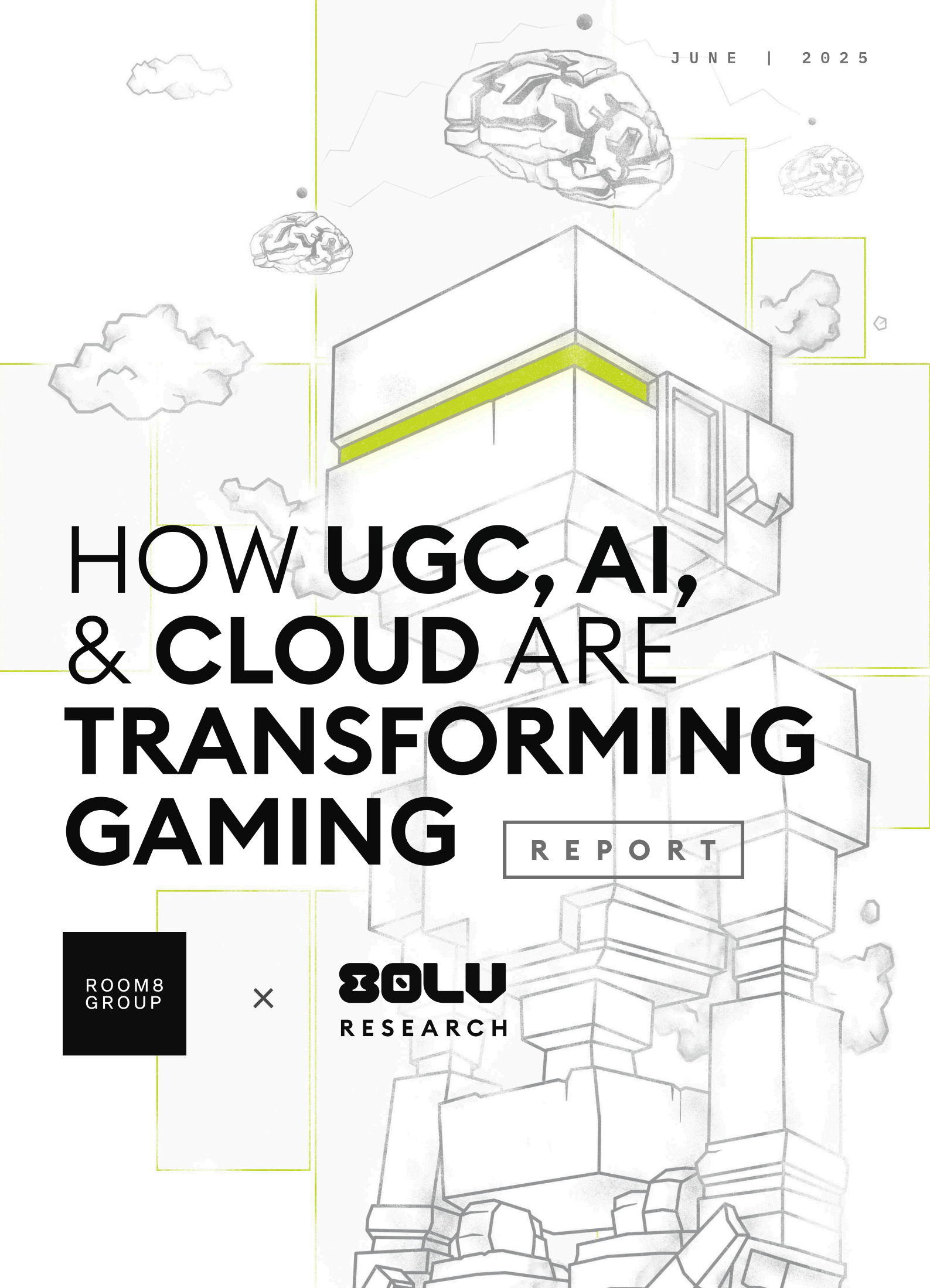
JUNE | 2025



HOW **UGC, AI, & CLOUD** ARE **TRANSFORMING GAMING**

REPORT

ROOM8 GROUP × BOLU RESEARCH

INTRO

The gaming industry is evolving rapidly, with new technologies disrupting the space and player expectations changing.

In 2025, we're seeing a big shift toward **user-generated content (UGC), artificial intelligence (AI),** and **cloud gaming,** which offer exciting ways to create, play, and connect. However, these advancements also bring their own unique set of challenges.

To take the temperature of the industry for the rest of this year and beyond, **80 Level** and **Room 8 Group** have partnered to conduct research on three of the most intriguing trends in the gaming industry.

ABOUT US

80 Level is a global media platform, market research agency, and service that connects talents with hiring companies.

80 Level Research conducts quantitative and qualitative research to gain valuable market insights. We leverage structured surveys and in-depth interviews to identify industry trends, challenges, and growth opportunities.

With over eight years of experience, we've completed more than 100 research reports and prepared presentations for prominent conferences like GDC and Devcom.

To find out more how 80 Level Research can help you, contact:

Arti Sergeev
Head of 80 Level
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ROOM8 GROUP

Room 8 Group is an end-to-end strategic partner in external game development.

Working across all platforms, we provide creative and technical expertise across game development, technology, art, trailers, and QA for AAA and AA games.

Since 2011, we've built creative partnerships with world-leading publishers such as Microsoft, Nintendo, Ubisoft, Sony, Gameloft, Take2, EA, and more.

While leveraging our own cutting-edge tools and R&D capabilities, we've co-created a multitude of award-winning projects for video game IPs and franchises including Call of Duty, Diablo, Assassin's Creed, Star Trek, The Walking Dead, Doctor Who, and many more.

To find out how Room 8 Group could help you make your next great game, contact:

Anna Berdnyk
Deputy Head of Business Development
A.BERDNYK@ROOM8GROUP.COM

We interviewed **9 leading experts** in game development, production, creativity, and marketing to gain valuable insights into how these innovations are being applied today and what the future holds.

MEET OUR EXPERTS

Benjamin Paquette
Senior Game Director
at Room 8 Group

Yann LeTensorer
VP of Technology
at Room 8 Group

Guillaume Carmona
VP of Game Development
at Room 8 Group

Shayan Sanyal
Global Games Industry
BD Leader at AWS

Scott Reismanis
CEO at mod.io

Daphne Parot
CMO at Blacknut

Manolis Emmanouilidis
Co-Founder at Arcware

Jan Sechovec
Technology Director at Revolgy's
Cloud Gaming Department

Štěpán Kaiser
Global GameTech Lead
at Revolgy

This report explores in detail important trends and technologies that will, one way or another, impact gaming significantly in the near future, from the growing power of AI to how UGC and cloud gaming are making games more dynamic, accessible, and community-driven.

If you want to stay ahead of the latest trends and see where gaming is headed, this report is for you!

Laying The Foundation: **Key Industry Insights**

01

The gaming industry is changing fast; games are now part of people's everyday lives. Over 90% of Gen Alpha and Gen Z interact with video games, and their preferences influence the gaming market, driving the popularity on social, immersive, and interactive experiences. This shift has fueled the rise of trends like UGC, AI, and cloud gaming. For example, Roblox, the biggest UGC game in the world, became extremely popular among younger generations: in the U.S., 48% of people aged 13-24 played it in 2024.

02

UGC is becoming a key part of gaming, with leading games like Fortnite, Roblox, and Minecraft. Players can make games more dynamic by creating and sharing their own content, which not only extends game lifespans but also increases users' engagement and retention. In Q4 2024, over 85.3 million people were actively playing Roblox, showing the demand for player-driven creativity. There's also the potential growth of UGC in traditional gaming experiences like sports, racing, and strategy games. TrackMania, Journey of Wrestling, and Zeepkist are great examples of how players are getting creative in these spaces.

03

However, some studios can face challenges such as legal issues, quality control, and accessibility when incorporating UGC into their games. Besides, modding has historically been free, so it can be difficult to justify for paid UGC. Overcoming these hurdles requires easy-to-use tools, cross-platform compatibility, and fair monetization models.

04 AI in gaming is expanding quickly and is projected to grow to $4.2B USD by 2029. This technology allows developers to automate routine tasks, improve coding, enhance game personalization, and integrate open-ended conversations with NPCs.

05 Despite the fact many studios are still concerned about the replacement of human work by AI, our interviewees believe that emotional depth, creativity, and narrative design remain essential in game development. That's why AI will be a supporting tool that enhances human creativity in the gaming industry.

06 The cloud gaming space is also growing fast: in just 4 years, the number of users increased from 62.5 to 395.9 million. The demand for instant access to games, cross-platform play, and affordability is driving adoption, but challenges like latency, infrastructure limitations, and scalability still need solutions. Advancements in 5G could solve latency and connectivity issues, making cloud gaming more reliable, while AI optimizations could help build better infrastructure and improve cost efficiency.

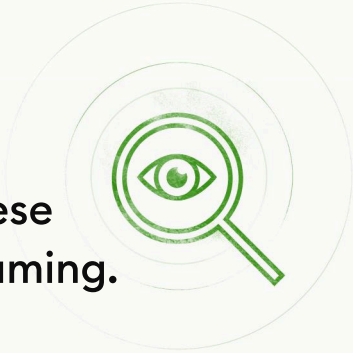
07 Undoubtedly, there won't be a mass adoption of cloud gaming in the near future. However, this path can begin with active use of the technology in the B2B market. After that, cloud gaming can be gradually scaled to the B2C area.

08 In the future, we can expect the combination of UGC, AI, and cloud gaming to create more immersive, social, and accessible gaming experiences. Gaming will become more democratized so that more people can have the same fun!

A NEW CHAPTER *OF* GAMING

The gaming market has transformed significantly in recent years.

Before getting into the key trends shaping the industry, it's important to recognize that gaming has become an integral part of younger generations' everyday lives. Their interests and preferences are driving the industry forward.



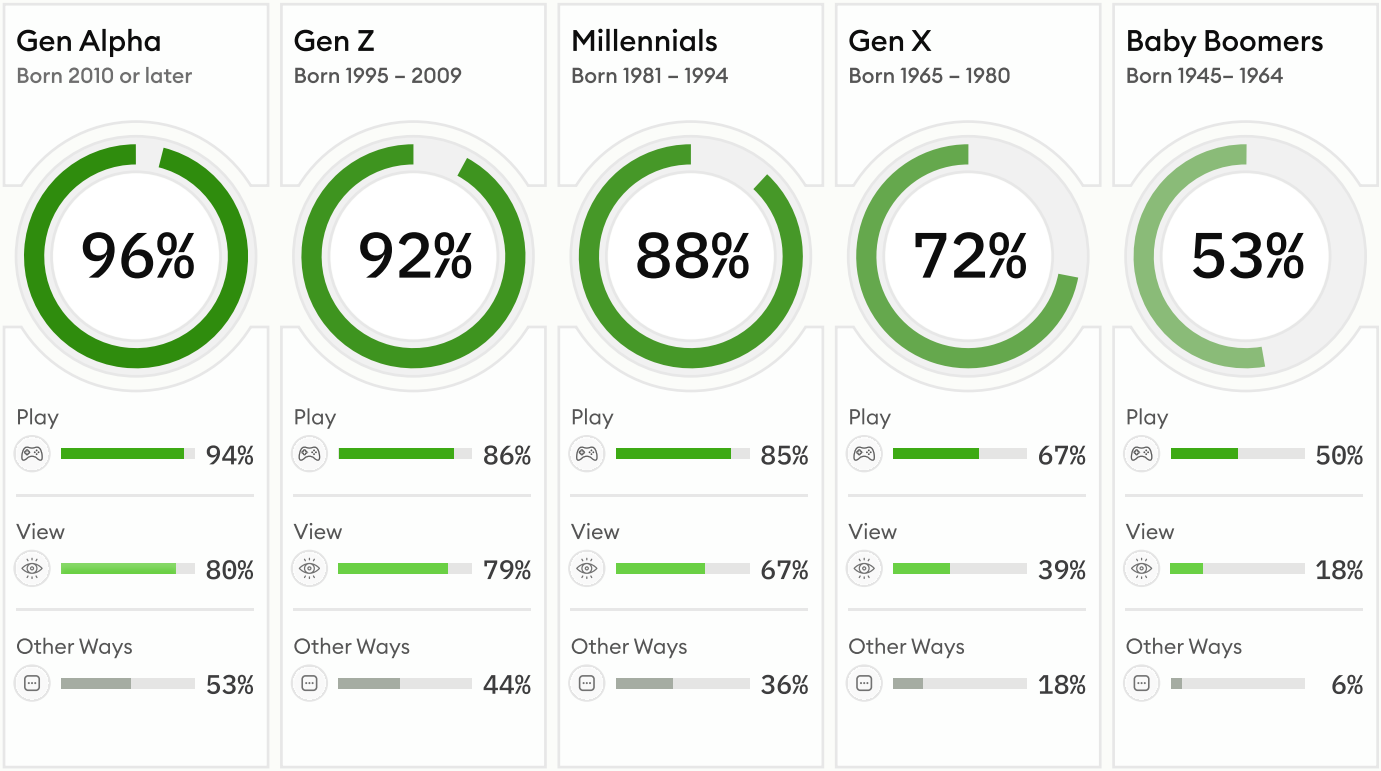
Let's take a closer look at how these new generations are changing gaming.

According to Newzoo, over 90% of Gen Alpha and Gen Z consumers interact with video games. Gen Z, Gen Alpha, and, to some extent, Millennials, not only play games more frequently but also engage more actively with gaming content. Gaming is seamlessly integrated into their daily lives, and this trend is expected to persist as they grow up.

Younger Generations Rewrite The Rules

GAMING ENGAGEMENT BY GENERATION

Base: Total online population



Source: Newzoo

> Gen Z is now going to be the executive of every brand, and gaming is a part of their lives from the start. Gaming is not a niche audience or for geeks anymore.

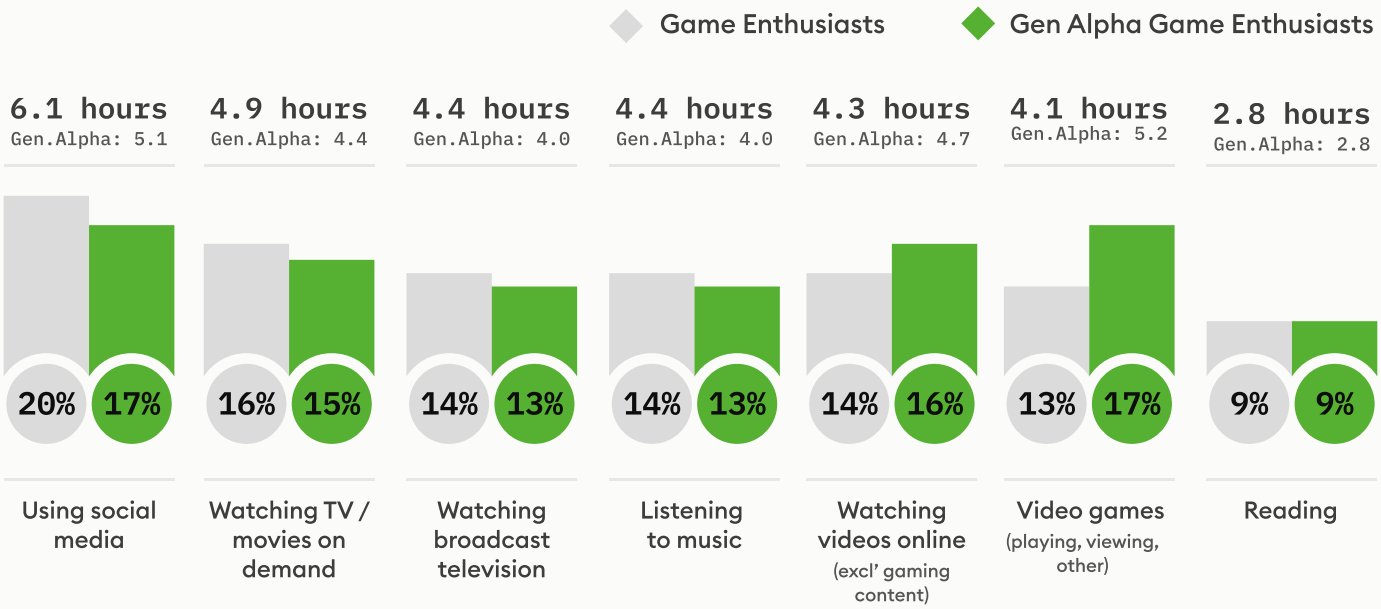
Daphne Parot
CMO at Blacknut

5.2

Gen Alpha spends an average of 5.2 hours per week engaged with games, making it the single thing they spend the most of their time doing. This surpasses even social media, which occupies 5.1 hours of their weekly attention

SHARE OF LEISURE TIME SPENT ENGAGING WITH MEDIA FORMS (AVERAGE PER WEEK)[1]

Base: Game enthusiasts[2]



[1] This is not an exhaustive list of all Game Enthusiast's pastimes; we asked them to indicate the time across these pastimes only, hence the total equals 100%
[2] Game Enthusiasts are consumers who engage with gaming through playing, viewing, owning, and/or social behavior

Source: Newzoo

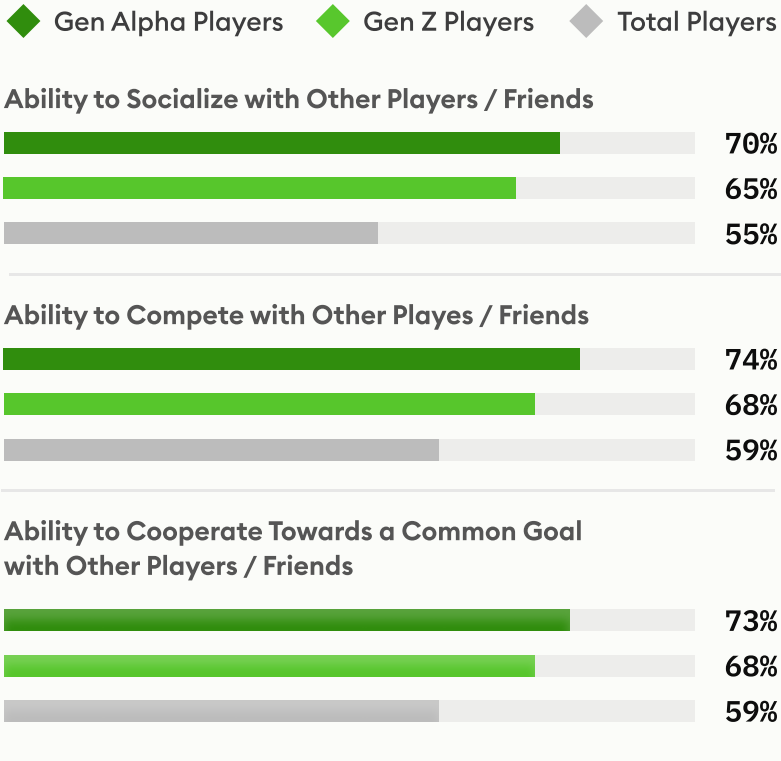
Currently, vast open worlds (66%) and deep storytelling (65%) are the top motivators for playing games among PC and console players.

Younger generations value social aspects of gaming: 55% of Gen Z and Gen Alpha players seek to socialize in games, while 59% prefer cooperating and competing with other users.

Moreover, players don't want their gaming experience to be disrupted. According to Wunderman Thompson Intelligence, over 60% of consumers expect brands to impress them with remarkable advertising. They want vibrant, evocative experiences when interacting with brands.

IMPORTANCE OF SOCIAL FEATURES IN GAMES

Rated 5, 6 or 7 out of 7 in terms of importance



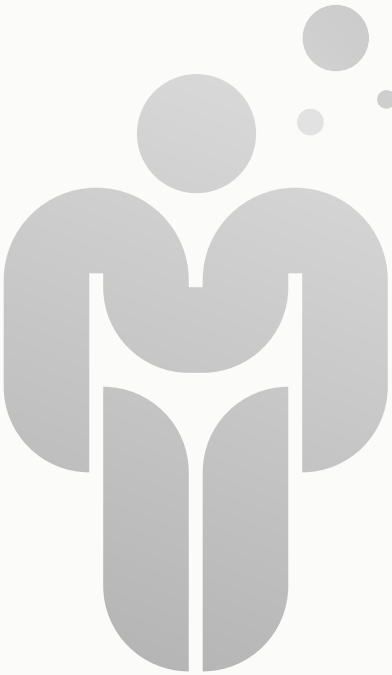
Source: udonis

What Do People Expect From Brands?

65%
Make more effort to wow me with spectacular advertising or marketing

63%
Provide me with multisensory experiences

61%
Help me to feel intense emotions



Source: Wunderman Thompson Intelligence

That's why some games apply intrinsic in-game advertising. This approach integrates advertisements seamlessly into the game environment. Unlike traditional ads that can disrupt immersion, intrinsic ads are designed to blend naturally into the game.

Intrinsic advertising has been especially revolutionized by UGC in games like Roblox and The Sandbox. Some of the biggest companies in the world, like Gucci, Burberry, Nike, and H&M are finding novel ways to present their brands to new audiences using UGC.

> There's a trend of intrinsic ads that are basically built into the game but don't interrupt your gameplay. We are working with the startup Anzu, which developed really cool technology that allows brands and advertisers to target players inside the game, for example, through billboards. It is a non-disruptive way of getting served advertising in a game rather than having to get this pop-up.

Shayan Sanyal
Global Games Industry BD Leader at AWS

The Impact of Generational Shifts in Gaming

Since the younger generations are increasingly seeking more interactive and social gaming experience, richer content, and higher engagement with a game world, developers strive to focus on enhancing these elements in their games. Now, we can observe the success of free-to-play games with continuously expanding content, with games like Roblox, Fortnite, and Minecraft ranking among the top 5 PC titles worldwide by monthly active users.

As a result of this growing demand for deeper gaming experiences, UGC has become one of the key trends in modern gaming. Now, players are actively participating in creating and sharing their own content.

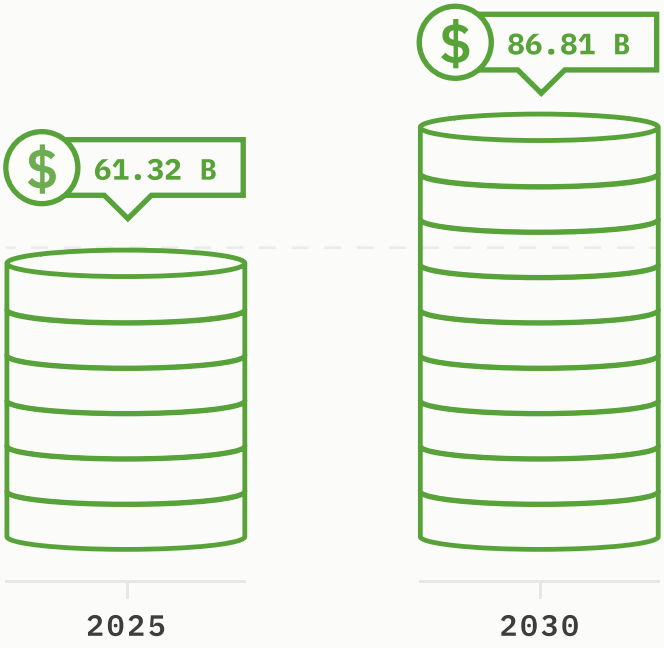
> User-generated content (UGC) is transforming games from defined experiences into evolving, community-driven platforms. The success of Roblox and Minecraft prove that gamers aren't just consuming content any more, they want to add their own creativity – building worlds, crafting storylines, and sharing creative ideas in real time. In essence, the relationship to the game itself shifts from a product one simply plays to a collaborative canvas where each user's contribution matters and make the game bigger and more desirable. In a world where the fight for attention has never been as important, this is a key component to creating highly engaged communities.

Guillaume Carmona
VP of Game Development at Room 8 Group

The console gaming market has also helped UGC thrive. It's projected to grow from $61.32B USD in 2025 to $86.81B USD by 2030, demonstrating a CAGR of 7.2% during this period.

GAMING CONSOLE MARKET

Market size in USD Billion | CAGR 7.20%



Source: Mordor Intelligence

Console modding has emerged as a new trend, opening up a world of customization and creativity for console players. Patch 7 for Baldur's Gate 3 introduced mod support on PS5 and Xbox Series X/S. This update allows players to customize their gaming experience with a variety of mods.

> We were the first service provider to be approved to bring modding onto consoles. Historically, modding has always been a PC gaming feature, and it's never really been on PlayStation, Xbox, and Nintendo systems. So several years ago, we worked hard on those relationships and ensured that we could provide a system that adheres to the requirements of each platform and works with their technical systems. We've done that, and now we have several dozen live games on each of those systems.

Scott Reismanis
CEO at mod.io

At the same time, games are becoming more accessible with advancements like cloud gaming, which eliminates the need for expensive hardware and allows people to get seamless experience on any device.

50% In 2023, 50% of consumers worldwide had already used cloud gaming services.

> For me, cloud gaming means leveling out the playing field for everyone, everywhere. No matter what equipment you have, as long as you have access to a screen, you can play the latest and greatest games. With that entry barrier gone, multiplayer gamesin particular can create much wider communities, erasing barriers worldwide.

Benjamin Paquette
Senior Game Director
at Room 8 Group

Of course, our interviewees feel that the gaming industry is still under high budget pressure.

As a result, many studios strive to personalize the gaming experience in the early stages of their games by involving players in development and apply new technologies allowing them to reduce costs.

> I think there is still bigger pressure on the budget in the gaming industry. It's pushing a lot of studios to launching many betas, early stage things and unfinished projects. To finish the game in a good shape and make it attractive and functional for the player, it's important to gather the feedback and involve with the player in early stage. If you do it smart, you can increase the probability that when you launch the final product it will be successful.

Štěpán Kaiser
Global GameTech Lead
at Revolgy

For example, our experts believe that AI is helping lower the barriers to entry into the gaming market.

A decade ago, even indie projects required massive budgets, but today, developers have access to a variety of AI tools, making game development more affordable and less expensive. Unreal Engine, for instance, offers users solutions for integrating AI into their games, while Unity launched Unity Muse, bringing generative AI directly into the Unity Editor.

> In terms of development models, we're seeing a massive democratization of development right now: there are lower costs to entry to building a game than there were a decade ago. Ten years ago, if you wanted to build an indie game, you were still looking at million-dollar startup costs or a really excruciatingly slow development cycle. But now, technologies such as generative AI are playing an important role in democratizing game development access.

Shayan Sanyal
Global Games Industry BD Leader at AWS

With fewer entry requirements, largely due to AI, global game distribution via cloud platforms, and player-driven content creation, indie developers are now competing with AAA titles in the market.

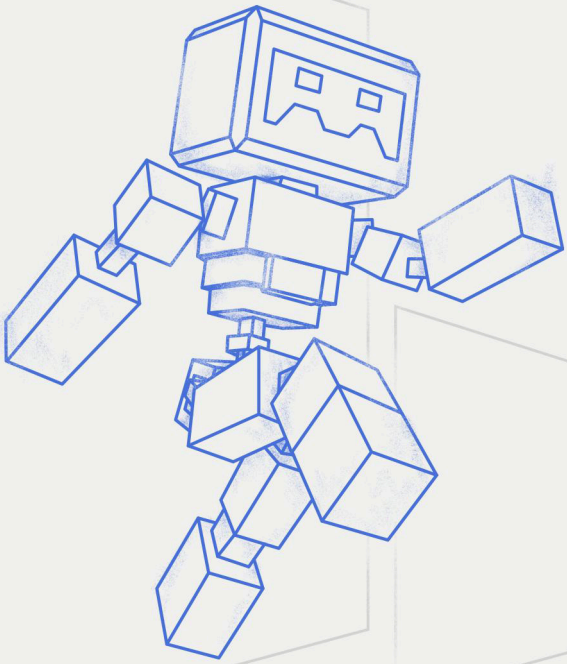
In 2024, the indie games market reached high revenue levels, nearly matching the revenue of AAA and AA titles for the first time. From January to September 2024, indie games made $4B USD on Steam, or 48% of total full-game revenue.

> In 2024, nearly 20,000 games launched on Steam, whereas 10 years ago, there were only 1,000 games released on this platform. And the costs of producing games have been heartbreaking for everyone over the last 2 years. Taking into consideration layoffs and customers' requirements for graphics quality, studios face huge costs and technological capacities. And this is where we can see a lot of single-dev games like Stardew Valley, Balatro, and Manor Lords have success. The net gets wider as both audience and developers grow.

Benjamin Paquette
Senior Game Director at Room 8 Group

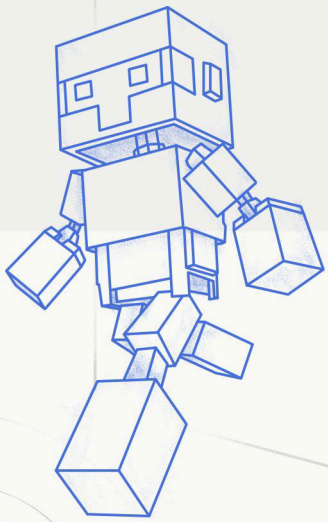
So, the gaming industry is evolving rapidly, with UGC, cloud gaming, and AI leading the way.

Let's explore these trends in more detail!



User-generated content (UGC) is rapidly gaining popularity in the gaming industry, transforming how players interact with each other and their favorite titles.

Nowadays, gamers can be active creators, designing and sharing custom content within games for others to experience.



UGC

OR WHEN **FANS** BECOME **CONTRIBUTORS**

> Beyond extending a game's longevity, UGC also harnesses the collaborative power of a global community in ways no single studio could achieve on its own. When players become co-creators, their boundless creativity breathes life into modes and storylines that can even surprise the original designers. By integrating user-made content, developers can explore uncharted territory and learn from the evolving ways the community interprets or reshapes core mechanics. This feedback loop of experimentation and adaptation propels the game forward, opening a dialogue that benefits both players and producers.

Guillaume Carmona
VP of Game Development at Room 8 Group

UGC has the potential to improve different aspects of a game, leading to a more personalized and engaging experience for players. Based on our interviews, some key areas where UGC can be implemented include:

Items and Objects:

Players can create and customize items, weapons, armor, or other in-game objects.

Character Creation and Customization:

UGC enables players to design their own characters, from physical attributes to clothing and accessories. For instance, the recently released inZOI: Character Studio allows players to craft highly personalized Zoi characters with extensive customization options, share their creations, and engage with others' designs.

UI Enhancements:

Players can develop and share custom user interface (UI) elements, such as HUDs, menus, or hotkeys.

Gameplay Modifications:

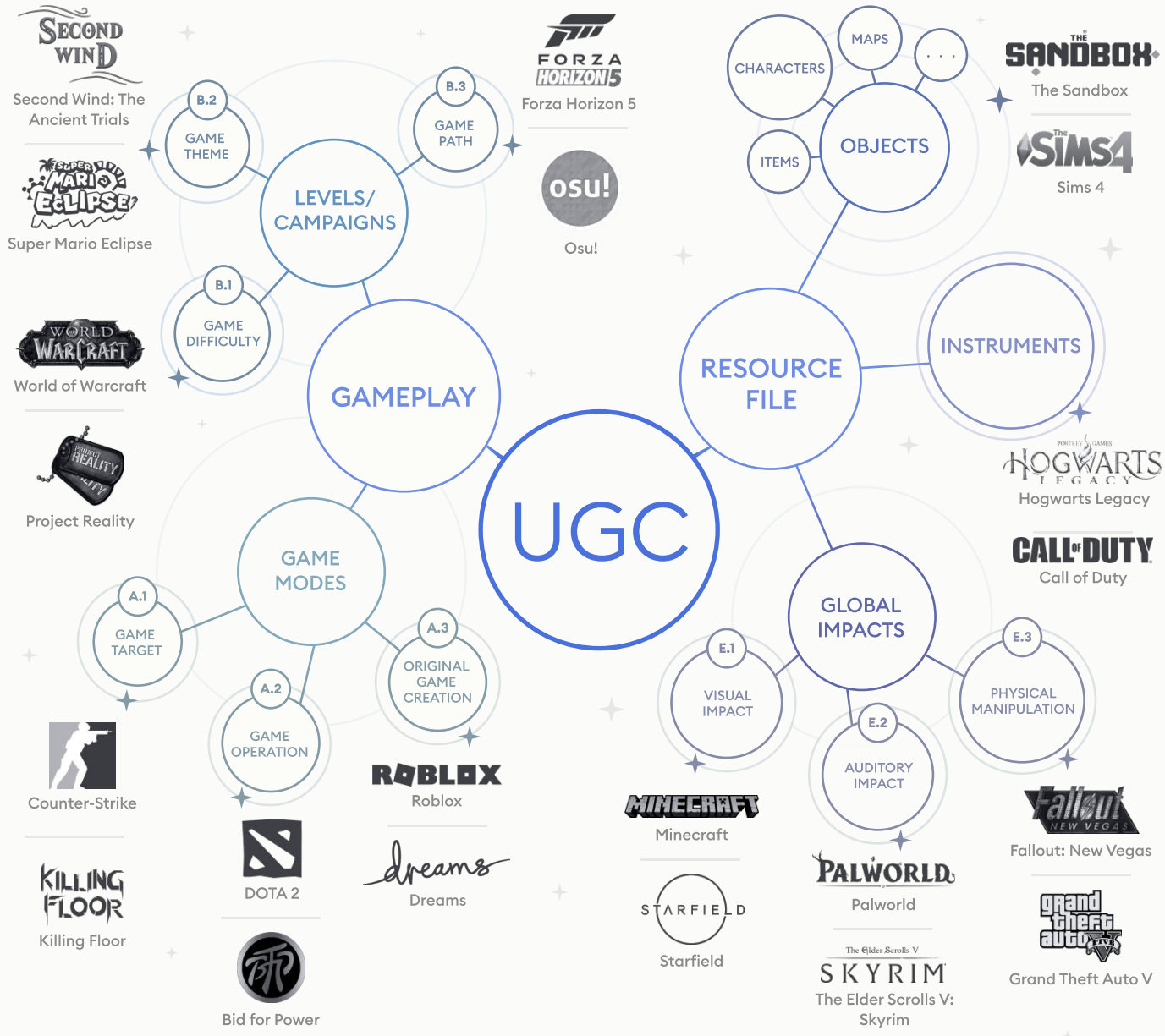
UGC can extend to the creation of custom game modes, maps, or even entirely new gameplay mechanics.

Level Design:

Players can construct and share their own levels, challenges, or puzzles.

Social Interactions:

Social Interactions: UGC can facilitate social interactions between players, such as the creation and sharing of in-game events, guilds, or communities.

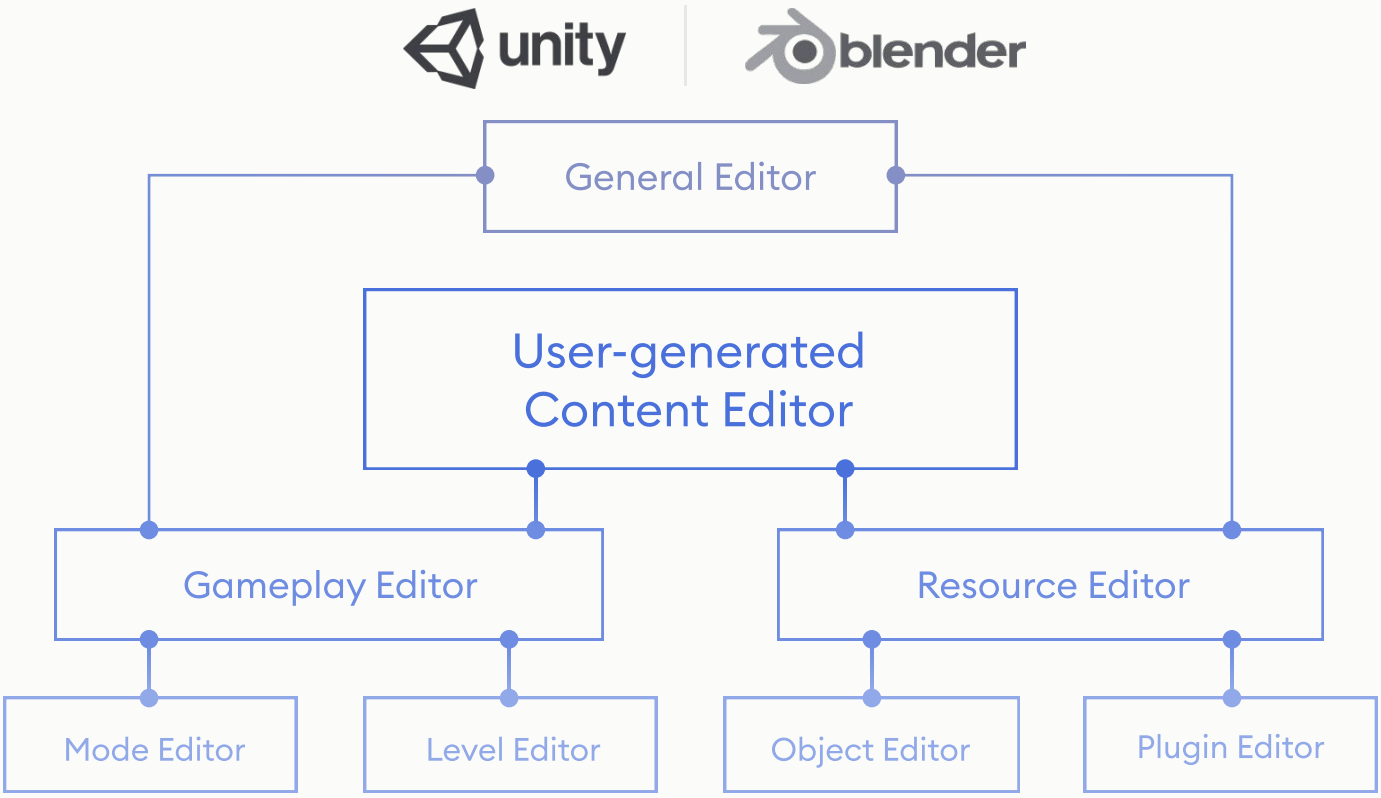


Source: arXiv

> There's so much that UGC can do. It depends a lot on the game and what their engine permits. If it's a simulation game, they like to introduce new trucks, cars, trains, planes, and boats. If it's a shooting game, they want to introduce new levels, characters, and skins. Then, it's challenging and interesting new biomes and worlds. It's quality of life and UI enhancements. Finally, the gameplay. You can potentially introduce the ability for players to influence the gameplay that the game offers.

Scott Reismanis
CEO at mod.io

There's a range of tools available for UGC creation, from general-purpose software like Unity and Blender to specialized in-game editors. For example, level editors are used in Super Mario Construct, while mode editors enable custom game modes in games like Warcraft III: Frozen Throne's World Editor and Battlefield 2042's Battlefield Portal.



WORLD EDITOR
of Warcraft III: Frozen throne

ULTIMATE DOOM BUILDER
of Doom

TYNKER'S TEXTURE PACK EDITOR
of Minecraft

CHEAT ENGINE
for single-player offline game

BATTLEFIELD PORTAL
of Battlefield 2042

SUPER MARIO CONSTRUCT
of Super Mario series

IN-GAME CHARACTER EDITOR
of Cyberpunk 2077

TES5EDIT
of The Elder Scrolls V: Skyrim

Source: arXiv

Where Can UGC Be Applied?

When talking about UGC, it's necessary to highlight that it's mainly driven by the habits and preferences of younger players.

This trend has contributed to the success of games like Fortnite and Roblox. Along with Minecraft, these games accounted for 19% of total playtime last year.

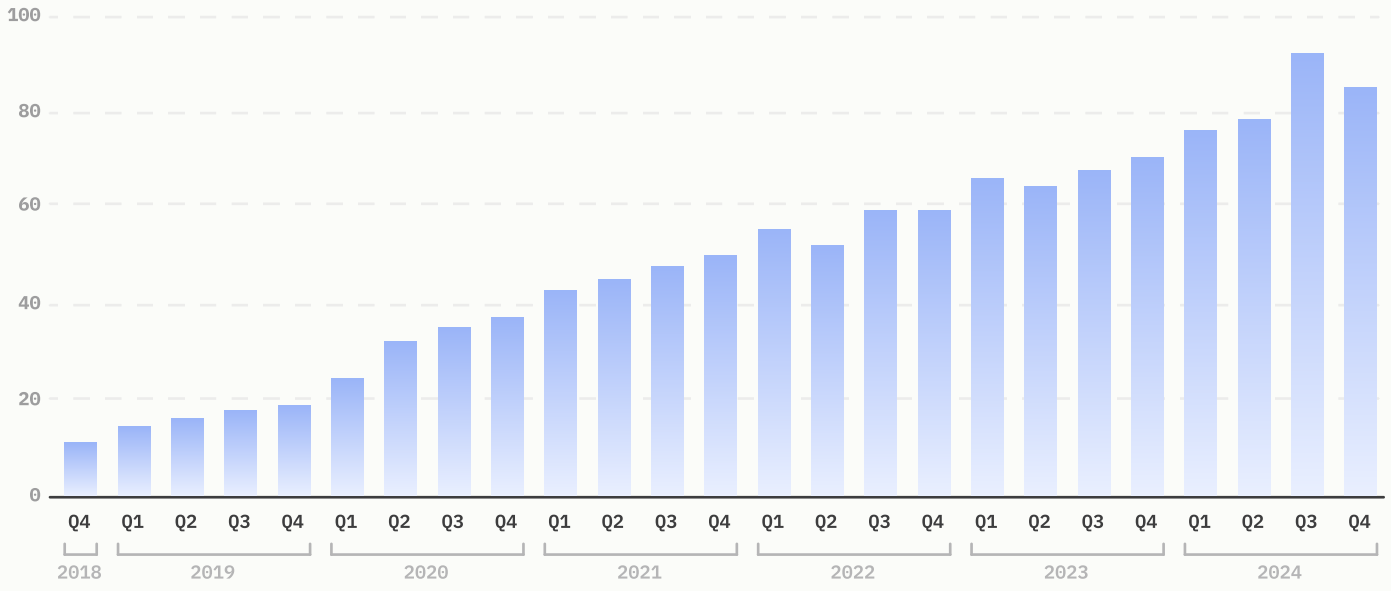
> UGC is already at the heart of some of the most successful games and platforms today and for the past 10-15 years. The "big 3" Minecraft, Roblox, and Fortnite, but also games like Skyrim, Farming Simulator, Little Big Planet, and No Man's Sky, benefit a lot from UGC. UGC is a tool for creativity, extends the lifespan of games, helps build communities, increases player engagement and retention, reduces the cost of development, and generates new revenue streams for creators.

Yann LeTensorer
VP of Technology
at Room 8 Group

Thanks to the extensive UGC ecosystem, more than 85.3 million users around the world were actively playing Roblox games daily during the fourth quarter of 2024.

DAILY ACTIVE USERS (DAU) OF ROBLOX GAMES WORLDWIDE

From 4th quarter 2018 to 4th quarter 2024 (in millions)



Source: Mordor Intelligence

As for Fortnite, it had over 650 million registered players by the end of 2024. The number of creators in Fortnite also saw a significant increase, tripling from 24,000 in 2023 to 70,000 in 2024.

2024 OVERVIEW

70K
Total Creators

198K
Total Islands Published

Source: Epic Games

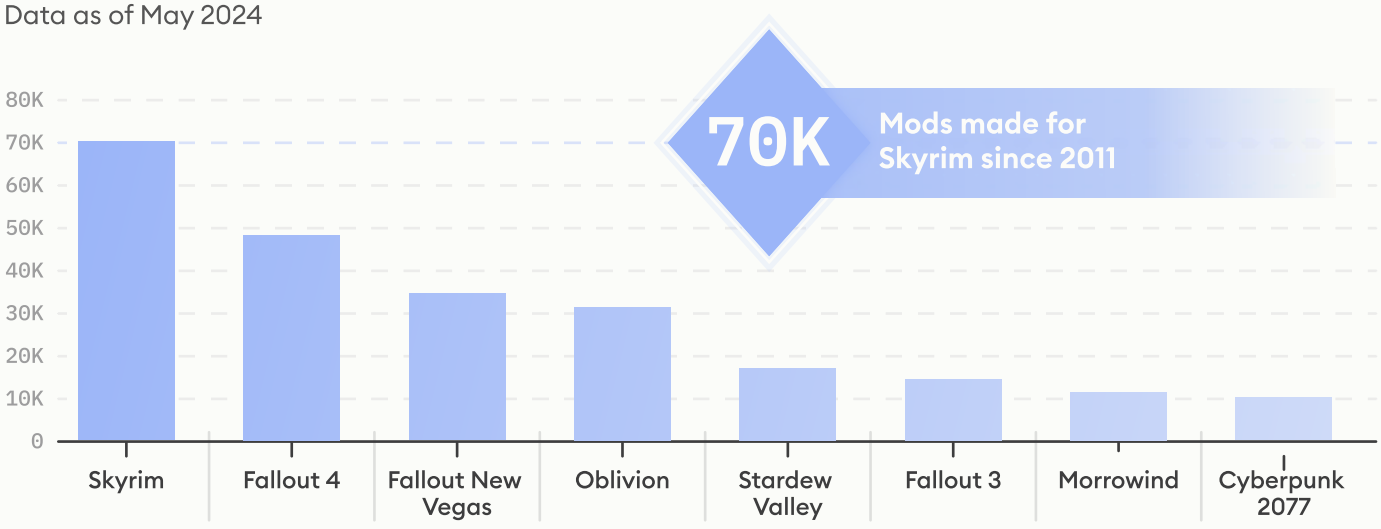
> I can really see third parties contributing to the games. Currently, more and more game studios are coming with sandboxes. If I take Fortnite as an example, they have Unreal editor which is a huge user-generated content technology and they took it from the ground up because they made it very meaningful in their ecosystem. It means that actually everyone currently can be a Fortnite developer, creating levels, entire universes, and sharing it with friends and with the community or with everyone, which is good.

Jan Sechovec
Technology Director at Revolgy's Cloud Gaming Department

It's also worth noting that UGC thrives well in the RPG and action genres. The modding community is strong, especially for games like Skyrim, which has over 69,000 mods on Nexus and 27,000 on Steam.

NUMBER OF MODS FROM VARIOUS GAMES ON NEXUS MODS

Data as of May 2024



Source: Nexusmods.com

> We looked at all the game genres, what works within each genre, and how UGC impacts them. The strongest genres for UGC were RPGs and action titles.
> I guess there's a very long history of UGC in games like Baldur's Gate, Skyrim, and similar titles.

Scott Reismanis
CEO at mod.io

Besides, UGC has the potential to broaden established IPs by enabling fans to create scenarios and narratives that may motivate official updates or spin-offs.

For example, Kodansha hosted a contest on Roblox where players created Attack on Titan-themed games. The winner received funding to develop their project, helping the IP reach a new audience.

> UGC can open entirely new possibilities for established IPs. When fans build upon a game world, they often devise scenarios and narratives that go far beyond the original scope. Such expansions can inspire official content updates or even spin-offs, demonstrating how a community's passion and inventiveness can steer the trajectory of a franchise. Over time, the synergy of user and developer co-creation transforms the very definition of what an IP can be, forging deeper, more expansive connections between the game, its world, and its community.

Guillaume Carmona
VP of Game Development at Room 8 Group

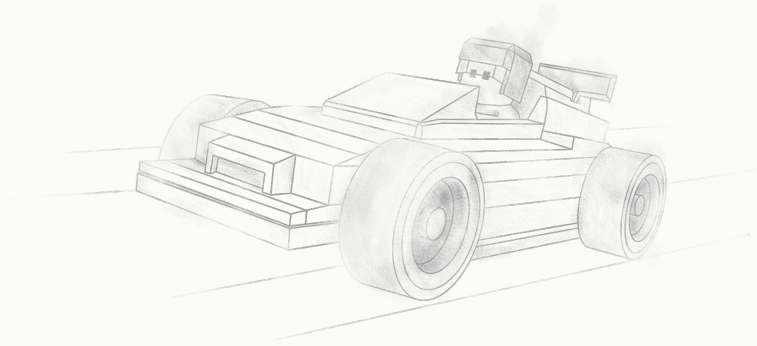
To showcase the effectiveness of UGC, our interviewees shared real-world use cases:

Most recently, Baldur's Gate 3 launched their official mod support using our services. So, it's been incredible to work with the team at Larian and a title that is game of the year.

Scott Reismanis
CEO at mod.io

One of our successful cases of UGC is a racing game where players can edit and create their own tracks. We had 5 basic tracks, 2-3 minutes of gameplay each. By providing players access to our editor we increased retention by 10% within a day, from 35% to 45%.

Benjamin Paquette
Senior Game Director
at Room 8 Group



One example comes from working on Far Cry, where dev teams integrated an in-game editor allowing players to create and share custom maps, scenarios, and entire gameplay experiences. Originally designed for light modifications – like tweaking terrain or placing props – the community quickly embraced it to produce expansive, creative designs far beyond our initial vision. Even if it was the very early stage of UGC, the way the community embraced and the creativity shown there was absolutely mind blowing.

Guillaume Carmona
VP of Game Development
at Room 8 Group

Farming Simulator 19 (the version we shipped when I was COO of the company) had UGC at its heart. Thousands of mods were done by creators (generating billions of downloads) allowing a large variety of gameplay.

Yann LeTensorer
VP of Technology
at Room 8 Group

Challenges *of* UGC

However, our interviewees also see some challenges of UGC connected to accessibility, legal issues, and quality control.

Accessibility

Game developers may use in-house tools for professional design that are too complex for the average player. This can be a barrier to entry for players who want to create and share their own content, as they may not have the skills or experience to use these advanced tools. Accessibility becomes a significant challenge when developing UGC tools for players.

POSSIBLE SOLUTION:

- Put yourself in the user's shoes and design a seamless service that allows creators to easily and quickly generate new content.

> One of the most important things regarding UGC is paying attention to accessibility. I've often seen this mistake among developers where they take their in-house tool – designed for developers – and put it in players' hands. But players need more intuitive tools to understand things better. For example, the designer wanted to make a Lego block approach for creating tracks in the game, so players would have to place thousands of bricks to make their tracks. We quickly figured out this would take too long for players to build a track and instead switched to big segments of tracks (think Playmobil), which turned out to be much easier and faster for them.

Benjamin Paquette
Senior Game Director
at Room 8 Group

Legal Restrictions

Secondly, UGC policies require content to be respectful and avoid infringing on intellectual property (IP).

POSSIBLE SOLUTION:

- Comply with DMCA and other content guidelines and IP regulations.
- Use takedowns when the content isn't appropriate.

> We have an acceptable-use policy at mod.io, which follows standards on UGC ownership platforms. You need to share content that is respectful of other community members and doesn't expose information, or that isn't based on other people's IPs.
>
> The legal conjecture that exists around UGC is that much content is fan-inspired, and some IPs have fan content guidelines. You can release fanfic and fan films around the Star Wars IP as long as you follow certain rules. For us, it's always respecting DMCAs and takedowns that IP owners have when they see their content being appropriated in a way that they don't approve of.

Scott Reismanis
CEO at mod.io

> The concern arises when individuals produce subversive, insulting, or aggressive material. To mitigate this, developers should integrate moderation and reporting tools from the outset, enabling rapid identification and removal of inappropriate content. As the volume of UGC grows, manual oversight alone can become impractical; artificial intelligence systems capable of scanning text, images, and even gameplay elements could offer a scalable first line of defense. However, human review remains essential for nuanced decision-making, especially in borderline cases.

Guillaume Carmona
VP of Game Development at Room 8 Group

QA and Cross-platform Compatibility

A key challenge in UGC for gaming is the growing need for quality control and technical solutions to ensure cross-platform compatibility.

POSSIBLE SOLUTION:

- Have a mod QA team that can verify mods.
- Develop tools for mod support and cross-platform compatibility.

> For consoles, you need to have a mod QA team that verifies the content created and validates it before putting it online. Weak content will be rejected, and a certain level of quality is guaranteed, as well as a legal check. On PC, it can be more challenging based on how you do it, so the best way is to create a "mod hub," an interface between the modder and the game itself. If modders must submit through the mod hub, you can use the same QA methods as for consoles.

Yann LeTensorer
VP of Technology
at Room 8 Group

> From a technical point of view, cross-platform mod support is becoming a more required feature. The existing ways that mods work on PC are often not cross-platform compatible. At the moment, we're taking steps to go earlier in that and help studios architect UGC support in their games. So, it will work in a dynamic, accessible, and cross-platform-compatible manner.

Scott Reismanis
CEO at mod.io

Monetization

Monetizing UGC and fostering creator economies in games like Roblox and Fortnite offer opportunities but also challenges. Players are used to free mods, so costs need justification. While professional content creators might produce higher-quality content, it's essential to clearly communicate the value to players to gain their support.

POSSIBLE SOLUTION:

- Clearly communicate the added value that players will receive from paid content.
- Offer transparent pricing.

By overcoming these barriers, developers can unlock the full potential of UGC, fostering a dynamic and collaborative community where players can actively shape their gaming experiences and express creativity.

What Does the Future Hold for UGC?

The integration of UGC is not limited to a specific genre or platform. It has found a place in a diverse range of games, including:

Little Big Planet

Level Creation Tools

Divinity: Original Sin 2

Modding Community

The Elder Scrolls V: Skyrim

Extensive Modding Capabilities

Halo Forge

Custom Map Creation

Super Mario Maker 2

Level Design Tools

Grand Theft Auto V

Modding Scene

Earlier interviewees indicated that new generations are immersed in a contemporary creative environment fostered by games with UGC. Therefore, there is huge potential for its further integration into genres where it has not been traditionally prevalent. This could include genres like sports, racing, or strategy games, where UGC could take the form of custom teams, tracks, or scenarios. TrackMania, Journey of Wrestling, and Zeepkist showcase how players are exploring new ways of playing in traditional games. By incorporating UGC into these genres, developers could potentially increase player engagement and satisfaction.

However, to further leverage this trend, there is a need for enhanced tools that streamline content creation and moderation. By developing more intuitive and accessible tools, game developers can empower creators to produce high-quality content efficiently, driving innovation and profitability. For example, Fall Guys players created 230,000 levels in just 48 hours using the new Fall Guys Creative Construction tools, according to a Fall Guys tweet. The "Tool Up" update increased the Budget Points from 1,000 to 2,000 and introduced several new features, including Object Overlapping, a Music Selector, new rounds, cosmetics, and bug fixes.

We're seeing a growing trend towards players themselves becoming creators, along with an increasing focus by developers on encouraging them to produce content.

Keeping Users' Creativity Alive

According to our interviewees, one of the ways to do it is to create themed events that can be connected to specific celebrations. For instance, a Halloween event could allow players to design spooky costumes and haunted houses. A New Year's event could inspire players to create festive decorations, fireworks displays, or unique countdown events. The possibilities are virtually limitless.

Moreover, themed events can add a sense of community and shared experience among players. By participating in these events and creating content for them, players can connect with one another on a deeper level. Themed events can also serve as a platform for showcasing player talent and creativity, and they can provide a sense of accomplishment and recognition.

As the creators invest countless hours and efforts into creating new experiences, one of the strongest ways to inspire players to be creative is to encourage them with monetary rewards.

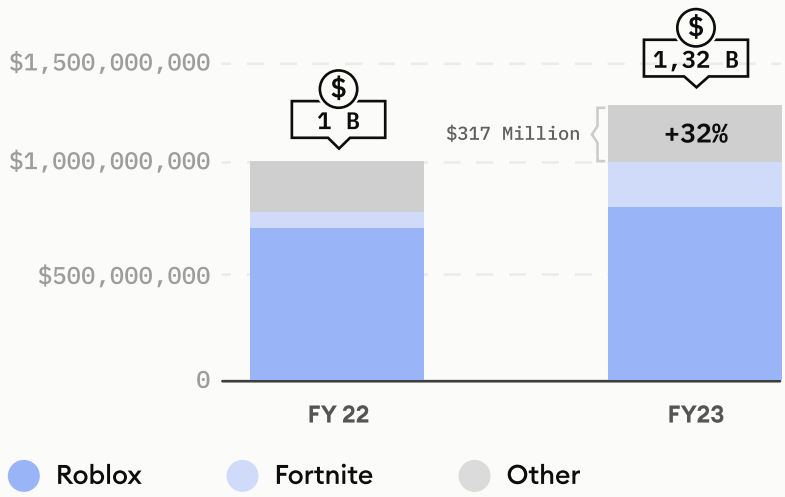
> There's a lot of consideration when it comes to the monetization of UGC and the opportunity surrounding creator economies and studios wanting to do projects like Roblox and Fortnite. One is: How do we make sure that it's wanted by players? I guess modding has historically been free in games. And so, the argument is that we really want creators to be able to pursue this as a career and not just a passion if they so desire. We believe doing so will allow them to apply more time, effort, and energy to polished, higher-quality content.

Scott Reismanis
CEO at mod.io

In 2023, developer payouts significantly increased, mainly due to Fortnite's Creator Economy 2.0 launch and Roblox's consistent growth. Overall, developer payouts in the industry saw a substantial 32% increase, rising from $999.5M USD to $1.32B USD.

Fortnite's payouts to developers increased by over 300% year-over-year, reaching $150M USD. This accounted for almost half of the industry's total growth and represented the largest percentage growth among all games.

UGC GAMES DEVELOPER PAYOUTS FY22 AND FY23



"Other" includes payouts made to creators from Minecraft Bedrock, Minecraft Java, GTA V, The Sims 4, Ark Survival, League of Legends, Zepeto and Rec Room and more.

Source: Naavik

	Q2 2024 LTM average earnings	2019 – Q2 2024 LTM growth
TOP 10 CREATORS	$30M	5.0x
TOP 100 CREATORS	$5M	5.3x
TOP 1000 CREATORS	$753K	6.2x

Source: Roblox

Recently, Roblox announced that they've paid out $280M USD to creators in Q4 2024 alone, for a total of nearly $930M USD for the year. This dwarfs the $352M USD Fortnite reported paying to creators over 2024.

The data regarding earnings within the Roblox creator community reveals that the top 10 creators have an impressive average earning of $30M USD. Meanwhile, the top 1000 creators earn an average of $753K USD, reflecting a more modest yet noteworthy earning potential.

Summing up, supporting UGC development requires building a community of players willing to invest in content creation. This can be achieved in various ways, including offering monetary rewards and creating an environment where their efforts are appreciated and valued by other players.

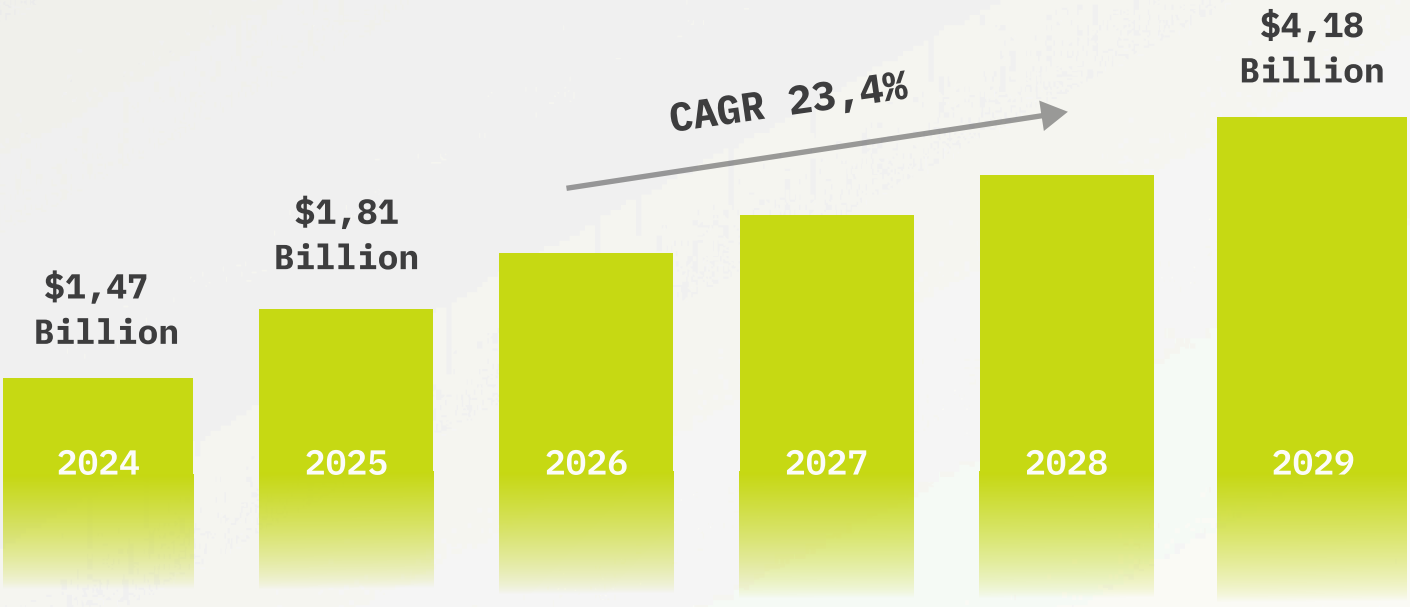
FAST ADOPTION *OF* AI *WILL MAKE* YOU BETTER *AT* YOUR JOB

The generative AI market in gaming has grown rapidly and is expected to continue expanding. It is projected to increase from $1.5B USD in 2024 to $1.8B USD in 2025, with a compound annual growth rate (CAGR) of 22.8%.

Factors driving this growth include competition in the gaming industry, demand for player-centric content, the need for scalability and flexibility in design, cost, and time efficiency in development.

GENERATIVE AI IN GAMING GLOBAL MARKET

Report 2025

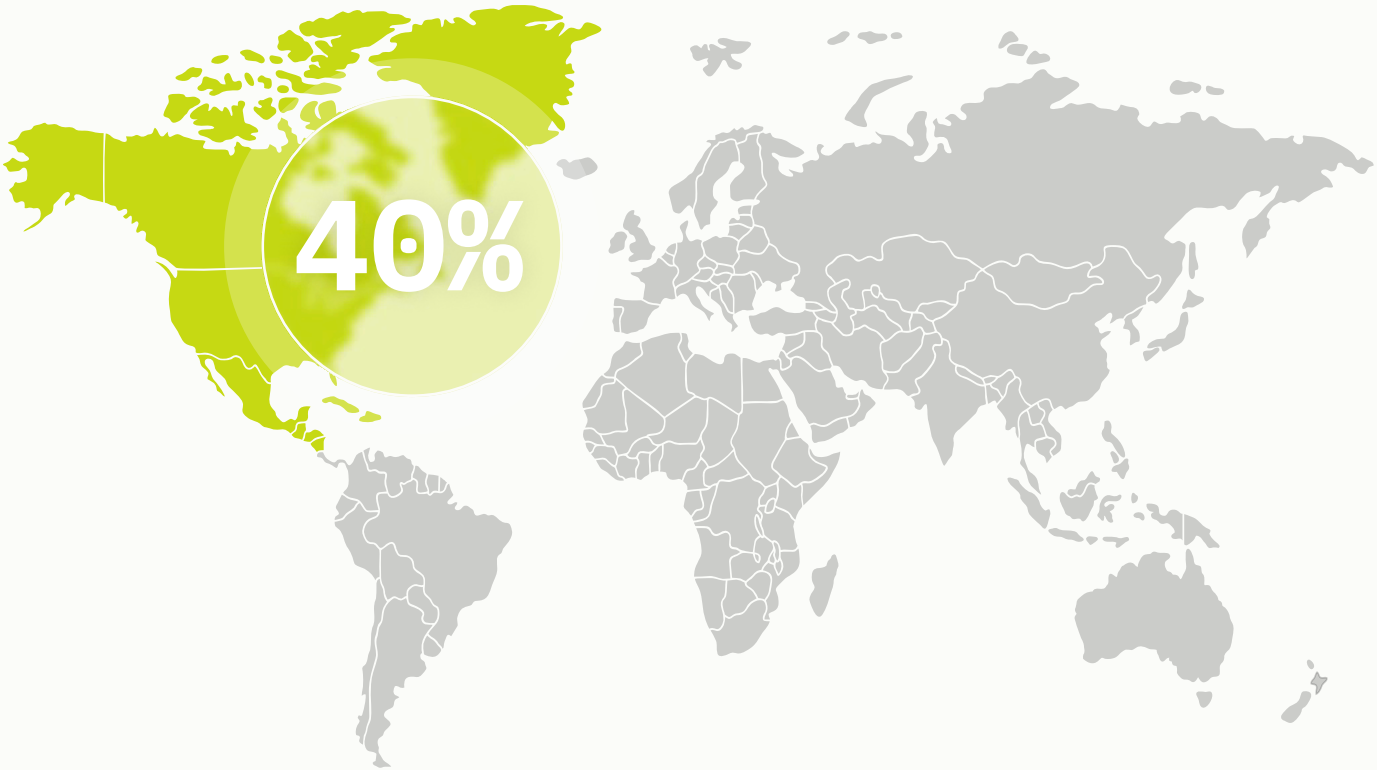


Source: The Business Research Company

> AI is permeating every aspect of our lives. We're seeing it in AI agents, virtual digital humans, being used for sales, onboarding, you name it. It's capable of automating tasks, providing information, and even simulating human interaction. The potential is vast.

Manolis Emmanouilidis
Co-Founder at Arcware

North America is the biggest gaming market for AI with a 40% market share.

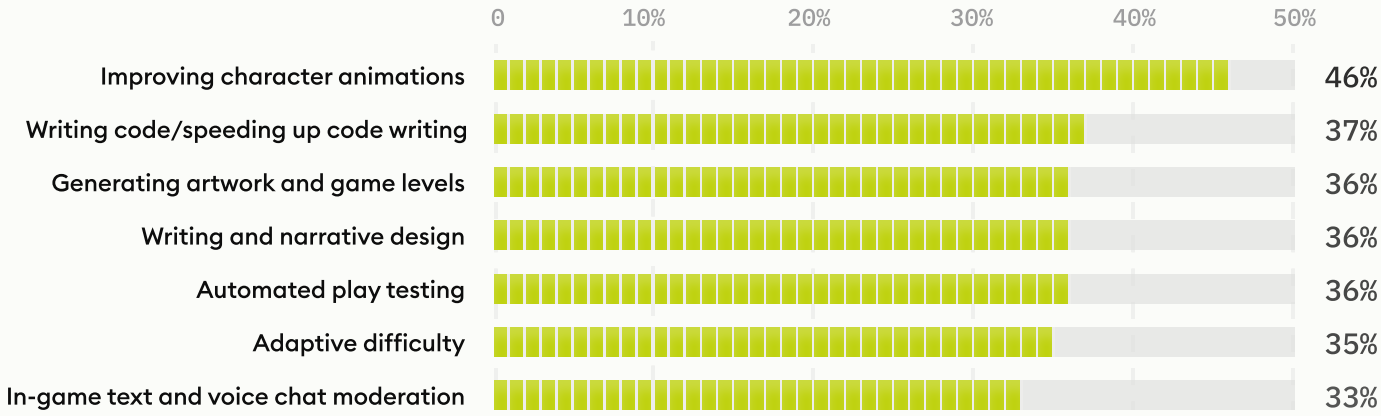


Source: technavio

It's important to note that AI in gaming has the potential to be both positive and negative. However, success ultimately lies in learning how to use it to maximize productivity and support those responsible for making games.

Ways **AI-generated Content** Influences **The Gaming Experience**

Game developers are using AI in a number of key areas to enhance their games. The top three areas where AI is being applied are enhancing animations (46%), automating code writing (37%), and generating art and levels (36%).



Source: Games.gg

AI is enabling more interactive experiences; it is revolutionizing the way dialogue is generated in video games. It has the ability to enhance storytelling and player engagement through dynamic interactions.

> We're seeing a lot of our customers integrate AI into non-playable characters. For instance, Saltwater Games and Jam & Tea actively use AI in their game development. With the help of AI, casual conversation between a player and a non-playable character is completely changing. They can literally talk about anything. If they want to have a conversation for half an hour, they can! I believe that things like that are going to change the way we play and interact with games over time.

Shayan Sanyal
Global Games Industry BD Leader at AWS

AI can be used for UGC, improving the modding process through texture upscaling and creating high-definition content. This not only upgrades visual quality but also saves creators' time.

> If you look at the modded games, the main application of AI has been upscaling and creating higher textures and HD-type content. So, it's mostly been upscaling mods created by hand in a very painstakingly detailed manner. AI has massively accelerated those workflows and pipelines.

Scott Reismanis
CEO at mod.io

Another AI use case is recommendation systems, which are transforming how players discover new games. By analyzing player behavior, gameplay history, and interactions, these AI-driven systems provide personalized suggestions that enhance user engagement. However, SDLC CORP experts noted that AI recommendations tend to suggest games or content similar to what players have enjoyed before. While this helps personalize experiences, it can also prevent players from exploring new types of games.
If players consistently choose familiar experiences, developers might be less inclined to innovate or experiment with new gameplay mechanics. This could make players more likely to get bored of gaming altogether. Therefore, it's necessary to design a system that strikes a balance between familiarity and exploration to engage people with their preferred genres while also giving them the option of something new.

> We see some opportunities for in-game recommendations – "If you like this game, let me recommend it to you." So, it's always a discovery of tools for customization because this is a real issue for players. AI is going to be a great tool for us to analyze their behavior.

Daphne Parot
CMO at Blacknut

Moreover, AI is revolutionizing game development by automating repetitive tasks that traditionally consume significant time and resources. This allows developers to focus on more complex and creative aspects of game design.

> I would say the AI will help with repetitive tasks in development itself. If you'd like to optimize something in the cloud, it's super easy to do it with the AI because it understands data and the overall model of that, and can really help you with battling with that.

Jan Sechovec
Technology Director at Revolgy's Cloud Gaming Department

> Most customers we work with view AI as a mechanism to automate undifferentiated heavy lifting. No game designer wants to spend hours building 400 different game items or 30 versions of the same character with different variations. People want to create worlds and design new maps.

Shayan Sanyal
Global Games Industry BD Leader at AWS

Ethical And Legal Considerations of AI

Integrating AI into game development brings challenges related to creative ownership and integrity. This, and other legal and ethical challenges, should be addressed seriously.

> First of all, I think it becomes a real discovery challenge because, whilst I really like the idea of democratizing content creation, there's no longer any scarcity. There will probably be 300 people who have made a new texture. How do you help players filter through the noise and find that gem that they really want? It becomes much harder with AI because the incremental cost of producing more content goes down and down. And then there's the legal side of it. Musicians and artists within gaming are very proud of their work and the influence that they've had over a long period of time. They don't want to see their work appropriated by AI without their permission.
> So make sure that if AI is used, it only uses assets that have been sourced with approval. That's quite a hard challenge, and it's a new one that we're going to have to face.

Scott Reismanis
CEO at mod.io

As AI technologies become more sophisticated, many developers are increasingly turning to these tools to improve some aspects of game creation, from asset generation to level design and gameplay testing. However, there is a risk of diminishing developers' core competencies. According to a CompTIA report, 55% of companies currently utilize AI, while 45% are investigating its future implementation.

> Here's the crucial point: It's all about how you choose to use AI. You can either leverage it as a tool to enhance your capabilities, or you can allow it to become a crutch that ultimately diminishes your own. I'm seeing a trend where developers are becoming overly reliant on AI, using it to speed up their workflow. While that can be beneficial in the short term, I worry that it could lead to a decline in fundamental skills. That's a real concern for the long-term health of the industry. We must use AI responsibly, ensuring that it empowers us rather than replacing us.

Manolis Emmanouilidis
Co-Founder at Arcware

A global survey conducted by Global Advisor across 31 countries revealed that 54% of respondents believe AI products and services offer more benefits than drawbacks. 54% expressed excitement about AI products and services.

However, 52% of survey participants admitted feeling nervous about them.

FEELINGS ABOUT AI

	Products and services using artificial intelligence have more benefits than drawbacks	Products and services using artificial intelligence make me excited	Products and services using artificial intelligence make me nervous
Agree 31 country-average			
Change since Dec. 2021	+3 ppt	N/A	+12 ppt
Highest	 Indonesia	 Thailand	 Australia
Lowest	 France, USA	 Sweden	 Japan

Source: Global Advisor survey

Moreover, there is a growing concern about the use of generative AI in the gaming industry. The percentage of respondents who believe AI has a negative impact has risen by 12%, now reaching approximately 30%. This suggests heightened fear that automation may lead to a decline in the quality and creativity of content.

However, our interviewees demonstrated another perspective on AI's role. They viewed AI as a tool for efficiency rather than a replacement for creative vision, emphasizing the importance of human-originated content.

> AI is not going to be a replacement for creativity. It becomes an assistant in everything related to game design, copywriting, et cetera. If you are a writer, designer, or creative leader, you need to bounce your ideas like developers often do when using code pairing. This is where AI comes in handy. It speeds up the mundane and repetitive tasks, enhances brainstorming quality and, generally, the better you use that tool, the more creative and efficient you become.

Benjamin Paquette
Senior Game Director
at Room 8 Group

> I honestly don't believe that there will be fully AI-generated games because the heart of the game is still the design, narrative, story behind it, et cetera. If you want to create a basic mobile game where you just want to make some quick cash, I can very easily imagine that it can be 100% AI-generated pretty soon, but if you want to do a big AAA title, I think it will still need a soul inside of it.
>
> I can't imagine people really want to listen to AI-generated music or go to AI concerts. And I think it will be the same for games because it's also part of the art.

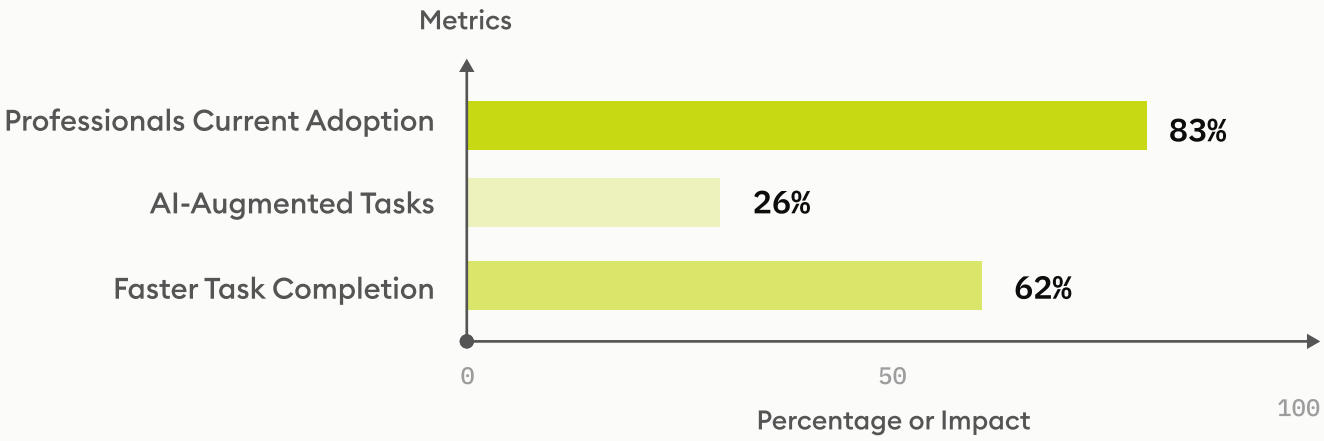
Štěpán Kaiser
Global GameTech Lead
at Revolgy

What Is **The Future** of **AI** in **Game Development?**

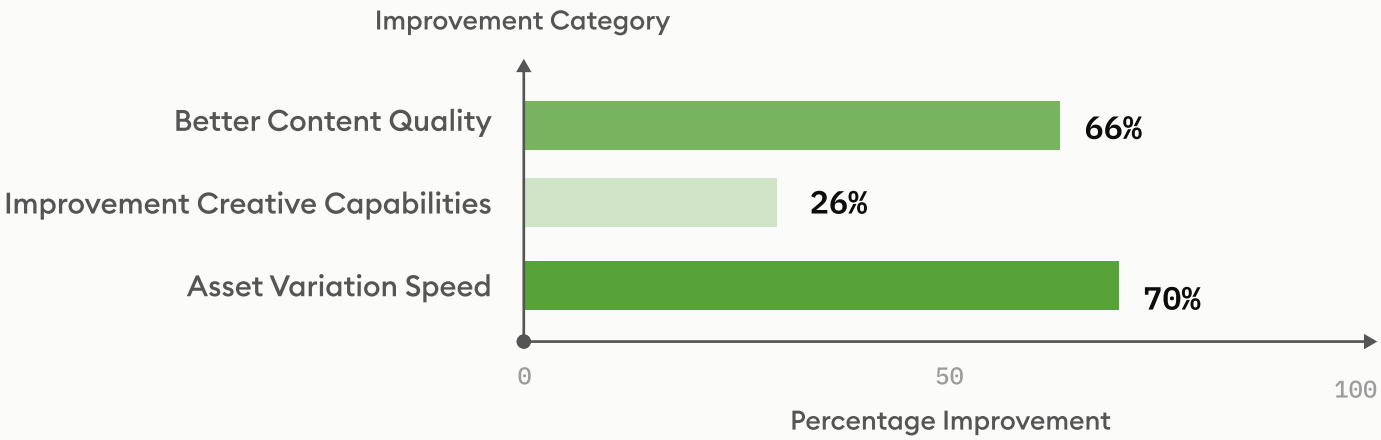
Harmonizing human creativity and AI tools is now the key question for the future of game development.

According to Magai, the integration of AI in creative industries has led to remarkable advancements. Professional adoption stands at 83%, indicating that a significant majority of professionals are embracing AI in their workflows. The research results show that this adoption translates into enhanced content quality (66%) and asset variation speed (70%).

AI ADOPTION AND IMPACT IN CREATIVE INDUSTRIES



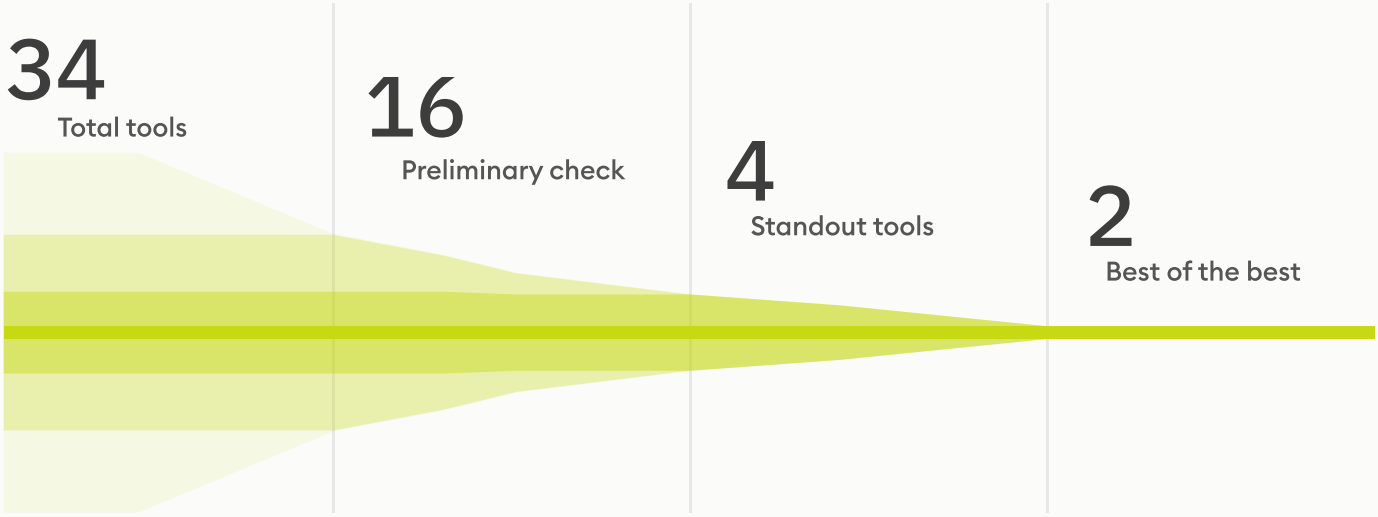
IMPACT OF QUALITY IMPROVEMENTS



Source: Magai

However, AI instruments should be chosen carefully. Room 8 Group evaluated 34 generative AI tools based on four key criteria: quality, control, legal compliance, and cost. While some tools showed potential, only 2 of them were suitable for professional use.

In general, the effectiveness of generative AI tools in 2D/concept art creation for game development is highly dependent on the specific production stage. While AI can be beneficial for mood board creation, ideation, art direction, and rendering, it's currently not suitable for tasks like polishing.



Source: Room 8 Group

> There are businesses that see AI as a tool to help them do things faster and more efficiently, but they don't see it as replacing the creative vision and the role of designers in the final product. So, they want that content to originate from the mind of a human.

Scott Reismanis
CEO at mod.io

The use of AI tools in the creative parts of game development is still far from widespread. This is due to a lack of effective tools and the audience's desire to support human creators. Players increasingly ask for filters on Steam to exclude games made with generative AI, as they want to support games created by passionate developers.

How Gaming Industry Leaders Are Experimenting with AI

Microsoft recently announced a new generative AI breakthrough called Muse, designed to assist with the development of gameplay ideas. Muse was developed through a collaboration between Microsoft Research Game Intelligence, TAI X, and the game developers from Ninja Theory.

Muse was trained on seven years of human gameplay data from the game Bleeding Edge. The goal was to test whether Muse could generate new gameplay footage. The final result showed that Muse could be used as a tool to predict and visualize how gameplay might change in response to developer input while still keeping the developer in the loop.

MUSE'S KEY FEATURES

- Creation of realistic game worlds
- Improved game physics
- Generation of intelligent NPC interactions
- Automated gameplay optimization
- Adaptive balancing

Source: Xpert

Muse's key features include the creation of realistic game worlds, improved game physics with profound collision analysis, generation of intelligent NPC interactions where characters are capable of making decisions autonomously, automated gameplay optimization in real time, and adaptive balancing of weapons, opponents, and challenges based on player style.

Thus, it is expected that more models like Muse will emerge in the future, and game studios will implement them more actively. Microsoft and other important industry players show significant interest in AI for game development.

Company	AI Project/Initiative	Key Features	Development Stage
Microsoft	Muse (WHAM model)	+ Gameplay sequences generation + Gameplay outcomes prediction + Game physics improvement	Experimental (2025 launch)
Adobe	Firefly for Substance 3D	+ Text-to-texture generation + AI background compositing + Real-time lighting/ perspective matching	Production-ready (2024 integration)
Unity Technologies	Unity AI	+ Texture, for generating PBR materials + Sprite, for generating 2D sprites + Muse chat	Widely adopted
NVIDIA	NVIDIA AI	+ Noise reduction in ray-traced images + Shader performance improvement + Realistic characters creation	Advanced development

Source: Microsoft, Adobe, Unity, NVIDIA

This growing investment suggests that AI will play a significant role in content creation, automation, and personalization in the future. But at the same time, human creativity will remain highly valuable in games.

CLOUD GAMING: CAN IT SCALE AND SUCCEED?

The evolution of gaming has impacted cloud gaming development – promising technology with considerable challenges. Our experts observe that players seek seamless access to games without needing expensive, powerful hardware and game installation.

But at the same time, they see zones of improvement, like overcoming infrastructure limitations and building a scalable economic model that ensures sustainability for both providers and users.

Despite hurdles, cloud gaming is becoming an important part of the shift toward digital convenience. It reflects the demand for simplicity and accessibility.

> Cloud gaming is mainly about simplicity, cross-platform play, and access to high-quality games for those who do not have high-end consoles or PCs. So, there is instant game access. But I am not sure if this is key for the gaming industry. It also requires large infrastructures, stable internet connection, and dealing with latency issues.

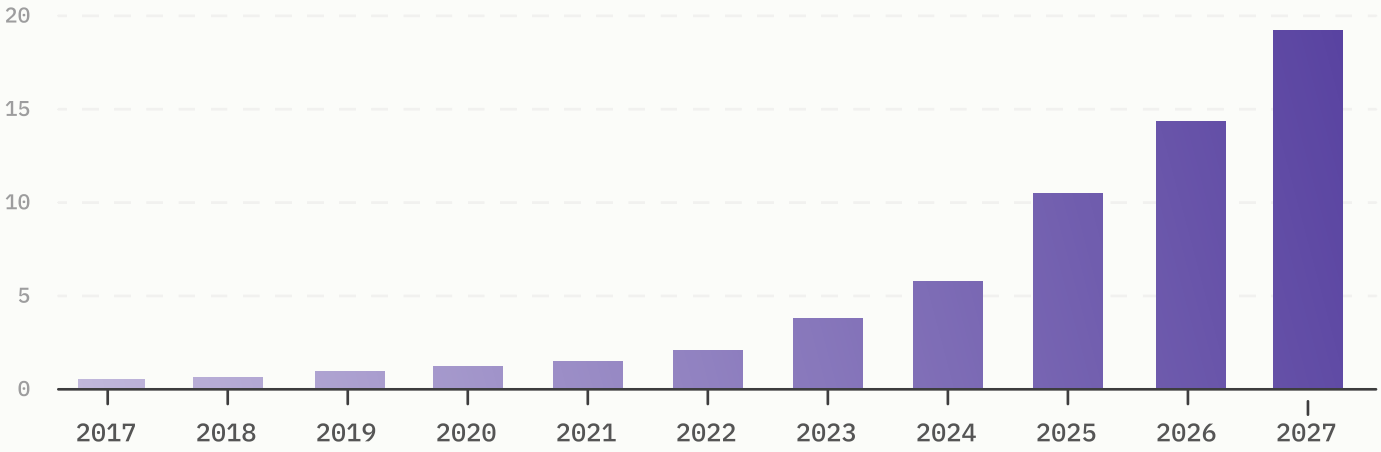
Yann LeTensorer
VP of Technology
at Room 8 Group

The cloud gaming industry has shown significant growth in recent years.

According to Statista, market revenue increased from $1.1B USD to $6.9B USD in 2020-2024 and is projected to hit $18.7B USD by 2027. The number of cloud gaming users is also growing considerably: the player base has expanded more than 6 times, from 62.5 to 395.9 million people in the period between 2020 and 2024.

GLOBAL CLOUD GAMING MARKET REVENUE FROM 2017 TO 2027

In billion U.S. dollars



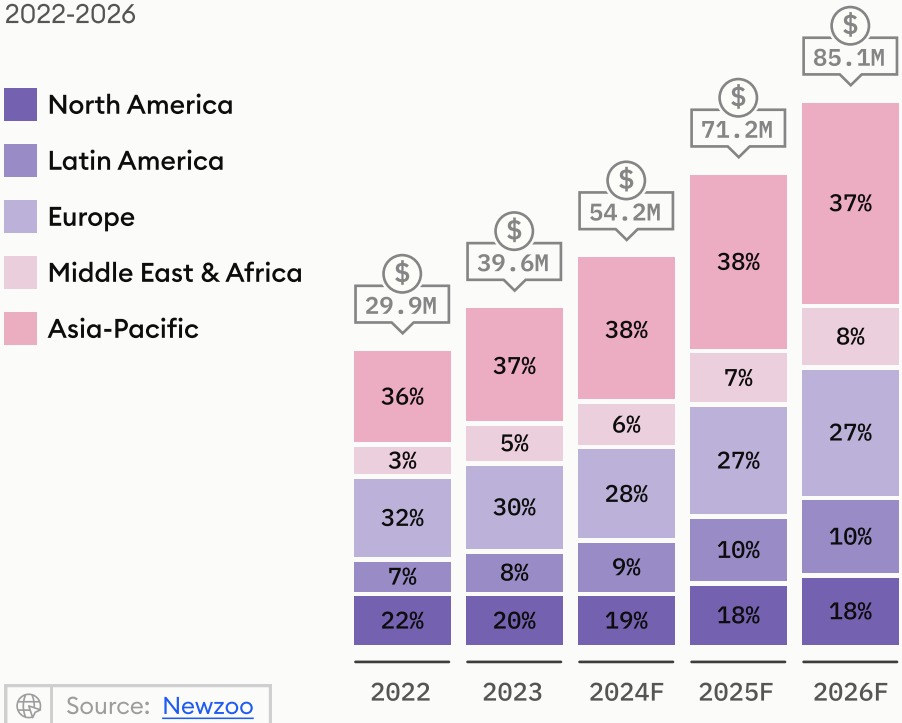
Source: Statista

Asia-Pacific is the key region for cloud gaming usage.

In 2023, 37% of paying cloud gaming users were in this region. This figure is expected to grow in 2025-2026.

CLOUD GAMING PAYING USER FORECAST PER REGION

2022-2026



Source: Newzoo

Global companies are actively distributing cloud gaming services around the world to cover new markets and audiences.

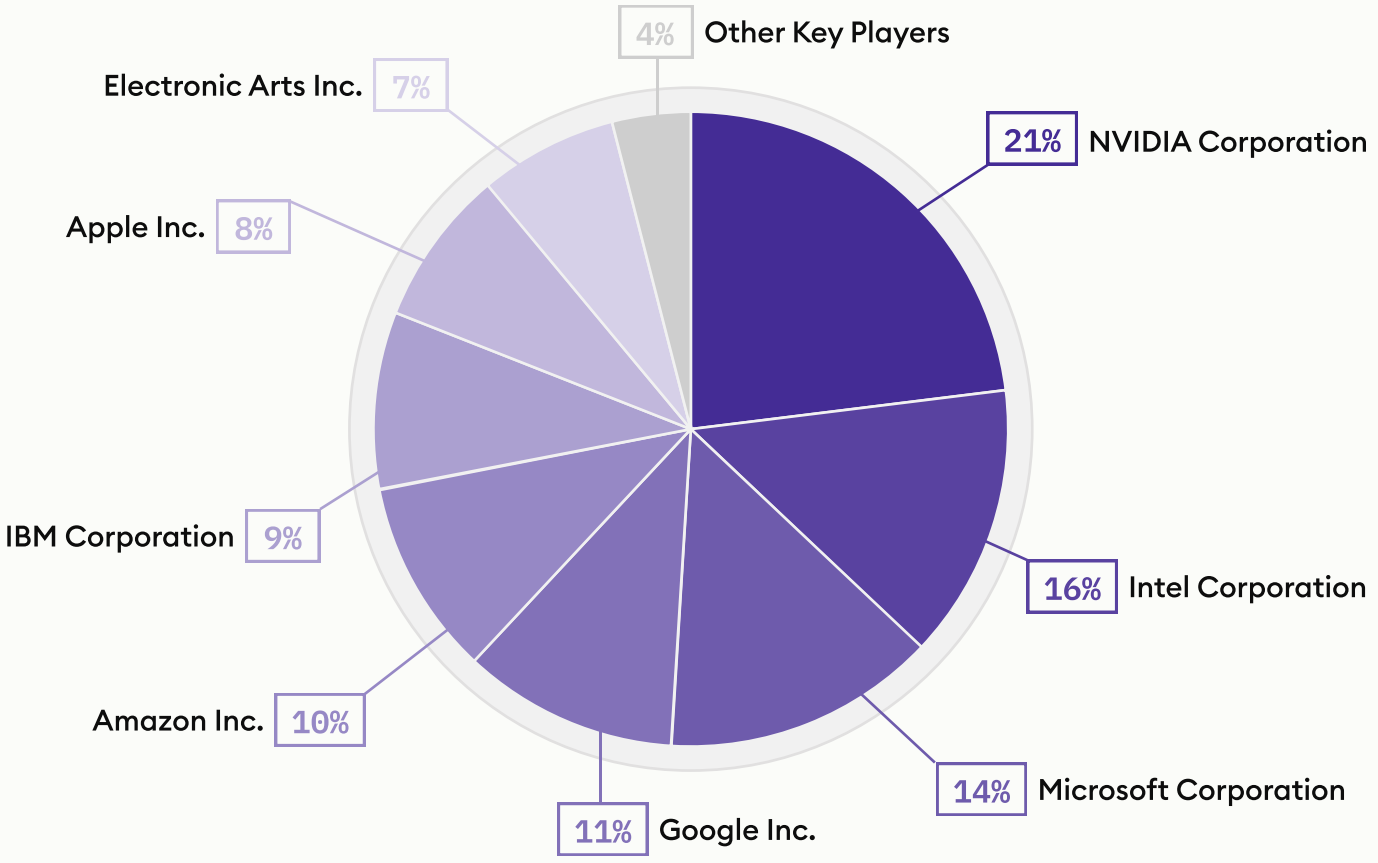
For example, AWS, one of the biggest cloud service providers, announced that they have expanded their cloud gaming services to new markets where they can target more gaming studios and gamers.

> Now, we are available in 36 geographic regions and 114 availability zones worldwide. We've announced four more regions, including New Zealand and Saudi Arabia, where there are many gamers. I believe we provide the networking and computing fabric to enable cloud gaming in a much more cost-effective way than was previously possible.

Shayan Sanyal
Global Games Industry
BD Leader at AWS

SHARE IN CLOUD GAMING MARKET

Market Share in Percentage



Source: Market.us Scoop

Flexibility, Instant Access, and **Social Play** are What **the Cloud** is About

Cloud gaming is transforming the way people play by making high-quality gaming experiences more accessible. The technology provides advantages for both players and game developers.

According to our interviewees, there are several benefits of cloud gaming:

01 NO NEED FOR EXPENSIVE HARDWARE

Since the game runs on powerful remote servers, players can enjoy high-quality graphics and smooth gameplay without buying expensive PCs or consoles.

> I believe cloud gaming will be a significant driver of innovation and accessibility in the coming years. By running games on powerful remote servers rather than local hardware, it lowers the barrier to entry for players who might not have the latest console or a high-end PC. This, in turn, broadens the potential audience and will bring new experiment with different genres and experiences.

Guillaume Carmona
VP of Game Development
at Room 8 Group

02 INSTANT ACCESS TO GAMES

Players don’t need to install games on their devices and worry about their storage space. A large number of games can be found on the cloud, where players can play instantly.

> Look, the idea is simple: you don't need a beefy computer anymore. Just good internet. Cloud gaming promises to let you play any game, instantly, without downloads or installs.

Manolis Emmanouilidis
Co-Founder at Arcware

03 PC, MOBILE, OR TV – PLAY ANYWHERE

The rise of cloud gaming is a great opportunity for cross-platform play. Players can use any device to jump into the game and play anywhere if they have a stable internet connection. They can switch between a PC, laptop, tablet, and even a mobile phone, continuing the same game. Moreover, many games implement the possibility of using mobile phones as controllers, which can be convenient for gamers who want to play games on TV.

A good recent example of cloud gaming in action is this review of Assassin’s Creed Shadows by games journalist Stephen Totilo. He spent 47 hours playing the same save file on six different platforms, which he said "felt like a glimpse into gaming's future."

> Now more and more games use the phone as a controller, so you can just take your phone, open your TV, log into your cloud service, and play games in high quality. We used to watch TV while playing on our phones – now we’ll be playing with our phones on games streaming seamlessly on TV!

Benjamin Paquette
Senior Game Director
at Room 8 Group

04 OPPORTUNITY TO TRY GAMES

If the provider offers a subscription-based plan, users can try different games without having to buy them separately. This makes high-end gaming more affordable and accessible to a wider audience.

> We are on a subscription platform, which means you can launch a game and try it without thinking too much about it. So you will try more games because this process will not be complicated. And I think that's another opportunity for games that want to emerge and make the gaming experience available. Such demos can give more people a way to try the game easily with just a click.

Daphne Parot
CMO at Blacknut

05 SOCIAL LIFE

Cloud gaming opens new opportunities for multiplayer games. People from different devices and locations can interact with each other and have the same gaming experience.

> Younger generations are more interested in games like Minecraft and Roblox than they are in hanging out on social networks. Those games have become their social networks, and cloud gaming allows them to have their social life. What people understood during the rise of World of Warcraft (come for the game, stay for the community) has taken over the world.

Benjamin Paquette
Senior Game Director
at Room 8 Group

Based on a survey conducted by 80 Level in 2023, gamers highly value the discussed benefits of cloud gaming. Nearly half of the respondents (47%) see cost savings on hardware and game purchases as the biggest advantage. Players also appreciate the accessibility and cross-platform play (44% and 37%, respectively).

ADVANTAGES OF CLOUD GAMING

47%

Lower cost compared to buying new hardware or physical games

44%

Better accessibility for people with lower-end hardware

37%

Ability to play games on multiple devices

34%

Access to a wider variety of games and genres

22%

Better perfomance and graphics quality

Source: 80 Level

Moreover, developers can modify and update game content on the cloud dynamically without requiring any downloads on the player's side. This allows them to customize the player experience in real time.

> Cloud gaming enables seamless updates, meaning developers can rapidly deploy new content without requiring players to download massive patches. We're already seeing cross-play and cross-progression become more common, and cloud gaming amplifies that connectivity by unifying players across platforms.

Guillaume Carmona
VP of Game Development
at Room 8 Group

> Due to streaming, the game studios can self-publish the game and release it in real time. And because of the streaming nature, they are also able to customize the end-user experience on the go.
>
> It's great that you can dynamically stream different content to different audiences because people normally buy physical games or install games from stores. Of course, there are live update servers that can be modified somehow, but streaming enables the creation of content dynamically, including the code, because you are not giving up the executables. The only thing that goes to the players is the pixels that are generated in real time.

Jan Sechovec
Technology Director at Revolgy's
Cloud Gaming Department

Games can be seamlessly updated across multiple devices. Studios don't need to redevelop them. This can be a cost-effective way to expand the reach of games across platforms.

> If you develop a game for PC, you can make it playable on a mobile or a smart TV, and you don't have to redevelop the game to make it available on a TV screen, a PC screen, or a tablet. I think it's a great opportunity to bring your game to a new audience and new devices at no additional cost.

Daphne Parot
CMO at Blacknut

Cloud gaming is reaching new milestones, making it possible to host huge numbers of players simultaneously without losing connection or content quality. Recently, Amazon achieved something never done before – it managed to support 100 million concurrent users in a single game. With such advancements, games can become more immersive and bring together much more players.

> One of AWS's most significant achievements to date was building game services for the world's most demanding games, such as Fortnite and PUBG, which run on AWS massively worldwide. Just last week, we announced a benchmark for Amazon GameLift, where we had 100 million concurrent users for a single game. This is groundbreaking! It's never been done before! The test also showed that we were able to add 100,000 players to the game per second and spin up 9,000 compute instances per minute.
>
> Does the world need this right now? Probably not. I can't see that I would immediately deploy it into a game. But if people were to start thinking about world building, massive integration of different social networks, and bringing together fans in massive arenas, this could significantly change the way developers perceive how they can use the cloud to unlock new social fabrics in their games.

Shayan Sanyal
Global Games Industry
BD Leader at AWS

Can Cloud Gaming Overcome Its Challenges?

Despite significant progress, cloud gaming still faces challenges related to infrastructure, performance, and cost. Industry experts highlight various hurdles that must be addressed to make this technology scalable:

01 LATENCY ISSUES

One of the biggest problems with cloud tech is ensuring a low latency and stable connection. The technology is very dependent on internet speed and server location. That's why performance can vary significantly between locations, working seamlessly in some areas while being unreliable in others.

> I was recently visiting Seattle, and it was very interesting that I was directly in the city and had an amazing experience because the streaming was perfect, and I felt that I was actually playing the game locally. But I just wanted to try it a bit farther, just a few miles away from the city in a much smaller town, not close to any central hub of the Internet providers. I had a fast enough connection, but the Internet needed to travel through many switches. It was terrible, and the game was actually unplayable.

Štěpán Kaiser
Global GameTech Lead
at Revolgy

POSSIBLE SOLUTION:

- Place servers as close to the user as possible for better FPS (frames per second).
- Focus on games that don't require small ping.

> When it comes to latency, from a game design standpoint, it is very easy to design games that are lenient on latency. Of course, you shouldn't go to FPS games that require everyone to be at five [milliseconds] latency. There are quite a lot of games that support 30-45 ms. So, you will still have access to synchronous games with huge communities where your player agency is not impacted by latency. For example, if we're in Roblox and I'm going to go and play on your level, latency has little to no impact (as long as I can land my jump, ah!), but the size of the community and the fact that I can play from anywhere keeps me connected.

Benjamin Paquette
Senior Game Director
at Room 8 Group

02 BANDWIDTH

Cloud gaming relies on transmitting large amounts of data, which can lead to excessive compression that degrades graphics quality. Streaming a game requires a graphics processing unit (GPU) somewhere in the cloud, and bandwidth demands can be high, particularly in areas with unstable internet connections.

POSSIBLE SOLUTION:

- Use new AI-based compression techniques.
- Use better hardware encoding like the AV1 encoder.

> The main problems of cloud gaming are data bandwidth, latency, and input lag, as well as classical infrastructure challenges like availability and scalability. Edge computing (processing data closer to the user's location) could help reduce the latency a bit. Graphics quality can suffer from excessive compression used to reduce the bandwidth, and new AI-based compression techniques could help overcome this challenge. Some AI techniques could also help better predict what the player will do next, which could reduce the perceived lag.

Yann LeTensorer
VP of Technology
at Room 8 Group

> The tech's evolving fast. We're seeing GPUs and encoders like AV1 drastically improve stream quality and reduce bandwidth. That's a huge step.

Manolis Emmanouilidis
Co-Founder at Arcware

03 INFRASTRUCTURE AND SCALABILITY

The availability of GPUs remains a bottleneck, even for large-scale cloud providers. The hardware required to serve millions of players is still scarce, and 5G infrastructure can be blocked or limited in some areas. Moreover, some people may not have a device to start playing on the cloud, which can also be a problem for scaling cloud gaming.

> The availability of GPUs is a blocker, and hardware is still scarce, even for hyperscale vendors. It's not so common to have hardware in place to serve the millions of players. Also, availability of the networking. The 5G is good but can be blocked completely among the bigger cities or the areas.

Jan Sechovec
Technology Director at Revolgy's Cloud Gaming Department

POSSIBLE SOLUTION:

- Widespread adoption of 5G infrastructure.
- Provide the ability to use a phone as a controller to attract more users who don't have game devices.

> For us, the accessibility we want to offer is a challenge. If people don't have a gamepad...what can we invent? We have a lot of demand for games that allow people to interact with a mobile as a controller. So, you don't have to buy something else to start playing.

Daphne Parot
CMO at Blacknut

04 THE ECONOMICS OF CLOUD

Building a sustainable economic model can also be considered one of the biggest challenges for developers. If the unit economics do not work – balancing the cost of computing power, bandwidth, and user affordability – cloud gaming cannot scale globally.

POSSIBLE SOLUTION:

- Analyze cloud costs regularly: TCO (Total Cost of Ownership) analysis, cloud unit economics analysis, key metrics (CPU utilization, application performance, network latency, memory usage, ROI), cost anomalies.
- Adopt industry best solutions from reliable vendors like Amazon GameLift Streams, Microsoft Azure PlayFab, or Pragma.
- Use smart algorithms to allocate GPU resources based on actual game demand (e.g., scaling down during idle scenes).

Based on an 80 Level survey about cloud gaming, players highlight similar challenges that hinder their gaming experience. Most of them aren't satisfied with latency issues (76%) and dependence on internet speed and quality (68%). Moreover, some of them find limited game selection (21%), limited availability of cloud gaming in specific regions (18%), and privacy concerns (17%) to be significant problems.

DISADVANTAGES OF CLOUD GAMING

76%
Connection issues, such as latency

68%
Dependence on internet speed & quality

21%
Limited game selection or availability

18%
Limited availability of CG in certain regions

17%
Privacy & security concerns

15%
Dependence on CG providers

14%
Handing graphics and sound quality

9%
Customizing game settings

Source: 80 Level

While cloud gaming still faces hurdles, cloud gaming developers are trying to find ways to create a more seamless and accessible experience.

Improved infrastructure, AI-driven optimizations, and better economic models will help, if not overcome, at least minimize the negative effects of these challenges.

Game developers generally distribute their games through app stores and third-party platforms but are looking for additional ways to establish a direct relationship with players and provide custom storefronts and gaming experiences. Game streaming technology is one technology that enables developers to directly distribute games and reach more players across more devices that have a web browser. This includes PC, tablets, and phones, without the need to download installation files. However, creating a game streaming platform has many technical challenges and requires a global network that is close to players, a streaming protocol that prioritizes frame rate for games, very low latency roundtrip from game to server and back for a no-lag gaming experience, and access to a pool of cloud GPU servers to run and stream the games at a reasonable price point. Building to this scale requires many years of development and millions in infrastructure investment. Companies in the industry have attempted to build game streaming services with mixed results due to too-high latency from button press to on-screen reaction, or the requirement to modify the game code for a specific platform, and no perceived value over playing games locally. Additionally, development cycles for games are taking longer, and developers are looking for ways to collect user feedback faster to make a better game and get to market.

To that end, we recently launched Amazon GameLift Streams, which helps game developers deliver game streaming experiences at up to 1080p resolution and 60 frames per second (fps) across devices including iOS, Android, and PCs. Using a single AWS offering, publishers can deploy their game content in minutes, without modifications, onto fully-managed cloud-based GPU instances and deliver them through the AWS Network Backbone directly to any end-player device with a webRTC enabled browser. Amazon GameLift Streams enables players to start gaming in just a few seconds, without waiting for a download or an install, and delivers a gameplay experience nearly indistinguishable from playing the same game locally on a PC or gaming console. With Amazon GameLift Streams, game publishers can distribute their existing and new games direct-to-players, without having to manage infrastructure and paying only for the capacity they allocate for streaming games. Publishers also maintain full control over the player relationship, player experience, branding, and business model.

Shayan Sanyal
Global Games Industry
BD Leader at AWS

Our interviewees believe that 5G could help resolve some of the aforementioned issues for cloud, making it possible to distribute cloud services to more regions – ultimately, to and a wider audience.

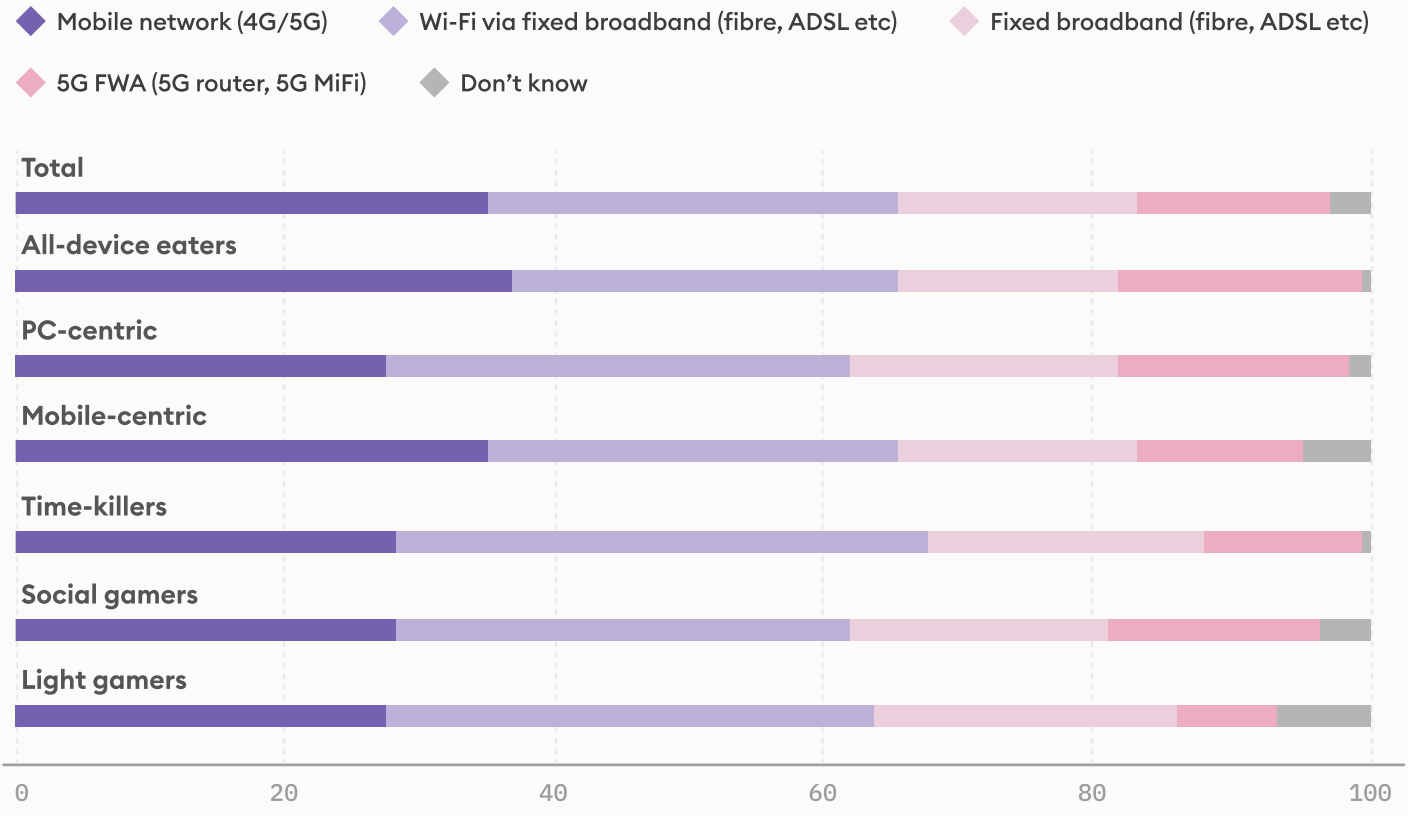
Ericsson's Cloud Gaming Consumer Research Report revealed that 5G users engage more in cloud gaming, but 68% of all cloud gamers are still on 4G, experiencing lower satisfaction levels due to unstable connections and lag. This suggests that upgrading to 5G could significantly enhance the user experience.

Will 5G be Cloud Gaming's Savior?

> 5G could help with bandwidth and latency, which are some of the reasons why cloud gaming is not growing as quickly as it was expected ten years ago.

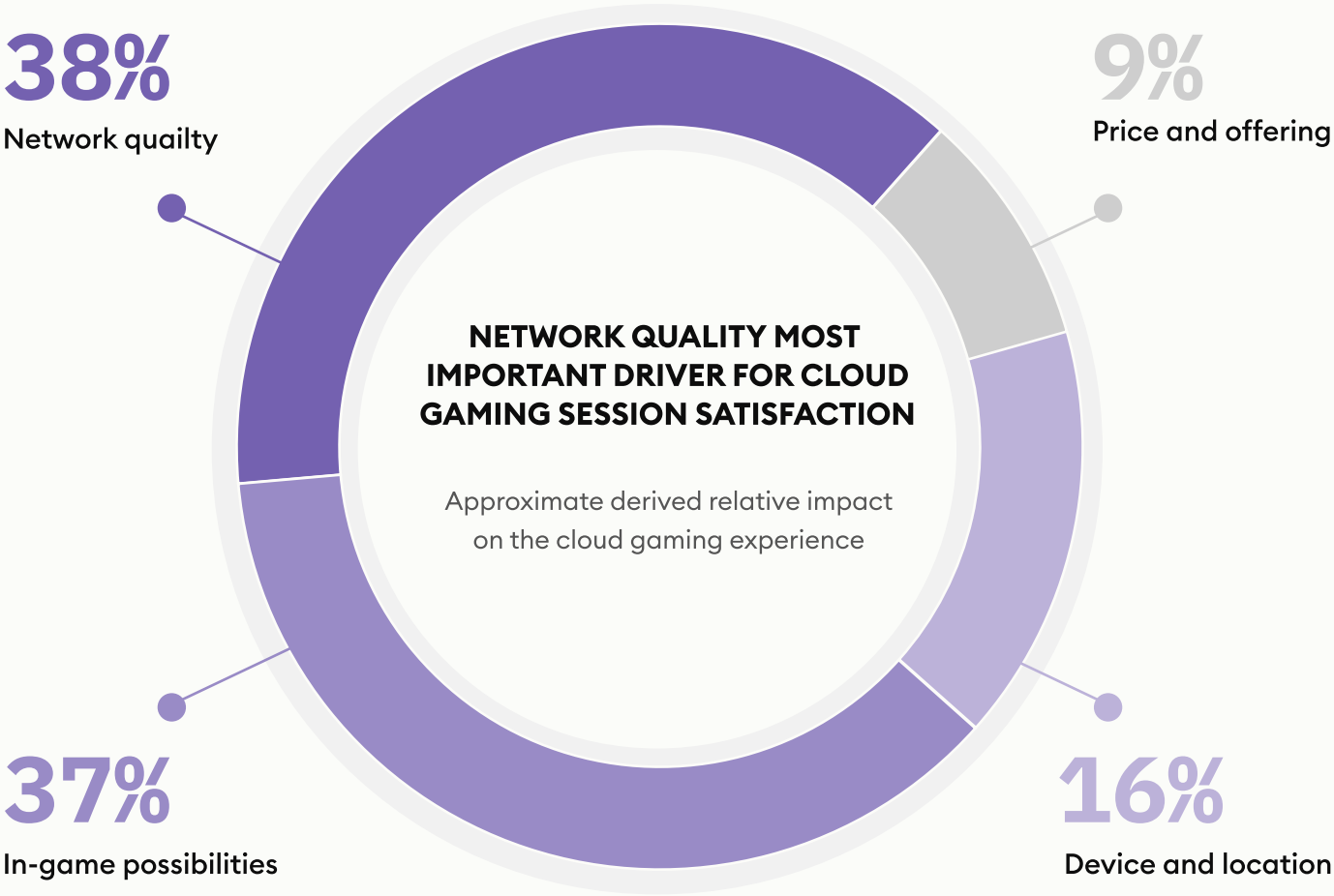
Yann LeTensorer
VP of Technology
at Room 8 Group

SHARE WHO HAVE THE FOLLOWING PRIMARY INTENET CONNECTION WHEN PLAYING CLOUD GAMES



Source: Ericsson ConsumerLab

Indeed, Ericsson's regression analysis indicated that network experience accounts for up to 38% of a cloud gaming session's satisfaction.



Source: Ericsson ConsumerLab

5G has the potential to transform cloud gaming, offering faster speeds, lower latency, and broader access to high-quality games.

> We hear that the internet quality in the US is a bit worse than in Europe in these farther locations, not in the big cities. I think unless this is solved somehow, either by 5G or 6G, there will still be a lot of negative emotions around connectivity.

Štěpán Kaiser
Global GameTech Lead
at Revolgy

Cloud Adoption: From B2B to B2C

Interviewees think full adoption of cloud gaming will take a long time. Even with the implementation of 5G around the world, cloud gaming still won't yet be relevant for games that require a low ping to have a playable gaming experience. There are also challenges related to infrastructure.

Companies need to address these issues if they want to build a reliable cloud ecosystem.

> The biggest hurdle is still latency. When you're playing fast-paced games, that tiny delay between your input and what you see on screen matters. And right now, streaming just can't quite match the responsiveness of playing locally. That quality loss, that little bit of lag, it's a real issue. So, while cloud gaming has immense potential, it's still reliant on internet speeds and streaming technology catching up.
>
> But make no mistake, cloud gaming is the direction we're heading. Within the next ten years, I genuinely believe it will become the dominant way we play games. The key to unlocking that future? A massive upgrade to our internet infrastructure. That's the catalyst thatwill change everything.

Manolis Emmanouilidis
Co-Founder at Arcware

Our experts suppose that cloud gaming mass adoption will be gradual and start with B2B applications before expanding to a wider audience.

There will be 2 main adoption phases:

B2B ADOPTION

This phase will focus on security and discoverability. For example, there are 2 main use cases that Amazon faces most often now:

Security.

Cloud tech enables safer game development and playtesting by keeping game builds on secure servers rather than distributing them to individual devices, reducing the risk of leaks. Game companies can watermark a play stream for partners or journalists so they can play the game in a secure environment.

Discoverability.

Startups like Playruo and Ludeo are leveraging cloud gaming for AAA playable ads. Playruo makes ads where you can play a short demo of a game and then buy it, while Ludeo creates specific challenges embedded within games and shares them on social media, letting users to instantly jump into the same scenario and try to beat it themselves.

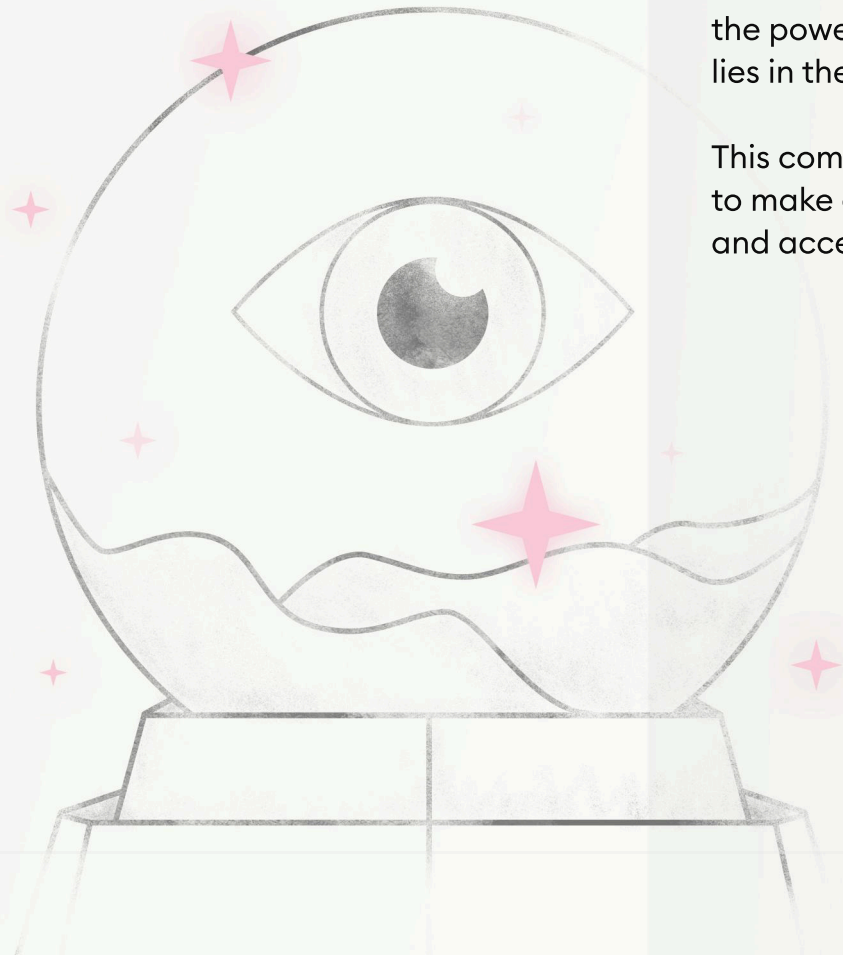
B2C ADOPTION

Users will be able to instantly launch games on any device without downloads, latency issues, and technical limitations.

> I think that we are on the cusp of adoption at scale: we may start seeing some point use cases at first, such as secure playtesting or playable demos, but this will rapidly accelerate to expanding engagement with players, be it through instant access to new games, or a back catalogue of existing and older games without the need to port. We are already seeing customers unlock new monetization opportunities with instant "click to play to install" frameworks that drive conversion. With economies of scale, you will start seeing a widespread adoption of these games in a click-to-play format. And that's going to unlock all of the different scenarios that come with cloud gaming like cross-platform play or being able to play a game on mobile.

Shayan Sanyal
Global Games Industry BD Leader at AWS

THE FUTURE OF CLOUD, AI, & UGC



Some of our industry experts believe that the power of cloud gaming, UGC, and AI tools lies in the convergence of these technologies.

This combination will allow developers to make games more immersive, social, and accessible than ever before.

Will Cloud, AI, and UGC Converge?

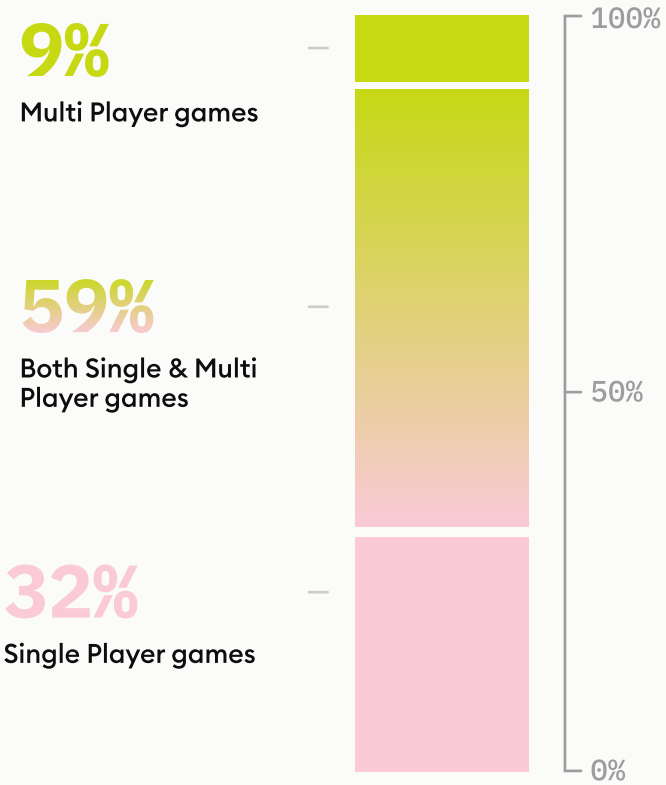
While single-player games will still have their niche in the gaming market, the combination of low-latency cloud gaming, AI-driven content, and boundless creative freedom for players will lead to multiplayer worlds where people will be able to interact with each other and create something new without barriers.

> In 5-10 years, we will see a combination of all the trends discussed. Of course, there will be ALWAYS have room for single-player games, but when you combine cloud gaming, AI, and UGC, you will get a world of connectivity and ease of access. This is where people can transcend cultures, so everyone can have fun together. People will use an efficient cloud with low latency, have access to UGC, and have the opportunity to create what they envision with the entire world. This is potentially one of the most underrated and higher value of videogames : transcend cultures, genres, ages, generations and revenue gaps – we're all equal when we're having fun and can learn much from this back in the real world!

Benjamin Paquette
Senior Game Director
at Room 8 Group

Indeed, according to an 80 Level survey, more than half of gamers love to play both singleplayer and multiplayer games (59%). The findings also revealed that 32% of gamers enjoy playing solo adventures, while 9% of them exclusively prefer multiplayer experiences, meaning both will continue to have their place among gamers.

SINGLE PLAYER / MULTIPLAYER



Source: 80 Level

Moreover, we will see more cross-platform games. People will be able to create and share content across different platforms so that modding will move beyond PCs. This will make gaming more accessible, allowing users to have gaming experiences irrespective of their locations and devices. Our experts believe that developers who use this shift will build strong communities and brand loyalty.

> I think cross-platform support will also be significant. When a game launches with mods on PlayStation, Xbox, or Switch, the percentage of players who consume content is higher than their PC counterparts. So, the studios that pursue this and unlock that for their fans are going to generate insane goodwill and positivity around their brands.
>
> More and more games are not going to just launch with PC modding. It's going to be fully integrated, accessible, and available for all their players no matter where you are and which device you're using.

Scott Reismanis
CEO at mod.io

Eventually, this interoperability of platforms and content types will disrupt the whole entertainment industry, where different media formats will be combined with interactive environments. The boundaries between movies, games, and other digital experiences will be blurred, allowing users to engage with content in more immersive ways. This means that people will be able to instantly switch from passive content consumption to interactive experience – from just watching a movie to actively exploring its world.

> Imagine a world where you watch your Star Wars movie, and then you can click a button and can enjoy the interactive Star Wars universe. So, you are just one click away from the passive experience of VODs, when you're cozy, to the interactive way of entering your favorite universe and world.

Daphne Parot
CMO at Blacknut

The Possibility *of* Endless Games: Differing Expert Opinions

The growth of the aforementioned technologies raises an interesting question: is it possible to create and maintain endless games? Based on this GDC report, 33% of AAA developers already work on live service games, constantly expanding them with new content.

However, our interviewees expressed different opinions on the possibility of endless games. Some of them are sure that developers are no longer just competing for players' gaming time, but for their overall engagement across various platforms and social media. Retaining players within a game's ecosystem has become increasingly important. In this context, advancements in cloud gaming, AI, and UGC are seen as key drivers of game democratization and the creation of endless experiences.

> Undoubtedly, the combination of these trends will lead to endless games. Roblox, Fortnite, World of Warcraft, League of Legends, Clash of Clans, Candy Crush Sage and so many more are great examples of games that have been successfully existing in the market for years. Games aren't competing with other video games – they're competing for their players' time - period. Once you are mindful of that, you realize that only one thing really matters, and that is "Value". What this value is and what it is worth to each dev or player might be different, but if players see value for their time using your product, they'll find the money if it matches the value. Also, the longer you keep people in your ecosystem, the easier it is for you (retention AND acquisition over just acquisition).
>
> And this is where Fortnite is extremely successful. People are sucked into Fortnite, so now the game has this big community.
>
> With cloud gaming, more people will have access to games, including multiplayer games, which also means more connectivity between players and potentially more UGC. It's worth noting that UGC lives by its community, so the more users you have, the more value UGC can bring. So, cloud gaming directly impacts it: fair prices and a lot of content just democratize games even more.

Benjamin Paquette
Senior Game Director
at Room 8 Group

Other experts believe that the future lies in deep, genre-specific creativity rather than all-encompassing virtual worlds. Instead of endless games, there will be platforms of creation where users will be able to build unique, physics-based mechanics. This will allow to keep games fresh and diverse.

I'm in the UGC business, but I don't really believe in the vision for the metaverse. I think it's really hard to try to be everything to everyone and to create endless games. But I really think we're going to see the strong depth of creation in specific genres. Imagine building a game with incredible physics and then allowing creators to build the most incredible physics-based first-person shooters on top of that.

Instead of endless experiences, I think there are going to be these games that will become almost platforms for creation. You will be able to play a realistic military sim and jump into realistic armor because not only does the base game deliver that, but creators have iterated on it and changed it in a lot of different ways for you to enjoy and explore.

Scott Reismanis
CEO at mod.io

Regardless of these different opinions, one thing remains certain – the gaming industry is on the brink of transformation. Technologies are evolving, and people are smarter about how to launch and sustain games than they were a decade ago. Developers need to apply emerging trends to their business to improve the player experience and stay competitive.

Now, there are a little bit more smarts and intelligence being built on the go-to-market, which wasn't thought of 10 years ago. On the one hand, the tech has massively evolved, and on the other hand, people are also more savvy about how they go to market with these technologies and realize that game developers and publishers can be under cost pressure in the industry right now.

Shayan Sanyal
Global Games Industry
BD Leader at AWS

The future of gaming is shaping up to be more connected, creative, and accessible than ever.

With cloud gaming, AI, and UGC coming together, players will have more freedom to create, share, and explore games across different platforms. Games won't just be something we play. They will represent living, dynamic, and interactive experiences.

FEEL FREE TO CONTACT US IF YOU HAVE ANY QUESTIONS.

80 Level is a global media platform connecting gaming industry professionals and companies through engaging content, talent services, and market research.

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Room 8 Group is an end-to-end strategic partner in external game development.

Working across all platforms, the company provides creative and technical solutions across art, game development, technology, trailers, and QA for AAA and AA games.

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