Market Analysis

CEO DESK – AI research Report

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Market Analysis – Gaming and Blockchain

The Market

A trend towards play-to-earn business model

Market Overview

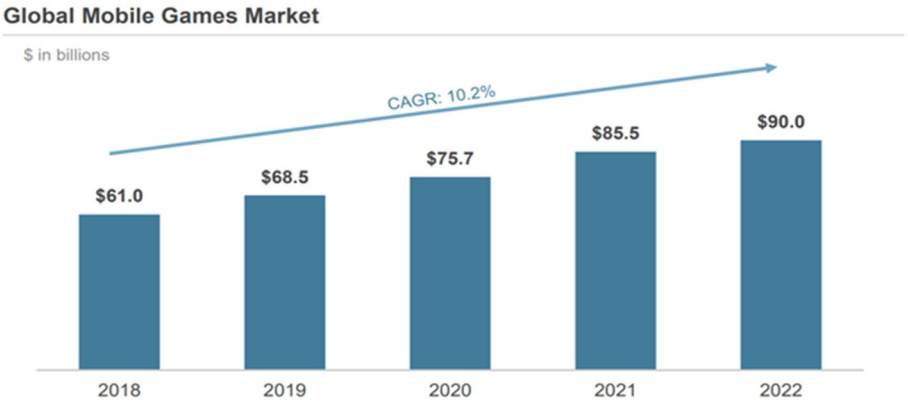
Since Nakamoto created Bitcoin in 2008, blockchain technologies have opened a range of new possibilities in many sectors, such as healthcare, logistics and education.

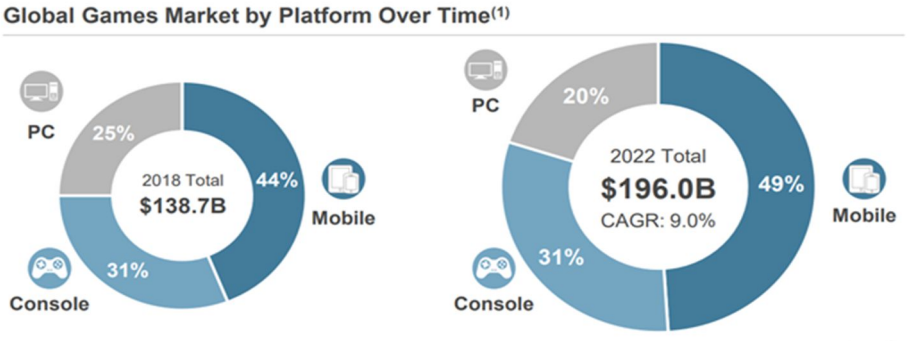
The gaming industry seized its opportunity with the prominent emergence of play-to-earn games and metaverses in 2021.

A) Overview of the Gaming Industry

Over the last 20 years, the gaming industry has evolved from a crude arcade style into graphically gorgeous 3D mobile entertainment featuring live video streaming and supported by cloud-based infrastructure. Newzoo's 2021 Global Games Market Report estimated that there are currently 2.9 billion gamers across the globe, a roughly twofold increase in just five years. Add in another couple hundred million people who watch gaming clips or competitions, and roughly one out of every three people worldwide say they play or watch video games.

The global games market, which is on pace to be a $ 200 billion market by 2022 (growing at a healthy 9% CAGR), has proven to not only be resilient during COVID-19 but is also in many respects a beneficiary of "shelter in place" orders. The popularization of diverse revenue models, including free-to-play, subscription, and ad-driven models, are important factors in the continued, rapid increase of the games industry. Mobile, which has been a key driver of growth, as well, now makes up 45% of the global games market and is expected to represent ~50% by 2022. In many ways, COVID-19 has helped to accelerate several key trends that were already driving innovation and growth within the industry.





New Technology is making a significant difference:

- The global adoption of smartphones, coupled with increasingly powerful 5G networks and cloud-based infrastructure, has fuelled rapid growth in mobile gaming, allowing the industry to scale rapidly at a low marginal cost.
- In recent years, video game companies have significantly expanded their reach and enhanced their technology infrastructure, implementing internet capability in traditional consoles and introducing games onto modern mediums, such as smartphones.
- Incumbent platform companies in the United States and Japan have launched online gaming services, opened digital stores for distribution of games, and broadened their devices' access to the array of digital content available. While their sizeable bases of serious gamers and longstanding relationships with top publishers and developers give them substantial momentum, we expect global Internet platforms to leverage their scale, reach, technical prowess and financial resources into viable game-streaming businesses.

Global Gaming Is attracting New Players: While younger users still comprise the majority of gamers today, there are indications that older generations and past gamers have re-engaged with video games during the pandemic and will likely continue gaming as the world normalizes.

- As noted, while one-third of the global population plays or watches video games already, there is room for this to increase in the medium-term on par with the global consumption of film and music.
- This represents a significant structural change which we expect to yield an increased customer lifetime value for publishers, along with incentives to create long-lasting global franchises marketed across the developed, emerging and frontier markets.

Trends of the Gaming industry are as follow:

- **Cloud gaming and subscription services expected to expand market further.**
  - Cloud gaming has generated more than $300 million in 2020 and grow to more than $3.0 billion by the end of 2023.
  - Cloud gaming enables the playing of any game on any device without needing to have a local copy of the game itself or to own the physical hardware to process the game.
  - As the technology continues to improve, it is expected that more consumers will enter the gaming ecosystem and drive growth in overall demand for games.
  - Faster internet and the upcoming release of 5G technology will make cloud gaming more feasible in an increasing number of markets.
  - The technology advances that have driven the growth in cloud gaming have also enabled the proliferation of subscription streaming services, with Sony, Microsoft, Google, and Apple now offering various forms of subscription options.
- T**he drive to cross-platform games:**
  - Cross-platform play has helped create the modern juggernauts of gaming like Minecraft, Fortnite, and Call of Duty Warzone.
  - The ability to play a game regardless of the type of console or platform (console, PC, or mobile) has made many cross-platform games one of the primary destinations for many people during the COVID-19 lockdown.
  - Many game companies have increased their focus on offering cross-platform games as they expand their potential customer base and monetization opportunities.
- **Games: The social network of the future:**
  - The success of games like Fortnite, Roblox and IMVU is in large part attributed to their role as a social network inside of a game.
  - COVID-19 has clearly heightened the need for social and/or immersive game play, as illustrated by the success of Nintendo's new game Animal Crossing. It sold 5 million copies in March 2020, making it the highest-selling title for any console in a single month.
  - In the future, these types of social game platforms are expected to evolve into a next generation internet called the Metaverse, where real-world brands start engaging with consumers in real time. Recent examples include Star

Wars characters or Marvel content in Fortnite and virtual concerts by Marshmello and Travis Scott, which were attended by 11 million and 13 million people, respectively.

B) Overview of the Crypto and Blockchain & this Industry

Since the creation of bitcoin in 2008, cryptocurrencies have been the subject of uncertainty, scepticism, hype and disillusionment. While still early as a technology category, cryptocurrencies are now maturing and have demonstrable utility.

- Cryptocurrencies in aggregate are valued at over $2 trillion in market capitalization.
- Cryptocurrency based lending applications and decentralized trading venues currently command $65 billion in on-boarded assets.
- Just in the first quarter of 2022, over $1 billion worth of digital collectibles and digital art traded hands, underpinned by cryptocurrency networks.
- This is not to mention the areas that are still in exploratory phases: community governance, file storage, and cross-border payments, among others.

Cryptocurrencies and blockchain are a monstrous topic. There are several hundreds of cryptocurrencies and the applications of blockchain technology are also numerous.

- Blockchain is a particular type or subset of so-called distributed ledger technology ("DLT"). DLT is a way of recording and sharing data across multiple data stores (also known as ledgers), which each have the exact same data records and are collectively maintained and controlled by a distributed network of computer servers, which are called nodes.
- Blockchain is a mechanism that employs an encryption method known as cryptography and uses (a set of) specific mathematical algorithms to create and verify a continuously growing data structure – to which data can only be added and from which existing data cannot be removed – that takes the form of a chain of "transaction blocks", which functions as a distributed ledger
- In simple terms, the blockchain can be thought of as a distributed database. Additions to this database are initiated by one of the members (i.e. the network nodes), who creates a new "block" of data, which can contain all sorts of information. This new block is then broadcasted to every party in the network in an encrypted form (utilising cryptography) so that the transaction details are not made public. Those in the network (i.e. the other network nodes) collectively determine the block's validity in accordance with a pre-defined algorithmic validation method, commonly referred to as a "consensus mechanism". Once validated, the new "block" is added to the blockchain, which essentially results in an update of the transaction ledger that is distributed across the network. In principle, this mechanism can be used for any kind of value transaction and can be applied to any asset that can be represented in a digital form.

While blockchain technology is often associated with digital or virtual currency schemes, payments and financial services, its scope is much wider. Blockchain can theoretically be applied in a large variety of sectors (e.g. trade and commerce, healthcare, governance, …). In addition, it has numerous potential applications. It could have an impact on the pledging of collateral, on the registration of shares, bonds and other assets, on the transfer of property tiles, on the operation of land registers, etc

Cryptocurrencies – Tokens – Cryptosecurities:

- The term cryptocurrencies is in practice often erroneously used in a very broad sense.
- Firstly, cryptocurrencies should be distinguished from cryptographic "tokens", which offer a functionality other than and beyond that of a general-purpose medium of exchange. Tokens are issued in the framework of an Initial Token Offering or "ITO" to raise funds for a given project or enterprise. They constitute a novel class of crypto-assets (i.e. digital assets recorded on a distributed ledger, secured by cryptography) which embody some sort of claim against an entity (or against its cash flows, assets, residual value, future goods or services, …) that arises from the use of blockchain technology.

- Some tokens resemble traditional instruments such as shares or bonds and are commonly referred to as "security tokens" or "investment tokens. Other tokens grant their holders (future) access to specific products or services and are commonly referred to as "utility tokens". They can be used to acquire certain products or services, yet they do not constitute a general-purpose medium of exchange, simply because they can generally only be used on the token platform itself.

Cryptocurrencies and blockchain have become hot topics in the last couple of years. Whilst the two are often referred to in the same sentence and are clearly linked to each other, one should never mistake one for the other. Blockchain is a type of distributed ledger technology that forms the backbone of the crypto-market. It is the technology behind the large variety of cryptocurrencies currently in circulation. Its scope and field of application are, however, not limited thereto.

Play to earn market:

The combination of blockchain technologies and the gaming industry has given rise to metaverses and play-to-earn games, which incorporate their own economy, commerce, and currencies, namely, metaverse and play-to-earn tokens.

Non-fungible tokens (NFTs) have become the new centre of attention for both industrial and scientific communities in the cryptocurrency market.

- This trend happens because of their technical properties and their profitable transactions, as can be observed with the set of 101 NFTs from the "Bored Ape Yacht Club" collection, which was sold for $24.4 million.
- Unlike traditional cryptocurrencies (e.g. Bitcoin or Ethereum), which coins are all equivalent, indistinguishable, and "fungible", NFTs are defined as pure digital assets that cannot be exchanged like-for-like. Consequently, NFTs are unique and "non-fungible".
- This intrinsic feature allows NFTs to demonstrate the authenticity and ownership of different items in distinct fields, which explains its fast expansion on virtual events, digital collectibles (e.g. trading cards, digital images, videos, virtual real estate, domain names, and crypto stamps), play-to-earn games, and metaverses.
- Indeed, it has been in the metaverse and play-to-earn games where investors and gamers have flocked in recent months and, consequently, virtual property sales and token prices are setting new records. As proofs of it, digital lands in the Decentraland metaverse and Axie Infinity pet-training game were sold for $2.4 million and $2.5 million, respectively. Additionally, their corresponding digital currencies, MANA and AXS, have been found among the 40 largest cryptocurrencies by market capitalisation due to their increase in price.

Interest in the gaming industry and its NFT applications is observed in NFT transaction numbers and in the attention of investors, as we report with the evolution of Google searches. Consequently, given the increasing awareness in this niche, we shed more light on play-to-earn games and metaverses.

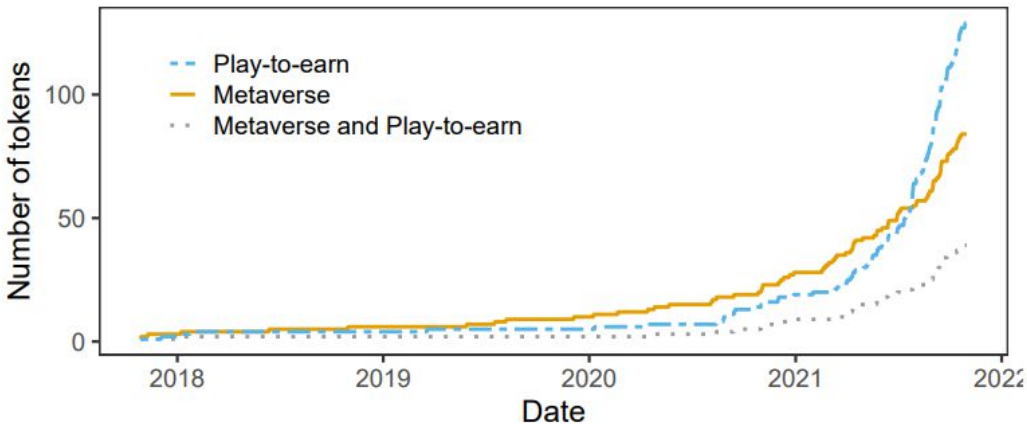
- On the one hand, play-to-earn games are based on a business model in which users play a blockchain game and earn rewards while doing it. The critical element of these games is that users mainly obtain two types of in-game assets as rewards: (i) NFT items with variable scarcity and (ii) a particular type of cryptocurrency or play-to-earn token. Whereas NFTs (e.g. weapons, skins, and monsters) can be purchased and sold on the open market (e.g. OpenSea), game developers create the cryptocurrency or play-to-earn token, which has an inherent currency value and can be traded by players during the in-game experience.
- On the other hand, a metaverse is defined as an immersive and shared virtual world in which different activities are allowed for its users, which are represented by avatars. One of its main features is economic governance and metaverse commerce, since this virtual world has its own economy and currencies with which users can trade any item.

Indeed, the increasing interest in NFTs, play-to-earn games and metaverses has given rise to a remarkable increase in initial coin offerings (ICO) focused on the gaming industry (i.e. initial game offering, IGO). This is a similar tendency observed during the ICO bubble in the entire cryptocurrency market in 2017. Specifically, on January 1,

2020, there were five play-to-earn and 10 metaverse tokens. One year later, on January 1, 2021, the market included 19 play-to-earn and 28 metaverse tokens. Finally, in January 2022, it could be observed 129 play-to-earn and 84 metaverse tokens.

This landscape is a demonstration of the growth of a new niche in the cryptocurrency market.

Number of tokens over time: a) play-to-earn, b) metaverse, c) metaverse & play-to-earn.



C) Overview of the Monetisation in the Gaming Industry

Traditionally, publishing and direct sales of games was the way of making money within the game industry. This business model has strong historic examples, such as the US giant Atari, which in the 1970s generated $20 billion in sales with its Pongseries, the classic two-player virtual table tennis game. In the traditional model most profits were made from 'content business', activities such as leveraging game direct sales of the game itself. As well as licensing deals to other established game companies. In the traditional model profits went directly to the service publishers and content creators.

Then in the early 2010s, a new earning model developed. Professional gamers emerged, participating in official leagues that were opened mostly as marketing avenues for established publishers. The development of the 'programmer' coincided with the appearance of professional influencers. These professional influencers used personality-based content delivered via streaming platforms, such as twitch and YouTube Gamingt or each wider audiences, often with the help of content that was heavily sponsored or facilitated by publishers. Together, the rise of 'progammer' and streamer culture showed that individuals could profit by playing games or by utilizing game content.

In 2021, a new paradigm was born, the era of 'Play-to-Earn'. The blockchain game industry is rewarding gamers for playing games, allowing them to monetize game content by simply playing them.

Pay to Play	Free to Play	Play to Earn
Traditional Video Game (1972~)	Freemium Game (2000~)	Play to Earn Game (2021~)
ATARI's Pong	Supercell's Clash of Clans	Blockchain Game
Pay to Play	Free to play	Play to Earn
Service Purchase (single product, monthly subscription)	Pay to win, In-game Customization, Ads	Presale, Miner, Tournament
Paying User, Core Gamer Specific	Non-Paying User, Target Audience Generalized Including Light Gamer	Target Audience Generalized Including Non-Gamer

P2E business model structure:

Play-to-earn, or p2e, games essentially involve rewarding players for participating in a game.

- It is worth noting that play-to-earn gaming isn't a concept that is exclusive to the web3 world, but it became popular because of crypto and blockchain technology.
- Blockchain technology, NFTs, and tokens have opened up a whole new frontier for game developers, players, and investors.
- Play-to-earn crypto games are the fastest growing industry in the web3 space right now. According to DappRadar, even during the crypto winter, when the price of cryptocurrencies has plummeted and numerous significant crypto businesses have gone bankrupt, the dominance of play-to-earn gaming is rising.

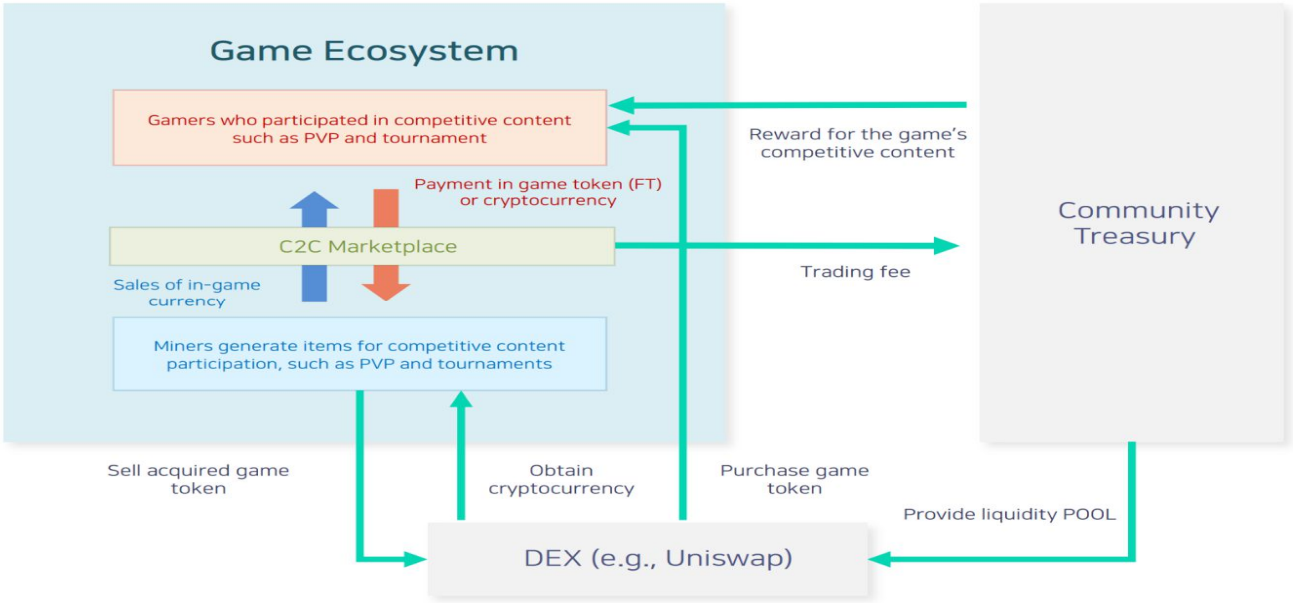
Play-to-earn games are the most recent business model introduced in the gaming industry, rewarding players for playing or participating in in-game activities with real-world money, such as fiat, tradeable tokens, or a cryptocurrency.

- While there are several p2e games in the traditional gaming world, popular play-to-earn crypto games like Axie Infinity, Decentraland, Sandbox, Gods Unchained, etc are blowing up in the web3 space.
- Most P2E crypto games offer native tokens or cryptocurrencies for in-game purchases in the form of NFTs. These tokens and NFTs can be traded between players inside the game's own marketplace or on external NFT marketplaces and exchanges.

At the core of the Play-to-Earn structure is the significance – investment of the game's revenue into user activities.

Alongside this reinvestment strategy the majority of key products required for gameplay are obtainable as in-game reward so rewards for other participation, rather than the traditional model of selling game-items. Core game items earned by players are exchanged directly via a peer-to-peer(C2C) market or indirectly for game-tokens.

These game tokens can be exchanged for other cryptocurrencies on Decentralized Exchanges (DEX) or Centralized Exchanges (CEX). Under this new item acquisition method platform and game developers generate revenue via transaction fees incurred during each sale.



Conclusion:

Play-to-Earn or GameFi has taken the cryptocurrency world by storm this year, combining DeFi and entertainment to create a new genre of gaming allowing people to make money by playing.

Behind it all is a carefully designed token economics system with incentives balancing NFTs which usually represent some sort of in-game property and a utility token that represents a sort of internal currency. Players use these NFTs to earn the utility token, which has a value on the market and can be exchanged with ordinary DeFi infrastructure2 into other currencies.

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