GAMING SECTOR OUTLOOK

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Rohan Pujara, Principal

VALHALLA VENTURES

The average gamer spends **14.7% OF THEIR WAKING HOURS** playing video games.[1]

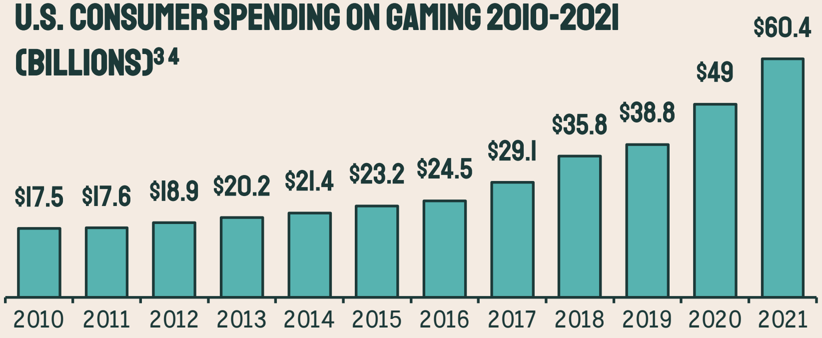
There are **2.96 BILLION** gamers globally.[2]

GAMING IS ENTERING A GOLDEN AGE AS IT BECOMES THE NEXUS OF SOCIAL INTERACTION AND ENTERTAINMENT FOR MILLENNIALS & GEN Z

1

The rise of interactive entertainment is part of a **decade-plus long generational shift**, not just a pandemic fluke.

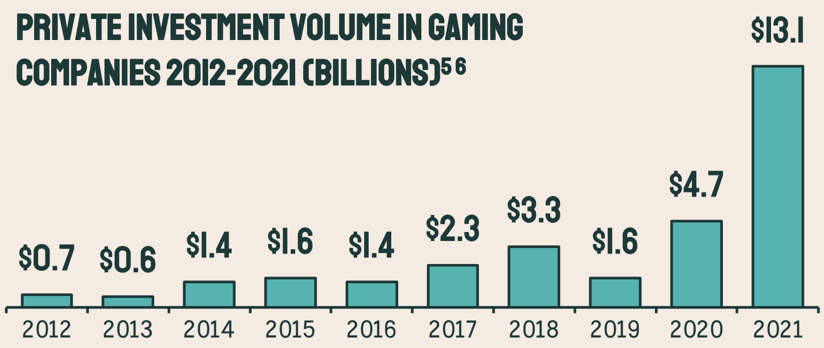
U.S. CONSUMER SPENDING ON GAMING 2010-2021 (BILLIONS)[3 4]



2

Investment volume in gaming companies reached an all-time high in 2021 with **over $13B deployed into the space**.

PRIVATE INVESTMENT VOLUME IN GAMING COMPANIES 2012-2021 (BILLIONS)[5 6]



GAMING HAS EVOLVED OVER 50 YEARS FROM A NICHE HOBBY TO...

1972[7]

Pong becomes **the first commercially successful arcade title**

1975[8]

Atari releases a console version of *Pong* **matching the success of the arcade version**

1980[7]

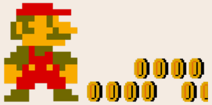
Pac-Man generates **$1B of revenue** in the United States in a single year

1983[8]

The gaming market crashes after a string of **high-budget low-quality projects** highlighted by the infamous *E.T.* game

1985-86[8]

Nintendo releases NES console and a series of classic franchises including ***Super Mario Bros.* and *The Legend of Zelda***



1989[7]

Nintendo releases its iconic **Game Boy handheld device** bundled with *Tetris*

1991[8]

Nintendo releases its Super NES, launching **the first "console-war"** against Sega's Genesis system and *Sonic* franchise

1993[7]

Doom popularizes the **FPS (first-person shooter)** genre

1994[8]

Franchises like *Mortal Kombat* give rise to the ESRB which **rates games based on suitability for children**

EVERYONE E ESRB

1995[8]

Sega's Saturn and Sony's PlayStation consoles **usher in the era of 3D gaming** with CDs replacing cartridges

… A CENTERPIECE OF GEN Z AND MILLENNIAL CULTURE WITH NEARLY 3 BILLION PLAYERS GLOBALLY

1997[7]

Nokia starts shipping cell phones with *Snake*, **the first popular mobile game**

2000[8]

Sony's PS2, with its **unrivaled third-party game support**, becomes the best-selling console ever

2002[7]

Microsoft launches **Xbox Live**, a subscription online multiplayer service for its flagship consoles

2004[7]

World of Warcraft, a subscription-based MMO RPG launches and **grows to 14M subscribers**

2007[7]

Apple releases its first iPhone smartphone **opening the door to 3D mobile gaming**

2010[7]

Minecraft is released in public beta – it **remains the best-selling video game of all time**

2011[7]

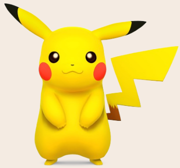
Twitch launches as the **first streaming platform primarily for video games**

2013[7]

Grand Theft Auto V shatters records **earning $800M on its release day**

2016[7]

Pokémon Go, an AR-based mobile game, reaches **500M downloads in one year**



2017-19[9]

Fortnite, a free-to-play battle royale game, launches to **massive commercial success generating $9B** in its first 2 years

GAMES ARE THE SOCIAL HUB FOR MILLENNIALS AND GEN Z

- Gaming has evolved into the go-to hangout spot for younger generations – **multiplayer games are replacing small in-person gatherings.**

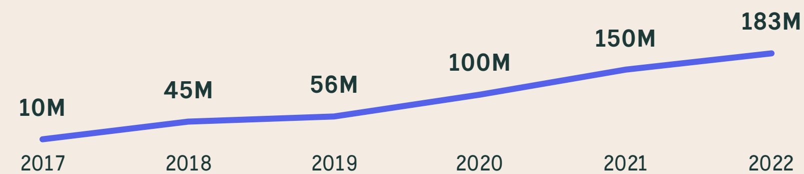
- **40% fewer 17-year-olds met with friends in-person daily in 2017 than in 2001[10]**, the year before the launch of online multiplayer platforms like Xbox Live on gaming consoles.

SOCIAL GAMING PLATFORMS ARE ON THE RISE

ABOUT | PLATFORM | MONTHLY ACTIVE USER (MAU) GROWTH[3, 28]

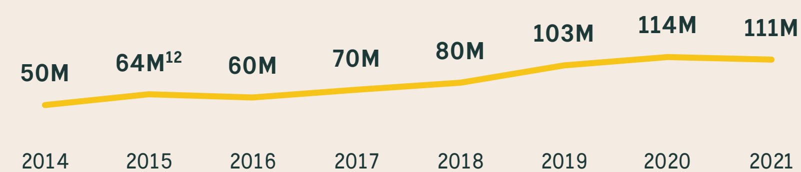
Discord is a server-based group voice (VoIP) and messaging platform originally built for gamers

Discord



PlayStation Plus is Sony's subscription online multiplayer and in-game social platform for its flagship consoles

PlayStation Plus



Xbox Live is Microsoft's subscription online multiplayer and in-game social platform for its flagship consoles

XBOX LIVE

GAMES HAVE DISPLACED TV SHOWS AND MOVIES AS THE DE FACTO ENTERTAINMENT OPTION FOR GEN Z

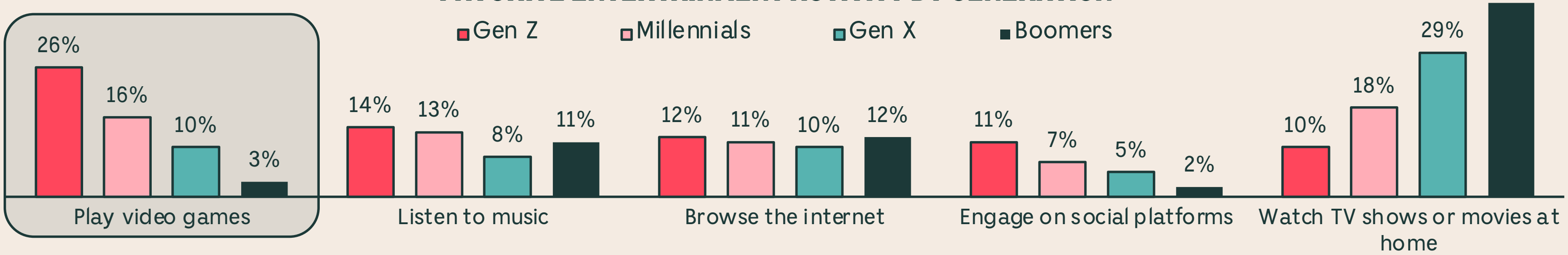
- Not only does **87% of Gen Z game at least once a week**[15], they spend **billions of hours per month watching others play**[16] on platforms like Twitch, YouTube, and Facebook.
- More people have played the game PUBG: Battlegrounds[17] than **subscribe to the top 20 streaming services (including Netflix, HBO, Prime Video, Disney+, etc.) combined.**[18]

Twitch boasts **140M monthly active users – 73% of which are under age 35**[13]

2 of the top 5 most subscribed-to YouTube channels in the world are gaming-related[14]

Games are the most-downloaded category of apps on the Apple App Store

FAVORITE ENTERTAINMENT ACTIVITY BY GENERATION[15]



LOOKING BEYOND THE NOISE – WHAT REALLY IS THE METAVERSE?

- The metaverse sits at the intersection of **interactive virtual worlds** – which exist today within individual games – and the **shift of human social interaction to the internet**.

- We define a metaverse as **any virtual setting where users can interact with one another socially around a common activity**.

- Social sandbox, MMO (massively multiplayer online), and team-based games are the **primary destinations for gamers to play and socialize with friends.**

SOCIAL SANDBOXES

ROBLOX, MINECRAFT, Terraria, Animal Crossing, grand theft auto ONLINE, STARDEW VALLEY

MMO (MASSIVELY MULTIPLAYER ONLINE)

WORLD of WARCRAFT, FINAL FANTASY, EVE ONLINE, RUNESCAPE, The Elder Scrolls ONLINE, DESTINY 2

TEAM-BASED

VALORANT, CS:GO, APEX LEGENDS, PUBG, LEAGUE of LEGENDS, CALL of DUTY WARZONE, FORTNITE, BATTLEFIELD, 2K, DEAD BY DAYLIGHT, DOTA 2, ROCKET LEAGUE, AMONG US, HALO, OVERWATCH

PRE-LAUNCH

THE SANDBOX, GALAXY FIGHT CLUB, EDGE of CHAOS, STAR CITIZEN, STAR ATLAS, SEED, SHRAPNEL, EXOMECHA

HOW DOES BLOCKCHAIN FIT INTO THE PICTURE?

- Blockchain gaming has been one of the most talked about gaming sub-verticals over the past two years with **$3.6B of capital deployed into the space in 2021.**[19]
- **Blockchain gaming projects typically raise funds via a combination of traditional equity and token/NFT offerings** without much beyond a product roadmap in place.
- **Most projects released to date follow a "play-to-earn" model** where users are rewarded in cryptocurrency for in-game progress.

WHAT CAN BLOCKCHAIN BRING TO GAMING?

1. Build **more robust in-game economies using novel tokenomics**
2. Allow players to **monetize in-game progress or take it from one game to another**
3. Enable independent developers to better **monetize custom in-game experiences**
4. Enable independent game developers to **fund projects without institutional backing**
5. **Build secondary markets** for in-game items - existing "gray markets" violate game T&Cs

PRE-LAUNCH

The Sandbox | Galaxy Fight Club
Edge of Chaos | Star Atlas
Guild of Guardians | Illuvium
The Bazar | Shrapnel
Mobland | Ember Sword
Rocket Kong League | Life Beyond

LAUNCHED

Axie Infinity | Decentraland
DeFi Kingdoms | Crypto Raiders
Zed | Splinterlands
Upland | CryptoKitties
Genopets | Gods Unchained

BLOCKCHAIN GAMING IS STILL PRIMITIVE DESPITE RECENT HYPE

- Announced projects tend to focus overly on blockchain-related features – and as a result **attract crypto-natives rather than the much larger gaming user base.**

- Projects that **feature rich and engaging gameplay and use blockchain as a user-experience enhancement rather than a core focus** will win out in the long-term.

PLAY-TO-EARN

- **Play-to-earn is the preeminent model** used by blockchain games today.
- **This model has a critical flaw** – it attracts crypto-natives looking to speculate and earn cryptocurrency rather than gamers.
- This has led to **fundamentally inferior games commanding hefty private market valuations** fueled by "farming" strategies.
- **This model does not scale** – earnings drop off as more users "join the party".
- Without an engaging game in the absence of earnings, **users leave**.

PLAY-AND-OWN

- People don't play games for money. **They play games to have fun.**
- A model that prioritizes the development of **rich and engaging gameplay** – like traditional game development has (mostly) for years – and **thoughtfully employs blockchain to enhance player experience** will win in the long-term.
- **In-game economies are not new** – they have existed for decades.
- Blockchain, if implemented **natively and seamlessly** into games, can **enable players to own in-game assets and sell them on secondary markets**.

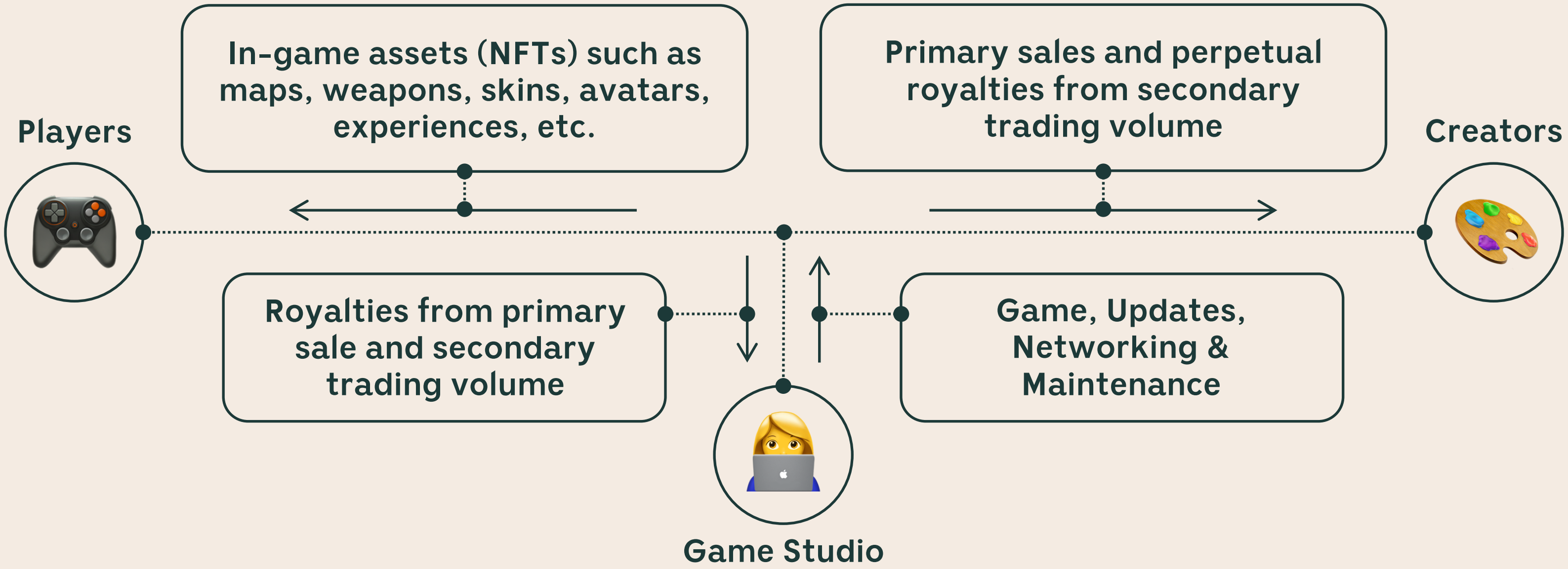
MAX AUDIENCE

295M
Crypto Users[20]

2.96B
Gamers[2]

FUTURE IN-GAME ECONOMIES WILL LIVE ON THE BLOCKCHAIN

- The **blockchain enables new models that incentivize user-generation of in-game assets** like maps, skins, avatars, and other items.
- Roblox is an example of why the current model is ripe for disruption – **creators of Roblox's in-game experiences keep only 28% of revenue they generate.**[21]
- Enabling ownership and secondary trading of in-game assets **opens an entirely new revenue stream for game developers and in-game content creators**: perpetual royalties.



GAMING IS SEEING A SHIFT TOWARD FREE-TO-PLAY EXPERIENCES

- Over the past decade, free-to-play games games like *Fortnite*, *League of Legends*, *Clash of Clans*, and *PUBG: Battlegrounds* have **surpassed their pay-to-play peers in revenue** [22] **resulting in a broader industry shift toward removing the initial cost barrier for players.**

- Free-to-play games more than make up for the lost upfront revenue – ***Fortnite*** **generated $10.9B in revenue between 2020-21 alone from in-game microtransactions.**[23] *GTA V* (2nd best-selling game title ever) has generated $6.4B over the 9 years since its 2013 release.[24]

TOP 8 MOST-WATCHED GAMES ON TWITCH (JUNE 19 - JULY 18, 2022)[25]

1	League of Legends	112M hours
2	Valorant	104M hours
3	Grand Theft Auto Online	100M hours
4	CS:GO	57M hours
5	Fall Guys	46M hours
6	Apex Legends	45M hours
7	Dota 2	40M hours
8	Fortnite	39M hours

7 of the 8 most-watched games on Twitch are free-to-play. The only exception (GTA) recently cut its entry price by 50%.

GAME DISTRIBUTION IS RIPE FOR MASSIVE DISRUPTION WITH THE RISE OF SOCIAL GAMING

- **Gaming distribution today is largely controlled by the platforms that games are played on** (ie, Microsoft's Xbox Store, Sony's PlayStation Store, Apple's App Store, Alphabet's Play Store). Valve's **Steam meanwhile controls 75% of global PC game distribution.**[26]

- With Gen Z and younger gamers moving more of their social interaction into games, **there is an increasing need for gaming platforms to decouple from gaming distribution.**

PROBLEM

- Platform-tied distribution is problematic for social gamers as **friend groups are usually not all on the same platform** making multiplayer challenging or impossible.
- New entrants have used content exclusivity to differentiate **rather than innovating on features for gamers (ie, social, discovery, cloud gaming)**.

SOLUTION

- Opportunity for a **cross-platform social tool** to enter distribution with social features increasingly central to the gamer experience.
- Core features like **matchmaking or differentiated content (ie, interactive clippings)** are all possible centerpieces for a social + distribution hybrid platform.

- **Cloud gaming** (subscription services that enable on-demand gameplay streamed to any device) has the potential to disrupt distribution by **removing the hardware performance barrier for most people**.
- Potential to enable **consistent gameplay experience across TVs, PCs, mobile, etc.**

THE NEXT EVOLUTION OF SOCIAL GAMING PLATFORMS IS IMMINENT

- **Games are a natural common interest that can spur social connection** – this is why platforms like Twitch (140M MAUs)[13] and Discord (183M MAUs)[3] have been so successful.

- Despite being the only major cross-platform social tool for gamers, **Discord has struggled to monetize effectively** (Twitch generated $2.68B in 2021 revenue[27] vs. Discord's $309M[28]).

3 POTENTIAL MOLDS FOR THE NEXT SOCIAL GAMING PLATFORM

Social sandbox platforms (like what *Roblox* has built for U13 gamers) centered around user-generated content that foster creative + social collaboration	**Seamless, cross-platform social experiences that integrate directly into games** for a richer experience than Discord	**Platforms that offer differentiated content and/or functionality for gamers** (ie, matchmaking, wagering, interactive game clippings)

NEW ENTRANTS

BUNCH, Stadium LIVE, goss., 1V1ME, THE SANDBOX, Edge, REC ROOM, CRAYTA

THE RISE OF GAMING-NATIVE INTELLECTUAL PROPERTY — THE NEXT DISNEY WILL RISE OUT OF THE GAMING INDUSTRY

- As gaming quickly becomes a centerpiece of Gen Z culture (**25% of Gen Z leisure time is spent gaming**[29]), gaming-native IP is becoming increasingly valuable.

- In 2021, **Wizards of the Coast (publisher of *Magic: The Gathering* and *Dungeons & Dragons* franchises) generated 75% of Hasbro's ($11.3B market cap) operating profit.**

Millennials, Gen X, and Baby Boomers spent 2.85 hours per day watching TV as of 2017.[30]

87% of Gen Z games once per week.[15] The average gamer spends 2.4 hours per day gaming.[1]

The last wave of generational $10B+ IP franchises came out of TV/film following Millennial and Gen X behavior. **The next wave, driven by Gen Z behavior, will come from games.**

GAMING REVENUES HAVE BEEN HISTORICALLY RESILIENT TO MACROECONOMIC DOWNTURNS – BUT SOME THINGS HAVE CHANGED

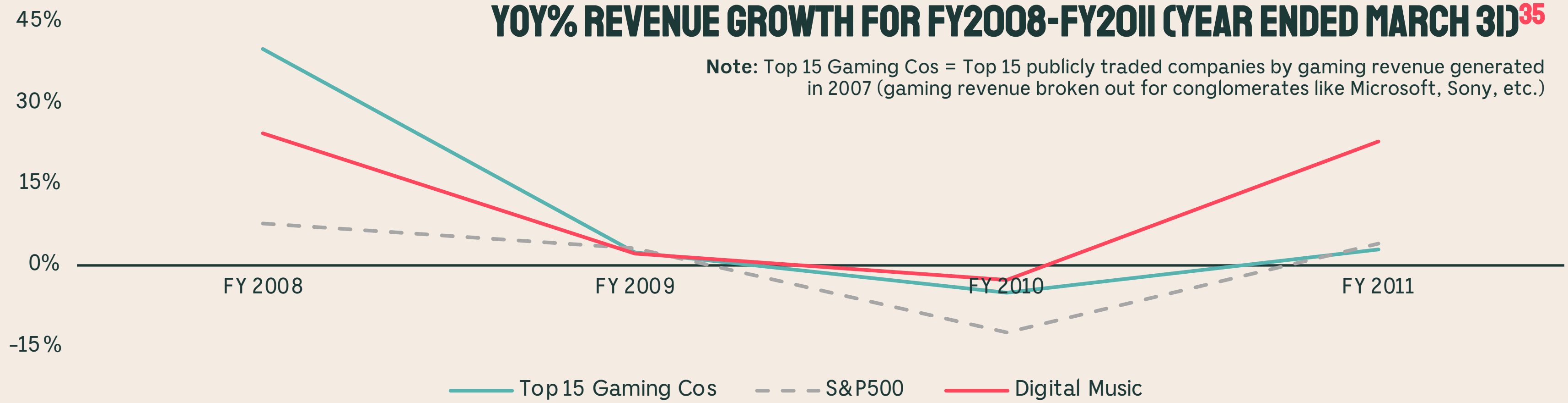
- The top 15 companies by gaming revenue between 2006 and 2011 experienced **peak gaming revenue contraction of -5% YoY** in 2010 (FY ended 3/31/10) **vs. -12.4% across the S&P 500**.

- However, as gaming has shifted toward microtransactions over the upfront purchases relied upon in the late 2000s, **it remains to be seen how gamers adapt spending in a downturn**.

- Digital music ($0.99-$9.99 microtransaction-driven entertainment) performance during the GFC could serve as a model for **how today's gaming market might perform in a downturn**.

YOY% REVENUE GROWTH FOR FY2008-FY2011 (YEAR ENDED MARCH 31)[35]

Note: Top 15 Gaming Cos = Top 15 publicly traded companies by gaming revenue generated in 2007 (gaming revenue broken out for conglomerates like Microsoft, Sony, etc.)

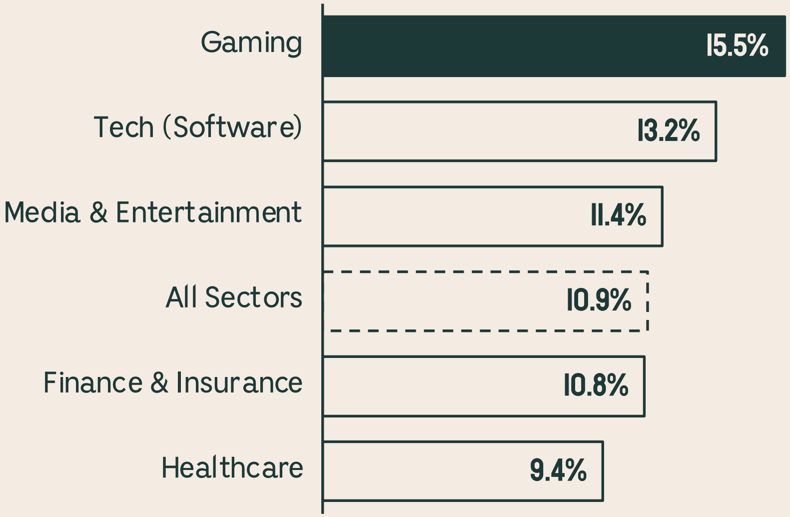


CONSOLIDATION IN THE GAMING INDUSTRY OVER THE PAST DECADE HAS CREATED A MAJOR OPPORTUNITY FOR EARLY-STAGE INVESTORS

- Driven by Microsoft, Tencent, Take Two, Zynga, EA, and others, **the gaming industry is undergoing a period of massive consolidation** with $85B in M&A activity in 2021[31] followed by over $102B in activity in H1 2022 alone.[32]

- Talented AAA game developers are **increasingly opting to leave these slow-to-innovate conglomerates to start independent game studios** in need of Pre-Seed and Seed financing.

EMPLOYEE TURNOVER RATES BY SECTOR (2018)[33]



THE ORIGIN STORIES OF 4 OF THE 8 LARGEST GAMING ACQUISITIONS EVER

Activision Blizzard: **$68.7B** – Started by 4 fed up Atari engineers after Atari was acquired by Warner Communications in 1976

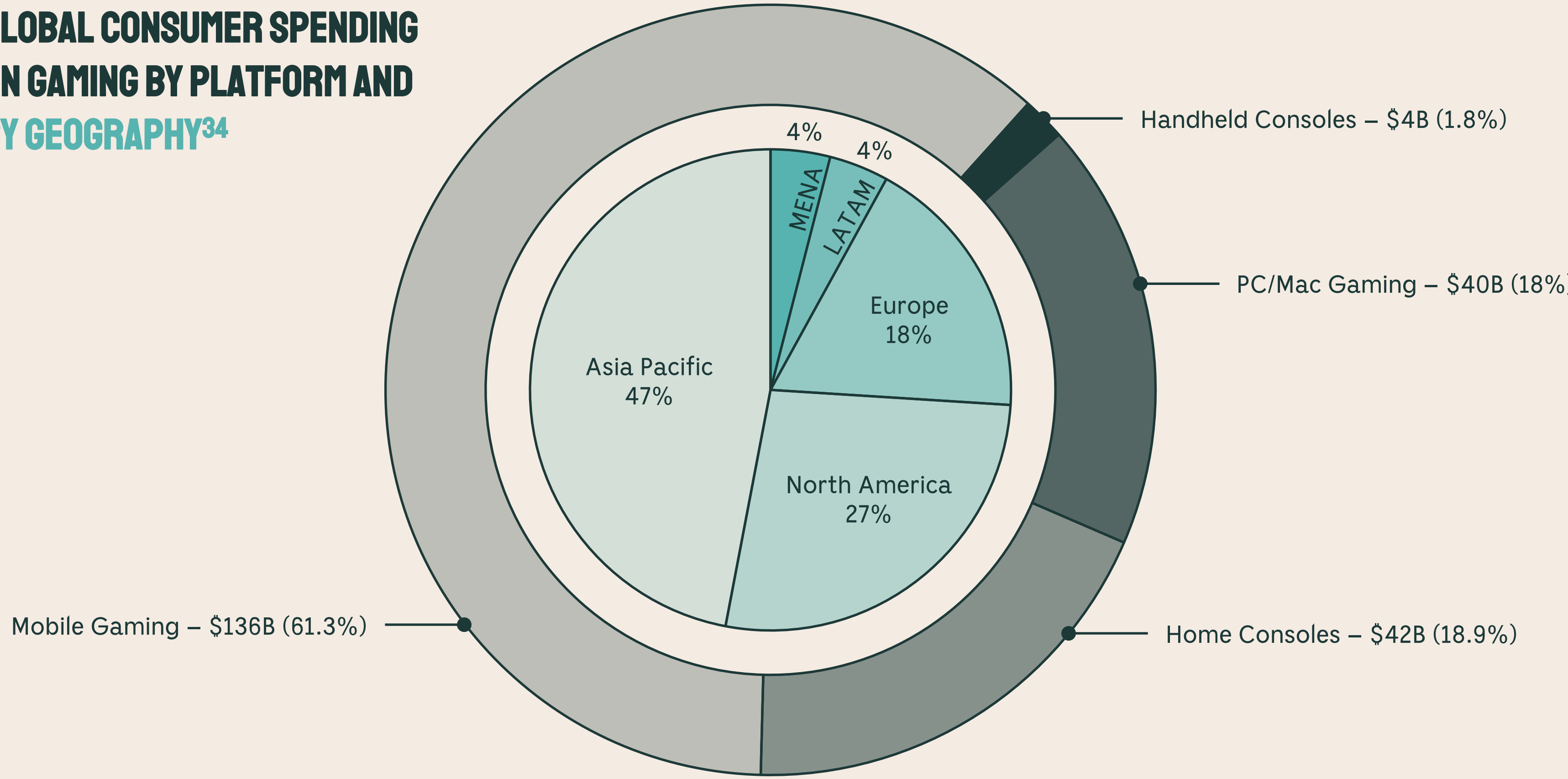
Supercell: **$8.6B** – Started by 2 Finnish developers seeking creative freedom after their previous company Sumea was acquired by an American studio

Moonton: **$4B** – Started by 2 former Tencent developers

Mojang Studios: **$2.5B** – Started by a former game developer for King.com

CONSUMER SPENDING ON GAMES PROJECTED TO REACH $222B IN 2022 WITH MOBILE GAMERS OUT-SPENDING PC GAMERS BY 3.4X

GLOBAL CONSUMER SPENDING ON GAMING BY PLATFORM AND BY GEOGRAPHY[34]



GAMING MARKET LANDSCAPE – CONTENT AND DISTRIBUTION

DISTRIBUTION

STEAM, Google Play, XBOX LIVE, PlayStation Store, prime gaming, EPIC GAMES, My Nintendo, Origin

ROBLOX, UPLAY, GOG.COM, itch.io, Bethesda, BATTLENET, GAMERSGATE, GameStop, oculus, SIDEQUEST

CLOUD GAMING

NVIDIA GEFORCE, PlayStation Now, XBOX GAME PASS, STADIA, shadow

luna, BOOSTEROID, Rainway, NETBOOM Cloud Gaming, Blacknut

PLAYKEY.NET, Paperspace, vortex, HATCH, PARSEC

HARDWARE

ALIENWARE, XBOX, PlayStation, Nintendo

VALVE, NVIDIA, Google Play, amazon fireTV, AMD

Meta, RAZER, HYPERX, CORSAIR, VIVE

CONTENT/PUBLISHING

ACTIVISION BLIZZARD, EA, RIOT GAMES, EPIC GAMES, Nintendo, SONY, Tencent, XBOX GAME STUDIOS, T2 TAKE-TWO INTERACTIVE

UBISOFT, SQUARE ENIX, Bethesda, VALVE, amazon game studios, KRAFTON, NCSOFT, NetEase Games, NEXON

CD PROJEKT, NIANTIC, CAPCOM, BANDAI NAMCO, bE HAVIOUR, GAMELOFT, KONAMI, SCOPELY, MOONTON

SEGA, 37GAMES, PEARL ABYSS, thatgamecompany, RE-LOGIC

GAMING MARKET LANDSCAPE – INFRASTRUCTURE & SOCIAL

SOCIAL

Discord, twitch, XBOX LIVE, PlayStation Plus, BUNCH, REC ROOM, Stadium LIVE, blerp, Edge, 1V1ME, eFuse, MEDAL, reddit, Guilded

ENGINES

UNREAL ENGINE, Unity, ROBLOX, lumberyard, GODOT Game engine, CRYENGINE, PANDA3D, COCOS2D, GameMaker, MADE WITH DEFOLD

BACKEND TOOLS & SERVICES

HADEAN, IMPROBABLE, BULLET PHYSICS LIBRARY, PhysX by NVIDIA, Box2D, BeamNG, OUTFOX, echo3D, INCREDIBUILD, blender, celtx, Houdini, mixamo, GameBench, Hathora, CHARACTER CREATOR 4, Quixel, coherence, SpatialOS, Firebase, PLAYFAB, App Engine, photon, GAMESPARKS

LANDSCAPE OF PRIVATE INVESTORS IN THE GAMING SPACE

VENTURE + GROWTH INVESTORS

GENERAL CATALYST	MAKERS FUND	GRIFFIN GAMING PARTNERS	Lvp.	KONVOY	dune	GALAXY INTERACTIVE
HIRO CAPITAL	PLAY	LIGHTSHED VENTURES	USV	VALHALLA VENTURES	BENCHMARK	vgames
MGVC	BITKRAFT	Transcend.	NEA	MARCH GAMING	THE GAMES FUND	VELO PARTNERS
CREANDUM	PATRON	andreessen horowitz	COURTSIDE VC	Lumikai	GAMESEER	ANTHOS
Index Ventures	INITIAL CAPITAL	GAMERFORCE VENTURES	FOUNDERS FUND	WestSummit Capital	NORTHZONE	BLACK SHEEP VENTURES

CORPORATE

Microsoft	RIOT GAMES	LEGO ventures	Tencent	MINICLIP	SONY	SUPERCELL
T2 TAKE-TWO INTERACTIVE	EA	EPIC GAMES	UBISOFT	KRAFTON	Google	NetEase Games
com2us	NIANTIC	BANDAI NAMCO	animoca BRANDS	37GAMES	colopl	NEXON

KEY TAKEAWAYS

1

The greatest opportunities in gaming today lie at the intersection of **robust social experiences** and **in-game economies powered by blockchain technology**.

2

Game distribution is undergoing a massive shift toward **cross-platform, free-to-play or subscription-based, and on-demand content** driven by rapid innovation in cloud infrastructure.

3

The metaverse is an expression of a decades-long **transition of human interaction and entertainment to interactive virtual worlds** found in multiplayer games.

4

Investors should be wary of blockchain games with poor underlying gameplay. **Highly engaging games with thoughtful features will always win in the long-term and at scale**.

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THANK YOU.

For inquiries, please reach out rohan@valhalla.ventures.

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