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Blockchain Gaming: An Overview

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Content

Introduction

The past decade has seen blockchain technology expand beyond the boundaries of its cypherpunk origins to become a new technological frontier. Originally purpose-built for the Bitcoin network to ensure transparency and security while transferring value between peers, the creative energy of the tech community quickly found new avenues for exploring blockchain technology, creating new forms of ownership in the art market and new forms of decentralised finance among a host of other innovations.

One area that has become a particular focus for blockchain in recent years has been the gaming industry, as developers began to realise that blockchain can be integrated into games in different ways, such as NFT items, micropayments using cryptocurrencies, or even for tracking user actions. The blockchain gaming space has been growing quietly for a number of years, and 2021 in particular has seen a wave of new projects, funding and innovations in the space, which suggests that this is a good time to give our readers an introduction to the subject.

In this article, we will attempt to give a general overview of the blockchain gaming space and map out its different segments. These include different areas in the blockchain gaming landscape at a high level, in the hope of inspiring readers to conduct their own deep dives into areas that catch their interest in this developing ecosystem.

High-Level View of the Industry

According to Venturebeat, the gaming industry was worth $162.32bn in 2020, with a rise to $295.63bn expected by 2026.

In a 2021 report, Accenture put the size of the gaming industry at over $300bn, a far higher number than other sources, apparently due to its inclusion of indirect revenue from other sources in the calculation (which it puts at roughly $100bn, including the value of items like mobile devices or gaming PCs). It found that there were 2.7bn gamers worldwide, a surprisingly large figure until one considers the amount of people playing mobile games, something which anyone who has recently taken a subway at rush hour may have engaged in. In short, the gaming market in 2021 is enormous.

We have also seen the rise of venture capital funds specialising in gaming, sixteen of whom have raised a combined $2bn as of April this year. While low-tech cult hits like Dwarf Fortress still crop up from time to time, long gone are the days of bedroom coders and small, scrappy teams leading the gaming scene; it is now a multi-billion dollar industry, and it's looking like the big money is here to stay.

The growth of the blockchain gaming space has also been accompanied by a flow of investment capital as investors begin to take interest. As early as mid-2020, Cointelegraph noted the increase in venture capital money coming into the sector, predicting that this trend would increase as monetisation models evolved in the gaming sector. Venturebeat reports that blockchain gaming companies raised $476m in the first half of 2021, which suggests that venture capitalists may expect the blockchain gaming space to boom in the near future.

Examples of this include:

- Forte raising $185m at a $1b valuation
- Mythical Games recently raising $75m to build an NFT game engine
- the Hong Kong-based Animoca Brands raising $50m
- Yield Guild Games (creators of Axie Infinity) raising $4.6m in an Andreessen Horowitz-led funding round

While it's worth noting that 75% of the $476m in H1 2021 was raised by just three companies, it nonetheless shows that cash seems to be pouring into the sector at present.

The biggest players in the NFT gaming space at present are the three blockchain gaming unicorns, namely:

- Forte, whose blockchain gaming platform is being used by development studios to build their games
- Animoca Brands, who both produce their own blockchain-based games and NFTs and invest in other crypto and gaming companies
- Dapper Labs, a very early entrant to this space, originally best known as the creator of CryptoKitties, but who have recently had significant success with newer outputs such as NBA Topshot, in which basketball highlight clips are sold as collectable NFTs, occasionally for over five figures, with over $230m in gross sales as of February 2021

With enough money coming into this space to produce multiple unicorns, whether or not one is a gamer, it's getting increasingly hard to ignore the business opportunity presented by blockchain gaming.

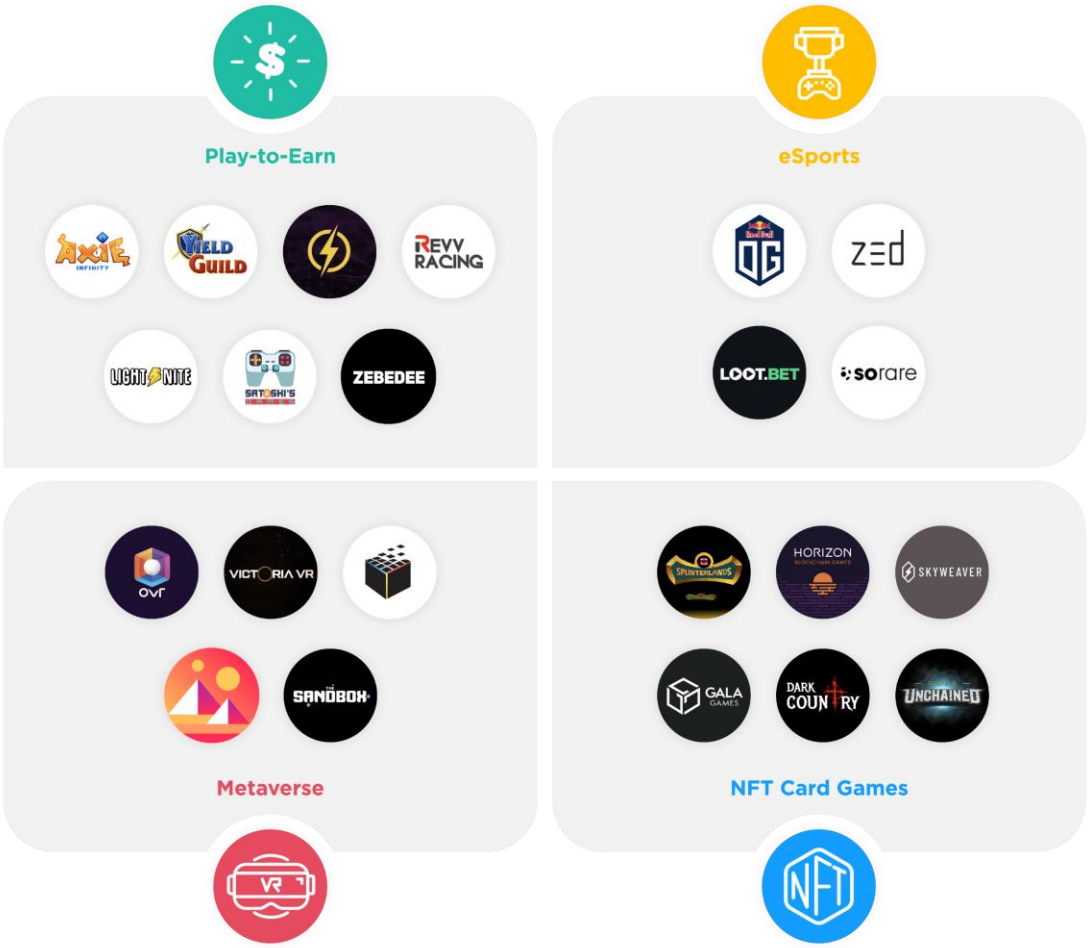
We're also beginning to see exchanges spring up purely for gaming NFTs, such as DMarket. This has been accompanied by various cryptocurrency exchanges opening up to NFT trading instead of simply cryptocurrency spot and derivative markets (including our very own NFT Marketplace at Crypto.com). This is a natural evolution of the well-established markets for in-game items, such as the market for skins in CS:GO, which even has its own third-party marketplaces where items can be bought and sold. NFT Marketplaces have also begun to appear for specific games, the marketplace for Mythical Games' *Blankos Block Party* announced earlier this year being a good example.

Established industry players have also begun to get involved; for example, Ubisoft have entered a partnership with Ultra, a blockchain-based gaming platform comparable to Steam. *Final Fantasy* creators Square Enix have also got involved, participating in Animoca's 2019 funding round. Sega too have decided to get involved in the NFT world, albeit with reports of some alleged blowback from fans over their environmental impact. The fact that gaming giants are beginning to see potential in integrating blockchain and gaming is a positive sign for the future of the space.

Mapping the Blockchain Gaming Ecosystem

Now that we have some context on the gaming industry and the segment of it that overlaps with blockchain, we can take a closer look at some of the sectors of the blockchain gaming industry as it stands today. We have identified a number of areas in the ecosystem at present:

- Play-to-Earn games
- eSports
- Metaverses
- NFT Card Games



The Play-to-Earn Space

One interesting concept that has arisen in the gaming world in recent years is play-to-earn. Essentially, this is a model that allows users to earn cryptocurrency for playing games online. This is a relatively new area in the crypto world, however there is already enough interest in it that dedicated aggregators have already started springing up to track news in the space.

Andreessen Horowitz have also recently invested in play-to-earn gaming (participating in Yield Guild Games' recent funding round), which is a strong signal that it will continue to thrive. Of all the innovations that have been produced by mixing blockchain and gaming, the play-to-earn concept seems to be the most impactful, providing new income streams for players that some predict may turn into full-time careers in the future.

One team working on this area is Zebedee, whose *Infuse* project allows users to play CS:GO for Bitcoin, the idea being that users can put money into a pot to play certain matches, the winner taking the pot at the end. The team also provides an API to allow indie game developers to integrate Bitcoin into their games in different ways. This is one way in which the play-to-earn concept crosses over into eSports, giving new life to games with the possibility of winning prizes, something much easier to accomplish using cryptocurrency.

One of the bigger success stories in the play-to-earn space is Axie Infinity, a Pokemon-inspired game where players can earn tokens through collecting and breeding monsters called 'Axies.' According to The Block, the platform reached 900,000 users in July, up 233% since the end of June; however, one unfortunate result of this rapid growth is that the platform is starting to run into scaling issues; Sky Mavis had planned to develop the game on Ethereum. However, these issues have spurred them to instead build out their own sidechain named Ronin, which is a good example of the innovation that gaming can bring to the blockchain space. For gaming, speed is crucial to avoid lag and user frustration, so it's likely that more scaling solutions such as sidechains or Layer 1 and 2 upgrades to established blockchains will come out of the gaming scene as it develops. The success of Axie Infinity demonstrates the potential of both NFTs and the play-to-earn concept in blockchain gaming, as users scramble to purchase Axies even at inflated prices due to the earning potential of the game's rewards scheme.

Axie Infinity rewards players with tokens for contributing to its ecosystem, e.g. by breeding Axies or by farming the items needed for breeding. This is a clever

means of keeping an ecosystem alive, not unlike the practice of rewarding market makers on asset exchanges for providing liquidity (which ensures that trades are filled quickly at a reasonable price); in the same way, Axie Infinity incentivises users to provide a kind of 'liquidity' for in-game items and processes, ensuring that new users don't need to struggle in order to get started on the platform. Additionally, the game provides users with a means of earning a special token called AXS, which gives governance rights and access to fee-sharing, so that users can take direct ownership in the ecosystem, which further incentivises players to spend time in the game and work to improve it.

The play-to-earn concept exposes a key benefit of using cryptocurrencies in games: the speed and ease of microtransactions and in-game purchases. While Bitcoin has been an option for this in theory since the dawn of cryptocurrency, in practice block confirmation times and fees meant that it was not practical. However, with the advent of Bitcoin Layer 2 solutions such as the Lightning Network, the field is now wide-open for fast, cheap payments. Lightnite is an example of this being used in a play-to-earn game. The gameplay is based on Fortnite but structured around microtransactions on Lightning which are used for in-game payouts; in-game assets such as skins are also NFTs, which can be moved on and off the platform using Blockstream's *Liquid* side-chain, and can be traded on Elixir, a marketplace for Bitcoin NFTs. The creator, Satoshi's Games, makes Bitcoin-focused games using different layers of Bitcoin technology to mimic the functionality of traditionally Ethereum-based assets such as NFTs. This is an example of gaming driving innovation, moving Bitcoin development towards decentralised assets that to date it has largely avoided.

Other games in the play-to-earn space include Revv Racing, a racing game where users can connect with Metamask and win cash prizes; CryptoBlades, in which players can buy SKILL tokens using BNB and earn more through gameplay; and Guild of Guardians, a mobile RPG with token rewards. It's clear that the play-to-earn concept is starting to spread across different game genres, so it's worth watching what new projects will emerge over the coming months.

eSports

In the gaming world, esports is essentially competitive gaming, which over the years has grown into a major participant sport, as well as producing its own viewership online. A quick look at the list of esports earnings for 2021 shows us that the most popular games, such as *Fortnite* or *CS:GO*, have produced millions of dollars of earnings through different tournaments, with individual players earning hundreds of thousands of dollars over the course of the year.

Platforms such as Twitch have also generated revenue by allowing people to stream or view esports effortlessly, an example of the adage that the true money-maker in a gold rush is the person who sells the shovels. As mentioned above, Zebedee has begun to integrate cryptocurrency into CS:GO, which is a first step in introducing cryptocurrency-based play-to-earn models to existing online games, a process likely to grow quickly if it catches on.

However, while in the broader gaming scene the major activity seems to come from competitive video games, the scene is just one part of the esports landscape where blockchain is considered. When looking at how blockchain interacts with esports, we begin to see how different technologies such as NFTs or crypto payments can add value to this growing economy.

On the NFT side, we're seeing esports organisations add additional revenue streams by selling NFTs to fans; for example, OG Esports made almost $1m from 3 NFT drops this year. Clips of streamers have also been sold as NFTs by streaming platform Trovo. These are all recent examples of innovation in the space, and companies are coming up with ways to utilise blockchain technology to add value and new revenue streams to their offerings. Readers should expect many more to emerge over the coming months.

NFTs have also made their way into online fantasy sports. Sorare is an example of this, allowing users to trade NFTs of players to build up fantasy teams, with weekly prizes. This concept seems to be taking off, as it was recently reported that the team raised $532m at a possible valuation of $3.8bn, making it the largest funding raise in the history of France's tech industry.

Zed, an NFT-based horse racing platform, is another example of a player in this sector that has recently grabbed headlines. The Sydney-based creators, Virtually Human Studio, recently raised $27m in funding, and has apparently sold horse NFTs for six figures. Currently the platform has around 14,000 users, so it still has some room for growth, but considering the prices for which their

NFTs are changing hands, they have tapped into a vital market, making it likely that their user base will grow as the NFT esports space matures.

Also of note is that the burgeoning esports market has sparked the growth of an esports *betting* market using cryptocurrency. Loot.Bet, for example, which hosts betting markets for various eSports titles like CS:GO and DOTA, allows users to use Bitcoin on their platform. More traditional betting sites have also begun accepting Bitcoin for bets, however it was also reported earlier this year that Sony has patented a Bitcoin-based in-game betting system. As we'll discuss a little later, using Bitcoin for this has significant advantages over fiat currencies, in particular the speed of transferring money and the ease of setting up this kind of system.

Metaverses & Virtual Reality

Another mushrooming area in the blockchain gaming space are metaverse-based games, i.e. games based in shared virtual spaces. While this concept has existed in the gaming world for decades (Everquest and Runescape being two well-known early examples), forays into blockchain-based metaverses are far more recent; a good example is Decentraland, which created some buzz in 2017 at the height of the altcoin mania that gripped the world that year. Decentraland is based on the concept of digital land, in which specific parts of the metaverse can be bought as NFTs, instantly creating a marketplace for this land based on scarcity. The project is one of the few that have stood the test of time, while the crash of 2018 wiped out many others.

The blockchain metaverse space is starting to turn into big business; a plot of digital land on Decentraland was recently sold for over $900,000 to virtual property developer Republic Realm, making it the most expensive piece of digital land ever sold on the platform. However, despite the size of this purchase, it pales in comparison to the $2.8m land purchase on rival platform The Sandbox in February. Additionally, recent controversy surrounded Nuggets News' failed launch of its community headquarters on Decentraland as promised when raising funds. Despite these obstacles, the fact that a blockchain metaverse is even considered as a location for a virtual HQ is an interesting prospect, perhaps where online news organisations at risk of censorship could move to.

The metaverse segment of the blockchain gaming world has also led to a crossover with the virtual reality (VR) space. Similar to the non-VR metaverse projects, this blockchain integration has mainly taken the form of including NFTs on the platform. Somnium Space, Victoria VR, and OVR are all examples of VR metaverse projects using NFTs. In the case of Somnium Space, all their digital land parcels and digital assets are on the blockchain, in an effort to decentralise the platform as much as possible. OVR also introduced a means of staking their native cryptocurrency in order to gain access to the fastest and most reliable hosting nodes; the nodes then earn a share of hosting fees, based on reputation as voted by users. This is an innovative means of truly decentralising the platform, incentivising users to host the infrastructure and to do so in a way that allows for a good gaming experience.

VR also got particular attention in the crypto community once the pandemic began, as various Bitcoin meetups were held in VR metaverses instead of in-person. It's worth pointing out that this concept still has room for

improvement. This is particularly important for the crypto world, as many of these meetups and conferences provide a platform for the developers in the community to collaborate and present new ideas, and are crucial for making advancements in different projects; having them in VR metaverses allows this work to continue even if they can't meet in person.

NFT Card Games

One of the biggest growth areas in this space has been the integration of NFTs into games. Of all the potential use cases of blockchain technology in gaming, NFTs are possibly the most natural fit, as they lend themselves well to an environment where exclusive ownership of a digital asset is part of the game. Trading card games are a good example of how this can be applied. While NFTs are usually used in games as a way to create scarce assets with clear ownership, they represent more than that; The fact that NFTs are appearing in the gaming world also shows that the crypto community is beginning to learn from the gaming community. It represents 'gamification' in its most literal sense, making NFTs themselves fun and addictive, as well as enhancing gameplay.

In the early days of blockchain gaming, the most obvious application for blockchain was in games involving collecting or trading items. Attempts at this were initially hit-and-miss; veteran crypto-watchers will recall CryptoKitties slowing down the entire Ethereum network in 2017. However, over time the scene has advanced, and we are now seeing gaming studios being set up that are exclusively focused on NFT-based trading card games. While CryptoKitties revolves around collectables rather than trading cards specifically, it's important to mention it here for context, as current NFT trading card games are a logical evolution of this early experiment.

The NFT trading card space, like other areas of blockchain gaming, is starting to see serious interest from the investment world; Techcrunch recently reported that Horizon Blockchain Games has raised $4.5m funding; their first game, Skyweaver, is a digital trading card game using NFTs as a means of determining card ownership. Gala Games is another studio that is making waves in the NFT gaming scene, with 1.3 million users playing their titles. They set records in the past for NFT sale prices. It was also reported that they have recently secured funding from Binance Smart Chain's $100m Accelerator Fund.

Gods Unchained was one of the earlier successes in the NFT card game space, with users spending $87bn on in-game items in 2019 according to their website. The game revolves around decks of NFT trading cards on the Ethereum blockchain, which are used competitively against other players; the game also has its own play-to-earn function, with users earning Flux, an item that allows them to buy cards more affordably, which can then be traded for

cash. The game quickly secured $15m funding in 2019 as investors began to realise the potential of the concept.

Splinterlands is another example of an NFT card game that has caught the attention of investors recently, raising $3.6m from Animoca Brands and others through a private token sale. It combines trading cards, a play-to-earn mechanism, and its own internal tokens. Yet it differs from others in that it is based on the Hive blockchain rather than Ethereum. And rather than simply integrating blockchain by having NFT items, it also records actions taken in the game on the blockchain in an effort to make the game transparent and provably fair.

A final example of this genre is Dark Country, which claims to have over $1m secondary market trading volume for its NFTs. It appears to take a more RPG-based approach to the trading card genre, with an American Gothic theme; like the games previously mentioned, it also has its own play-to-earn mechanism.

Conclusion

The blockchain gaming scene is starting to gain momentum in 2021. Blockchain technology has developed to a point where integration with the gaming industry is both feasible and attracts significant investment. This has unleashed a wave of creativity in which a small group of startups and developers are beginning to test the boundaries of what can be done. This is how progress is made in any new area, small improvements snowball until certain players can create disruptive innovation. We advise gamers and industry-watchers alike to observe the space so as not to miss any break-through releases.

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