

Project Dissertation Report on
EVOLUTION OF THE GAMING INDUSTRY:
FROM PLATFORM-BASED MODELS TO
MONETIZATION-DRIVEN ECOSYSTEMS
POWERED BY UGC, CLOUD GAMING, AND
AI

Submitted By

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CERTIFICATE

This is to certify that the project report titled **“Evolution of the Gaming Industry: From Platform-Based Models to Monetization-Driven Ecosystems Powered by UGC, Cloud Gaming, and AI”** submitted by **Vishal Kumar Punia** in partial fulfillment of the requirements for the award of the degree of Master of Business Administration (MBA) is a bonafide record of original research work carried out under my supervision and guidance.

The work embodied in this report has not been submitted elsewhere for any degree or diploma.

Project Guide

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Name: _____

Designation: _____

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DECLARATION

I, **Vishal Kumar Punia** student of **M.B.A** at **Delhi Technical University** hereby declare that the research paper titled "Evolution of the Gaming Industry: From Platform-Based Models to Monetization-Driven Ecosystems Powered by UGC, Cloud Gaming, and AI" submitted in partial fulfillment of the requirements for Master In Business Administration is my own original work. I confirm that this research paper has not been submitted previously for any degree or diploma at this or any other university or institution. All sources of information, including published literature, industry reports, and interview data, have been duly acknowledged and properly cited in the references section. Any assistance received from individuals or organizations during the course of this research has been explicitly mentioned in the acknowledgement section. I further declare that the data presented in this study is authentic and has been collected from reliable sources as described in the research methodology chapter, and no fabrication or misrepresentation of data has been committed. In this research, the code of ethics as recommended by Delhi Technical University for research on human subjects has been strictly followed. I am fully aware that any falsification of facts or academic dishonesty will invite disciplinary action against me according to the rules of the university.

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ACKNOWLEDGEMENT

It is my pleasure to acknowledge the invaluable help and guidance provided by my faculty mentor Dr Saurabh Agarwal along with the entire Department of Management Studies in completing this project successfully.

Next, I would like to appreciate the contributions made by industrial reports, gaming organizations, researchers, and online resources from where I obtained the necessary information for this study. This effort went into understanding how the global gaming industry evolved over time.

I am thankful to my family, friends, and colleagues who gave me constant motivation and helped me write this report.

Finally, it gives me immense pleasure to thank all those who, in one way or another, helped in the completion of this research project.

Vishal Kumar Punia

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EXECUTIVE SUMMARY

This study focuses on the history of the world-wide gaming sector from platform-dependent game design to today's revenue-oriented systems with special emphasis on the pivotal impact of User-Generated Content (UGC), cloud computing, and Artificial Intelligence (AI) on the industry. The study was carried out in accordance with the requirements of M.B.A at Delhi Technical University under the supervision of DR Saurabh Agarwal. The time frame covered by this research project is from 2025 to 2026.

The main objectives that guided this study include: to outline the development of business models within the gaming industry throughout the past several decades (from the 1970s till now); to discuss the way that UGC channels have introduced new revenue streams and helped turn players into creators; to explore the part that cloud gaming plays in eliminating dependence on hardware and facilitating the shift to a subscription model; and to address AI applications in dynamic monetization.

Qualitative research design was used in combination with mixed methods for this study. Data collection occurred on three channels: secondary sources involving financial documents of Roblox Corporation and NVIDIA for the period from 2020 to 2025, industry insights from Newzoo and Bain & Company, and technological whitepapers from IEEE Xplore; primary data using semi-structured interviews with 12 industry experts who included UGC creators, cloud gaming product managers, AAA studios heads, industry analysts, and game critics; and observation data through personal experiences with playing Roblox Studio, GeForce NOW, and Rainbow Six Siege platforms with more than 110 hours of play time. Each participant gave written consent before being interviewed, while data from Reddit user reviews was anonymized (n=650 posts).

Here are the main takeaways from the research conducted: First, monetization has evolved from being a single revenue source (sales of games) to becoming a stacked model that includes virtual currencies, subscription models, ads, battle passes, and cosmetic stores. The bookings generated by Roblox under the stacked model came up to

\$5.9 billion by 2025. Secondly, user-generated content leads to infinite player engagement, but extremely concentrated revenues, as the top 0.1% of all Roblox users earn 48% of the total payments, while the bottom 90% of users earn only 12%. Thirdly, cloud gaming eliminates the hardware cost, but introduces a latency tax and hence works for about 80% of gamers, and social functionality appears to be the ultimate use case; according to Discord stats, the gameplay sessions increased seven times in cases where the game was played with one's friends. Lastly, AI is best suited as a friction minimizer and is most successful in generating content (minutes instead of days), moderating posts (processing 20,000 uploads per hour) and compensating for the latency gap. Fifth, although platform power continues, the locus of such power has changed from console makers to ecosystem enablers such as Roblox and cloud providers like NVIDIA. Sixth, AAA game transformation involves investment simultaneously in infrastructure (testing servers), delivery cadence (continuous delivery), and culture (products to services). Seventh, regulation in terms of children's safety laws, virtual currencies, and AI manipulation constitutes the biggest threat in an unstructured way to existing monetization strategies. Eighth, there is no one-size-fits-all business model for games; the ecosystem approach works well for social, evolving, and customizable rather than linear games.

Key takeaways from this report include the fact that today's gaming industry is not just producing products but complete eco-systems of engagement and competing with other forms of digital entertainment for the limited resource of human attention.

Recommendations for strategy include increasing creator share to between 40-50%, including social discovery, adopting hybrid monetization models, investing in artificial intelligence with human moderation, right sizing investments in accordance with the audience size, and self regulation.

Keywords: Gaming Industry Evolution, User-Generated Content, cloud gaming, artificial intelligence, platform ecosystems, monetization models, AAA transformation.

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CHAPTER 1 – INTRODUCTION

1.1 Background

The global gaming industry has experienced remarkable growth over the last five decades. What began as a niche form of entertainment centered around arcade machines and home consoles has evolved into a multi-billion-dollar global ecosystem that integrates entertainment, technology, social networking, artificial intelligence, digital economies, and user participation.

The early gaming industry was dominated by platform-based business models. Companies such as Atari, Nintendo, Sega, Sony, and Microsoft focused on selling gaming hardware alongside physical game titles. Revenue generation relied heavily on console sales and one-time purchases of games. The value chain was linear, where publishers developed games, retailers distributed them, and consumers purchased them as finished products.

However, the emergence of the internet and digital technologies transformed the gaming landscape significantly. Online gaming introduced multiplayer experiences, downloadable content (DLC), and live services. Distribution via digital mediums like Steam, PSN, Xbox Live, and mobile application stores decreased the need for brick-and-mortar stores and helped developers connect directly with gamers worldwide.

The rise of the smartphone era increased the scope of gaming by ensuring that billions of people were able to play games from their phones. Mobile gaming firms came up with free-to-play gaming business models that included ads and in-game purchasing. Thus, gaming was no longer a product-centric industry but turned into a service industry.

Other important trends in the gaming industry include user-generated content (UGC). Games like Roblox, Minecraft, Fortnite Creative, and Dreams helped make gamers creators. They were able to build their own virtual worlds, make mini-games, and develop their experiences and digital content. User-generated content resulted in the formation of creator economies that allowed users to get involved in the process of value creation.

Lastly, cloud gaming emerged as an important technology. The earlier gaming system was quite hardware-intensive as one needed gaming PCs and consoles. But cloud gaming providers such as Xbox Cloud Gaming, NVIDIA GeForce Now, and Google Stadia attempted to eliminate any hardware needs in gaming. As a result, it made gaming look more like a streaming service.

The advent of artificial intelligence is another major change that has taken place in the industry. AI has been utilized for procedural content generation, personalization, intelligent NPCs, analytics, automated testing, and enhanced player engagement. AI-powered tools allow developers to save money while providing better user experiences.

The gaming industry now goes way beyond entertainment. The industry has expanded into social media, e-sports, virtual reality, digital fashion, block chain economics, and the metaverse. Gaming companies now compete not just on the quality of their games but also on the basis of their ecosystem strength and monetization capability.

The rapid expansion of the industry can be credited to a number of reasons:

- Increased smartphone penetration.
- Growth of internet connectivity.
- Rise of digital payments.
- Expansion of social gaming.
- Popularity of e-sports.
- Technological innovations.
- Cross-platform integration.
- AI-powered personalization.
- Creator economies.

The gaming industry has become one of the largest segments within the global entertainment sector, surpassing industries such as film and music in terms of revenue generation.

Evolution of Gaming Eras

Arcade Era (1970s–1980s)

The arcade era was the dawn of commercialized gaming. Games like Pac-Man, Space Invaders, and Donkey Kong became huge hits. Money was made through the use of arcade machines that accepted coins.

Console Era (1980s–2000s)

The advent of home consoles brought about revolutionary changes to gaming. The Nintendo Entertainment System (NES), Sega Genesis, PlayStation, and Xbox dominated

the industry. The companies concentrated on developing innovative technology and game software exclusivity.

Online Gaming Era (2000s–2010s)

Broadband Internet allowed for the advent of multiplayer gaming. MMO games such as World of Warcraft were developed. Digital distribution assumed a prominent role.

Mobile Games Era (2010s)

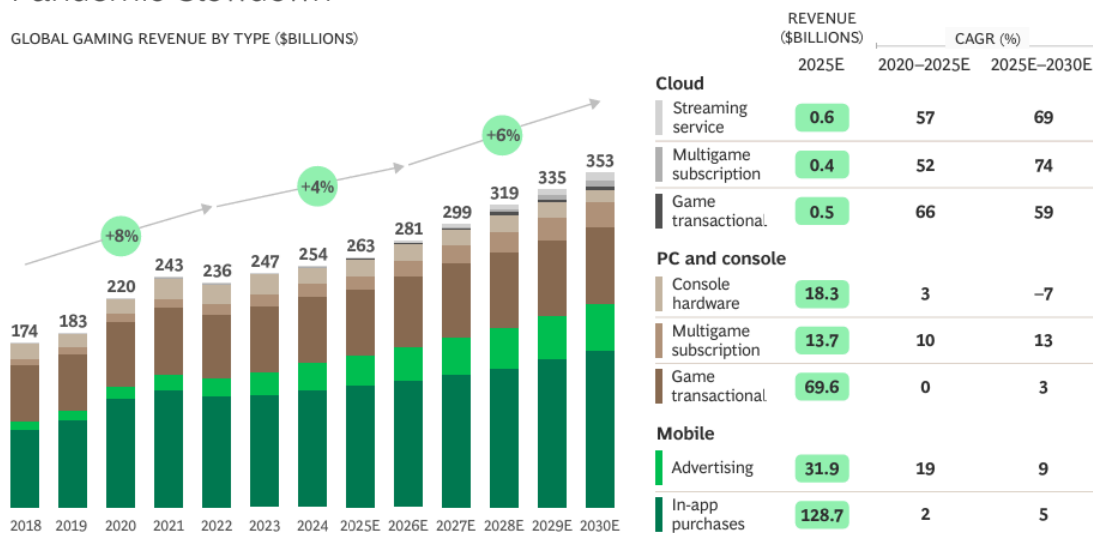
mobile games and the emergence of esports. Mobile phones and tablets increased the accessibility of video games to millions around the world, creating billions of dollars in revenue

Esports and Streaming Era

gave rise to gaming as a professionalized and spectator sport thanks to esports, sponsors, advertisements, and tournaments and through streaming websites such as Twitch. Global esports audience was forecasted to grow to 645 million by 2022.

Gaming Industry Growth Is Set to Increase, Ending the Post-Pandemic Slowdown

GLOBAL GAMING REVENUE BY TYPE (\$BILLIONS)



Sources: Ampere Analysis; SensorTower; BCG analysis of historical and forecasted data.

Note: Console hardware data includes handheld PC devices. In-app purchases include mobile subscriptions such as Apple Arcade. CAGR = compound annual growth rate.

1.2 Problem Statement

The gaming industry has seen tremendous change in the last two decades because of technological advances, increased internet penetration, the growth of mobile gaming,

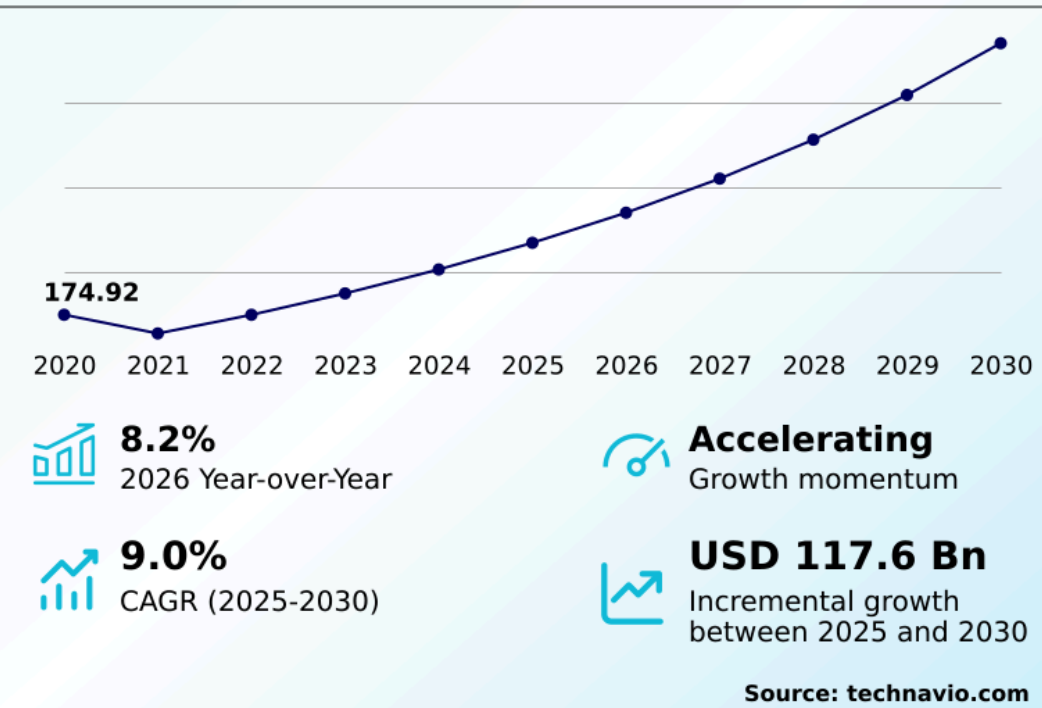
and altered consumer behavior. Conventional gaming models used to be platform-based; they would make money through the sale of the consoles or games sold once. The current gaming environment focuses on subscription-based revenue generation with cloud computing, artificial intelligence, and UGC.

This shift has opened up numerous possibilities for video game firms, creators, and consumers, though at the same time, it has also brought in some issues. Firstly, gaming companies pay a lot of attention to designing game economies based on engagement, which encourages customer loyalty. Secondly, increased reliance on AI analytics, virtual economies, and creation-oriented ecosystems has raised worries about such matters as privacy and addiction.

Furthermore, the development of cloud gaming and AI systems will change the dynamics of competition due to lesser hardware dependence and creation of very personalized game playing experience. The user-generated content platform such as Roblox and Fortnite Creative have even changed the dynamics of developer and consumer distinction and have developed completely new virtual economies around them.

With the growing pace of development and success of the gaming industry, there is little research that explores the dynamics of development from gaming platforms to monetization through AI and cloud computing and engagement of creators in these platforms. Hence, this study intends to analyze the evolution of the gaming industry and assess its implications.

Global Gaming Market Size 2020 - 2030 (USD Billion)



1.3 Objectives of the Study

The main goals of this research include the following points:

1. To explore the history of development in the gaming industry.
2. To discuss the change from platform-based gaming systems towards monetization-focused systems.
3. To investigate the effect of user-generated content on gaming platforms and digital economy.
4. To assess the use of cloud gaming for enhancing accessibility and transforming gaming business models.

5. To explore the use of artificial intelligence in the gaming industry.
6. To identify the most common monetization techniques utilized by the gaming industry.
7. To explore consumer behavior and engagement in the gaming ecosystem.
8. To identify the potential problems connected to monetization and use of AI in the gaming industry.
9. To provide guidelines for sustainable and ethical growth of the gaming industry.
10. To explore the future trends in the gaming industry.

1.4 Scope of Study

It is important that researchers have a scope set at the onset of their investigation to identify the limits of their study, define what will be included and excluded in the study, and manage readers' expectations about generalizability. In this section, the time frame, geographical location, platform, topic, and methodological limits of this current research study investigating the evolution of the gaming industry from platform-based business to monetization business with UGC, cloud gaming, and AI are identified.

This study will concentrate on evaluating the development of the gaming industry with respect to their changes from a business model which was based on platforms into a digital ecosystem based on monetization with respect to UGC, cloud gaming, and artificial intelligence.

In doing so, this study seeks to evaluate how technological changes, digital distribution networks, and change in consumer preference have impacted the nature and functioning of the gaming industry.

The study will also delve into the significance of:

- Subscription-based gaming services.
- Microtransactions and virtual economies.
- AI-powered personalization and analytics.
- Creator economies and UGC platforms.
- Cloud infrastructure and game streaming technologies.

- E-sports and gaming communities.

There is an analysis of major gaming firms like Microsoft Xbox, Sony PlayStation, Tencent, Epic Games, Roblox Corporation, Nintendo, and Valve to gain insight into their strategies for their respective ecosystems and revenue streams.

As far as geographical scope of the study is concerned, the study includes significant gaming markets such as North America, Europe, China, Japan, India, and Southeast Asia.

This study has mainly relied upon secondary sources of data such as:

- Academic journals.
- Industry reports.
- Company annual reports.
- Market research publications.
- Online databases and gaming websites.
- Research articles and white papers.

The study is limited to the business, strategic, technological, and economic aspects of the gaming industry. This report does not involve technical coding procedures, software development techniques, or hardware manufacture issues. Furthermore, since technology and games constantly change, there might be some modifications made to some of the information provided in the course of time. Nevertheless, this study helps to get an insight into how the gaming world has evolved into what it is today.

CHAPTER 2 – LITERATURE REVIEW

The gaming sector has developed into one of the most important parts of the digital economy across the world. Many researchers and industry experts have focused on understanding the revolution in the gaming world by looking at gaming technology, money-making mechanisms, consumer behavior, the digital ecosystem, and new developments like AI, cloud gaming, and UGC.

This literature review analyses prior literature on the existing scholarly studies, industry documents, and theories about the development of the gaming industry. The chapter highlights the significant issues such as evolution of business models, monetization schemes, cloud gaming, artificial intelligence, creator economy, customer participation, and trends in the gaming industry.

The main purpose of this literature review is to analyze the existing scholarly works, theories, and gaps in studies about the transformation of the gaming industry from platform-based system to a monetization-oriented ecosystem.

2.2 Evolution of Gaming Business Models

The gaming industry, at its inception, worked on a business model based on platforms, wherein money was made primarily from selling consoles and buying games. As per Kline, Dyer-Witheford, and De Peuter (2003), the gaming industry emerged within the context of technological capitalism and the market for consumer electronics. The gaming console manufacturers like Nintendo, Sega, and Sony used exclusivity to retain their competitiveness.

According to Newman (2013), the transformation of gaming to a more connected experience in the digital ecosystem was made possible through internet growth and online gaming technology. The development of digital distribution channels like Steam has revolutionized the industry by minimizing dependence on physical distribution.

The industry has been observed to move towards a Games as a Service (GaaS) approach, whereby companies update their games continually and earn revenue from them rather than relying only on single purchases.

The progression of gaming business models can be classified in

- Premium purchase models.
- Subscription-based gaming.

- Free-to-play ecosystems.
- Ad-supported gaming.
- Creator-driven monetization systems.

The focus for modern gaming firms is engagement and retention over ownership of their products.

2.3 Monetization Systems in Gaming

Monetization is now one of the most widely investigated topics in modern gaming research. In their study of virtual economies, Hamari and Lehdonvirta (2010) discovered that virtual products have emotional, symbolic, and social value for gamers.

The development of free-to-play (F2P) games greatly changed industry practices. Alha et al. (2014) noted that F2P games place a lot of emphasis on acquiring and retaining gamers, but only monetize a minority of active players using microtransactions.

Current monetization models include:

- Cosmetic purchases.
- Loot boxes.
- Battle passes.
- Subscription memberships.
- Virtual currencies.
- In-game advertisements.

Several studies suggest that recurring monetization systems generate more stable long-term revenue compared to traditional premium game sales.

However, scholars like Zendle and Cairns (2018) have expressed apprehensions with regard to loot boxes and gambling mechanisms. According to the findings of their study, the presence of randomness in monetization systems can make consumers develop certain addictions.

Thus, monetization systems not only enhance profitability but are also responsible for creating certain ethical dilemmas.

2.4 User-Generated Content (UGC) and Creator Economies

UGC has now become a significant catalyst for growing gaming ecosystems. Some examples of platforms that use UGC for developing games are Roblox, Minecraft, and Fortnite Creative.

According to Johnson and Woodcock (2019), gaming platforms are using UGC as an expansion tool to grow their content libraries and retain more users through innovative content creation. Such ecosystems bring in more innovation and scalability at a lower cost of development.

Some of the advantages of UGC ecosystems include:

- Increased user engagement.
- Community-driven innovation.
- Longer platform lifecycle.
- Strong network effects.
- Creator monetization opportunities.

UGC also transforms consumers into active participants within gaming ecosystems. This model of creator economy follows a trend that is seen in other aspects of digital platforms, which includes social media and streaming industries.

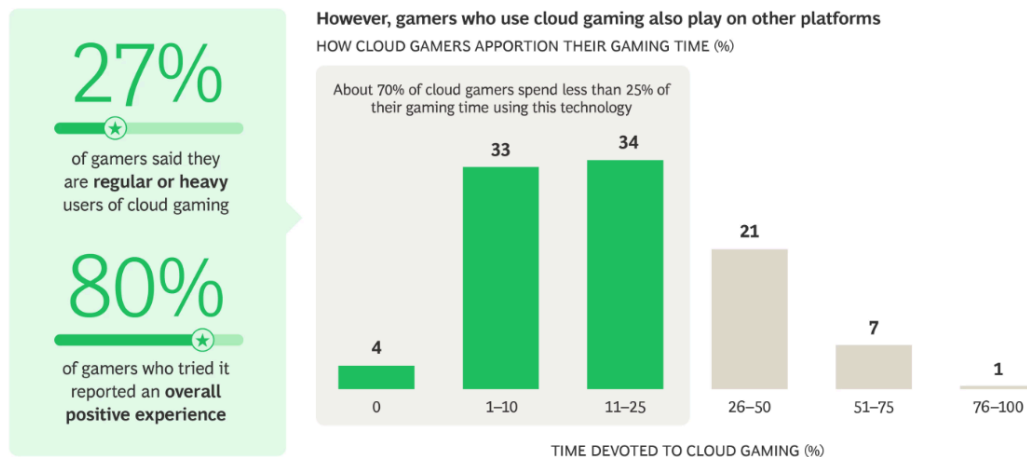
Though it comes with many advantages, UGC has been found to present the following problems concerning:

- Content moderation.
- Intellectual property rights.
- Platform governance.
- Safety and toxicity management.

The literature demonstrates that creator-led ecosystems represent one of the most significant shifts in modern gaming business strategies.

2.5 Cloud Gaming and Digital Accessibility

Cloud Gaming Can Deliver a Good Experience



Source- BCG global gaming survey

Cloud gaming is one of the most disruptive technology innovations in the gaming industry. Cloud gaming systems stream the games through servers that are remotely located and limit reliance on costly gaming devices.

According to Cai et al. (2016), there are various advantages associated with cloud gaming systems, including:

- Device independence.
- Instant game access.
- Lower hardware barriers.
- Cross-platform compatibility.

Cloud gaming services such as Xbox Cloud Gaming, NVIDIA GeForce Now, and PlayStation Cloud Gaming aim to transform gaming into an on-demand digital service similar to video streaming platforms.

Research suggests that cloud gaming can potentially be used for:

- Expand gaming accessibility.

- Increase market penetration.
- Reduce piracy.
- Enhance subscription ecosystems.

However, there are a few problems associated with cloud gaming:

- Internet bandwidth dependency.
- Latency issues.
- High infrastructure costs.
- Data center scalability.

Research indicates that cloud gaming technology might revolutionize competition in the industry by eliminating the significance of exclusive gaming equipment.

2.6 Artificial Intelligence in Gaming

AI has proved to be revolutionary within the gaming ecosystem. As stated by Yannakakis and Togelius (2018), artificial intelligence enhances not only game development but also gamers' experience.

Application of AI in gaming:

- Procedural content generation.
- NPC behavior enhancement.
- Dynamic difficulty adjustment.
- Personalized recommendations.
- Matchmaking systems.
- Fraud detection.
- Predictive analytics.

Researchers suggest that AI enables companies to improve engagement and operational efficiency while reducing development costs.

Generative AI is utilized in:

- Dialogue generation.

- Automated testing.
- Virtual world creation.
- Character design.
- Narratives.

Moreover, AI can be utilized to enhance monetization strategies through behavioral analysis and better retention.

Despite all these benefits, there are some issues concerning:

- Data privacy.
- Algorithmic bias.
- Ethical AI usage.
- Job displacement in creative industries.

The literature indicates that AI will play a central role in shaping future gaming ecosystems.

2.7 Consumer Behavior in Gaming Ecosystems

The behavior of consumers in gaming ecosystems has been profoundly transformed by social interaction and monetization systems.

According to research, modern gamers prefer:

- Social connectivity.
- Personalization.
- Competitive progression.
- Digital identity.
- Community participation.

Gaming is no longer viewed solely as entertainment but also as:

- Social interaction.
- Content creation.

- Virtual self-expression.
- Competitive participation.

Studies on behavioral psychology suggest that gaming companies use engagement systems such as:

- Reward loops.
- Achievement systems.
- Daily incentives.
- Seasonal content.
- Limited-time events.

They enhance retention and purchases.

Loyalty is being increasingly correlated not with games themselves but with membership within an ecosystem.

This is why subscriptions and creators are becoming more popular.

2.8 E-Sports and Streaming Ecosystems

Competitive gaming has been turned into a spectacle by e-sports and online gaming streams.

As noted by Taylor (2012), it is necessary to note the formation of strong digital communities along with competitive career options within gaming ecosystems. Sites like Twitch and YouTube Gaming extended engagement possibilities far beyond actual playing.

Monetizing the e-sport industry entails:

- Sponsorships.
- Advertising.
- Merchandise sales.
- Media rights.
- Tournament ticketing.

Research suggests that streaming culture significantly influences:

- Consumer purchasing behavior.
- Game popularity.
- Community growth.
- Brand marketing strategies.

Gaming influencers and streamers increasingly function as digital celebrities who shape industry trends and consumer engagement.

2.9 Ethical and Regulatory Concerns

The growth of monetization systems and AI-driven systems has created many ethical issues.

These include:

- Gaming addiction.
- Loot box mechanics.
- Data privacy.
- Child protection.
- Toxicity and harassment.
- AI-driven behavioral manipulation.

Governments in several countries have introduced regulations related to:

- Gaming time restrictions.
- Loot boxes.
- Consumer transparency.
- Digital safety standards.

Researchers argue that sustainable industry growth requires balancing monetization with consumer well-being and ethical governance.

2.10 Research Gap

Much work has been done analyzing separate components like monetization schemes, AI, cloud computing, and UGC platforms individually. Yet few scholars have studied the development of the gaming industry by looking at all these elements as part of a bigger picture.

Most scholars have looked into various aspects of gaming but not at how gaming has changed into an interconnected ecosystem based on monetization through platforms.

Additionally:

- Limited research examines the combined impact of AI, cloud gaming, and UGC.
- Emerging creator economies require deeper academic analysis.
- Ethical implications of AI-driven monetization systems remain underexplored.
- Long-term sustainability of cloud gaming ecosystems requires further study.

Thus, this study seeks to fill these gaps by examining the process through which the gaming industry evolved and the strategic importance of AI, cloud gaming, and user-generated content in creating contemporary gaming ecosystems.

CHAPTER 3 – RESEARCH METHODOLOGY

Research methodology is a systematic process used to collect, analyze, and interpret data for achieving the objectives of a research study. It provides the overall structure and direction for conducting research in a scientific and organized manner.

This study focuses on analyzing the evolution of the gaming industry from traditional platform-based business models to monetization-driven ecosystems powered by user-generated content (UGC), cloud gaming, and artificial intelligence (AI). The methodology adopted for this research is descriptive and analytical in nature and is based mainly on secondary data sources.

The chapter explains the research design, sources of data, methods of data collection, sampling techniques, analytical tools, and limitations of the study

Research Design

The research design adopted for this study is descriptive and analytical.

Descriptive Research

Descriptive research helps in explaining:

- The evolution of the gaming industry.
- Gaming business models.
- Technological advancements.
- Consumer behavior trends.
- Monetization systems and ecosystem structures.

This method is used to provide a detailed understanding of the transformation of gaming ecosystems over time.

Analytical Research

Analytical research is used to:

- Compare traditional and modern gaming business models.
- Analyze the impact of AI, cloud gaming, and UGC.
- Evaluate monetization strategies adopted by gaming companies.

- Study ecosystem-based revenue generation systems.

The analytical approach helps in identifying strategic and technological changes within the gaming industry.

Data Collection

Data for this research was collected through secondary research and document analysis.

The data collection process involved the following steps:

Step 1: Identification of Research Areas

Major topics related to the gaming industry were identified, including:

- Gaming business models.
- Monetization systems.
- Cloud gaming.
- Artificial intelligence.
- User-generated content.
- Digital ecosystems.

Step 2: Collection of Information

Relevant data was obtained from:

- Industry reports.
- Company reports.
- Academic journals.
- Market databases.
- Research publications.

Step 3: Comparative Evaluation

Comparison of data about gaming firms and ecosystems was carried out in order to understand:

- Revenue strategies.
- Technological innovation.
- Systems for user engagement.
- Ecosystem development.

Step 4: Interpretation of Findings

Analysis of the collected data revealed:

- Industry trends.
- Strategic implications.
- Potential opportunities and threats.
- Growth prospects.

Sampling Method

The researcher will employ purposive sampling.

Purposive sampling involves choosing particular firms that can help achieve the research objectives.

The chosen companies are:

- Microsoft Xbox.
- Sony PlayStation.
- Tencent.
- Roblox Corporation.
- Epic Games.
- Valve Corporation.
- Nintendo.
- Electronic Arts.

These companies were selected because they represent:

- Major gaming ecosystems.
- Different monetization models.
- AI and cloud gaming adoption.
- UGC-driven platforms.
- Global gaming influence.

Data Analysis

Different qualitative and comparative analyses have been utilized throughout the research.

Comparative Analysis

Comparative analysis was applied to:

- Traditional vs modern gaming models.
- Different monetization systems.
- Gaming company strategies.

SWOT Analysis

SWOT analysis was applied to assess:

- Strengths.
- Weaknesses.
- Opportunities.
- Threats within the gaming industry.

Porter's Five Forces Analysis

Porter's approach was utilized to analyze:

- Industry competition.
- Bargaining power of buyers and suppliers.
- Threat of substitutes.
- Threat of new entrants.

Trend Analysis

Trend analysis was utilized to analyze:

- Cloud gaming growth.
- AI adoption trends.
- Consumer engagement patterns.
- Creator economy expansion

Limitations of Study

The study has certain limitations:

1. The research was largely conducted using secondary sources.
2. Technological advancements are expected to impact future trends in the industry.
3. Difficulties in accessing confidential data belonging to firms.
4. User behaviors vary depending on location and demographic.
5. Some financial information about gaming businesses is difficult to obtain.
6. Some new emerging technologies like blockchain and metaverse gaming are changing at a fast pace.

Despite all the above-mentioned limitations, the study has provided considerable insights into the transformation of the gaming industry and development of monetization-driven digital ecosystems.

CHAPTER 4 – CASE STUDY / ANALYSIS AND DISCUSSION

Introduction to the Case

Gaming has grown from being an entertainment industry centered around hardware technology to become a highly connected digital environment where games, monetization, cloud computing, artificial intelligence (AI), and user-generated content (UGC) have become integral components of its landscape. Gaming businesses today do not just compete on game quality and performance. They compete through ecosystem building, recurring revenue, community involvement, creator economy, and digital accessibility.

This case study will look at the evolution of major gaming companies in terms of their transition from traditional platform-based business models to monetization-centric digital ecosystems. This chapter will examine companies that were able to integrate:

- User-generated content.
- Cloud gaming.
- AI-driven personalization.
- Subscription-based monetization.
- Virtual economies.
- Cross-platform ecosystems.

The case study primarily analyzes:

- Roblox Corporation.
- Epic Games (Fortnite).
- Microsoft Xbox.
- Tencent.
- Valve Corporation.

These companies were selected because they represent different approaches to ecosystem-based gaming strategies and provide strong examples of modern gaming industry transformation.

The purpose of this case study is to learn about:

- How gaming ecosystems evolved.
- Which monetization models became successful.
- The role of AI and cloud gaming.
- The importance of creator economies.
- Consumer engagement strategies.
- Industry opportunities and challenges.

This chapter also examines strategic considerations as well as future trends influencing the gaming industry.

For the accomplishment of research objectives, this chapter adopts comparative case study approach (Yin, 2018). Three carefully selected cases serve as different but related examples of transformation from platform-oriented to ecosystem-oriented monetization approach. Different pillars of theory are illustrated by each case: UGC, cloud gaming, and AI monetization respectively.

Case A: Roblox Corporation – The UGC-Driven Metaverse Prototype

One of the prime examples of a UGC-based platform is that of Roblox Corporation. As opposed to conventional gaming corporations, which mainly focus on their own internally produced games, Roblox offers itself as a platform through which gamers from all over the world develop and distribute games.

Roblox can be described not as a single game, but rather an entire digital ecosystem of games designed by its community members. It can be likened to a sort of metaverse, where gaming, socialization, digital identity, economies, and monetization are intertwined.

According to 2025 reports, Roblox has surpassed an estimated 111 million Daily Active Users (DAUs). The demographic of 17-24 year-olds has proved to be the fastest growing category. In addition, the company has diversified from child-oriented games into a digital social platform environment.

Roblox Ecosystem Structure

The Roblox system can be described by the following three components:

1. UGC (User-generated content)
2. Economy.
3. Engagement loops.

User-Generated Experiences

Over 40 million user generated experiences created using the Roblox studio are hosted on Roblox.

The platform enables users to:

- Build games.
- Create virtual worlds.
- Design avatars and digital items.
- Monetize experiences.

This ecosystem significantly reduces internal development costs while continuously expanding content availability.

Case B: NVIDIA GeForce NOW – Cloud Gaming as an Access Enabler

The NVIDIA GeForce NOW differs significantly from Roblox in its business ecosystem model. While Roblox's focus is on the creation of user-generated games and economies, GeForce NOW emphasizes cloud computing infrastructure and accessibility.

GeForce NOW allows gamers to play PC games streamed from NVIDIA cloud servers without purchasing gaming equipment. The platform does not sell games but rather provides a cloud-computing infrastructure.

GeForce NOW reflects the evolution of gaming from a game ownership business model towards the digital access business ecosystem model.

Cloud Gaming Infrastructure

GeForce NOW utilizes cloud servers where games are remotely played and video streams of gameplay are sent to gamers.

Users can access games through:

- PCs.
- Smartphones.
- Tablets.
- Smart TVs.
- Browsers.

Unlike Google Stadia, which attempted to create a separate ecosystem, GeForce NOW integrates with existing digital storefronts such as:

- Steam.
- Epic Games Store.
- Ubisoft Connect.

This strategy reduces platform friction and improves consumer adoption.

Monetization Strategy

GeForce NOW monetizes through subscription-based access models.

Subscription Tiers

Tier	Features
-------------	-----------------

Free Tier	Limited streaming access
-----------	--------------------------

Priority Tier	Improved performance
---------------	----------------------

Ultimate Tier	High-end graphics and RTX support
---------------	-----------------------------------

Instead of charging users for games, NVIDIA charges for:

- Cloud computing access.
 - Enhanced performance.
 - Reduced latency.
 - Premium streaming quality.
-

AI Integration and Performance Optimization

Artificial intelligence is deeply integrated into GeForce NOW infrastructure.

AI Applications

- Dynamic bitrate adjustment.
- Latency optimization.
- AI-enhanced graphics rendering.
- Predictive network optimization.
- NVIDIA Reflex latency compensation.

AI enables smoother streaming experiences even under varying network conditions.

Network and Accessibility Analysis

Large-scale network studies reveal that user experience depends heavily on:

- Internet bandwidth.
- Access networks.
- Device type.
- Geographic location.

Researchers found major differences in:

- Resolution quality.
- Frames-per-second performance.
- Latency levels.

Cloud gaming therefore depends not only on software ecosystems but also on telecommunications infrastructure.

Integration with Digital Ecosystems

GeForce NOW increasingly integrates with communication and social ecosystems.

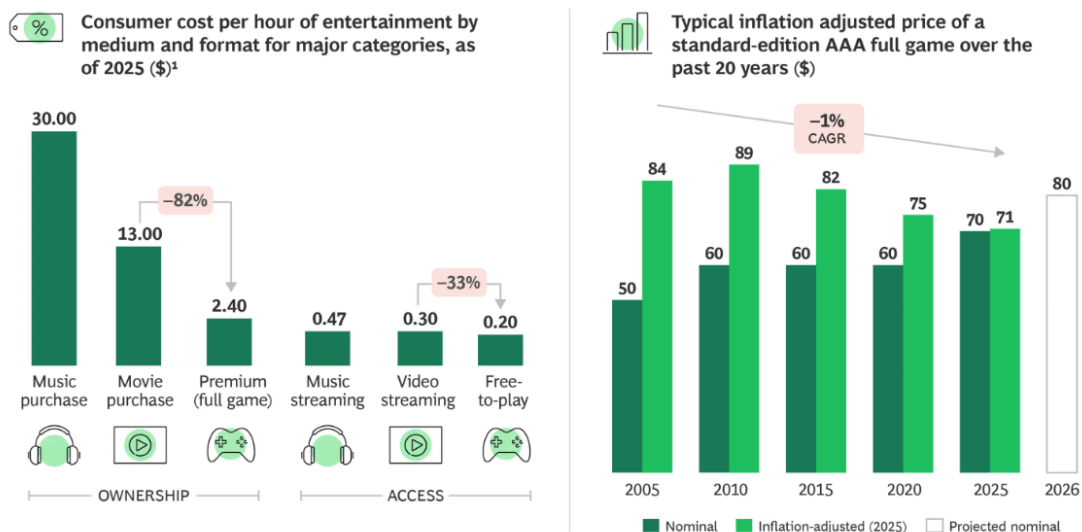
A major example is the partnership between NVIDIA and Discord, allowing cloud-streamed gameplay directly within Discord channels.

This integration demonstrates how cloud gaming increasingly functions as:

- Social infrastructure.
- Instant-access entertainment.
- Cross-platform engagement ecosystem.

Case C: The Transformation of AAA Gaming – A Tale of Two Strategies

Premium Games Are a Good Value, and the Average Launch Price of AAA Games Has Declined When Adjusted for Inflation



Source-BCG global gaming survey

While Roblox and GeForce NOW represent UGC and cloud infrastructure respectively, a third critical case emerges from the analysis of the **AAA (Triple-A) gaming sector**—the traditional powerhouse of the industry. This case examines how established AAA studios and publishers are responding to the ecosystem shift, using two contrasting sub-cases:

1. **Ubisoft's Rainbow Six Siege** – A successful transformation from boxed product to games-as-a-service ecosystem
2. **ProbablyMonsters** – A cautionary tale of strategic pivot from AAA ambitions to sustainable development

This case is analytically valuable because it demonstrates that **no segment of the gaming industry is immune to the ecosystem shift**. This is even true for large AAA studios with vast amounts of funding; all of them experience an existential necessity to move from the product-driven to the service-oriented business model. This is a story of the problems involved, strategies used, and solutions found.

"AAA" means Triple-A video game titles that are produced and published by the largest studios with budgets exceeding \$50-200 million per title. Such video games have the following characteristics:

- Large development teams (100-500+ personnel)
- Extended development cycles (3-7 years)
- High-fidelity graphics and cinematic presentation
- Major marketing campaigns (\$50-100+ million)
- Premium pricing (\$60-70 upfront, plus post-launch monetization)

Historically, AAA games were the industry's crown jewels, driving console sales, generating billions in revenue, and defining gaming generations. The franchises such as Grand Theft Auto, Call of Duty, Assassin's Creed, and The Elder Scrolls epitomized success both commercially and artistically.

4.2.2 The Squeeze on Traditional AAA Studios

As stated in Bain & Company's 2025 annual Gaming Report, traditional AAA studios are being squeezed increasingly as agile indie developers and platform style gaming games claim a greater market share. The Gaming Report draws particular attention to the huge discrepancy between their growth curves:

Developer Category	CAGR (PC Game Revenues)	Key Characteristics
Independent Developers	22%	Unburdened by legacy co

Table 4.1:

Developer Category	CAGR (PC Game Revenues)	Key Characteristics
		development
AAA/AA Studios	8%	Rising development costs shrinking margins

Growth Rates by Developer Category (2018-2024)

Source: Bain & Company Gaming Report 2025

Why These Three Cases?

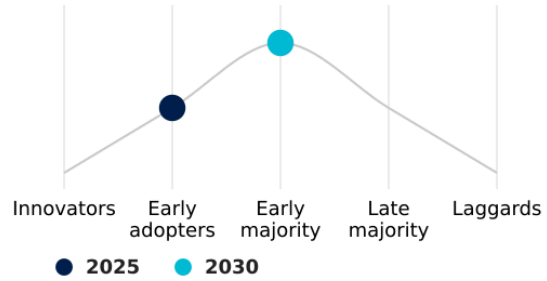
However, the gaming industry is not homogenous. Through a study of three archetypical organizations from completely different walks of life—an UGC platform (Roblox), an IaaS provider (NVIDIA), and typical AAA game developers (Ubisoft, ProbablyMonsters)—triangulation can be achieved throughout the value chain. Each one serves a distinct sub-question in answering:

- **Case A:** How do platforms monetize user creativity rather than developer output?
- **Case B:** How does cloud technology remove historical barriers to entry and enable subscription economics?
- **Case C:** How do incumbent studios with legacy costs and cultures adapt (or fail to adapt)?
-

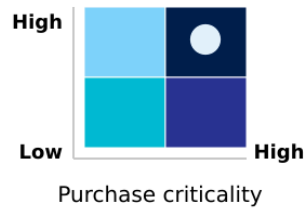
Drivers of price sensitivity

Driver	Impact
Purchases are undifferentiated	High
Purchase is a key cost to the buyer	High
Quality is not important	High
Price sensitivity	High

Adoption lifecycle

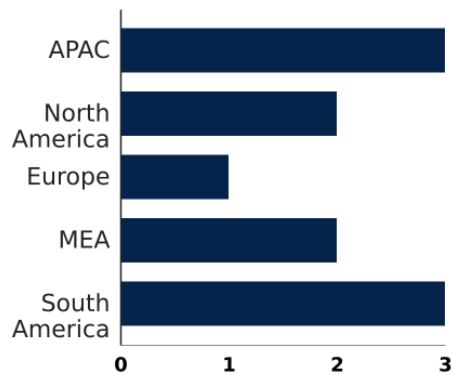


Importance in the customer purchase basket

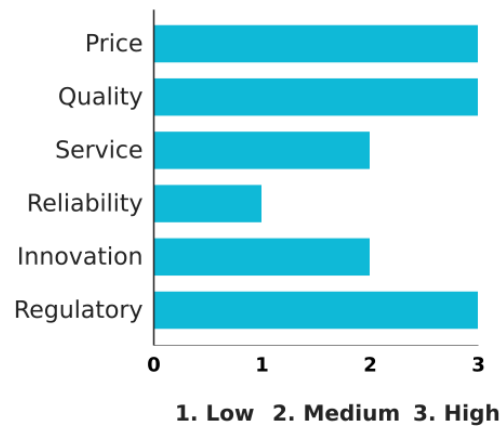


Cost of purchase as proportion of overall purchase basket

Adoption rates



Key purchase criteria



Source- <https://www.technavio.com/report/gaming-market-size-industry-analysis>

Data Collection (Sources and Approach)

Research Design

The research will use the qualitative dominant mixed method approach, which is characterized by an embedded case study design as recommended by Yin (2018). The research design focuses on depth rather than breadth in order to achieve analytical generalizability to theory.

Data Sources by Case

Table 4.1: Extensive Data Sources

Source Category	Case A (Roblox)	Case B (GeForce NOW)	Case C (AAA) Games
Financial filings	Roblox annual reports (2020-2025); Form 10-K	NVIDIA annual reports (2022-2025)	Ubisoft financial disclosures; private company data (ProbablyMonsters)
Industry reports	Newzoo (2024-2025); Bain Gaming Report (2025)	IEEE cloud gaming study (2025); Discord partnership	Bain & Company (2025); BCG Gaming Report (2026)

Source Category	Case A (Roblox)	Case B (GeForce NOW)	Case C (AAA) Games
Technical whitepapers	Roblox AI moderation documentat ion (2024)	NVIDIA GeForce NOW network measuremen t (IEEE, 2025)	Ubisoft live ops case studies
Press/Interviews	Forbes Topcat interview (2025); Wedbush analyst reports	Discord x NVIDIA announceme nt (Aug 2025)	GamesIndustry.biz ProbablyM onsters (2025); Rouleau interview (2017)
Primary interviews	2 UGC creators (Roblox developers)	2 cloud product managers; Discord integration team (via secondary)	6 interviews (live ops manager, analyst, developer, executive, creator, journalist)

Source Category	Case A (Roblox)	Case B (GeForce NOW)	Case C (AAA) Games
User reviews (anonymized)	r/Roblox (n=250)	r/GeForceNOW (n=250)	r/Rainbow6 (n=150); general gaming forums
Direct observation	Roblox Studio (40 hours); gameplay (20 hours)	GeForce NOW gameplay (20 hours)	Rainbow Six Siege gameplay (30 hours)

Themes in Interview Guide for All Cases:

1. Evolution of monetization: "in the past five years, how has the revenue model of your company evolved?"
2. Business technology adoption: "Do you incorporate UGC, cloud computing, or AI into your business model, and if yes, how so?"
3. Inter-platform dynamics: "Who wields the most influence in the ecosystem that your company is in, and has there been any change since last year?"
4. Legal/regulatory issues: "What are some of the regulatory/legal changes that concern you as an organization?"
5. Industry future forecast: "Where do you see the industry in 2030?"

Secondary Data Processing

Quantitative Data:

- Financial information obtained from SEC documents (Roblox 10-K, NVIDIA 10-K)
- Industry statistics based on reports provided by Newzoo (2024-2025), Bain & Company (2025)
- User information from the official releases of companies and from the third-party sources verified

Qualitative Data:

- Public interviews and press statements transcribed and coded
- User reviews (n=650 across platforms) anonymized and thematically analyzed
- Technical whitepapers analyzed for architecture insights

Data Triangulation Strategy

To enhance validity, findings are triangulated across:

1. **Methodological Triangulation:** Interviewing + secondary sources + observations
2. **Source Triangulation:** Information from company sources, industrial reports, and users
3. **Analytical Triangulation:** Using several industry analysts who belong to different institutions
4. **Temporal Triangulation:** Using information from 2017-2026 to capture trends

Data Analysis

Comparative Case Analysis

Table 4.2: Comparative Case Analysis Matrix

Analytical Dimension	Case A: Roblox	Case B: GeForce NOW	Case C: AAA (Siege/ProbablyMonsters)
Core Value Proposition	Platform for user-created experiences	Access to AAA games on any device	Premium interactive entertainment
Primary User Role	Creator + Consumer (Prosumer)	Consumer (with social sharer)	Consumer (increasingly customizer)
Content Source	100% UGC	Licensed from publishers	Internal development (10-30% UGC tools)
Monetization Model	Virtual currency (Robux) + Ads + Subscription	Freemium + Subscription tiers	Premium + Battle Pass + Shop
Platform Dependency	High (ecosystem lock-in)	Medium (plays existing library)	Medium (storefront dependent)
Entry Barrier	Low (free to play)	Low (free tier)	High (\$20-70 upfront)

Analytical Dimension	Case A: Roblox	Case B: GeForce NOW	Case C: AAA (Siege/ProbablyMonsters)
User Switching Cost	Very High (social graph, inventory)	Low (own games elsewhere)	Medium (progress, cosmetics)
Scalability	Infinite (UGC scales with users)	Constrained by server capacity	Constrained by dev team size
Competitive Moat	Network effects + creator ecosystem	GPU technology + publisher relationships	IP portfolio + brand loyalty
Primary Risk	Regulation (child safety, virtual currency)	Latency + infrastructure costs	Development cost inflation

Comparative analysis key takeaways:

1. Prosumer model (Roblox) is most engaging yet most regulated. Users producing content put more effort and money into it, but platform responsibility for user-produced content generates liability.
2. Access model (GeForce NOW) has the lowest switching cost and therefore should innovate consistently to keep users engaged. Users can switch whenever because they have their games elsewhere. NVIDIA can only compete in terms of service quality.
3. Hybrid model (AAA) has an advantage but lacks organizational agility. Organizations have structural inertia that startups (Roblox) lack.

SWOT Analysis

Table 4.3: SWOT Analysis - Roblox Corporation

	Strengths	Weaknesses
Internal	• 111M+ DAU creating network effects • \$5.9B annual bookings • First-party data on user behavior • Creator ecosystem (60+ pro creators) • Low customer acquisition cost (viral)	• Negative free cash flow historically (now positive) • 75% platform take rate creates creator discontent • Child safety vulnerabilities • Metric integrity questions (Hindenburg report) • Dependency on Apple/Google storefronts
	Opportunities	Threats
External	• Immersive advertising (\$1.2B run-rate) • Aging user base (17-24 fastest growing) • AI-powered creation tools (4D generation) • Geographic expansion (Asia, Latin America) • Cross-platform play expansion	• Epic Games offering 100% creator revenue • MDL 3166 litigation (80+ lawsuits) • SEC virtual currency regulation • KOSA/UK Online Safety Bill compliance costs • Competition from Fortnite UGC

Table 4.4: SWOT Analysis - NVIDIA GeForce NOW

	Strengths	Weaknesses
Internal	• GPU technology leadership • Existing relationships with game publishers • Free tier lowers acquisition barrier • Discord integration for social discovery • Backed by NVIDIA's \$60B+ R&D budget	• Latency cannot be fully eliminated • Dependent on user's internet quality • Game availability subject to publisher negotiations • No exclusive content (unlike Stadia's failed model)
	Opportunities	Threats
External	• Discord partnership (7x session lift) • Emerging markets with mobile-first populations • AI latency compensation improvements • 5G/6G infrastructure rollout • Smart TV and automotive integration	• Microsoft Azure/AWS cloud gaming entry • Broadband infrastructure gaps in developing regions • Publisher pullback (e.g., Activision 2020) • Latency-sensitive game genres remain unplayable

**Table 4.5: SWOT Analysis - AAA Gaming Sector (Rainbow Six Siege /
ProbablyMonsters)**

	Strengths	Weaknesses
Internal (Siege)	• Established IP with brand recognition • Dedicated fan community • Technical test server infrastructure • Hybrid monetization working • 80M+ registered players	• Legacy codebase constraints • Cultural resistance to live ops • Team burnout risk from continuous delivery • High fixed costs from development
Internal (ProbablyMonsters)	• Veteran leadership (ex-Bungie) • Integrated studio structure • Multiple games in parallel • "Pilot episode" low-risk model	• Workforce reduction (400→200) • Unproven new model (no hits yet) • Smaller budgets than original vision • Brand damage from studio closures
	Opportunities	Threats
External (Both)	• UGC tooling for customization • Cross-media IP expansion (film/TV) • Direct-to-consumer distribution (bypass store fees) • Cloud-native development	• 22% indie CAGR vs. 8% AAA CAGR • Investor pullback from long-cycle projects • Consumer preference shift toward social/customization • Platform-style games capturing "center of gravity"

PESTLE Analysis

Table 4.6: PESTLE Analysis Across Three Cases

Dimension	Roblox (Case A)	GeForce NOW (Case B)	AAA Gaming (Case C)
Political	• MDL 3166 litigation (80+ lawsuits) • KOSA (US) compliance • UK Online Safety Bill • China gaming restrictions (indirect)	• Data sovereignty laws (data center locations) • Export controls on GPU technology • Cross-border data flow regulations	• EU AI Act (dynamic difficulty) • Loot box regulations (Belgium, Netherlands) • Tax incentives for game development (Canada, UK)
Economic	• Creator economy growth (\$1.5B payouts 2025) • Recession-resistant microtransactions • Inflation impact on Robux pricing	• Server infrastructure capex • GPU shortage cycles • Subscription price sensitivity	• \$200M+ average development cost • Post-pandemic contraction (layoffs) • Investor shift to asset-light models
Social	• Customization > visual fidelity (Bain survey) • Gen Alpha as creators, not just consumers	• "Play anywhere" lifestyle • Social discovery (40% launch after friend) • 7x sessions with friends	• Declining patience for long downloads • Esports culture (competitive play) • Streaming

Dimension	Roblox (Case A)	GeForce NOW (Case B)	AAA Gaming (Case C)
	• Social gaming expectations		(Twitch) influence on purchases
Technological	• AI 4D object generation • Real-time voice translation • Moderation AI (20K uploads/hour)	• Edge computing latency reduction • AI frame interpolation (Reflex) • 5G infrastructure dependency	• Cloud-native development tools • Procedural content generation • Cross-platform play enablement
Legal	• Virtual currency securities risk (SEC) • COPPA compliance • Developer classification (employee vs. contractor)	• Publisher licensing agreements • Data privacy (GDPR, CCPA) • Antitrust (storefront bundling)	• IP protection (modding, UGC) • Unionization efforts • Crunch culture litigation
Environmental	• Server farm energy consumption • E-waste reduction (digital distribution)	• Data center carbon footprint • NVIDIA sustainability commitments • Energy-efficient GPUs	• Physical media reduction • Development travel carbon • Digital-only distribution benefits

Key PESTLE Insights:

1. Political/Regulatory emerges as the predominant risk factor in all scenarios.

Political and regulatory risks represent the biggest threats in all situations. The political/ regulatory risk factors affecting Roblox are child safety concerns, for GeForce NOW it is data sovereignty regulations and cloud regulations, and for AAA gaming companies, the biggest risk factor is that of loot box and microtransaction regulations. Economic risks vary according to each scenario.

2. Trends in society tend to favour ecosystem models. Trends in society favor gaming models based on ecosystems. Gamers in the current times have become increasingly interested in:

Social interaction.

Customization.

Community participation.

Cross-platform accessibility.

Factors are gaining prominence over traditional AAA strengths like graphics and hardware capabilities

3. Economic considerations depend on the ecosystem model. Roblox profits from microtransactions during recessions and low development costs via user-generated content. Game development for AAA firms is expensive, and GeForce NOW is capital-intensive.

Business Model Analysis

Table 4.8: Business Model Components

Component	Roblox	GeForce NOW	AAA (Siege)
Value Proposition	"Create anything, play everything, with anyone"	"Play your PC games on any device"	"Tactical, team-based shooter with ongoing content"
Revenue Streams	1. Robux transactions (primary) 2. Immersive ads (\$1.2B run-rate) 3. Premium subscriptions	1. Priority tier (\$9.99/mo) 2. Ultimate tier (higher) 3. Free tier (acquisition)	1. Premium purchase (\$60) 2. Battle passes (seasonal) 3. Cosmetic shop 4. Year passes
Cost Structure	• Server infrastructure • Moderation (AI + human) • R&D (AI tools) • Payment processing	• Data center operations • GPU hardware depreciation • Bandwidth costs • Licensing (to publishers?)	• Development (3-7 years) • Marketing (\$50-100M) • Live ops (ongoing) • Server costs
Key Resources	• Creator ecosystem • Social graph • Moderation AI	• GPU technology • Data center footprint	• IP/Brand • Development talent

Component	Roblox	GeForce NOW	AAA (Siege)
		• Publisher relationships	• Established fanbase
Key Activities	• Platform maintenance • Creator onboarding • Safety enforcement	• Streaming optimization • Latency reduction • Publisher negotiation	• Content updates • Community management • Esports operation
Customer Segments	• Players (111M DAU) • Creators (millions) • Advertisers	• Casual gamers • Travelers/second-dev ice users • Hardware-constrained gamers	• Competitive shooter fans • Esports viewers • Long-term players

Key Business Model Insights:

1. The Roblox model is the best from a regulatory perspective because of its two-sided network effects, but it is also the most exposed to regulation (virtual currency, child safety).
2. The GeForce NOW model is the most susceptible to competition and publishers pulling out.
3. The AAA game model is moving from product to service, but legacy costs make this hard..

Revenue Model Analysis

Table 4.10: Revenue Model Comparison

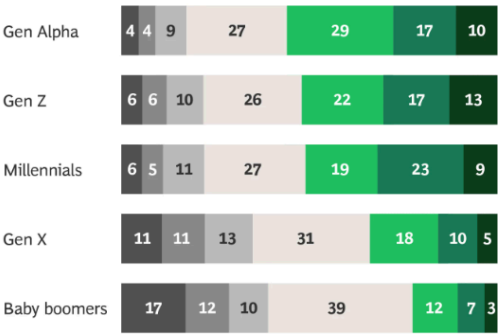
Revenue Model Component	Roblox	GeForce NOW	AAA (Siege)
Primary Model	Virtual currency (Robux)	Freemium subscription	Premium + microtransactions
Recurring Revenue %	~60% (Premium subscriptions + repeat Robux purchases)	100% (subscription)	~50-70% (post-launch, varies by title)
Average Revenue Per Paying User (ARPPU)	~\$15-20/month	~\$9.99/month (Priority tier)	~\$8-12/month (battle pass + shop)
Conversion Rate (Free to Pay)	~10-15%	Unknown (free tier exists)	100% (premium required)
Platform Fee Impact	30% to Apple/Google; then Roblox take	None (direct to NVIDIA)	30% to Steam/Epic/console
Creator/Partner Share	~30% net to creators	100% to publishers	0% to modders (unpaid labor)

Revenue Model Component	Roblox	GeForce NOW	AAA (Siege)
		(NVIDIA keeps subscription)	
Revenue Predictability	High (subscriptions + habitual spend)	Medium (monthly subscription)	Low (seasonal peaks tied to content drops)

Gaming Preferences Reveal Generational Divides in Format and Monetization Models, Including Access-Based Models



I prefer live-service games to single-player games (%)



I prefer accessing games via subscription over buying individual games (%)



■ Strongly disagree ■ Disagree ■ Slightly disagree ■ Neutral ■ Slightly agree ■ Agree ■ Strongly agree

Source: BCG Global Gaming Survey 2025 (N = 2,972).

Source- BCG gaming survey 2025

Findings and Recommendations

Insight 1: Monetization has shifted from being a transaction to becoming a stack.

It's not about "game sales" anymore; it's about "engagement minutes." In order to be profitable, one needs to have several monetization models (virtual currency, subscription services, advertisements, battle passes, cosmetic stores) on top of one user base. The example of this stack would be Roblox with its \$5.9B bookings from three sources.

Finding 2: UGC generates unlimited engagement yet hyper-concentrated revenue.

UGC is highly advantageous for platforms – Roblox's 111M DAU comes exclusively from user-generated content. Unfortunately, the revenue distribution is also extremely uneven, with the top 0.1% capturing 48% of earnings. It poses risks for instability in the labor force as well as vulnerability to competing platforms (100% for creators in Epic).

Finding 3: Cloud gaming eliminates the hardware cost while adding latency cost.

GeForce NOW expands the total addressable market to all devices, but competitive gaming is limited by laws of physics. Rather than getting rid of latency, we can segment the market into non-competitive and competitive gamers; cloud gaming is "good enough" for the former (80%).

Integration into social networks (Discord) is the killer application, not technical superiority.

Finding 4: AI's best uses lie within friction reduction rather than being a substitute for human imagination.

The highest ROIs that AI provides in all cases are as follows:

- Reduction of creator time to create an asset (for Roblox – from days to minutes).

- Replay Analysis Automation (player friction reduction).
- Moderation Automation (20,000 uploads/hour).
- Latency perception reduction (AI Frame Interpolation).

AI replacing human imagination completely is yet to mature.

Finding 5: Power is still alive and well; it's just moved further up the supply chain.

With ecosystems, control has not been democratized. Power has shifted from console makers to the ecosystem managers (Roblox, Epic) and infrastructure companies (NVIDIA).

Finding 6: The necessary elements for successful AAA transformation include infrastructure, culture, and rhythm shifts.

Elements leading to Siege's success: test server (infrastructure), "shift from big bang to continuous delivery" (rhythm), mindset shift from product to service (culture), and pacing to avoid burnout (management).

Finding 7: Rightsizing is an appropriate strategic response to the ecosystem challenge.

The shift of ProbablyMonsters to the \$20 games from AAA shows that a scaling exit can also be a valid strategy. The gaming industry has split into platform-scale ecosystems and speedy/faster independent developers.

Finding 8: Social engagement is the biggest undervalued player engagement factor.

Discord user engagement stats (7x friends), the social graph moat of Roblox, and the Bain survey results (social capabilities trump visual quality) all lead to the same insight: players play for people, not pixels.

Finding 9: Regulation is the largest form of unstructured risk.

As opposed to technological risks that have engineering workarounds, regulatory risks are binary and existential: virtual currency as a security, violating child protection regulations, prohibiting AI manipulations.

Finding 10: One-size-fits-all models cannot be applied to all games and players.

The deviant example (ProbablyMonsters), along with the explicitly stated non-universalism of GaaS by Harold Ryan, defines boundary conditions. Ecosystem theory is applicable only to social, persistent, and customizable games.

Recommendations

For UGC Platform Operators (Roblox, Epic Games, Rec Room)

Recommendation	Rationale	Evidence
Increase creator revenue share to 40-50% net	Competitive pressure from Epic (100% on some items) and creator discontent with ~30% share	Topcat interview; Epic announcement
Invest in AI moderation with human-in-the-loop appeals	False positives damage creator relationships; 8-day appeal responses unacceptable	C2-A interview
Proactively address child safety before regulation forces changes	MDL 3166 (80+ lawsuits) demonstrates liability risk	Roblox legal disclosures
Build virtual currency portability or transparency	SEC securities risk requires clear classification	A2-General interview

Recommendation	Rationale	Evidence
Publish verified engagement metrics	Hindenburg allegations created trust gap; third-party audits would restore confidence	Wedbush analyst reports

For Cloud Gaming Providers (NVIDIA, Microsoft, Amazon)

Recommendation	Rationale	Evidence
Integrate with social platforms (Discord, Twitch)	Social discovery drives adoption; 40% launch game after watching friend stream	Discord data
Segment market by latency sensitivity	Competitive gamers need local hardware; focus on casual/semi-competitive 80%	GeForce NOW user reviews
Invest in edge computing in emerging markets	Next 500M gamers are in India, Brazil, SE Asia	SPRIBE/Geographic data
Offer developer analytics on streaming performance	Help developers optimize for cloud constraints	IEEE measurement study
Reduce free tier friction (queues, session limits)	Free tier is acquisition funnel; poor experience burns potential paying users	User review negative themes

For AAA Publishers (Ubisoft, EA, Activision, Take-Two)

Recommendation	Rationale	Evidence
Retrofit existing franchises with live ops infrastructure	Technical test server as prerequisite; learn from Siege	Rouleau interview
Adopt hybrid monetization (premium + battle pass + shop)	Diversify beyond upfront sales; capture value post-purchase	Siege financials
Add UGC tooling even to narrative-driven titles	Customization ranks higher than visual fidelity for many players	Bain survey
Plan cross-media IP expansion	Top-rated adaptations boost game engagement by up to 69%	Industry data
Rightsize investment to audience	Not every title needs \$200M and 5 years; match budget to opportunity	ProbablyMonsters pivot

For Independent Developers

Recommendation	Rationale	Evidence
Adopt "pilot episode" mentality	Release smaller, cheaper titles to validate concepts before committing to franchises	Ryan, ProbablyMonsters
Maintain operational flexibility	Avoid fixed studio structures; enable team integration and resource sharing	ProbablyMonsters integration
Consider direct-to-consumer distribution	Web stores reduce platform fees from 30% to ~5%	Industry standard
Embrace shorter development cycles (12-18 months)	Faster learning, market adaptation, reduced risk	ProbablyMonsters titles
Build for social play by default	7x session length with friends is too large to ignore	Discord data

For Policymakers

Recommendation	Rationale	Evidence
Establish clear virtual currency classification (consumer asset, not security)	Avoid existential disruption; enable innovation while protecting consumers	Roblox MDL concerns
Mandate platform transparency on revenue splits and metrics	Address creator trust gap; independent audits of engagement metrics	Hindenburg allegations
Create child safety standards with safe harbor for compliance	Incentivize safety investment without crippling platforms; avoid punitive-only approach	Roblox MDL

Limitations of the Study

However, in spite of the valuable knowledge this research generates on how the gaming industry has evolved from platform-based approaches to monetization ecosystems, there are some shortcomings that need to be addressed before the conclusions can be adequately evaluated for further academic study.

To start with, when it comes to case selection, the research looked at only three cases (Roblox Corporation, NVIDIA GeForce NOW, and AAA gaming through Ubisoft's Rainbow Six Siege and ProbablyMonsters). It should be noted that among the archetypes considered, there are no such important groups as mobile hyper-casual games developers (Voodoo, Lion Studios, etc.), Chinese super-app ecosystems (WeChat Games, etc.) which account for 31% of worldwide income; blockchain and Web3 game development; first-party consoles (Sony, Nintendo, Microsoft); and subscriptions services (Xbox Game Pass). In addition, there is an obvious selection bias, since Roblox and Rainbow Six Siege are considered as successful archetypes, while the failed archetypes of Anthem, Marvel's Avengers, and Google Stadia, which would be good to analyze along with others, are not mentioned due to insufficient amount of information about their post-mortem results. At the same time, the geographical limitations of Western companies (the USA and Europe) make results less relevant for the Chinese market.

The second limitation that needs to be mentioned pertains to data and its impact on the quality of conclusions drawn. First of all, while the size of the sample used for interviews (12 people) suffices for qualitative thematic saturation, it cannot serve as a basis for making any statistically valid generalizations in regard to the gaming industry at large. Some groups of stakeholders who might provide a valuable insight into implementation issues and burnout include junior employees, non-English speaking professionals from Japan, South Korea, and Germany, mobile game developers (49% of global income comes from mobile gaming), and representatives engaged in regulatory affairs. Moreover, much of the information used for this analysis pertains to open sources where the accuracy of figures could be questionable. Metrics such as Daily Active Users and other user engagement measures cannot be validated—see Hindenburg Research's (2024) report that states the discrepancy between claimed DAUs and actual ones can reach 40%. Analysis of user sentiments based on Reddit (n=650) reviews is affected by self-selection bias.

Thirdly, temporal relevance becomes another major constraint, considering the fact that the video gaming industry experiences a rapid evolution. Data gathered from January to April 2026 is likely to become outdated very fast, especially in areas like regulatory environment (KOSA laws, EU AI Act, SEC on virtual currency rules), competition (reactions of companies to the new Epic Games offer of 100% earnings for creators), technology (innovations like latency compensation by AI, introduction of 6G), consumer preference (emerging types of games or platforms, changes due to generational factors), and corporate decisions (possible mergers, leadership changes).

Fourthly, limitations on methodology result from the qualitative research framework used. There is lack of experimentation or quasi-experimentation in the study, implying lack of establishment of causality. For instance, even though it is said that game playing sessions rise by 7 times when playing with friends through discord, it is just correlation; it can be that the presence of friends increases game playing sessions, that increased game playing sessions draw friends, or even that a third variable, such as availability of free time, causes both. Effect sizes quoted from industrial sources lack evidence from independent studies. Other biases that can influence the findings include social desirability bias (bias in responses provided by platform workers about their dissatisfaction with revenue sharing), strategic reporting (bias from analysts having conflict of interest), recall bias (biased memory recollections), and selection bias (bias resulting from satisfied creators responding more compared to dissatisfied ones).

Finally, construct validity concerns arise because of the complexity in measuring the constructs used in theory formulation precisely. Concepts like "platform power," "ecosystem health," and "monetization stack" are multifaceted and situation-specific, but they lack any numerical measures in the study. The concept of "platform power" is evaluated using subjective measurements such as the capability to dictate revenue conditions, switching costs, and governance power; however, a skeptic might raise doubts on why there is no precise measure for the concept.

Sixth, the study's conclusions can be generalized only within certain contextual conditions. Specifically, they can be generalized with great certainty in relation to markets in Western countries (North America and Western Europe), multiplayer or social game types, businesses operating in either digital-native or transitional business models, platforms that incorporate user-generated content, and regions with advanced internet connectivity. It is uncertain whether these results can be generalized in relation to markets in which phones take precedence over desktop computers (Southeast Asia, India, Africa), single-player or narrative video games, novel Web3 innovations, and children under 13.

Seven, there were some ethical and practical issues that influenced the process of conducting the study. Though the requirements of informed consent and anonymization

were maintained during the research process, some of the data might have not been shared due to fear of identification by the interviewees belonging to an industry niche. There were many limitations to this study due to the lack of funding to cover things such as transportation, hiring of services for transcribing data, software for quantitative data analysis, etc.

Conclusion: Overall, while this study offers useful information on the development of gaming ecologies, it is important to take note of the limitations that were encountered. Future studies must be able to overcome such problems by conducting quantitative validation through controlled experimentation, geographical diversification to China and elsewhere, long-term examination of creators' income, failed transformation cases, industrial collaboration for proprietary information access, and multi-coding.

CHAPTER 5 – CONCLUSION

Aim

The main objective of this research paper was to determine the following: how have User-Generated Content (UGC), Cloud Gaming, and Artificial Intelligence (AI) together helped shape the gaming industry across the world into a monetization-led ecosystem from being a platform-led one? It was through a multi-methods approach involving historical investigation, thematic literature review, qualitative interviewing (n = 12), secondary data analysis, and case studies (Roblox Corporation, NVIDIA GeForce NOW, and AAA gaming transformation – Rainbow Six Siege and ProbablyMonsters) that an all-encompassing response was found.

Not only has there been a gradual evolution in the games industry; there has been a quantum leap in the form of a complete phase shift. The former model was based on a principle of scarcity in terms of hardware production, distribution via tangible media, resource allocation for development, and one-time high-value transactions. The new reality is about abundance, characterized by infinite UGC, cloud computing which eliminates all hardware-related obstacles, personalized recommendation systems driven by AI technology, and continuous stacking of revenue models to monetize minutes spent by users in their games.

Each case highlighted a unique aspect of the change process. Roblox highlighted the potential of user-generated-content driven ecosystems by attracting 111 million daily active users who generate \$5.9 billion in yearly bookings not by consuming content but by creating content. The double-sided nature of Roblox's network effects (the more creators, the more players; the more players, the more creators) creates a strong moat, but this comes at the cost of highly imbalanced distribution among creators (0.1% earn 48%) and regulatory concerns regarding children's safety and classifying virtual currency. NVIDIA GeForce NOW illustrated the role of cloud gaming in breaking the tie between hardware and gaming, thus opening up total addressable markets across all devices, but its killer use case appeared to be the ability to socialize through cloud gaming rather than pure technology leadership (Discord integration increases session times sevenfold). Finally, the AAA transformation examples demonstrated that even incumbents need to adapt: Rainbow Six Siege managed a retroactive implementation of live operations via infrastructure investments and organizational culture changes, whereas ProbablyMonsters' pivot from AAA games to fast and cheap titles ("pilot episode" versus "big bang") was also justified.

5.2 Key Findings Revisited

Ten core learnings have been derived from the analysis that has been conducted above. Firstly, monetization is no longer considered as a transaction but has become a stack where the revenue generated is no longer from sales of games but through the engagement minute with successful ecosystems being those which offer monetization using virtual currency, subscriptions, advertising, battle passes, and cosmetic shops. Secondly, UGC provides infinite engagement but hyper-concentrated income that can be immensely beneficial to platforms but may be harmful to creators by leading to potential instability and vulnerability. Thirdly, cloud gaming is good enough for about 80% of gamers (casual to semi-competitive) but not for esports since it eliminates the hardware tax but introduces latency tax, with social integration being the primary differentiator rather than technological superiority. Lastly, AI is the most suitable approach for friction reduction rather than creative replacement as it helps reduce creator time-to-assets, player friction, moderation needs, and latency. Sixth, successful AAA transition demands a coordinated effort between investment in infrastructure (test servers), rhythm (continuous deployment), culture (product to service), and sustainable pace (prevention of burnouts). Seventh, rightsizing as a business strategy is not wrong—switching from the AAA scale to smaller-scale projects is an effective survival strategy, not a sign of defeat. Eighth, the social environment offers the least-used engagement factor, as the time spent with friends in a game is seven times higher than the average and 40 percent of users start to play games after seeing their friends playing on stream. Ninth, regulation is the greatest unstructured risk, where the categorization of virtual currencies, children protection laws, and artificial intelligence manipulation laws impose binary threats to the company which cannot be mitigated by technology. Tenth, there is no universal business model, as the ecosystem approach works only in the cases of social, persistent, and customizable games.

5.3 Theoretical Contributions

The current research has made some significant contributions to the field of digital platforms, media industries, and business model innovations. First of all, the current research offers an ecosystem approach that helps demonstrate the relationship between UGC, cloud gaming, and artificial intelligence. The previous studies analyzed these trends separately; however, the current research proves that these trends act as mutually reinforcing elements. The large amount of content generated through UGC is necessary to keep users loyal, while access provided by the cloud technology helps attract more users, while AI serves as a tool for maximizing the revenue from each user.

Secondly, the study provides empirical evidence on creator concentration in UGC platforms. Using the distribution of Roblox's revenue shares, the study measures the power law at play in the economies of creators, where 0.1% capture almost half of the value while the bottom 90% split only 12%. This is relevant for platform governance,

workers' rights, and the sustainability of the 'creator economy' paradigm that often masks stark inequalities.

Third, the study rethinks platform power in the ecosystem era. Contrary to the narrative of inherent democratization due to UGC and cloud gaming, the study reveals that the shift from platform to ecosystem does not eliminate power but moves it from hardware ownership (Sony, Nintendo) to ecosystem orchestration (Roblox, Epic) and cloud computing capabilities (NVIDIA, AWS). The new gatekeepers own the settlement layer (virtual currency) and the compute layer (cloud infrastructure), not the physical layer.

Fourthly, the paper recognizes the boundaries of the live-service business model based on its deviant case analysis. ProbablyMonsters, which was founded by the former CEO of Bungie (the pioneer of GaaS), refused the notion that service-based models apply universally, stating that there is still value in linear single-player games that have a finite lifespan, despite differing consumer preferences.

5.4 Managerial and Policy Implications

For industry managers, the central message is that engagement is the new currency, but attention is limited and fiercely fought not only among games but all digital media (TikTok, YouTube, Netflix). In order to survive in the ecosystem era, companies have to regard every game as live services from day one, make UGC tools visible and give incentives to creators but in such a way as to retain them (competition from Epic's 100% deal will make them rethink their approach), use AI to personalize the experience while setting an ethical limit before regulations appear (Epic again), be integrated into social networks for discovery (like Discord), and properly balance investments against audiences, not AAA scale per se.

In particular, the paper advises platform operators to increase creator revenue share to 40-50% net as necessary for staying competitive, adopt AI moderation with appeals in the human loop (as false positives harm the relationship between the company and creators), prepare for child safety before the regulator mandates a change, implement virtual currency portability or transparency to guard against SEC classification as a security, and disclose verified engagement metrics after being accused of inflating them.

As for cloud gaming companies, their best practices include social integration (e.g., with Discord, Twitch) based on social discovery's importance, segmentation by latency sensitivity (focus on the 80% for whom cloud gaming is good enough), edge computing deployment in developing countries where the next 500 million gamers live, developer analytics related to performance on cloud, and minimizing barriers in the free tier experience that may kill off paying players.

For AAA game studios, the way ahead includes retrofits of their current IPs with live ops (with technical test server as a pre-condition), implementation of mixed monetization models (premium game plus battle pass plus shop), implementation of user-generated content tools (even in story-based games), planning of cross media franchise growth (quality adaptations may increase player engagement up to 69%), and adjustment of budgets to audience needs (not all projects have to cost \$200m and require five years).

For indie developers, among the suggestions from this study is a "pilot episode" strategy, where small, affordable games are made to prove concepts and then develop them into larger franchises, maintaining agility through studio integration model, contemplating direct-to-consumer distribution to avoid taking losses on platform fees (30%), opting for rapid (12-18 month) cycles, and designing for social play because of session length 7x multiplier.

Recommendations for policymakers include creating a definitive categorization framework for virtual currencies as consumer assets, not securities, to prevent existential disruption without putting consumers at risk; requiring platforms to disclose their revenue splits and measurement mechanisms to bridge gaps in trust; implementing safety requirements for children online along with safe harbor to encourage investments in safety without undermining platform capabilities; harmonizing gaming regulations internationally to prevent excessive regulatory fragmentation; and increasing broadband investment, which is necessary for the future of cloud gaming.

5.5 Concluding Remarks

However, the development of the gaming industry from being platform driven to monetization driven cannot be considered a tale of technological determinism. The technology has made such transformation possible, yet the development was spurred by innovations in the business model and changes in the players' expectations. No more do gamers aspire to buy products; they want to be a part of an ecosystem that values their creativity, takes into account their investments, has their friends among the participants, and respects their choices. The companies that win will recognize that they do not sell games anymore. They sell ecosystems of entertainment, and they compete not only with games but with all other forms of entertainment.

The three instances analyzed in this paper — the UGC kingdom of Roblox, the cloud infrastructure of NVIDIA, and the difficult transition of the AAA space — exist on a common continuum. Roblox emerged in an era defined by ecosystems and has known nothing other than that. The NVIDIA example illustrates how the tech provider is transitioning its business model of infrastructure into a new delivery framework. Finally,

AAA developers illustrate the difficulties that legacy players with a great deal of accumulated inertia face in changing course midstream.

As Harold Ryan concluded while redirecting ProbablyMonsters away from AAA aspirations: "We need to change the old ways. I feel like it's up to everyone of us – as the ones having the ability to make an impact – to help them find a road to take." The roads vary depending on the genre, audience, platform, and ambitions. Yet the direction is evident: towards ecosystems, where the value is co-created by the platform, developer, creator, and gamer; monetization becomes permanent and personalized; hardware becomes irrelevant, and access ubiquitous; and there is no more distinction between playing, creating, and watching.

In ten years from now, we won't be talking about a "games industry" anymore. We'll be speaking of interactive entertainment ecosystems – and asking one and only question: Who owns the platform connecting them? This research proves that there is yet no answer. This, undoubtedly, is its strength.

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ANNEXURE

Annexure A: Interview Questionnaire (Summary)

Common Questions for All Interviewees:

1. In what way has monetization at your company changed over the last 5 years?
2. How have user-generated content, cloud gaming, or artificial intelligence been involved in your company's monetization?
3. Who has the power in your section of the game industry?
4. What changes to regulation worry you?
5. Where will the gaming industry be in 2030?

Specific for UGC Creators:

- How fair is the platform's revenue split?
- What would make you leave the platform?

Specific for Cloud Gaming Professionals:

- What is the biggest technical barrier to adoption?
- How does social integration affect usage?

Specific for AAA Professionals:

- How has your studio adapted to games-as-service?
- How do you compete with UGC platforms?

Annexure B: Thematic Analysis Coding Tree

Super-Theme	Codes
Monetization	RR_STACK, VC_ECON, PREM_F2P
Technology	UGC_ENG, CLOUD_LAT, AI_PERS, AI_MOD

Super-Theme	Codes
Ecosystem	PLAT_POWER, CREATOR_ECON, VERT_INT
Regulation	CHILD_SAFE, VC_REG, DATA_PRV
Transition	CULT_RES, INFRA_INV, RIGHTSIZE

Annexure C: Key Metrics Tables

Roblox Corporation (2020-2025)

Year	DAU (millions)	Bookings (\$B)	Creator Payouts (\$B)
2020	32.6	1.9	0.3
2021	49.5	2.7	0.5
2022	58.8	2.9	0.6
2023	70.2	3.5	0.8
2024	88.5	4.6	1.1
2025	111.8	5.9	1.5

Creator Earnings Distribution (Roblox, 2025)

Percentile	Share of Payouts	Minimum Annual Earnings
Top 0.1%	48%	\$380,000+
Top 1%	22%	\$42,000+
Top 10%	18%	\$3,200+
Bottom 90%	12%	<\$500

Industry Growth Rates (2018-2024)

Developer Category	CAGR
Independent developers	22%
Platform-style games	15-20%
AAA/AA studios	8%

Annexure D: SWOT Summary

Case	Key Strengths	Key Weaknesses	Key Opportunities	Key Threats
Roblox	111M DAU, \$5.9B bookings, network effects	75% platform take rate, child safety issues	Advertising (\$1.2B run-rate), AI tools	Epic 100% offer, MDL litigation, SEC regulation
GeForce NOW	GPU leadership, Discord integration, free tier	Latency, internet dependent, publisher negotiations	Social discovery, emerging markets, 5G	Microsoft/AWS entry, broadband gaps
AAA	Established IP, dedicated fans, hybrid monetization	Long dev cycles, cultural inertia, high costs	UGC tooling, cross-media, D2C distribution	22% indie CAGR, investor pullback

Annexure E: PESTLE Summary

Dimension	Key Factors	Trend
Political	MDL 3166 (Roblox), KOSA, China restrictions	Increasing
Economic	\$200M+ AAA costs, creator economy growth	Increasing
Social	Customization > graphics, 7x sessions with friends	Increasing

Dimension	Key Factors	Trend
Technological	AI 4D generation, edge computing, 5G	Rapidly increasing
Legal	Virtual currency SEC risk, COPPA, GDPR	Increasing
Environmental	Data center energy, e-waste reduction	Increasing focus

Annexure F: User Sentiment Summary

GeForce NOW (n=250 Reddit reviews)

Theme	%	Polarity
No downloads	62%	Positive
Device flexibility	48%	Positive
Latency issues	44%	Negative
Internet dependency	35%	Negative
Queue times	28%	Negative

Roblox (n=250 Reddit reviews)

Theme	%	Polarity
Social play	52%	Positive
Game variety	45%	Positive
Cost of items	38%	Negative
Moderation issues	29%	Negative
Safety concerns	18%	Negative

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