PORTAL

ASSET MANAGEMENT

A Primer on Non-fungible Tokens (NFTs)

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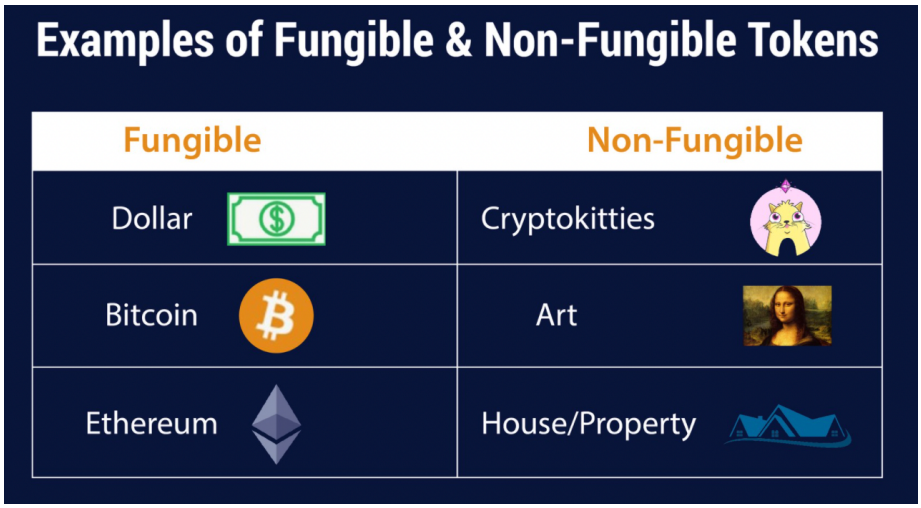
NFTs

- A Non-Fungible Token (NFT) is a unique digital asset whose ownership is tracked on a blockchain
    - Most NFT activity currently occurs on Ethereum.
    - '**Non-fungible**' means that something is unique and can't be exchanged for something else.
    - Bitcoin is **fungible** - you can swap one bitcoin for another with no difference.



Blockchain Simplified

- Assets that can be represented as NFTs range from digital goods such as digital art, to claims on physical assets such as real estate.

Why NFTs are important

It's easy to dismiss NFTs as another crazy fad when mainstream media typically only covers the outrageous amount of money someone has paid for digital art, tweets or replays of NBA dunks.

The media usually neglects to explain that NFTs unlock new use cases and new business models.
Traditionally contracts, deeds, bills of sale, shares, titles, have conveyed and proven ownership.

The current transfer of property ownership is extremely labour-intensive and expensive. By tokenising property rights, NFTs can make property easier to trade and manage.

NFTs are a new way to register ownership into a ledger, like entering a line into an excel sheet to record who owns what. The token is a digital receipt of your ownership rights.
Unlike a record that's kept in a central place, the ledger on the Ethereum blockchain is constantly updated and encrypted on multiple computers across the world. Ownership and provenance are always immutably tracked by the blockchain. What's yours is yours, without the need for a third party to verify.

In the traditional world, we've relied on layers of middlemen to establish trust in the transaction, exchange contracts and ensure that money changes hands.

Smart contracts (code that can specify a series of actions that happen as a result of specific triggers) can be used to ensure that both parties honour their agreements, replacing the need for lawyers and trust accounts.

NFTs go beyond a simple legal agreement. They also create the opportunity for new income streams - artists can attach stipulations to an NFT that ensures they get some of the proceeds every time the NFT gets resold, which allow them to benefit if their work increases in value.

NFTs has the potential to completely transform markets by:

- Making recording/transferring ownership more efficient and transparent
- Proving the authenticity and provenance of both physical and digital items and allowing them to be traded without an intermediary
- Creating new business models for creators

Current Use Cases

Although property and NFTs may sound like a marriage made in blockchain, this space is not even close to reaching its infancy. The technology has yet to mature for homebuyers to utilise an NFT in the purchase of physical property.

There are other industries where NFTs are currently disrupting:

Art

The Mona Lisa is likely the most popular artwork worldwide, but most people would be hard-pressed to distinguish the painting from a replica.
Why do millions of people stand in line for hours in order to see something that they can purchase on a keyring? Well, of all the Mona Lisa's in the world, there's only one that counts.

- This indicates that the value of art is not in its physical form but in its perceived value as a result of its provenance and scarcity.
- To put it simply, people like to own original or at least limited-edition items.

NFTs allow us to create digital objects that are truly unique, with an individual history that can be tracked & verified, much like the one true Mona Lisa.

Digitizing art and putting it on a blockchain will be recognized as one of the most important developments in art history.

- Art auction house Sothebys uses ten factors to value art, and blockchains enable three of the most important ones:
    - **Rarity:** Collectors can look at the blockchain and see exactly how many assets exist.
    - **Authenticity:** Collectors can look at the blockchain and inspect an artist's contract address to ensure artwork is authentic and made by a specific artist. Forgeries are not possible if you inspect the blockchain.
    - **Historical Importance**: Collectors can see exactly who owned a piece of art, when they owned it, and even how much they spent on it

Artists can use NFTs to sell directly to their fans and collect royalties every time their NFTs are resold.

- This is an entirely new revenue stream that is only possible because of true digital ownership that can encode royalty logic in the media itself.
- A common critique is that because digital art be copied, they don't carry much value
    - This is not true - the more a file is shared or seen, the more cultural value it accrues
        - Consider the mass production of posters or t-shirts of Warhol imagery which drives up the value
    - NFTs introduce a new possibility that enables true ownership to exist while a work continues to freely circulate online
- NFTs are designed to give you something that can't be copied: ownership of the work (however the artist can still retain the copyright and reproduction rights, just like with physical artwork).
    - To put it in terms of physical art collecting: anyone can buy a Picasso print. But only one person can own the original.
    - The pride of ownership is one reason to own an NFT - it's 100% yours, even if someone else can enjoy it.

Music

NFTs give musicians the potential to provide enhanced media and special perks to their fans - think of a music NFT like a limited-edition vinyl record signed by the artist.

The current streaming model pays musicians a fraction of a cent per stream:

- This model works relatively fine for songs that generate enormous number of streams, but do not work for artists who have a small audience
- Before the pandemic, many artists resorted to touring as a way to support themselves
    - It's a running joke-that-isn't-a-joke that a record is a loss-leader and that musicians are really in the ticket and T-shirt business.
- Pandemic hits - all artists have to cancel touring plans. Countless are artists left without any income in an industry where already 90% of all streaming income goes to the top 1% of artists.

Intermediaries help musicians reach fans and make money, but they also capture most of the value from their content.

- **Intermediaries take most of the earnings**: When fans stream a song, or purchase merchandise - some of that money goes to the artist, but a lot of it goes to the record company or the streaming platform. Spotify only pays ~$4,000 for 1M plays. The same middlemen are present when we buy tickets for concerts - record companies take a portion of ticket sales
- **Intermediaries owns the content rights**: artists give up song rights to the record label. Without the song rights, the artist can't even perform it live to fans without their label's approval.
- **Intermediaries control how many fans sees the artist's content**: Spotify can change its discovery algorithms or even take down your content at any moment.

NFTs offer a new business model for artists and new ways of connecting to audiences.

- NFTs get rid of the middlemen in the music industry:
- NFT transactions are direct transfers between the participants
    - Musicians can offer their NFTs directly to consumers or sell them on NFT marketplaces.
    - The artist gets the money, the fan receives the content in their digital wallet.
- Recently Grimes (EDM artist) sold $5.8 million worth of NFTs, 3LAU (DJ) sold $11.6 million of NFTs, Steve Aoki (DJ) sold $4.25 million worth of NFTs.

NFTs do not replace streaming platforms, however there are Web 3 alternatives such as Audius (artist-owned streaming service that is a blockchain alternative to Spotify).

- NFTs are revealing the 'super fans' who are willing to spend more to have authentic interactions with the artist.
- NFTs make it possible for super fans to make money by owning content that can appreciate in value with the artist.
    - Suppose you paid $30K to buy an NFT from an unknown artist.
    - If that artist became famous a year later, you can sell the same NFT at a much higher price.

- Like stocks, NFTs let fans make a bet on the artist's potential.
    - In the future anyone can be an investor and have the opportunity to monetise their knowledge, whether its games, music, sports, etc.
    - To make money from NFTs, investors need to have a clear understanding and deep knowledge of the genre of NFTs they are investing in
    - If you're able to make precise bets on the next Kobe Bryant, you have the potential to cash in on your knowledge of the NBA.
    - If you're an avid gamer, then virtual world assets may be of interest.

Gaming

- There are 2.7 billion gamers worldwide.
- The gaming market is valued at over $170 billion and growing.
- This growth is not slowing down either. By 2023, the gaming market is expected to bring in a striking ~$200 billion dollars.

- Gamers spend considerable amounts of money on in-app purchases, such as weapons and armour, for a variety of purposes that upgrade their gameplay or simply look cool.

Gaming is not only huge, but also evolving into more than just 'game play'.

- Games can enable social experiences, creativity, and learning.
- When you throw blockchain into the mix, you enable the integration of digital value.
- For the first time ever, users can truly own goods in virtual worlds and games.

NFTs essentially tokenize assets that you can buy within a game e.g., a shield or skin

- NFT's let users keep the assets they've purchased in their games.
    - Currently, when a user quits a game, the assets purchased in-game are gone.
- NFTs enable users to sell their assets or convert them into rewards points and even take them to other games.

    - Now gaming companies can create more engaged, loyal players who can create, earn and share their love for the game beyond the confines of the game's walled garden.

Yat Siu, chairman of Animoca Brands, believes every game company will be forced to participate in NFTs because the attractions are so strong for players:
"If you can play for something that is valuable to you, then why would you choose to play in a game where there is no value. We are not saying traditional games will go away. But we do believe in this thesis that it's better for the player to play in an environment when you have some ownership."

- An investor paid $222K to purchase a segment of a digital Monaco racing track in the F1 Delta Time game
    - The NFT representing the piece of digital track allows the owner to receive 5% dividends from all races that take place on it, including entry ticket fees.
    - The above shows how some NFTs offer real, intrinsic value, such as recurring cash-flows.

NFTs allow users to acquire rare items in games and sell those items for real money. This paradigm shift allows people to '**play to earn'.**

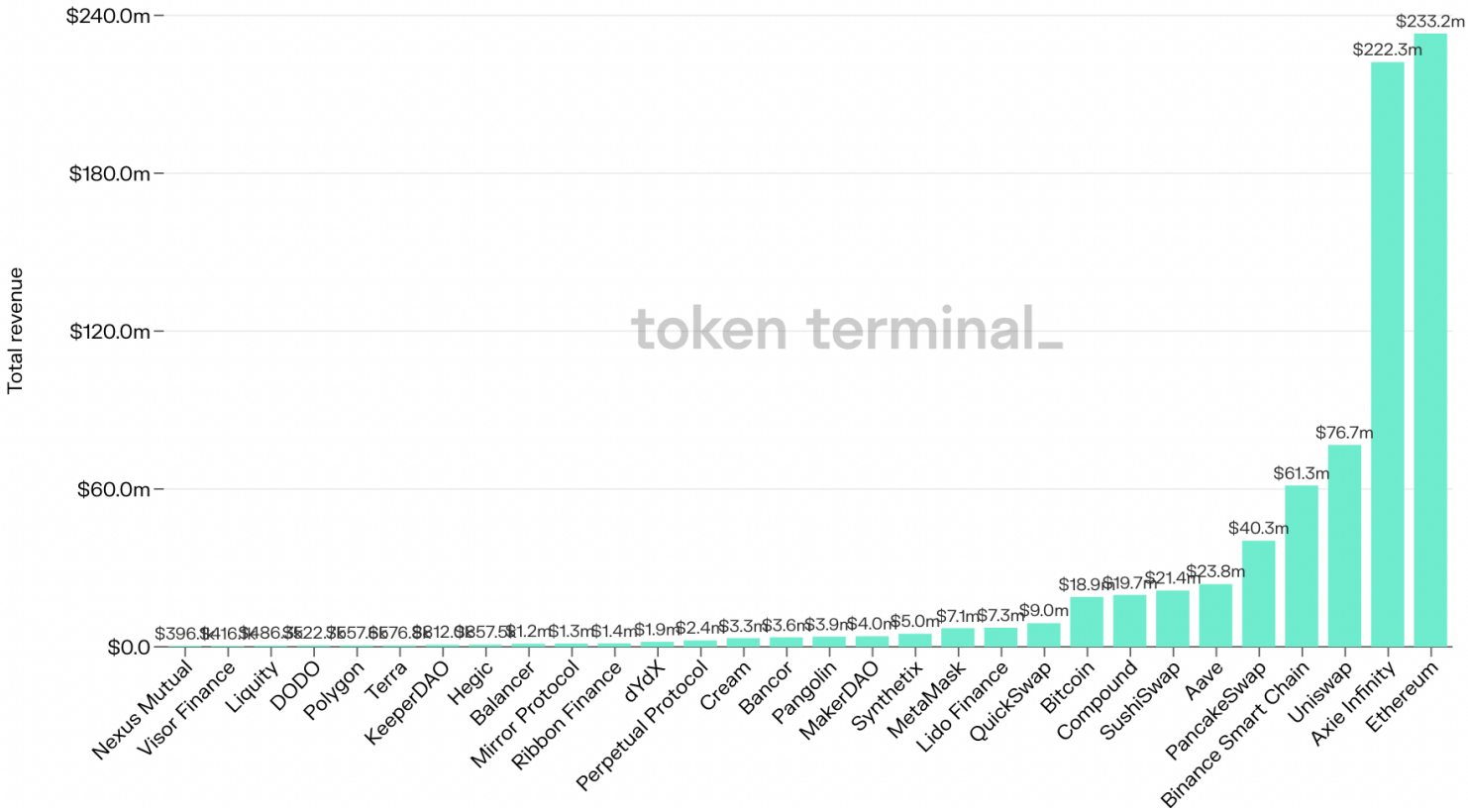
Case Study: Axie Infinity is a Pokemon-like game where users acquire cute digital pets and battle them against each other.

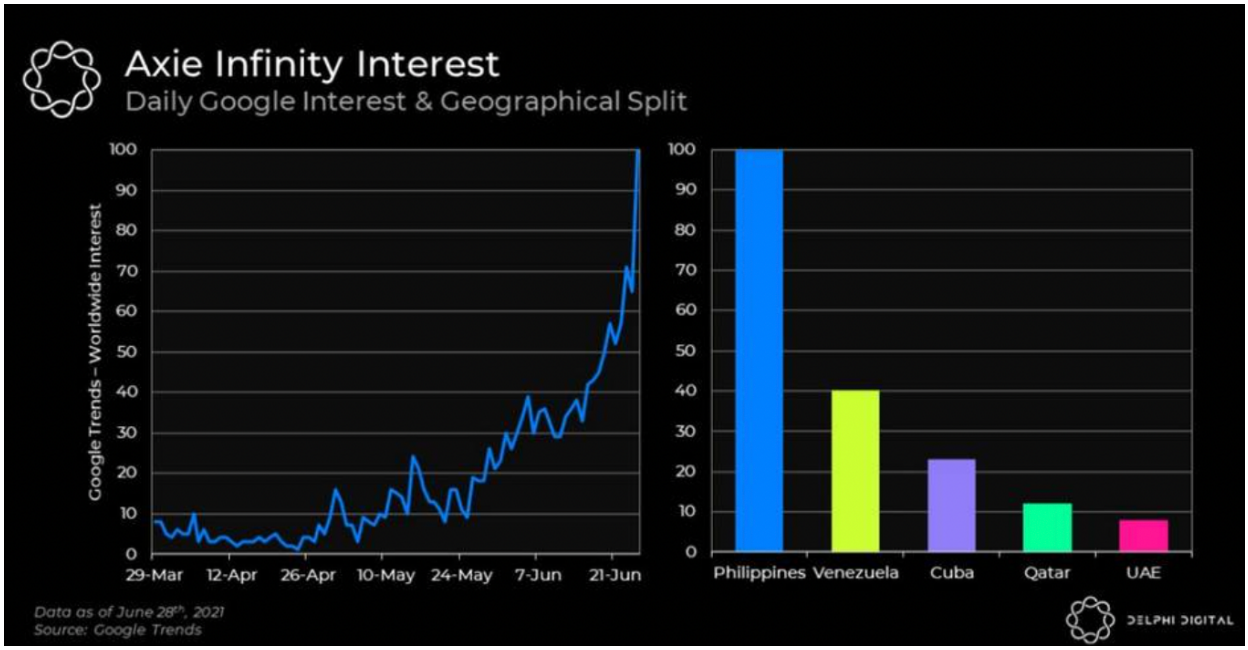
- The object of the game is to obtain smooth love potions (SLPs), which can be used to breed new Axies (digital pets) that can then be deployed within the game
    - SLPs are also cryptocurrencies that can be bought and sold on an exchange.
    - Top players are reportedly earning SLP1,500 (US$435) per day from their Axies
- Axies can be traded in Axie Marketplace as NFTs
    - In late 2020, an Axie was sold for 300 ETH
    - Axies are very complex NFTs - they have various unique traits such as stats, classes, body types, parts and abilities.
    - They have different maturity levels and breed counts, the rarest ones have mystical parts.

    - All these elements can create additional value to the NFTs.
    - Delphi Digital spent $159K on Axie 'digital pets' in October 2020

- AXS is a token that is intended to reward users for participating in Axie while also incentivizing users to hold tokens long term so that ownership and governance of the platform can be decentralised.
    - Investors are more likely to buy AXS tokens in the belief they will increase in value long term.
- According to Token Terminal, Axie has generated over $230 million in revenue in the past 30 days.
- Revenue comes from in-game purchases, such as land. Axie takes a 4.25% fee for buying and selling Axie NFTs and charges fees for breeding. Rest of the revenue goes back to the players.

Top dapps and blockchains based on cumulative total revenue in the past 30 days.





In the Philippines the income from Axie is better than many 'real world' jobs – especially at a time of high unemployment from the COVID economic fallout

- Play to earn creates entirely new wealth in a purely virtual sense but puts bread on the table and roofs over people's heads.
- Play to earn could become the primary income for hundreds of millions of people as a form of financial emancipation rather than digital feudalism.

A tricky part of play-to-earn is that it takes upfront capital for individuals to buy digital assets that then generate yield through play.

This can discriminate against those in less fortunate financial situations… one solution is **Yield Guild Games** (YGG)

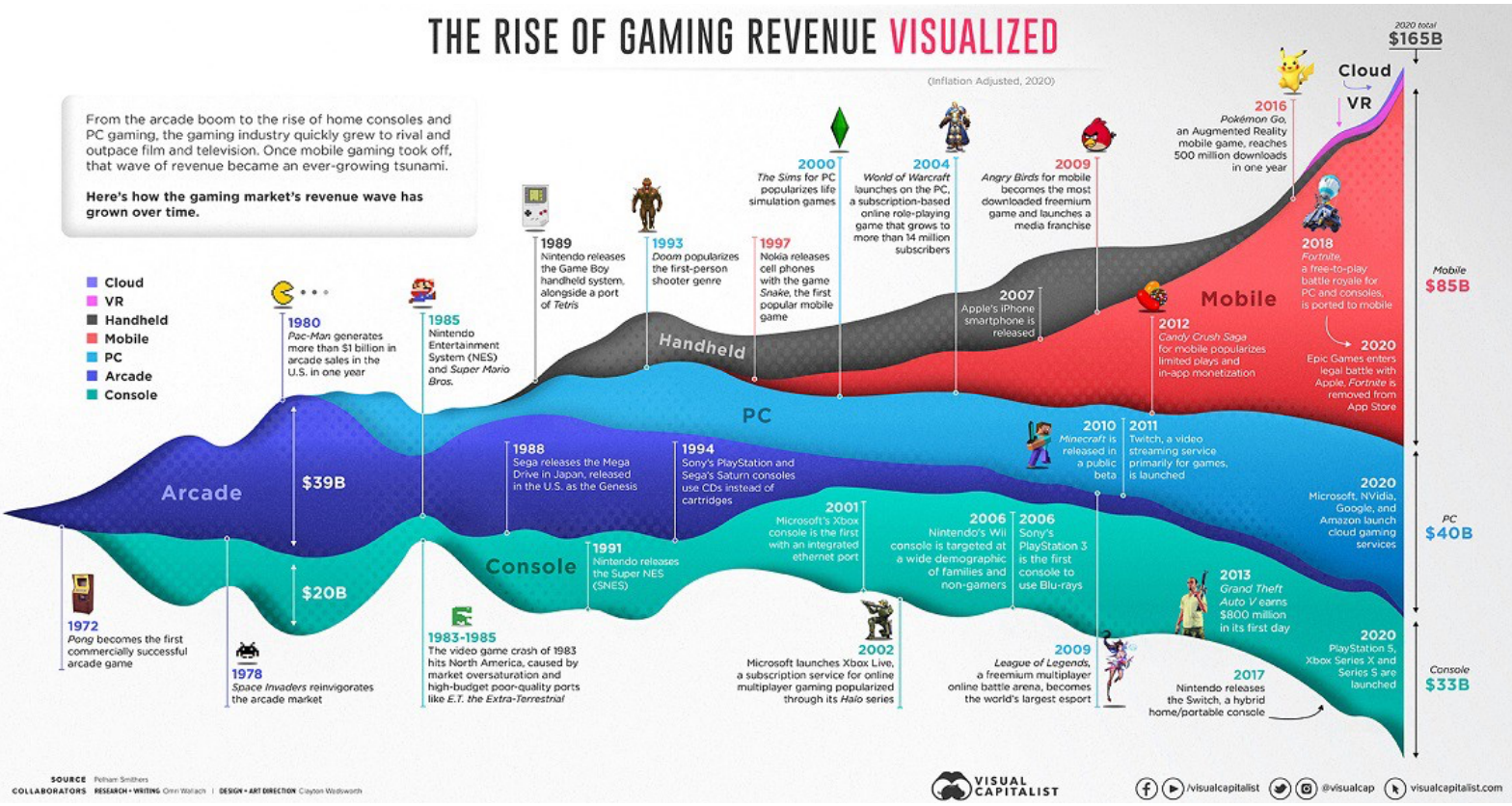
- YGG is a decentralized autonomous organization (typically referred to as a DAO).
- YGG is a collective of play-to-earn gamers
- YGG buys and rents in-game assets to players to create paying jobs for the 'scholarship recipients' and generate yield for YGG itself.
    - Think of it like a **prop-trading firm but instead of traders you have gamers**
    - The income earned from active players is shared between the player and YGG

    - It's a win-win that's uniquely enabled by the new possibilities of play-to-earn.
- YGG's goal is to seek yield and provide scholarships across a wide range of play-to-earn games such as Axie Infinity
- YGG's Initial Dex Offering (IDO) which launched on SushiSwap's Miso platform – sold out in 31 seconds, raising $12.5M from just 32 participants
- Play to earn could take some time before hitting the mainstream however it's hard to see play-to-earn not become a more relevant in the gaming industry
- Billions of people love gaming + everyone wants to make money = play to earn will be unstoppable?

Why gaming will take over the attention economy

- Human attention is finite
    - All forms of entertainment convert attention to revenue
- Netflix, in its Letter to Shareholders: "We compete with (and lose to) Fortnite more than HBO.
- Television has peaked and its time is being redistributed
    - Now there's TikTok, Snapchat and Fortnite. They will continue to take generational share away from the category with the most to give – TV.
    - Media diets are changing - Gen Y spends more time gaming than Gen X, and Gen Z spends even more time than Gen Y.
- Most media categories are confined by their finite length
    - At a certain point, you reach the last page of a book, last episode of a TV show, or end of a podcast.
    - Games are driven by social experiences
        - A gamer isn't playing to 'complete' a story, they're playing because they love competitive play – especially play with their friends. And given no multiplayer experience is the same, there's always a 'new story' that can be played.
- The most successful mediums are socially driven
    - Part of this is purely social pressure – the 'watercooler' effect (in order to participate in culture, you need to consume specific media).
- Gaming has been evolving into something all-encompassing
    - It's a hobby, an obsession, an in-home and out-of-home experience, something millions read about, talk about, and watch.

    - This isn't unique to gaming - professional sport has been here for decades.
    - The gaming ecosystem is finally meeting this potential and both the number of players and the average playtime per player is growing quickly.
- New Opportunities for eSports and Streamers
    - Obtaining true mastery - most people cannot compete at the top of these games.
    - Hence massive amounts of attention are being directed towards watching other people play, rather than playing oneself.
    - Since provenance is provable with NFTs, one of the ways an item will accrue value will include not only what the item is, but who has held it.
    - A costume worn by a top-performing eSports star during a tournament victory would always carry that story with it — and potentially become an additional revenue model for the eSports industry
    - Streamers could be rewarded with items that would be extra-valuable to their own communities: they could pass them on to their fans or resell them as a source of income. This appears to be a big part of the vision for Theta, which is building a decentralized streaming network on their own blockchain.



Collectibles & Fashion

Digital collectibles: Digitizing collectibles and putting them on a blockchain gives assets access to the distribution and market size of the internet. Anyone, anywhere in the world can start collecting and trading digital collectibles.

- NBA Top shot has seen over $100M in sales volume with notable entrepreneurs and players getting involved.

Physical collectibles/fashion: Creating NFT certificates that represent physical collectibles is going to unlock billions of dollars of value.

- High-end watches or baseball cards can now have digital certificates on the blockchain that are connected to their physical counterparts.
- This makes the ownership of creative goods permanently visible and bridges the physical and the virtual world.
- Because NFTs can act as a 'digital twin' of a real-life garment—proving authenticity and provenance—brands like Louis Vuitton and Nike are now actively investing in blockchain technology.

Digital fashion - Gamers are the pioneers of digital fashion.

- Fortnite is a free-to-play video game, making $5B in revenue which primarily comes from in-game cosmetics such as character outfits or skins.
- Fashion is rarely just about utility. It's a means of self-expression and a way to communicate status and identity.
- Robert Triefus, an executive vice president at Gucci, said it was inevitable that luxury brands would begin to design NFTs
    - Gucci has yet to delve into the market itself, but for three or four years now it has been making inroads into virtual spaces, creating digital products and environments for games such as The Sims and Zepeto.
- NFTs reinforce the exclusivity of luxury items

Virtual worlds

- Blockchain-based virtual worlds are the closest thing to a metaverse right now. These platforms are social networks, gaming platforms, e-commerce platforms, and creative platforms, all rolled into one.

- Blockchain-native virtual worlds started NFTs for land ownership and in-world assets.
    - Virtual worlds Decentraland and Cryptovoxels have slowly grown over time as individuals enter the worlds for conferences, art galleries, casinos, and upcoming use cases.

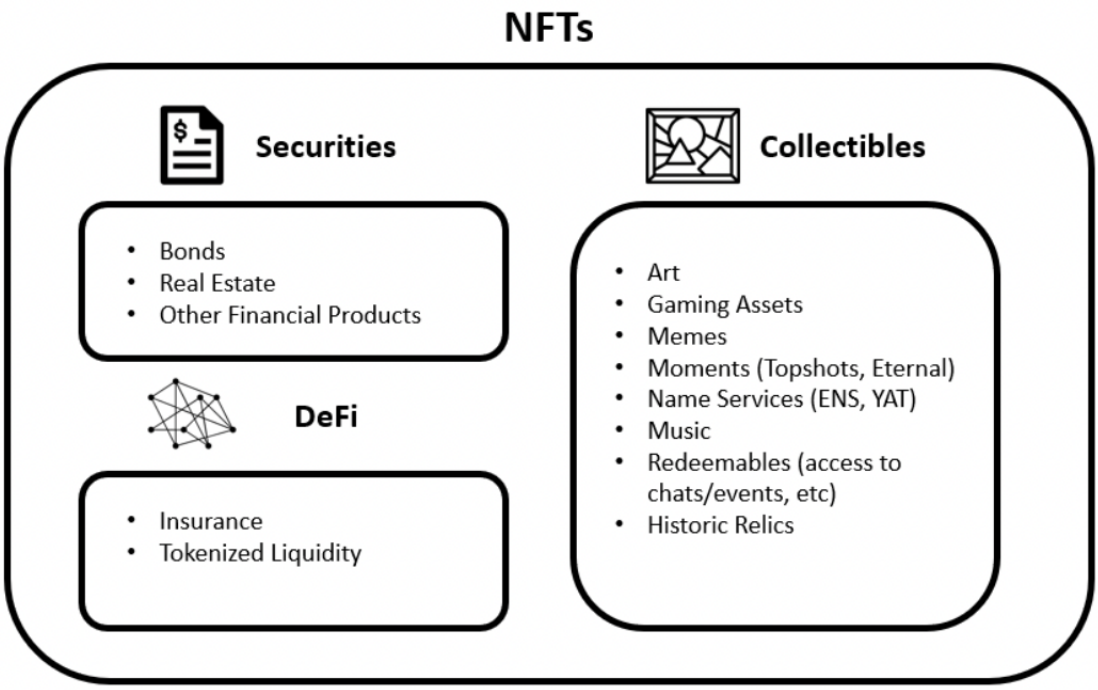
The above are just some ways NFTs and the ERC-721 standard has allowed us to imbed unique properties in an individual token.

The price tags for NFTs might seem downright ridiculous to the average person, but NFTs are simply going through their expected phase of the Gartner hype cycle, as all new technology must.

Current use cases pave the way for NFTs to represent anything else that is not intrinsically interchangeable - this could be:

- concert tickets: using NFTs for ticketing → prevents scams and fake tickets
- digital identity: NFTs can be used as Universal Profiles
    - blockchain-based user profiles that enable permanent identifiers in the digital world
    - makes economic and verifiable interactions possible and are the core building block for the new creative economies.

The evidence shows that NFTs have an indisputable role in the future of the economy.



Source: Mechanism Capital

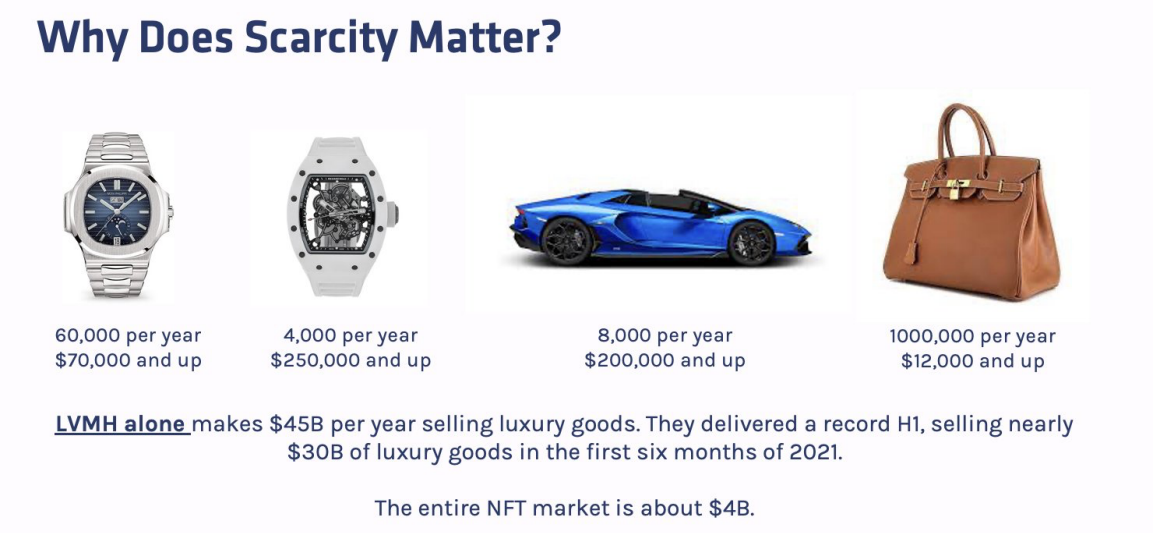
Since NFTs can represent many vastly different types of assets, the total NFT market is difficult to quantify.

Andrew Kang of Mechanism Capital writes 'While securities NFTs potentially constitute a massive market, the infrastructure and regulations required are still in nascent stages of development. Comparatively, collectible NFTs have exploded this year into a multi-billion dollar market with trading volume recently surpassing $100m daily.'

Using the current collectible NFTs market, Nansen estimates the market cap of the top collections to be greater than $4 Billion.

In a recent Nasdaq article 'Why the NFT Market Could Really Grow by 1,000X' the global collectibles market (including physical trading cards, games, toys, cars, and more) is estimated to be $370 billion.

NFTs are a status symbol for a new class of consumers.



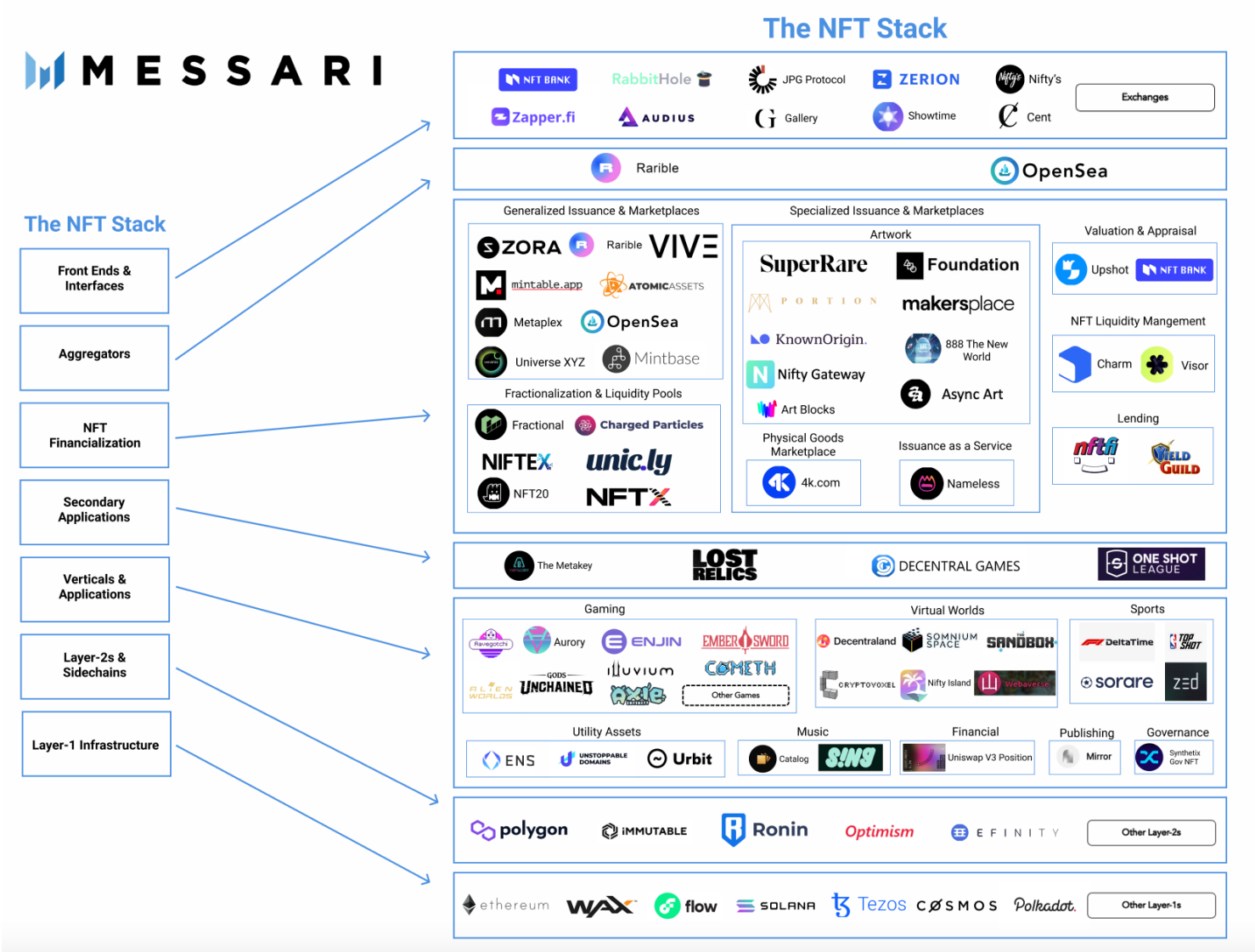
Source: Meltem Demirors

Comparison of companies by market cap:

1. $365B – LVMH
2. $153B – Hermes
3. $133B – Goldman Sachs
4. $75B – Uber
5. $42B – Walgreens

The total addressable market for luxury goods and scarce status symbols is in the trillions.

Arthur Hayes (BitMEX cofounder) describes NFTs as a way for humans to social signal in the digital world. We don't question the value of physical items used to project our social standing. We understand and value fashion, paintings, jewellery. When people spend thousands on a Louis Vuitton handbag or hundreds on a white t-shirt from a well-marketed fashion house, they are social signalling their affluence. Arthur also uses the analogy of the nightclub economy - individuals walk into a dark room, listen to loud music, dance, and pay exorbitant amounts of money to drink liquid. Everyone gets dressed up real nice in articles of clothing that serve no useful purpose other than to demonstrate that the wearer spent a lot of money to display their social status to the rest of the clubbers present. Social signalling isn't just evident in nightclubs, it exists in art collecting, travel, dining, etc. This human behaviour won't disappear simply because we're online - our digital identities will be paired with digital items and social signalling will take on new forms powered by blockchain enabled NFTs.



Source: Messari

The NFT landscape has evolved from a small ecosystem to a multichain ecosystem.

OpenSea and Rarible are NFT **marketplaces** and also **aggregators**. OpenSea facilitated $24 million in sales volume in all of 2020 and by August of 2021 surpassed $1 billion in volume.

- Rather than buying NFTs directly, traders/investors can buy tokens affiliated with NFT marketplaces
    - This allows betting on the NFT industry's growth without having to go all-in on some sky-high priced digital artwork or trading card.

- These tokens 'can serve, in a way, as index bets on the growth of the NFT marketplaces they power,' - Alex Gedevani, Delphi Digital.

NFT Financialization - increases NFT liquidity by:

- creating liquidity pools whereby individuals can deposit similar NFTs
  - e.g., NFT20 – A decentralized exchange where individuals can deposit NFTs into pools in exchange for fungible tokens (e.g. 100 $Punks tokens) that are redeemable for one NFT (e.g. CryptoPunk) in the pool.
- fractionalising individual NFTs in order to encourage greater speculation
  - e.g. Niftex – NFT owners create shards (fractions) of an NFT into fungible tokens. The underlying NFT can be recovered by acquiring 100% of the shards or via a special buyout clause.

NFTs, Web 3 and the Metaverse

'Once the people of planet Earth are all hanging out together online in a virtual world without any borders, I think it could change social networking, entertainment and even politics.'– Ernest Cline

NFTs will move us towards a world where the metaverse becomes an integral part of our everyday lives, aided by Web 3 - the decentralisation of the internet.

Outlier Ventures in their Metaverse Thesis describes Web 3 as 'distinct and separate Web paradigm to today's Web 2 based on centralised platform monopolies and highly regulated fiat financial systems, to one that is increasingly decentralised and based on user centricity and the sovereignty of their data and wealth.'

The Web 2 giants of Silicon Valley are no longer just corporations. Rather, Apple, Facebook, Google, and Amazon are like Internet-Nations increasingly entwined with government policies. This is evident in the policies around data rights, privacy, antitrust and also extends to financial legislation.

Internet Nations are ultimately at the mercy of Nation States, both exert top-down control and extract resources from their constituency in order to grow their domain.

Big tech's ability to de-platform individuals and censor speech has created structures that have become too rigid - smothering freedom and limiting expression.

The metaverse on the other hand is a virtual world independent of Nation-States and Central Banks. The building of the metaverse is a bottom-up process driven by market forces.

Outlier Ventures proposes that the 'defining characteristic of a true Metaverse is that it needs its own economy and currencies native to it, where value can be earnt, spent, lent, borrowed or invested interchangeably in both a physical or virtual sense and most importantly without the need for a government.'

Users looking for increased transparency, fairness and open-source solutions could slowly but surely create a domino effect that will result in total Web 3 adoption.

The metaverse is an opt-in nation, where the foundational Layer 1s have successfully separated money from state. There is no coercion from Bitcoin or Ethereum.

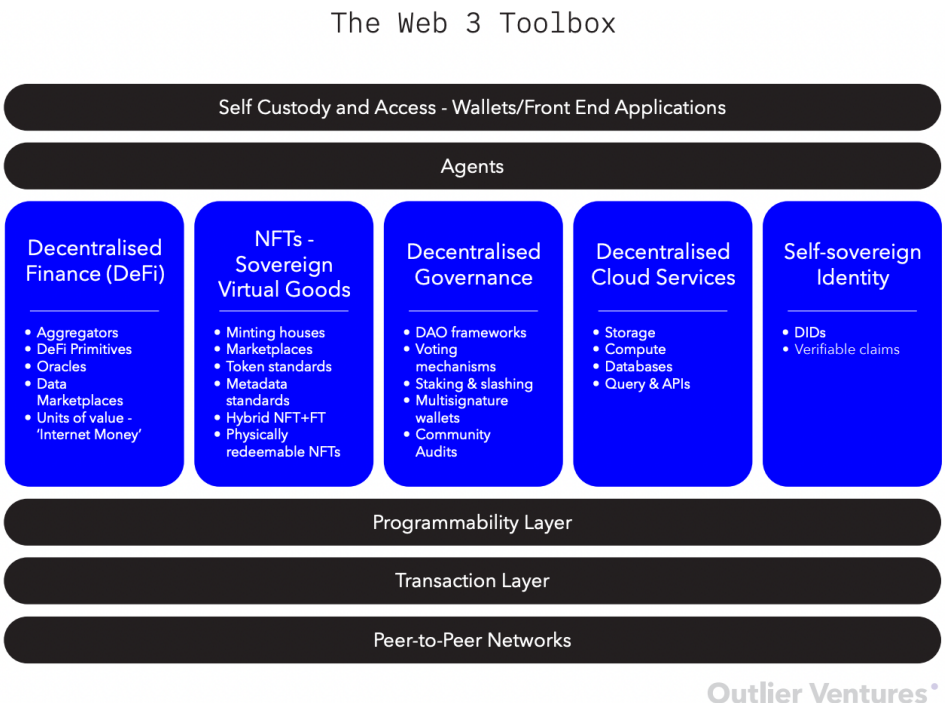
However, there's no point having a currency that's decentralised, if your wallet or the exchange you trade on is controlled by a centralised intermediary.

Enter **DeFi** - Decentralised Finance has proved successful on Ethereum - recreating the financial products/services found in our physical world, without an intermediary.

But what if your decentralised exchanges, are hosted on centralised servers? These become centralised points of failure and those in power can easily intervene, control or shut down applications as they see fit. What happens when the servers go down?

Enter **Web 3**. Web 3 servers can't go down – Filecoin, Siacoin, Storj are decentralised version of Amazon Web Services, the network is made up of many different computers run by many different people and organisations.

Layer 1, DeFi, Web 3, NFTs can all be categorised under 'The Web 3 Toolbox'.



The Web 3 Toolbox creates a metaverse that offers an alternative to those who feel disenfranchised by the existing system - a digital space to live, socialise, work and where individual sovereignty is respected.

If we're going to spend a significant part of our existence in the metaverse then we would want digital property rights and the comfort in knowing that platforms do not possess the power to delete our account if we said the 'wrong' thing.

Web 3 moves us to this permissionless and more democratised ecosystem where users take back the ownership of their own data and is censorship resistant.

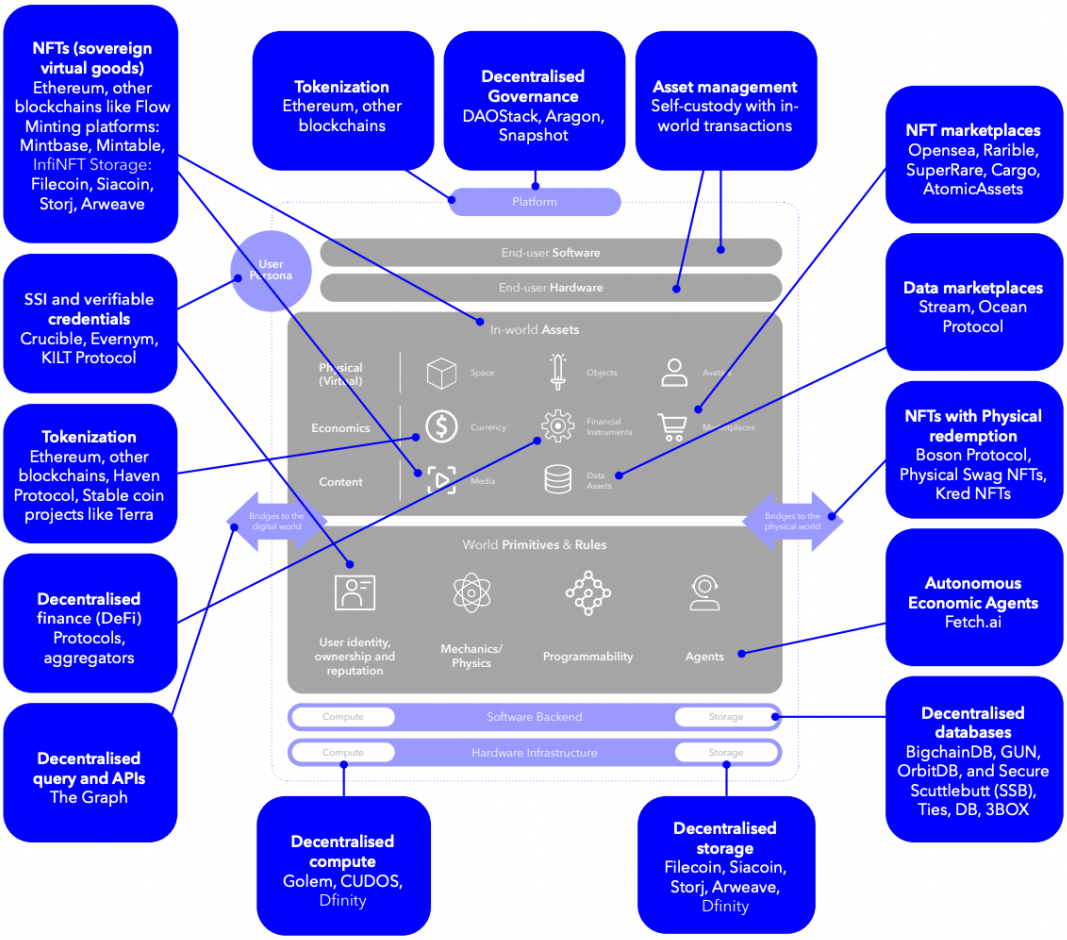
NFTs are the missing puzzle piece to enable a flourishing open metaverse because they enable digital property rights

- Similar to how China opened up to capitalism and land reform in the 1980s which led to economic prosperity, NFTs enables digital media ownership to the 4.6 billion active internet users around the world.
- When digital assets can have a life 'off platform' and be exchanged freely in open markets they grow in liquidity and value because more value can be exchanged between itself.

NFTs allow creators to monetise their work in a new way - empowering them to cut out middlemen and form direct relationships with their fans.

- This brings powerful network effects
- The creatively excluded will be more than willing to experiment in open and permissionless economic systems, especially when they derive a greater return and on-chain royalties in perpetuity.
- Closed virtual worlds like Fortnite have become powerful channels for entertainers e.g., Travis Scott – American rapper who held a virtual concert in Fortnite, earning $20M
- Artists will realise rather than just being paid to play in someone else's virtual world they can build and monetise their own communities through NFTs where they retain direct and full creative and financial control
- This will be accelerated by new NFT platforms that specialise in entertainment serving as an onramp into the metaverse, similar to how crypto exchanges like Coinbase/Binance brought crypto to millions of retail investors

How NFTs fit into the Open Metaverse



NFTs will enable open, trustless, decentralised ownership of the metaverse.

- Ownership is a powerful motivator for users to contribute to products in deeper ways.
- We have seen Bitcoin, Ethereum and DeFi protocols use incentives for early adopters to join a network.
- Virtual worlds create their own cryptocurrency, sell virtual land, or offer NFTs as incentives
- The co-operative economic model ensures better alignment with users over time, resulting in platforms that can be more resilient and more innovative, while leveraging the strongest form of market incentives to grow network effects.

Rationale for NFTs and the Creator Economy

'You never change things by fighting the existing reality. To change something, build a new model that makes the existing model obsolete.' - Buckminster Fuller

The crypto revolution is typically viewed as a revolution in money and technology – a new asset class and new technological mediums that promise to usher in a new age of unrestrained value-transfer without intermediaries. However, this revolution goes beyond money and technology, this is a revolution in human culture.

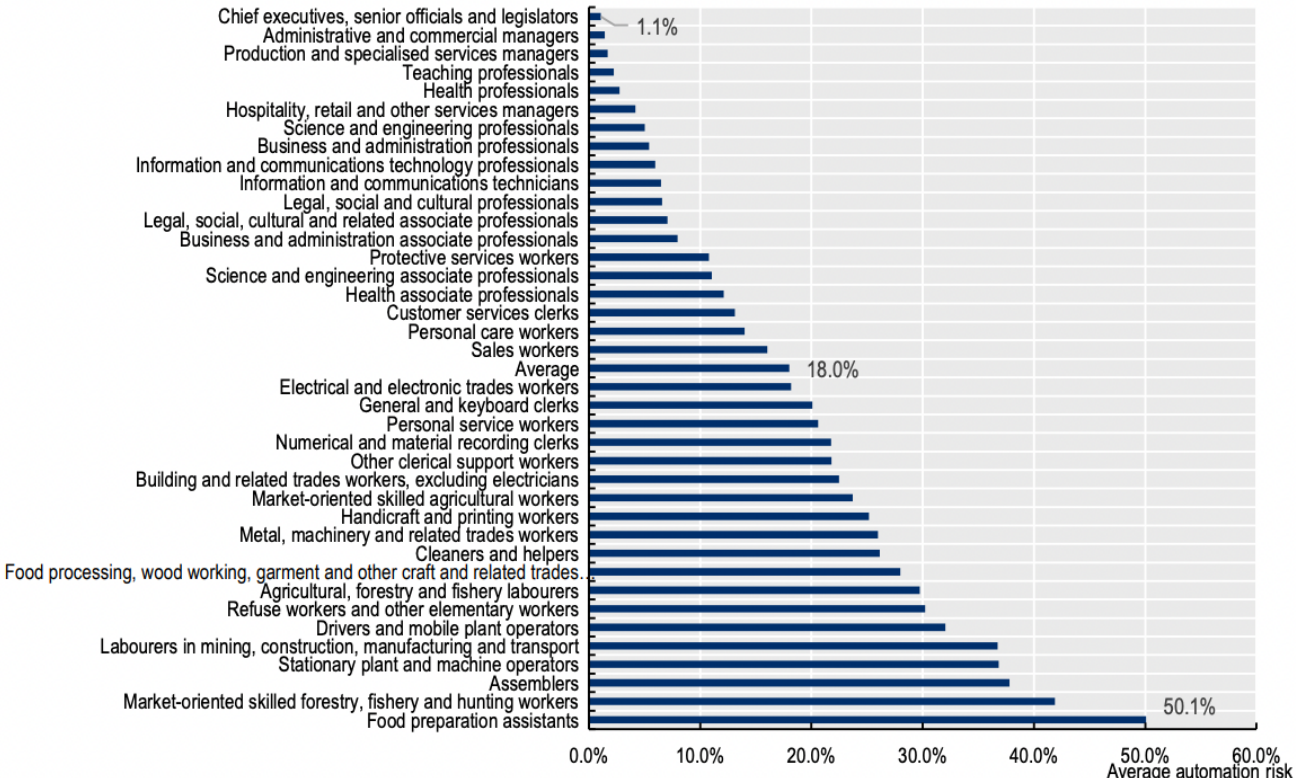
Blockchain technology will collide with AI innovation - completely breaking down our current paradigms to advance us further into the cultural zeitgeist spawned by NFTs.

Historian Yuval Noah Harari writes; *'as time goes by, it becomes easier and easier to replace humans with computer algorithms, not merely because the algorithms are getting smarter, but also because humans are professionalizing.*

Ancient hunter-gatherers mastered a very wide variety of skills in order to survive, which is why it would be immensely difficult to design a robotic hunter-gatherer… However, a taxi driver or a cardiologist specialises in a much narrower niche than a hunter-gatherer, which makes it easier to replace them with AI.
AI is nowhere near human-like existence, but 99% of human qualities and abilities are simply redundant for the performance of most modern jobs.'

Figure 1. The risk of automation varied significantly by occupation

Share of jobs at high risk of automation by occupation (averaged across countries)



Source: OECD

Harari theorises *'Since we do not know how the job market would look in 2030 or 2040, today we have no idea what to teach our kids. Most of what they currently learn at school will probably be irrelevant by the time they are 40.*
The crucial problem isn't creating new jobs. The crucial problem is creating new jobs that humans perform better than algorithms.'

If you're sceptical about the predictions made by academics, PWC shares a similar view in their 'Workforce for the Future – Competing forces shaping 2030' report:

'One clear lesson arises from our analysis: adaptability – in organisations, individuals and society – is essential for navigating the changes ahead. It's impossible to predict exactly the skills that will be needed even five years from now, so workers and organisations need to be ready to adapt… the impact of megatrends, and automation in particular – cannot be ignored by governments, organisations or individuals.'

Cathie Wood's ARK Invest reports in their 'Future of Automation':

'Today, the Third Industrial Revolution is upon us, cutting across sectors to weave robots and adaptive algorithms into the fabric of our lives.
By 2035, ARK predicts roughly half of the US labor force will be replaced by automation.
Demand for robots will grow significantly, improving margins for businesses, and potentially lowering costs to consumers.
The benefits of automation, however, will be even more profound than the $12 trillion increase in incremental GDP.
Perhaps most importantly, automation will enable people to pursue higher-level careers that will spur future innovations and progress, and further human fulfillment.'

ARK Invest believes that automation will not cause mass unemployment but rather a significant displacement of workers into higher-value-add jobs.

Automation is an integral part of human progress. Throughout the Industrial Revolution there were periodic panics about the impact of automation on jobs. In the end, these fears were never realised. Demand for new types of labour (such as mechanics to fix the new machines, supervisors to oversee the new factory) created new sectors for the economy.

We are living through a fundamental transformation in the way we work – one that will shape our culture and give further rise to the **creator economy**.

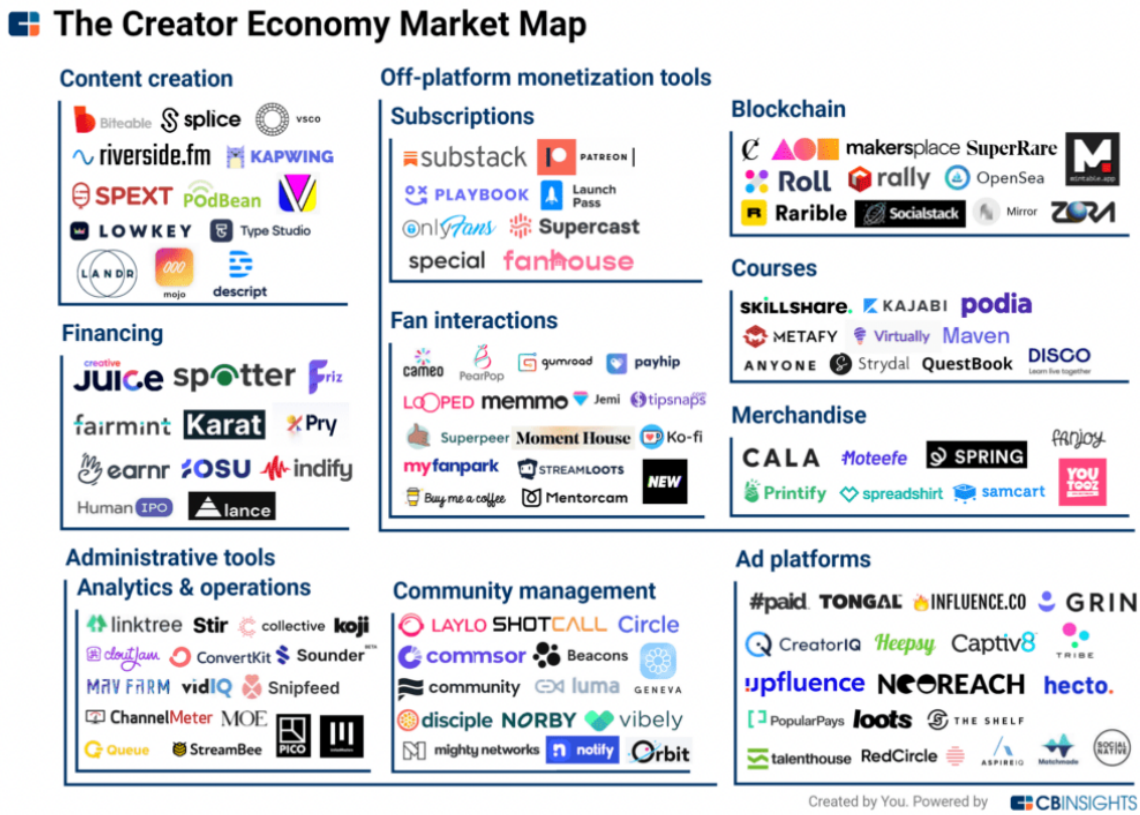
The creator economy is the class of businesses focused on independent content creators, be it video, fashion, writing.

It is an industry still in its infancy as not long-ago content was still dominated by big media and Hollywood celebrities. The high barriers to entry into this industry was removed with the advent of social media. The internet decentralised media and now content is being made by everyday people.

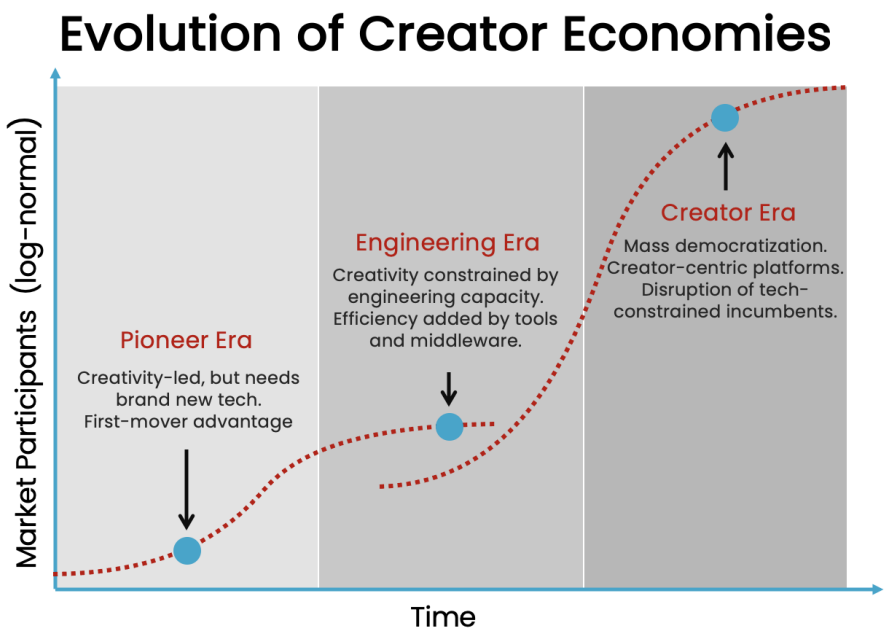
How big is the creator economy?

According to CB Insights there are approximately 50M creators today

- Top YouTube channels reaped $211M between Jun 2019 - Jun 2020.
- Famous Instagram influencers can net up to 6 figures per post.
- Top writers on Substack can rake in as much as $1M annually.
- Corporate brands are expected to spend up to a whopping $15B on influencer marketing by 2022.
- CB Insights identified 125+ creator-focused companies that are capitalizing on each step of the creator work cycle



- Andreessen Horowitz is the most prolific backer of creator-focused companies.
- Li Jin (Partner at Andreessen Horowitz) writes: *'Whereas previously, the biggest online labor marketplaces flattened the individuality of workers, new platforms allow anyone to monetize unique skills. Gig work isn't going anywhere but there are now more ways to capitalize on creativity. Users can now build audiences at scale and turn their passions into livelihoods, whether that's playing video games or producing video content. This has huge implications for entrepreneurship and what we'll think of as a "job" in the future.'*



Current state of creator economy:

- When creators post an image, video, song they give up ownership of the file to the platform.
- Facebook, Twitter, Instagram allow individuals to amass large followings but leaves them with few avenues for direct monetisation.
- YouTube gives creators 55% of ad revenue - it's paid out $30B to creators in the last 3 years.
- Newer platforms have emerged that recognise the value of user-created content:
    - Substack writers take home 90% of subscription revenue
    - Twitch partners collect half of their subscription fees
    - Patreon creators get paid between 88% to 95% of their subscriptions
- Despite the democratisation of creative platforms and the lower barriers to becoming a creator, financial success is concentrated among just a small segment of top creators.
- On Patreon, only 2% of creators made the US minimum wage of $1,160 per month in 2017.
- On Spotify, artists need 3.5 million streams per year to achieve annual earnings of $15,080.
- The creator economy resembles an economy of superstars - vast majority of creators are struggling to make ends meet and all creators are building on a shaky foundation as their ability to reach audiences and earn income is dictated by a small handful of companies.

- In a Harvard Business Review article, Li Jin argues for the establishment of a middle class for the creator economy to combat the inequality and offer more opportunities to other creators.

'Societies and platforms flourish when there is a path for everyone to have upward mobility, achieve financial security, and learn and grow. The beautiful thing is, in the real world as well as in the digital world, it's up to us to build this path' – Li Jin

How Web 3 and NFTs helps creators

- Current platforms' monetisation models do not align with the best interests of creators
- Bitcoin and Ethereum have exposed the power and success of user-owned and operated networks
- Web 3 is the opportunity to follow this pattern to build platforms that bootstrap adoption and participation through better economic alignment
    - E.g. a tokenized social network where creators and users are the owners of the platforms instead of investors or employees
    - This would enable creators to connect directly with their audience and be rewarded with tokens.
    - With broad-enough adoption, tokenized networks could become self-sufficient platforms by which creators distribute their content without the need for centralised intermediaries and predatory advertising partners.
- NFTs invert the ownership model of media - creators retain ownership of their content, without limiting the propagation of the media across the internet
- DeFi protocols are often referred to as 'money legos' as they allow programmers to compose and build on other applications. Similarly, NFTs are 'media legos' for creators to permissionlessly build new experiences in the direct-to-consumer world.
- NFTs create new revenue streams and Web 3 creates platforms designed for creators - capturing massive economic opportunities and disrupting incumbents.
- By bypassing gatekeepers and middlemen, NFTs are a path for the middle-class creators to achieve the monetisation strategy of 100 True Fans (100 fans who are willing to pay $1,000 a year)

The creator economy may sound like a romanticisation of pursuing passions while making money. However, it's much more than that. It's about taking back ownership from big monopolies, monetising individuality and encouraging creativity.

Being a creative has always been a risky pursuit. As Kristen Bahler puts it, 'Devoting yourself to the life of a 'starving artist' is a lot less risky if your family has enough money to make sure you don't actually starve.'

Karol Jan Borowiecki, economist at the University of Southern Denmark, found that someone whose family has an income of $100,000 is twice as likely to become an artist, actor, musician or author than a would-be creative with a family income of $50,000. Those from households with an annual income of $1 million are 10 times more likely to choose a creative profession than those from families with a $100,000 income.

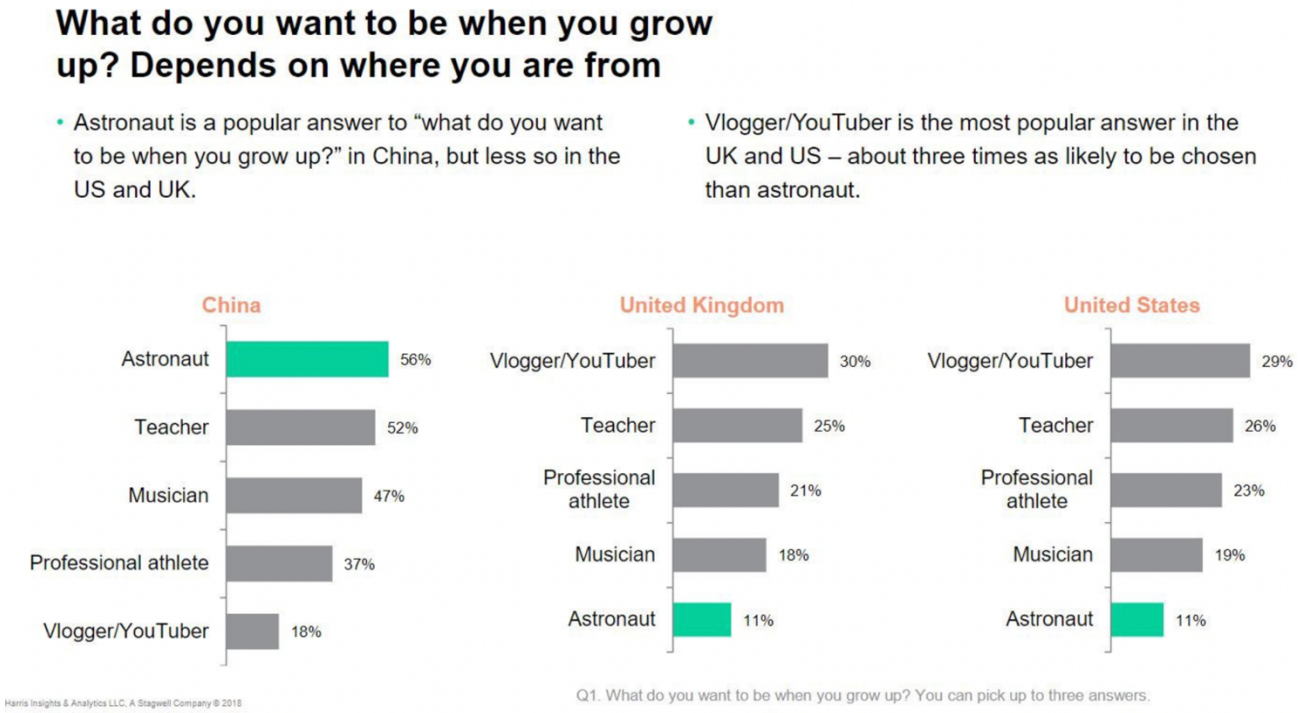
Without a financial safety net, it becomes quite risky to pursue a creative career. However just as DeFi has democratised financial opportunities, NFTs are democratising the opportunity for creative pursuits by offering creators a path to crowdfund work.

For most of the twentieth century, the safest career strategy was to get a standardised education and to fit in. However, at a time where rapid technological change is occurring and AI predicted to displace vast numbers of jobs, how safe really is the safe career strategy?

We are going through a process of Creative Destruction in the digital age. That process is how all modern economies have evolved and given rise to most of the benefits to society. New winners become so valuable that they disrupt existing market structures. It is driven by innovative entrepreneurs and bold investors that go up against the status quo.

The internet disrupted the media industry and democratised content creation. Now tokenisation is making it easier and more financially viable for people to achieve creatorship and artistic fulfilment. More and more people want to live their lives doing what they love and it's a cultural phenomenon worth analysing.

A 2019 survey of 3,000 kids found that being a YouTube star was the most sought-after profession in the US and the UK.

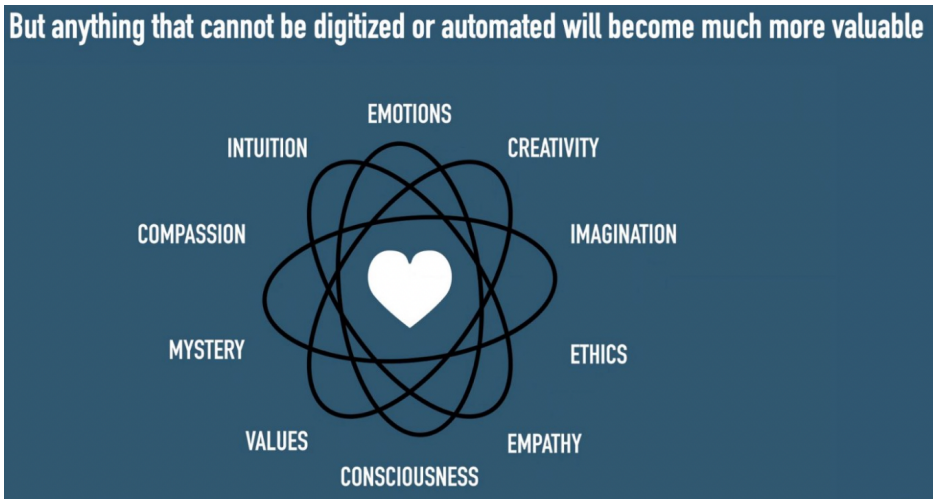


Source: Business Insider

Each generation grows up in a different context. Back in my days, Youtuber was not a job option. Professional gamers or play-to-earn games didn't exist.

The world is changing fast. This 'technology supercycle' will be bigger than anything we've seen before. In the not-too-distant future, humanity will be outstripped by our robotic creations in many areas of work.

However, the future of work is also where humanity will shine.
Moravec's Paradox states that: anything that is easy for a human, is hard for a robot.



History is replete with examples of societies transitioning from autocratic to more democratic systems. The current transition is well underway, and its consequences are more evident by the day.

DeFi is democratizing access to financial services and while important, it does not capture the attention of the youth in ways that gaming and entertainment do.

NFTs and the creator economy may be the real catalytic breakthrough for mainstream crypto adoption.

This new set of tools for incentivising and rewarding participation is synergistic to an opt-in model driven by values alignment.

The services that exist today will steadily be rethought, and rebuilt, for the metaverse. It will bring the same diversity of opportunity as we saw with the web – new companies, products and services will emerge to manage everything from payment processing to identity verification, hiring, ad delivery, content creation, security, and so forth.

These new platforms help service the creator economy and give birth to a new middle class. In both the real and digital worlds, a strong middle class leads to higher levels of societal trust, provides a stable source of demand for products and services, and drives innovation.

We are witnessing a pivotal point in human history where technology is reshaping our culture, antiquating our laws and inverting our institutions.

By rebalancing the flows of money and power, this new digital economy provides paths for upward mobility and democratises the opportunities to succeed.

This revolution will not be televised, it will be decentralised.

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