



Axie Infinity: Business Breakdowns Research

By: [Anastasia Solonitsyna](#)

Primary Research Sources

- [Axie Infinity White Paper](#)
- [Axie marketplace data](#) - the main channel for players trade Axies
- Axie economy statistics for volume, revenue, etc.: [1st source](#), [2nd source](#), [3rd source](#)

Company History & Key People

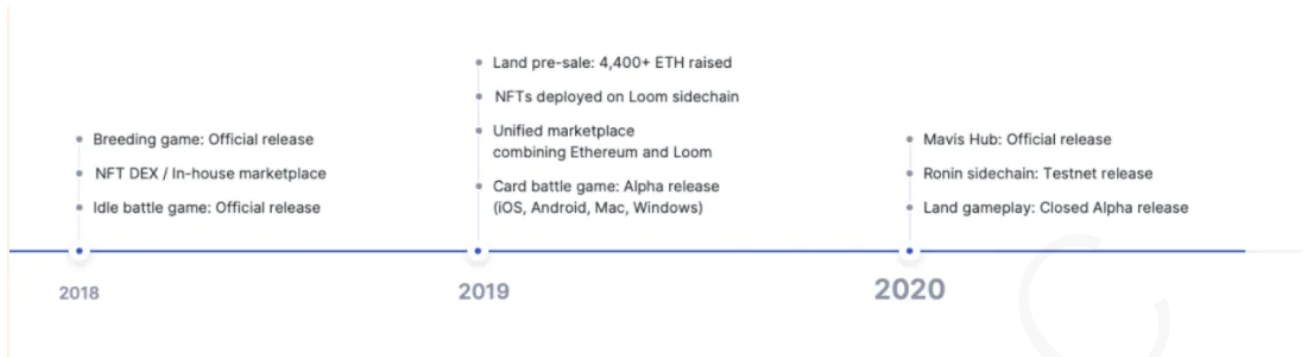
- Axie infinity is a NFT game powered by the Ethereum blockchain and described as a cross between CryptoKitties and Pokemon. It was launched in early 2018 by 3 people who met in 2017 because of CryptoKitties. The team now consists of 50 full-time employees and has its headquarters in Ho Chi Minh City, Vietnam.
- The founders came up with the idea for Axie Infinity after realizing how unsustainable crypto kitties and other blockchain games were at the time. None of these games had economic incentives that aligned with long-term growth.
- The founding team now consists of 5 people, all of whom have been on the front lines of gaming economics since they were kids:
 - **Trung Nguyen** (CEO) - co-founded a multimillion-dollar Vietnamese ecommerce startup when he was 19 years old (Lozi.vn)
 - **Aleksander Leonard Larsen** (COO) - a competitive Warcraft3, Dota and Dota 2 player and is the founder of some of the largest gaming communities in Norway
 - **Jeffrey Zirlin** (Growth Lead) - has a history degree from Yale and was once one of the best WoW players in the United States
 - **Andy Ho** (CTO) - worked as a software engineer at Anduin Transactions and interned at Google and Paypal
 - **Tu Doan** (Art Director and Game Designer) - he designed the original Axies. He co-founded and formerly worked as the Head of Design at Lozi.vn

Milestones

- **Early 2018:** The team founded **Sky Mavis**, a for-profit software company based in Vietnam that develops Axie Infinity and a suite of other blockchain gaming products and services
 - Sky Mavis to date has secured \$9mn in VC funding (see breakdown below)

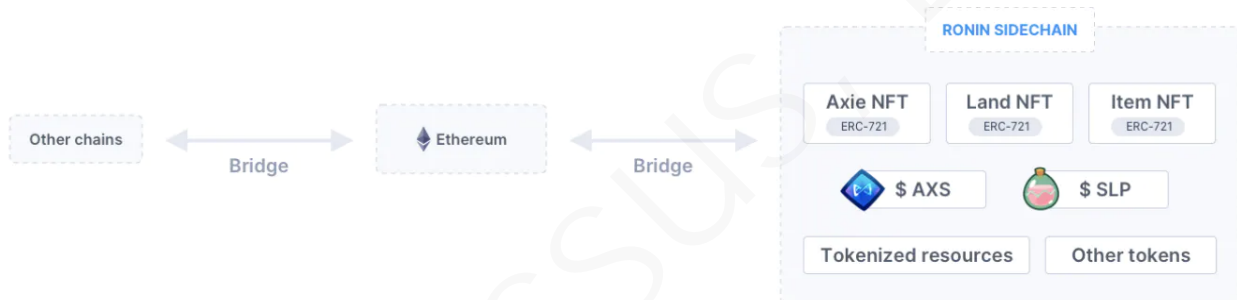
- \$1.5 million raised in two seed rounds in 2019 with some notable investors: Hashed, Animoca Brands (also an investor in Cryptokitties and Binance), Consensys (a NY blockchain-based company developing infrastructure and dapps for Ethereum and founded by Ethereum co-founder Joseph Lubin), etc.
- \$7.5m Series A round in May 2021 with investors including: Libertus Capital (also invested in Ledger and Zapper), Collab+Currency (also invested in Coinbase, Kickstarter, Lyft), etc.

● 2018-20 product timeline



Source: [Axie Infinity Whitepaper](#)

- **April 2021:** Axie Infinity migrated from the Ethereum blockchain to **Ronin Side Chain**. (Side note: Ronin is a Japanese word for "samurai without a master")
 - Created by Sky Mavis, for the sole purpose of hosting Axie Infinity.



Source: [Axie Infinity Whitepaper](#)

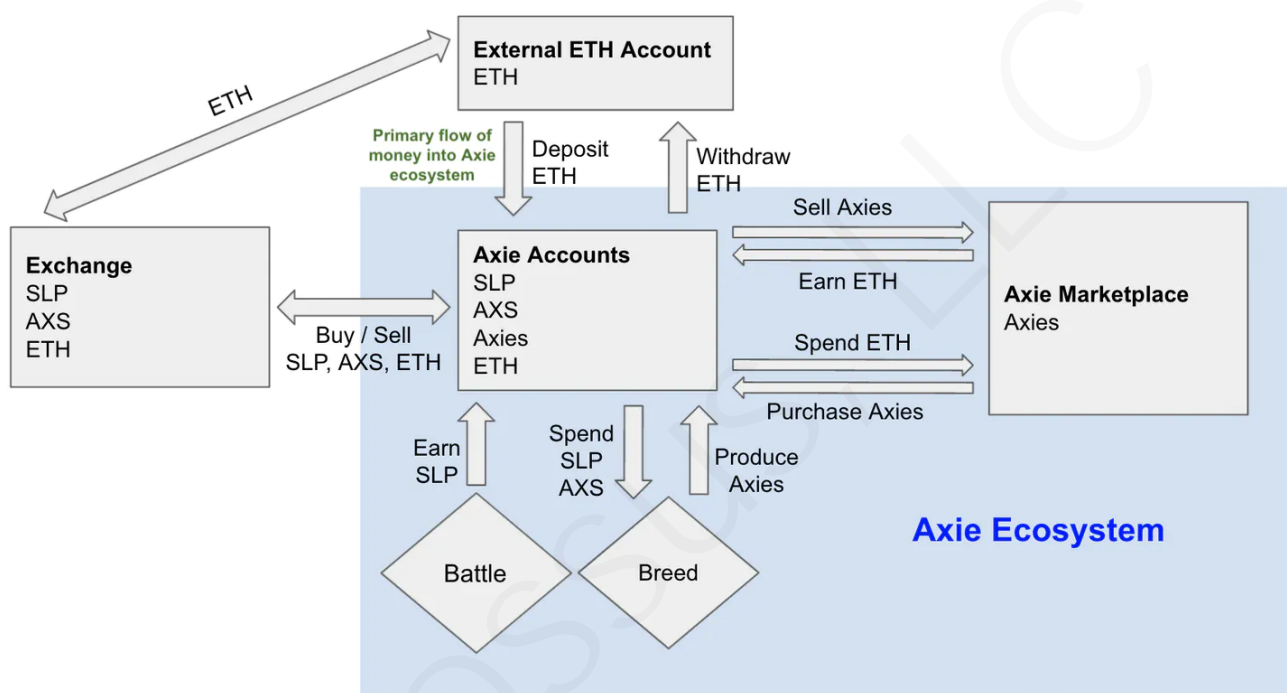
- Axie's native token did not see much price action from its 2018 launch until Ronin was introduced. Axie's single-day trading volume began to skyrocket after the migration.
- Through this migration, Ethereum's high gas fees were removed for users and the transaction settlement times were reduced to seconds.
- To secure Ronin's security Sky Mavis is planning on making Ronin a public blockchain, meaning it will have its own token that can be staked by validators.
- **2021:** Axie is the fastest growing game in the world; the top decentralized application (dApps) on Ethereum; and the #1 NFT product by daily volume (see 'Key metrics')

Business Model & Secret Sauce

- Axie Infinity is a community-driven digital pet game which allows players to earn money while battling, breeding, raising, and trading digital pets called Axies.
- Axies fall into one of nine categories that are similar to Pokémons. Each Axie has six of >500 possible body parts. Each of the body parts has three genes: dominant, recessive, and minor recessive. The combination of Axie's features determines its win rates and, eventually, return on investment.
- 'Play-to-earn' (P2E) appeal
 - Axie Infinity is a first-mover in the new play-to-earn space. P2E allows for an open economy within a game that provides financial benefits to the players.

- P2E has been done in traditional games: some players in World of Warcraft, Onmyoji, etc. make money by selling equipment. But traditionally, in-game asset transactions exist only in the game ecosystem, and it is difficult to trade those digital assets outside.
- In blockchain games, by actively participating in virtual economies, players can earn rewards, such as in-game assets and tokens, which can then be traded or sold on the open market for other cryptocurrencies or fiat money.
- The benefit of the new play-to-earn business model is that a gamer always creates some value that they can sell. Even when a gamer needs to pay to start playing, these acquired items can be sold again. All obtained items represent a certain value.

How the Axie Economy works (Players, Token holders, Sky Mavis)



Source: [Axie Pulse](#)

Players

- Getting started isn't straightforward (which brings to mind Gabe Leydon's broken but growing idea)...it requires acquiring ETH → signing up for a MetaMask wallet → transferring ETH → downloading *another* wallet (Axie's own Ronin wallet) → transferring ETH again → acquiring NFTs on Axie's own NFT marketplace (see below), logging in with MetaMask → downloading the application itself, on desktop or mobile.

And, it costs money to start:

- You need to buy 3 Axies from the Axie Infinity marketplace to start playing. The cheapest Axie w/o abilities currently costs ~\$200 which implies a minimum \$600 investment
- Users can opt to borrow Axies from managers and pay them a portion of their earnings (passive income for managers). It is currently done peer-to-peer.

By participating in the game, players earn AXS and SLP tokens (See 'Tokenomics') by:

- **Winning battles and challenges (earn SLP)**
 - SLP tokens are earned when a three-Axie team successfully defeats a foe in PVP (player-vs-player) or PVE (player-vs-environment) challenges.
- **Breeding and selling Axies (earn ETH / fiat / AXS)**

- To meet the demand from new players, who each need three Axies to play, existing Axie holders breed new Axies from a pair of existing ones.
- Total breeding cost = fixed cost (not related to the number of reproductions, pay in AXS) + variable cost (related to the number of reproductions, pay in SLP).
- To ensure that the Axie population remains stable and sustainable, there is a limit on the number of times an Axie can be bred. This number is currently seven with each additional reproduction requiring more SLP tokens.
- ETH / \$ are earned when new players buy current players' Axies through the marketplace, but can be paid in AXS too.

● **AXS Staking (earn AXS)**

- Players receive newly created AXS (see 'Ownership economy' section) if they lock up their tokens in the game and actively participate in the game by voting and playing regularly.

Users playing Axie Infinity can earn ~\$10-20 (recently closer to \$50-60 due to the AXS and SLP tokens' price increase) a day.

Axie token holders

- **Earn by speculating.** SLP holders might want to hold on to their SLP to speculate on the price.
- **Exchange for Fiat.** Both AXS and SLP are currently tradable on major decentralized exchanges (DEX) like Uniswap. In the near future, they may be able to do so on Axie's own DEX. Many players earn SLP, exchange it for money to pay their real-world bills.

Axie Infinity team (Sky Mavis)

Sources of income:

- **Collecting fees.** Sky Mavis takes a 4.25% cut of revenue when players trade in the marketplace (e.g. breeding axies and selling axies) and they earn 2 AXS whenever an Axie is bred. This goes to Community Treasury where they hold stake, see 'Ownership Economy'.
- **(n.b. primary sales:** i.e. selling Axies and land directly could be a future revenue stream but has not been done for a long time. They prefer to let the players generate most of the revenue initially. Once the network is large enough they can potentially increase the take-rate.)

Demand/Supply dynamics in the economy

- *If the quantity of new players declines → the purchase of new Axies decline → excess supply of Axies → breeding activity decreases → reducing SLP/AXS demand and price*
- *If the quantity of new players grows → the purchase of new Axies grows → Axie prices go up → breeding profitability goes up → SLP/AXS demand for breeding increases → SLP/AXS prices go up*

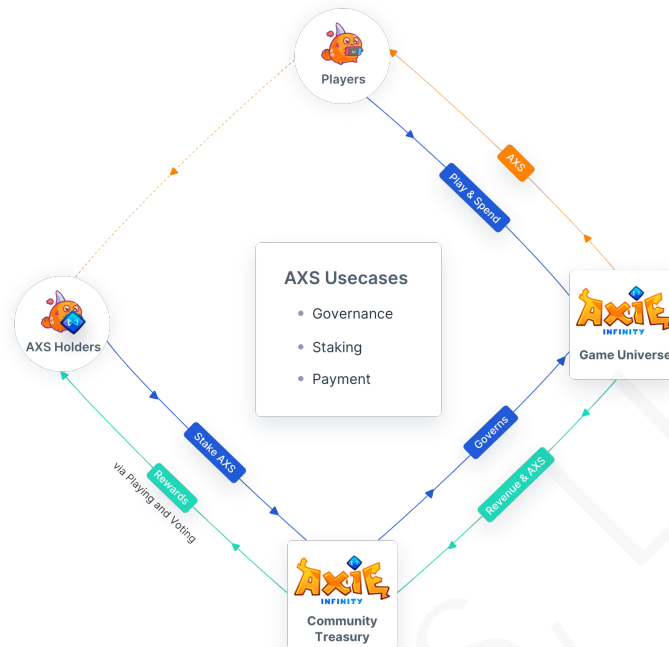
Tokenomics

1. Axie Infinity Shards (AXS)

- Launched in November 2020 and acts as the default currency for the Axie Infinity ecosystem. The interplay between Axie Infinity's rising popularity among gamers and its booming revenue has helped AXS to become one of the top-performing digital assets in 2021.
- The AXS token's main utilities are (+ more use cases to be added in the future):
 - a. **Payment:** AXS is accepted as currency within the Axie NFT marketplace (for buying and selling Axies and paying trading fees) and holding AXS may also be required for some protocol-initiated sales/auctions.
 - b. **Staking:** players can lock-up their tokens in the crypto protocol. If they do so, they will receive weekly rewards, subject to a 12-month unlocking period. Users who are staking AXS tokens can increase these

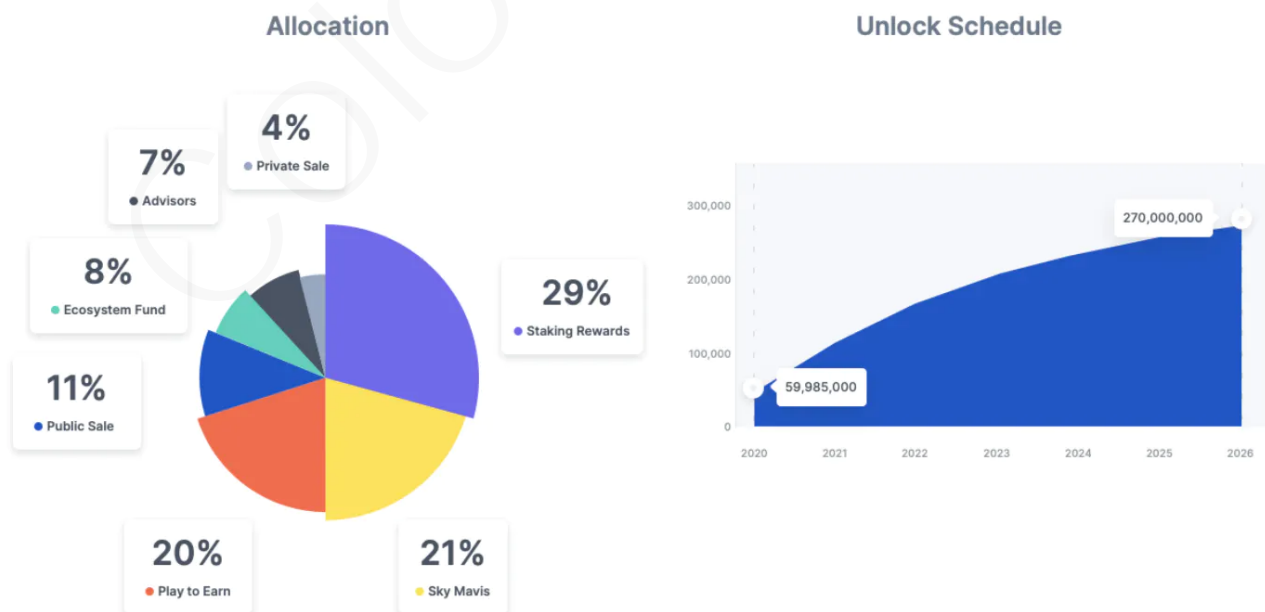
reward amounts through participating in governance and playing the game. In the future, staking users may also receive NFT rewards or vote for portions of the Community Treasury to be distributed to stakers (kind of like equity holders voting for dividend distributions).

- c. **[Future] Governance:** the Community Treasury went live in early 2021 and is amassing revenue. In the future, this treasury will be governed by AXS stakers once the network is more decentralized (see section 'Ownership Economy')



Source: *Axie Infinity Whitepaper*

- The maximum supply of AXS is limited at 270m which is being unlocked in a pre-determined schedule lasting 65 months from the public sale in November 2020. The initial circulating supply was set to ~60m of AXS and currently there is ~88m in circulation. Sky Mavis (the team behind Axie) have ring-fenced the majority of the allocated AXS supply - 56.7m (21%) which will be unlocked gradually over 4.5 years.



Source: *Axie Infinity*

2. Smooth Love Potions (SLP)

- Earned in-game, required to breed new pets and participate in Axie Infinity events and competitions.
- Unlike AXS it has no initial allocation. It was minted from zero by Axie Infinity players, which technically means it's a fair launch cryptocurrency. 100% of SLP that exists is also in circulation and they are continually earned in the game. They are also burned whenever an Axie is created. And each Axie needs more SLPs each time it reproduces (until it reaches the limit of seven reproductions).
- SLP value is tied to the amount of breeding that's taking place in the game. The more breeding that happens → the higher the value of SLP and vice versa.

Ownership Economy (via Community Treasury)

- All the fees and revenue generated by Axie Infinity are placed in the Community Treasury which is governed by AXS holders. The AXS token provides a stake in the Axie universe (alike to company shares). It will allow players to share the economic success of the game.
- The treasury's total revenue has increased from >\$1mn at the end of April to \$15mn+ in June and to \$530m+ now - see the data [here](#).
- AXS staking (to be launched in Q3 '21) - another dimension of demand for the AXS token. A player is going to stake their AXS for one year to earn rewards. AXS staking rewards will weigh on how much you're playing the game and how often you vote in governance proposals and community treasury spends
- In order to progressively **decentralize** - as more AXS tokens are unlocked over a 65 month schedule, Sky Mavis will slowly lose voting power, until it loses its majority some time in late 2023.

Future Vision

The endgame is to create a Game-as-a-Service model with a single application to interact with the Axie Infinity universe which will include:

- The team wants Axie to become the first game truly owned and operated by the community that plays it.
- The team is dedicated to the core values of cryptocurrency. Their vision is to create a virtual economy where you can own and operate your own businesses, save, invest, and spend your money without ever having to touch a bank. Progression of Axies, Breeding Game, PvP with ladder and tournaments, PvE/Adventure.
- **Future projects**
 - **New gameplay and features:** Sky Mavis now possesses a clear track record of impressive iteration in response to community feedback. Over time, Axie can potentially earn revenue from selling Axies, Land, cosmetics, and in-game consumables. Additionally, there will be fees when players want to level up their game characters, play in tournaments, and craft new assets.
 - **Axie Land**
 - Land is an upcoming game mode that will unlock further utility for Axie game assets.
 - **Lunacia**, the Axie homeland, is divided into tokenized plots of land which act as bases of operation for their Axies. It consists of over 90,000 plots of customizable tokenized land called terra. Same as Axies, players can directly trade in ETH in the Marketplace. The owner of the land can get rewards in the land, such as AXS generation.
 - Land features in Lunacia will be fully implemented by the end of 2022, and these include a Lunacia SDK which will serve as a map editor to facilitate the creation of in-game content.
 - Axie Infinity is still in the process of rolling out Lunacia even though the first-ever land sale took place in January 2019. Lunacia land is scarce relative to the number of players. As a result, the cheapest plot of land on the Axie Infinity marketplace is currently listed for \$7k. The largest sale for \$1.5m took place in February 2021.
 - **New sources of external capital** into the ecosystem such as: advertising fees and sponsorships, Nonprofit organizations, Government donations and grants

- **Own blockchain & Ronin Blockchain Token:** Sky Mavis plans to ultimately make Ronin its own public blockchain complete with its own Ronin token. Co-founder Aleksander Larsen [recently stated](#) that the plan is for the Ronin token to be distributed primarily to the community, not whales or VCs, i.e. Sky Mavis wants this Ronin token to also be a “fair launch” token.
- **Native & Decentralized Exchange (DEX):** Sky Mavis is building a decentralized exchange on Axie. In this DEX, users will swap in-game resources. There is no timeline for this.

Key metrics

- YTD, the number of Axie Infinity DAU has grown from 16,000 to 1.7 million.
- DAU by country:








Source: [Similar Web](#)

- Axie Infinity is the most traded NFT collection, with a total trading volume of \$1.7bn.

				24H	7D	30D	ALL TIME
TOP COLLECTIONS							
COLLECTION		VOLUME	TRADERS	SALES			
1	Axie Infinity ETH	\$1.748B	508,558	3,951,414			
2	CryptoPunks ETH	\$1.183B	4,801	18,041			
3	NBA Top Shot FLOW	\$673.521M	435,444	8,472,164			
4	Art Blocks ETH	\$598.852M	19,230	82,745			
5	Bored Ape Yacht Club ETH	\$389.894M	8,104	20,538			

Source: [Dappradar](#)

- Axie NFT's marketplace volume is second only to the internet's most popular NFT digital art marketplace OpenSea (which hosts a number of collections across different categories).

				24H	7D	30D	ALL TIME
MARKETPLACES							
MARKET		TRADERS	VOLUME				
1	 OpenSea ETH • Polygon	330,868	\$4.329B				
2	 Axie Infinity ETH	507,720	\$1.747B				
3	 CryptoPunks ETH	4,766	\$1.177B				
4	 NBA Top Shot FLOW	435,444	\$673.521M				
5	 Rarible ETH	70,985	\$199.427M				

Source: [Dappradar](#)

- Market capitalisation: AXS - \$3.9bn
- **Axie ERC721**: Among one of the earliest NFTs ever created, even before the NFT standard was official. Among the top traded projects on Ethereum and it took off even further once we migrated to Ronin.
- Holds the record as Ethereum's first NFT game to generate \$1 billion in sales.
- One of the largest Discord servers across the world.

Revenue

- Axie's protocol revenue currently stands at ~\$530 million YTD, almost 2x that of Ethereum ([click](#)).
 - ~85% come from Axie breeding fees, paid in AXS to the Community Treasury.
 - ~15% comes from a 4.25% trading fee taken from sales of Axie NFT assets: Axies, land, and land items.

Month - Year	Axie price		in ETH y/y	in USD y/y
	ETH	USD		
Feb-18	84	76,786		
Mar-18	379	176,942		
Apr-18	453	208,374		
May-18	23	13,216		
Jun-18	61	32,356		
Jul-18	08	3,615		
Aug-18	09	2,871		
Sep-18	17	3,694		
Oct-18	23	4,798		
Nov-18	31	5,049		
Dec-18	28	3,039		
Jan-19	2,517	291,448		
Feb-19	689	84,681	725%	10%
Mar-19	443	59,830	17%	-66%
Apr-19	260	39,867	-43%	-81%
May-19	184	39,349	717%	198%
Jun-19	61	15,883	00%	-51%
Jul-19	39	9,897	402%	174%
Aug-19	43	8,547	356%	198%
Sep-19	18	3,229	05%	-13%
Oct-19	32	5,746	40%	20%
Nov-19	61	10,712	96%	112%
Dec-19	52	7,092	85%	133%
Jan-20	75	11,282	-97%	-96%
Feb-20	41	10,180	-94%	-88%
Mar-20	105	14,741	-76%	-75%
Apr-20	137	21,654	-47%	-46%
May-20	157	30,773	-15%	-22%
Jun-20	09	2,044	-86%	-87%
Jul-20	39	9,540	-02%	-04%
Aug-20	34	13,315	-22%	56%
Sep-20	211	73,709	1,080%	2,182%
Oct-20	472	178,696	1,379%	3,010%
Nov-20	499	236,954	724%	2,112%
Dec-20	329	198,545	538%	2,699%
Jan-21	92	103,145	22%	814%
Feb-21	142	243,666	247%	2,294%
Mar-21	379	656,975	261%	4,357%
Apr-21	294	670,067	114%	2,994%
May-21	1,050	2,992,669	569%	9,625%
Jun-21	5,446	12,229,390	63,084%	598,180%
Jul-21	92,004	196,893,595	238,872%	2,063,791%
Aug-21	107,525	322,449,833	320,297%	2,471,673%
YTS Aug 2020	596	113,529		
YTD Aug 2021	206,932	536,239,341	332 x	4,468 x

Source: Axie World

Competitive Position

Secret Sauce

- **Network effects:** Axie Infinity has 1m+ global DAU, and the availability of **Managers** (who fund player entry into the game by lending in-game assets) helps to maintain a strong momentum of spread. The “Scholarship-manager-player” structure has the potential for viral expansion and enhances network effects. The adoption rate is explosive despite a complicated UX experience and high cost to play. Simplifying onboarding experience and a mobile app launch can further contribute to growth.
- **Property rights:** Although not exclusive to Axie, property rights incentivize players to act more like founders and employees rather than users. These rights include being able to sell your game assets to anyone in the world, earning liquid tokens for playing/contributing, and being able to own a piece of the game you’re playing. Traditional video games extract value from their players via centralized, in-game purchases. Axie players make peer-to-peer purchases. *“I think one of the things our players really like is that 95% of the value that flows through the game is going to them”.*
- **Switching costs:** For traditional online games is relatively low. For Axie players, switching to another game is more expensive, both because of Axie’s high start-up costs and the emotional cost of the way the game is structured.

Open-source, expanding and vertically integrated ecosystem

- **New routes.** Axie’s native infrastructure currently includes wallets, gameplay, NFTs (including virtual land), native currency (SLPs and AXS), and a decentralized exchange. Axie’s future plans include turning the

sidechain into its own native blockchain, lending/scholarship programs, an open-source platform for further game development, tax assistance, banking services etc.

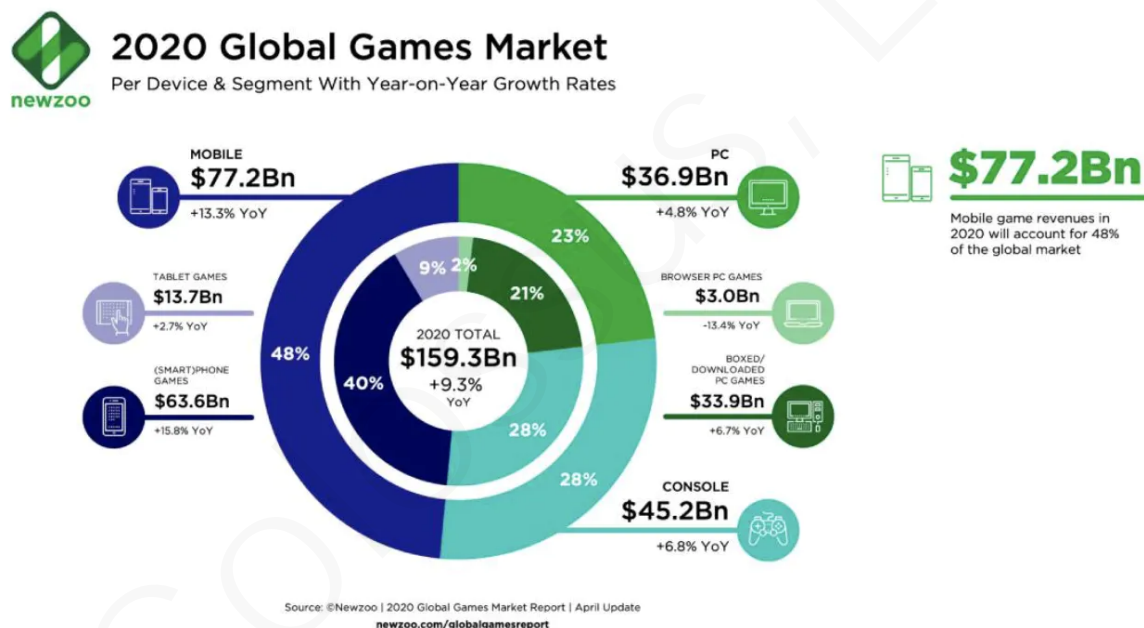
- **Loyal existing players.** Many feature ideas that can drive non-monetary value for players, such as Land gameplay, Crafting, Soulbound Axies, Collection Goals, Cosmetics, Virtual Pet gameplay, etc.
- This is the way Axie Infinity has the opportunity **to become a metaverse in the future**. Axie will have the critical mass of users to support an ecosystem built within its universe.

Blockchain economy

- **Fast & affordable blockchain transactions:** There are very few sidechains on Ethereum and none of them were built to service a specific protocol. Axie's foresight in building Ronin drove Axie's explosive growth.
- **Native wallet:** Users can store and transact their assets on the Ronin sidechain with Axie's native wallet. Jiho [recently mentioned](#) that a traditional bank is looking to integrate with Ronin. This bank might help users track their taxes through the native wallet. "[The next generation] is going to skip banks, they are going straight to digital wallets".

Market opportunity

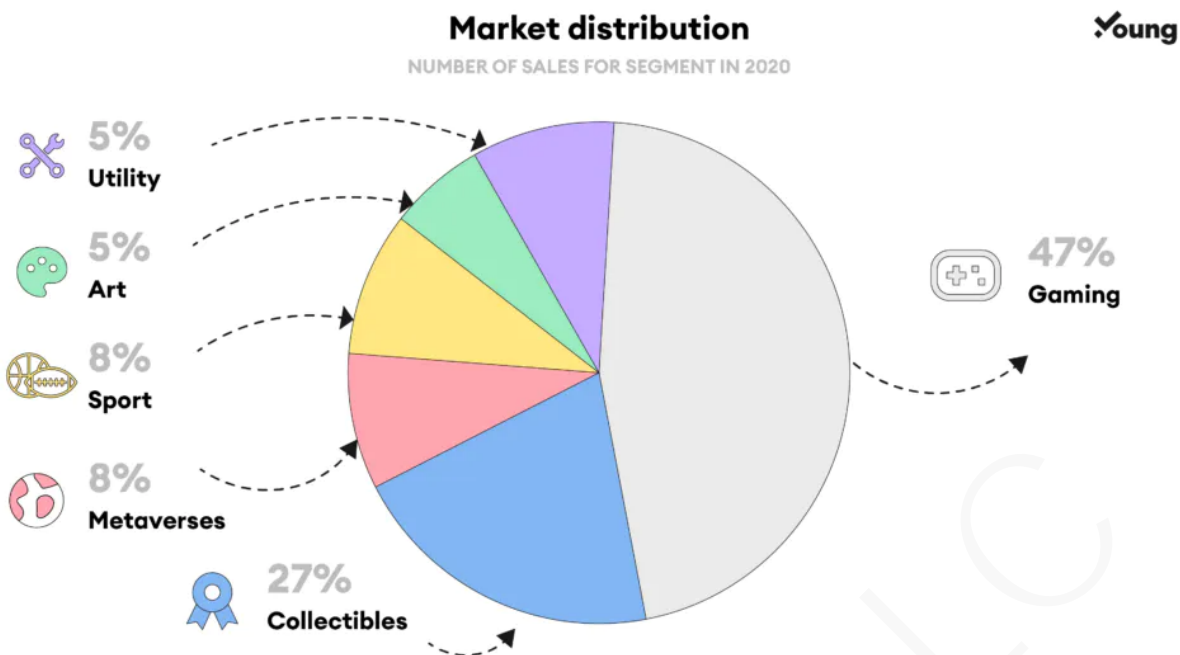
- Gaming is the largest segment of the entertainment industry ([click](#)) with ~\$180bn according to IDC (another source: ~\$160bn revenue in 2020 and ~2.3bn players according to Newzoo, see the chart).



Source: [newzoo](#)

NFT gaming - the future of playing video games

- The sales volume for NFTs hit \$2.5 billion in the H121, up from a total of \$250mn in FY20 ([click](#)). At the moment, the most popular crypto application for NFTs is gaming.



Source: *Young Platform*

Competitive landscape

- There are no direct competitors but similar players exist in a similar field. Sorare and Gods Unchained create the utility of their NFTs more indirectly, through paying out prizes in tournaments (rare NFTs and ETH). Axie Infinity is the only game that introduces a governance token on top of an in-game currency.

	Crypto-Kitties	Gods Unchained	Sorare	Axie Infinity	Zed Run
Blockchain	Ethereum	Ethereum	Ethereum	Ethereum	NEAR
Launch date	2017	2019	2019	2020	2021
Free-to-play	-	Yes	-	-	-
NFT properties					
Genetic algorithms	Yes	-	-	Yes	Yes
NFT utility	Breeding	Prizes	Prizes	Breeding, Earn SLP	Breeding, Earn ZEST
Rarity classes	Yes	Yes	Yes	Yes	Yes
Utility tokens					
Currency	-	-	-	SLP	ZEST
Governance	-	-	-	AXS	-

Source: *Outlier Ventures*

- Unsurprisingly, perhaps, there are clear copy-cats being made, like <https://monstainfinite.com/> which will be interesting to follow.
- Some other players: F1® Delta Time (collection and trading of unique Cars, Drivers, and Components); The Sandbox Game (play, build, own, and monetize virtual experiences); League of Kingdoms (MMO strategy game).

Gamers fight for dominion within the game); Illuvium (a fantasy battle game); Star Atlas (Gamers perform space exploration, territorial conquest, political domination)

Risks

- **Demand driven by new players.** If Axies reproduce excessively and/or new players' growth slows, it will cause the price of Axies to fall, which in turn will affect the demand for SLP and the demand for AXS.
- **Gamers are fickle ("fad risk"):** viral games are typically trendy and the preferences of the masses can shift. Will players in the USA and Europe like Axie enough for it to reach mainstream adoption there as well?
- **No underlying storylines:** Unlike PokemonGo, Axie appears to be missing a complete cultural universe of TV shows, movies, trading cards, and memories. Axie's narrow cultural band may increase its risk of becoming a fad.
- **Axie isn't fully decentralized:** Currently, the gameplay and data storage of Axie infinity are not decentralized.
- **Regulatory:** Recently, regulators in the Philippines shared their intent to tax the game's publishers and players.

Useful Resources

Title	Type	Description	Link
NFT Gold Mine... Axie Infinity speaks out	Video	Interview with Jeff Zirlin, a co-founder, on the catalysts of Axie take-off in 2021 and the team's future plans	https://www.youtube.com/watch?v=27ZHnbkDKWI
How Axie Infinity Boosted Revenue 400%+ in 30 Days	Video	Aleksander Larsen, co-founder and COO of Axie Infinity, discusses Axie Infinity's recent growth	https://unchainedpodcast.com/how-axie-infinity-boosted-revenue-400-in-30-days/
Gabby Dizon - Mapping the Metaverse Economy	Colossus	Conversation with Gabby Dizon, co-founder of Yield Guild Games, that covers the player/manager relationship with games like Axie Infinity.	https://www.joincolossus.com/episodes/45988185/dizon-mapping-the-metaverse-economy?tab=transcript
Is Axie sustainable?	Article	A look into Axie Ecosystem and the sustainability of its business model	https://axiepulse.substack.com/p/is-axie-infinity-sustainable
Axie Infinity (AXS): The Craziest Crypto Game Ever!	Article	The numbers, economics and recipe for success of the biggest NFT and crypto related game in history	https://medium.com/general_knowledge/axie-infinity-axs-the-craziest-crypto-game-ever-a28322b5601b
NFTs and Gaming Lead the ETH Rally	Article	The article maps out the basics of the NFT space, and assess the volume and demand metrics describing its meteoric growth	https://insights.glassnode.com/nfts-and-gaming-lead-the-eth-rally/
Thoughts on gaming economics, NFTs and the Metaverse	Article	A dive into the economics of the metaverse and the challenges on the path to sustain its economic viability	https://threadreaderapp.com/thread/1419667589001850881.html
Infinity Revenue, Infinity Possibilities	Article	Packy McCormick dives into Axie Infinity and the play-to-earn gaming revolution.	https://www.notboring.co/p/infinity-revenue-infinity-possibilities