively multiplayer online role-playing game and as a virtual community.



Definition

The Metaverse is a seamless convergence of our physical and digital lives, creating a unified, virtual community where we can work, play, relax, transact and socialize.

Still early in its evolution - akin to 1990's internet

Target Addressable Market

Citigroup “Metaverse & Money” report March 2022 estimate a 2030 target addressable market for the Metaverse economy to be in the range of \$7 trillion to \$12 trillion

Metaverse TAM, 2030 (\$ trillions)		Digital Economy as % of GDP			
		15%	20%	25%	30%
Metaverse as % of Digital	10%	1.9	2.6	3.2	3.8
	20%	3.8	5.1	6.4	7.7
	30%	5.8	7.7	9.6	11.5
	40%	7.7	10.2	12.8	15.3
	50%	9.6	12.8	16.0	19.2

Assumptions: (1) Global GDP of \$127.9 trillion in 2030, based on IMF growth forecasts; (2) Digital as % of GDP In 2025 of 24.3% (Oxford Economics); (3) Metaverse as a % of Digital based on the scenarios above.

Source: IMF, Citi Global Insights

Target Addressable Market

Goldman Sachs' Research Report "Metaverse Edition" Dec 2021 estimates \$6 trillion - \$9 trillion opportunity by 2030.

Scenario Analysis – Potential Metaverse Market Opportunity (\$tn)

		% of Digital Economy Shifting to Metaverse									
		15.0%	17.0%	19.0%	21.0%	23.0%	25.0%	27.0%	29.0%	31.0%	33.0%
% of TAM Expansion	10.0%	\$ 3.75	\$ 4.05	\$ 4.35	\$ 4.66	\$ 4.96	\$ 5.26	\$ 5.56	\$ 5.56	\$ 6.16	\$ 6.46
	15.0%	\$ 4.51	\$ 4.81	\$ 5.11	\$ 5.41	\$ 5.71	\$ 6.01	\$ 6.31	\$ 6.61	\$ 6.91	\$ 7.21
	20.0%	\$ 5.26	\$ 5.56	\$ 5.86	\$ 6.16	\$ 6.46	\$ 6.76	\$ 7.06	\$ 7.36	\$ 7.66	\$ 7.96
	25.0%	\$ 6.01	\$ 6.31	\$ 6.61	\$ 6.91	\$ 7.21	\$ 7.51	\$ 7.81	\$ 8.11	\$ 8.41	\$ 8.71
	30.0%	\$ 6.76	\$ 7.06	\$ 7.36	\$ 7.66	\$ 7.96	\$ 8.26	\$ 8.56	\$ 8.86	\$ 9.16	\$ 9.46
	35.0%	\$ 7.51	\$ 7.81	\$ 8.11	\$ 8.41	\$ 8.71	\$ 9.01	\$ 9.31	\$ 9.61	\$ 9.91	\$ 10.21
	40.0%	\$ 8.26	\$ 8.56	\$ 8.86	\$ 9.16	\$ 9.46	\$ 9.76	\$ 10.06	\$ 10.36	\$ 10.66	\$ 10.96
	45.0%	\$ 9.01	\$ 9.31	\$ 9.61	\$ 9.91	\$ 10.21	\$ 10.51	\$ 10.81	\$ 11.11	\$ 11.41	\$ 11.71

The Future of the Metaverse



7 Things The Metaverse Will Be:

★ Persistent

It's always on whether you are logged in or not.

It never “resets” or “pauses” or “ends”, it just continues indefinitely.

7 Things The Metaverse Will Be:

★ Persistent

★ Synchronous and live

Even though scheduled and self-contained events will happen, just as they do in “real life”, the Metaverse will be a continuous living experience that exists live for everyone and in real-time.

7 Things The Metaverse Will Be:

★ Persistent

★ Synchronous and live

★ **Accessible to all, without limits**

Without any cap to concurrent users, while also providing each user with an individual sense of “presence” – No barriers due to geographic, political, or economic status.

All can participate in a specific event/place/activity together, at the same time and with individual agency.

7 Things The Metaverse Will Be:

★ Persistent

★ Synchronous and live

★ Accessible to all, without limits

★ **A fully functioning economy**

Individuals and businesses will be able to create, own, invest, sell, and be rewarded for an incredibly wide range of “work” that produces “value” that is recognized by others

7 Things The Metaverse Will Be:

- ★ Persistent
- ★ Synchronous and live
- ★ Accessible to all, without limits
- ★ A fully functioning economy
- ★ **An experience**

That spans both the digital and physical worlds, private and public networks/experiences, and open and closed platforms.

7 Things The Metaverse Will Be:

- ★ Persistent
- ★ Synchronous and live
- ★ Accessible to all, without limits
- ★ A fully functioning economy
- ★ An experience
- ★ **Inter-operable**

Data, digital items/assets, content, will eventually be transferable across main experiences.

Today, the digital world basically acts as though it were a mall where every store uses its own currency, required proprietary ID cards, with proprietary units of measurement.

7 Things The Metaverse Will Be:

- ★ Persistent
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- ★ A fully functioning economy
- ★ An experience
- ★ Inter-operable
- ★ **Collaborative**

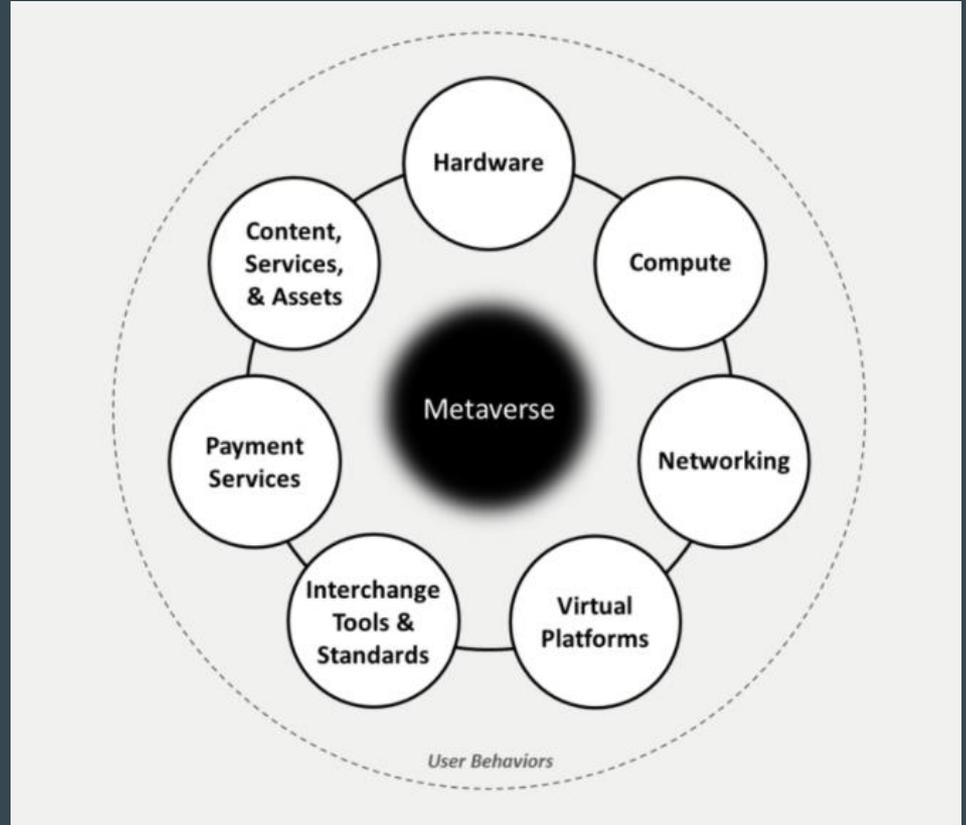
Be populated by “content” and “experiences” created and operated by an incredibly wide range of contributors. Independent individuals, informally organized groups, and even commercial enterprises.

7 Things The Metaverse Will Be:

- ★ Persistent
- ★ Synchronous and live
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- ★ An experience
- ★ Inter-operable
- ★ Collaborative

Metaverse Opportunities - 8 key areas

Think of these as *layers* to the overall experience which are needed to deliver the complete Metaverse experience.



Hardware Layer

The sale and support of **physical technologies and devices** used to access, interact with, or develop the Metaverse. Operate & creating immersive experiences

Consumer-facing hardware - e.g. VR headsets, mobile phones, and haptic gloves

Enterprise hardware - e.g. industrial cameras, projection and tracking systems, and scanning sensors).

Status: Developed but needing to refine and scale for mass adoption

Computing Layer

The enablement and supply of **computing power** to support the Metaverse

Diverse and demanding functions as physics calculation, rendering, data reconciliation and synchronization, artificial intelligence, projection, motion capture and translation.

Status: Lacking - Need approx 1000x more computation power

Networking Layer

The provisioning of persistent, real-time connections, high bandwidth, and decentralized data transmission by backbone providers, the networks, exchange centers, and services that route amongst them, as well as those managing 'last mile' data to consumers

Status: Lacking - the main reason Sandbox and Decentraland require pixel based visuals to host hundreds of concurrent users

Virtual Platforms Layer

The development and operation of immersive digital (often 3D) environments

Where users & businesses can explore, create, socialize, and participate in a wide variety of experiences (e.g. race a car, paint a painting, attend a class, listen to music), and engage in economic activity.

Large ecosystem of developers and content creators which generate the majority of content on and/or collect the majority of revenues built on top of the underlying platform.

Status: Many scaling up in 2023 - network effects

The Sandbox Game Beta Release in 2023

The Sandbox is a community driven platform where creators can monetize voxel assets and gaming experiences on the blockchain



THE
SANDBOX



VOXEDIT

Create and animate voxel art. Export anywhere.



MARKETPLACE

One place to sell and collect the best assets.



GAME MAKER

Make and Play any game that you can imagine.



PARTNERS

SNOOP DOGG

THE WALKING
DEAD



RICHIE
HAWTIN

THE
SMURFS

HELLS KITCHEN

RollerCoaster
TYCOON WORLD



ATARI

CARE BEARS

BLOND:ISH

animoca
BRANDS

Interchange Tools & Standards Layer

The tools, protocols, formats, services, and engines which serve as actual or de facto standards for interoperability, and enable the creation, operation and ongoing improvements to the Metaverse.

These standards support activities such as rendering, physics, and AI, as well as asset formats and their import/export from experience to experience, forward compatibility management and updating, tooling, and authoring activities, and information management.

Status: Early days - Cross functional groups such as World Wide Web Consortium (W3C) working to develop Web standards.

Payments Layer

The support of digital payment processes, platforms, and operations.

Will allow **arbitrary, bi-directional** value flow

Includes Fiat “on-ramps” (for example EUR → SAND) and “off-ramps” (SAND → EUR)

Current examples of TradFi adoption:

Crypto.com Visa cards: Buy 250+ crypto with 20+ fiat currencies, earn, spend

Paypal - Buy major crypto assets with 25 fiat currencies, hold, spend

Status: Developed and maturing relationships with established payment providers

Content, Services and Assets Layer

The design/creation, sale, re-sale, storage, secure protection and financial management of digital assets, such as virtual goods and currencies, as connected to user data and identity.

This contains all business and services “built on top of” or “service” the Metaverse

Copyright laws still catching up

Status: Somewhat developed but the space is immature and needs guard-rails

Content, Services and Assets Layer

- Fashion brands have been quick to capitalize on NFTs as the digital collectibles become more lucrative, and their investments are paying off.
- NFT revenue model, production capacity, distribution needs totally different

Rank	Title	Secondary Transactions	Secondary Volume	Primary Sales Revenue	Total Royalties	Total NFT Revenue
1	Nike	82.31k	\$1.33b	\$93.13m	\$92.94m	\$186.07m
2	Dolce & Gabbana	11.97k	\$20.62m	\$23.14m	\$557.20k	\$23.69m
3	Tiffany	76.00	\$3.41m	\$12.62m	0	\$12.62m
4	Gucci	4.84k	\$31.92m	\$10.00m	\$1.60m	\$11.60m
5	Adidas	57.34k	\$178.21m	\$6.20m	\$4.81m	\$11.01m
6	Time Magazine	22.38k	\$37.55m	\$7.09m	\$3.72m	\$10.81m
7	Budweiser	4.44k	\$6.65m	\$5.88m	0	\$5.88m
8	Bud Light	11.23k	\$3.34m	\$4.00m	0	\$4.00m
9	A0	10.53k	\$8.18m	\$1.50m	\$204.45k	\$1.70m
10	Lacoste	15.27k	\$3.13m	\$1.00m	\$125.18k	\$1.13m
11	Nickelodeon	8.26k	\$2.67m	\$348.45k	\$267.42k	\$615.87k
12	McLaren	2.22k	\$2.62m	\$204.54k	\$130.84k	\$335.37k
13	Pepsi Mic Drop	3.50k	\$11.06m	0	0	0

Content, Services and Assets Layer

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3	Tiffany	76.00	\$3.41m	\$12.62m	0	\$12.62m
4	Gucci	4.84k	\$31.92m	\$10.00m	\$1.60m	\$11.60m
5	Adidas	57.34k	\$178.21m	\$6.20m	\$4.81m	\$11.01m
6	Time Magazine	22.38k	\$37.55m	\$7.09m	\$3.72m	\$10.81m
7	Budweiser	4.44k	\$6.65m	\$5.88m	0	\$5.88m
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User (& Businesses) Behaviour Layer

Observable changes in consumer and business behaviors (including spend and investment, time and attention, decision-making and capability) which are either directly associated with the Metaverse, or otherwise enable it or reflect its principles and philosophy.

These behaviors almost always seem like ‘trends’ when they initially appear, but later can show enduring global social significance.

Status - Early days, will grow with network effects and as the value of data grows

Emerging tech



Converging & exponential

Emerging Tech - XR

XR (Extended Reality)

Collective term applied to immersive experiences incorporating varying degrees of digital and real information

AR

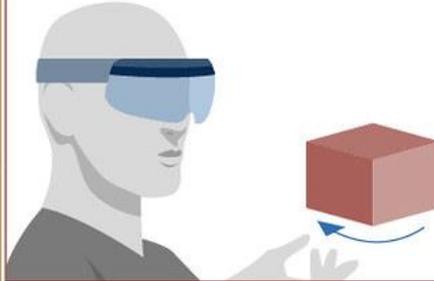
(Augmented Reality)



User views static digital information or visual elements integrated into the real environment

MR

(Mixed Reality)



User interacts with responsive virtual elements integrated into the real environment

VR

(Virtual Reality)

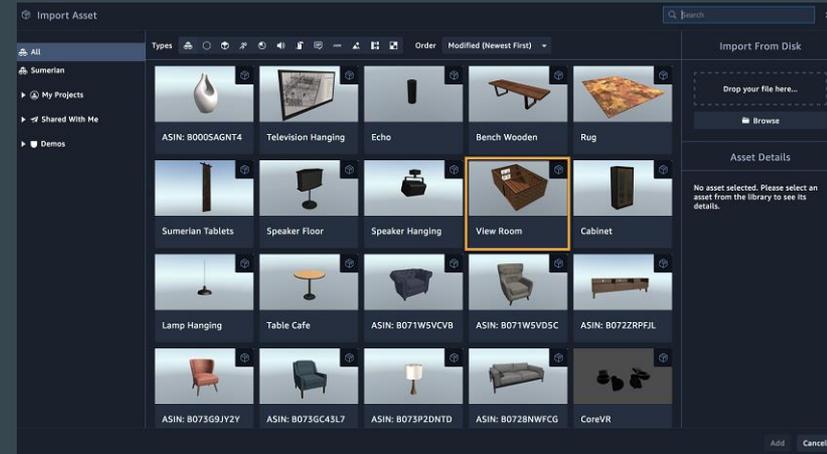


User is immersed in an interactive, digitally-generated environment

You don't have to be a developer!

Amazon Sumerian is a managed service provided by Amazon Web Services for creating applications of extended reality technologies.

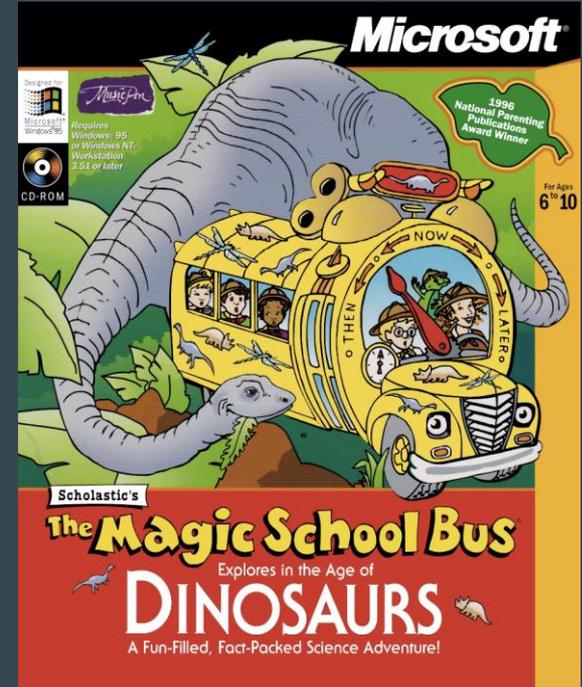
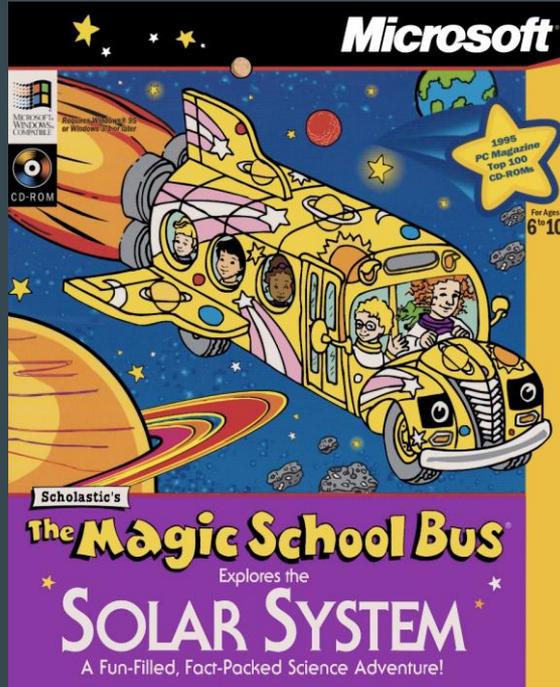
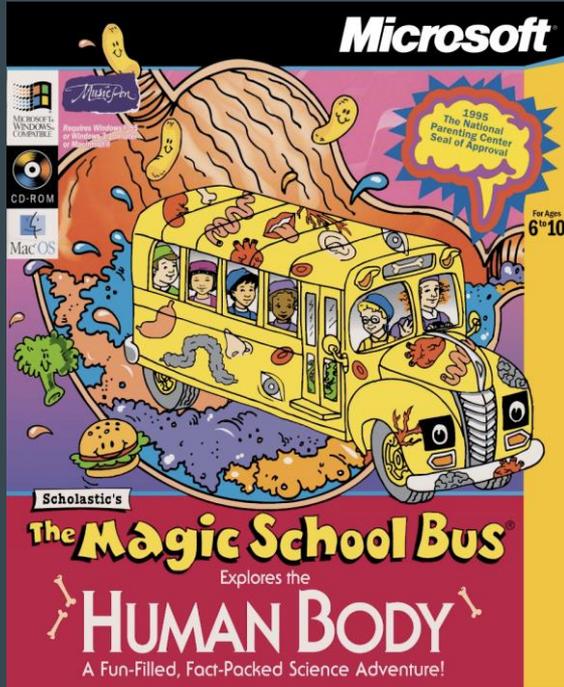
- Web & mobile applications, new & existing.
- No technical knowledge required to create immersive experiences.
- Sumerian runs on cloud, so no need to invest an upfront amount of money on hardware



Virtual Meeting & Learning

- Covid pandemic was a catalyst
- Many benefits for meetings of all types and sizes, maximising collaboration and productivity.
- For education, **immersive** and **gamified** lessons will engage learners of all ages
- 2023 roll-out of Mesh for Microsoft Teams - Students, instructors, and staff will be able to engage through lifelike 3D avatars on Microsoft Mesh, a mixed reality platform. VR headset or HoloLens smart glasses ideal but also mobile and PC options.

Imagine These As Actual Experiences



Emerging Technologies - AI

- ChatGPT has taken the world by storm, showing the value of a chatbot
- AI can help make the Metaverse inclusive despite language or (dis)ability
- Leverages advances in Natural Language Processing (NLP), speech recognition, computer vision, translation, and augmented reality. Increases productivity.
- Means of interaction in the Metaverse: digital avatars, chatbots, interfaces, and more.

Emerging Tech - Decentralised Finance

Needed: A trustless, permissionless financial system for the Metaverse to function well.

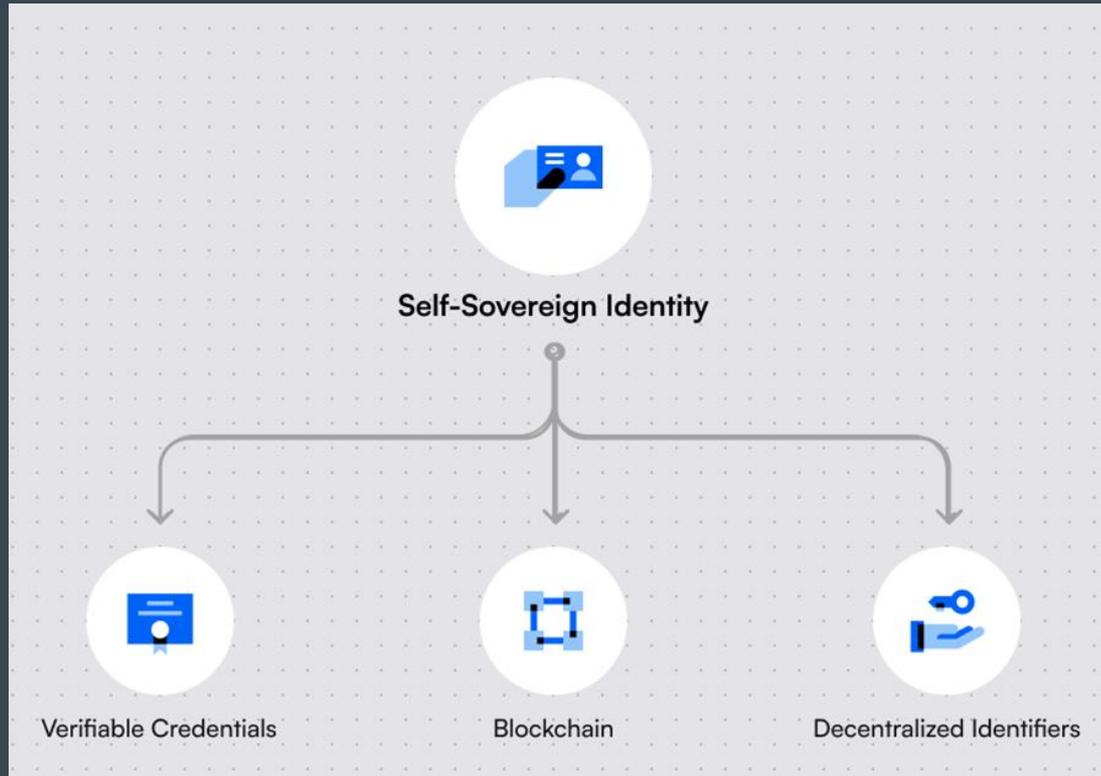
DeFi will provide the crypto-decentralized core structure offers users the ability to:

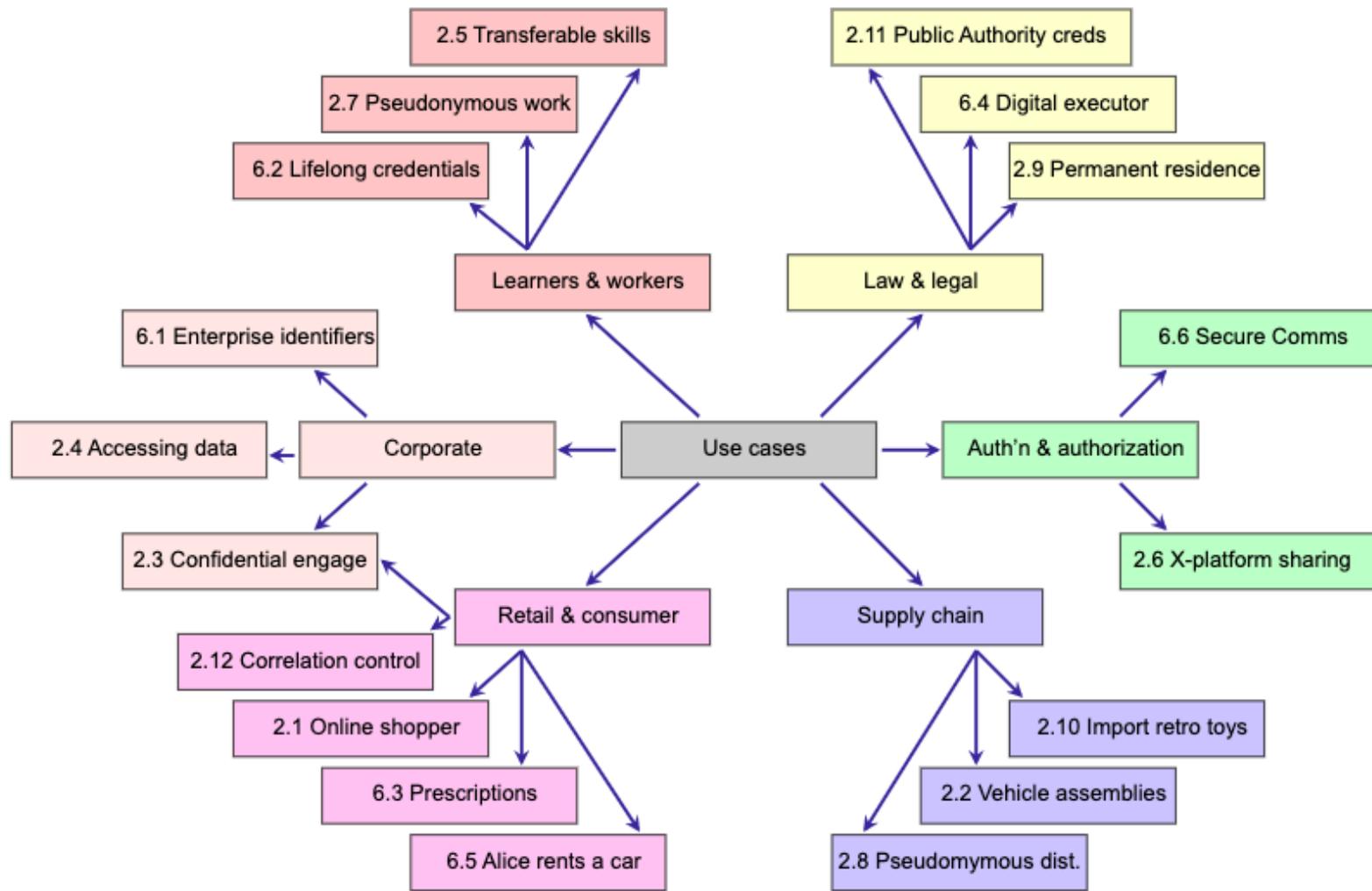
- Spend
- Earn
- Borrow
- Lend
- Tip (micropayments!)

DeFi rails are in place (esp popular in emerging economies) and the space is maturing. Regulation unlocks institutional money.

Emerging Tech - Digital Identification Solutions

How do we verify the identity of people/content/objects in a trustless way?





Avatar Personalisation

