Innovating Ethical Monetization for Profitable and Engaging Games

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Lately we have been seeing a trend of successful gaming companies shutting down within the video game industry at a rapid pace. The current state of the video game industry is quite unsustainable due to outdated and questionable monetization strategies being used by many companies. The benefits of loot boxes and microtransactions come with a cost of unsatisfied gamers, as well as concerns with fairness and openness, in gaming practices. The aim of this research study is to explore the existing monetization strategies and develop a game monetization framework that gives more importance to ethical principles and fairness and explores the potential of using AI technologies to enhance the overall gaming experience for modern gaming audience while ensuring long-team success for the gaming companies with successful game launches.

When designing the research method, a mix of Constructive Research and Case Study Research methods were used to study the current monetization strategies in the video game sector by utilizing both qualitative data, such as online surveys, and analysing various literature to gain a deeper insight into the challenges and possible solutions while establishing a stronger framework. One online survey was designed to gather input from players for the framework creation and second survey was directed at industry professionals to validate the framework.

The results showed a clear dissatisfaction among players with current monetization methods, such as pay-to-win models, as they view them as exploitative. The respondents prefer cosmetic only microtransactions that do not affect gameplay progression. There were some concerns about the AI-driven personalization, as they see a potential of prioritizing profits over player experience. Although results show that AI integration could enhance monetization, it must be carefully managed with regular audits to prevent exploitation. The industry professionals provided positive feedback on the proposed framework, with several areas of improvements. Key feedback includes relying on real-time player feedback may not fully capture the preferences of larger player base and unnecessary transparency would reduce the appeal for some players, and the dynamic pricing could unintentionally exploit loyal players through manipulation. However, they also acknowledged that, if done correctly, these elements could still provide benefits. A few professionals stated that Pay-to-Win models may be acceptable in certain conditions.

The findings make it clear that the gaming industry needs to shift toward more ethical, player-centric, and more balanced monetization approaches. Maintaining player trust and protecting consumers from exploitative practices require strict adherence to regulatory standards and ethical business practices within gaming companies. This framework provides clear guidelines for regular AI audits, maintaining pricing transparency, and incorporating ongoing player feedback for continuous improvement. Ultimately, this framework provides a long-term solution that balances player experience with the long-term success of gaming companies.

Keywords
Monetization, Microtransactions, Loot Boxes, Play-to-Win, Loot boxes, Artificial Intelligence, Machine Learning, AAA games, Live-service games, Freemium models, MMORPGs

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1 Introduction

In the rapidly changing video game industry, challenges around strategies for monetizing games take centre stage more than ever before. The industry has now become extremely volatile and it takes longer development time to deliver games, as pointed out by gaming journalists (Brooks, 2021; Deane, 2022; Go, 2024; Kim, 2024; Shirey, 2024). The rising development costs and longer timelines, mainly for AAA games pose a significant financial risk to companies by the time the game was released. According to Deane, (2022) what used to cost $50 million back in the days, now regularly exceeds $100 million. Games like Cyberpunk 2077 from CD Projekt RED, costing $174 million in development alone, excluding marketing costs, Most recently Studio Firewalk's high-profile online shooter game called Concord become victim of painfully long development cycle. Another live service game called "Squad Kills the Justice League" from Rocksteady spent nine years in development, costing $200 million to make and had an extremely disappointed launch (IGN, 2024).

Since current AAA game development cycles can go up to five to ten years, and postponed releases can make games extremely dated. Games like Concord, Suicide Squad Kills and the Justice League games were two most recent examples of games that suffered from unsatisfied players, outdated monetization models and being lagging market trends when they were first released (Kim, 2024). These challenges clearly emphasize the importance of proactive approach to review current monetization models and prioritize how they improve their strategies to ensure a more potentially successful launch.

This thesis highlights the significance of adopting ethical and adaptable monetization approaches to safeguard the long-term success during game development. The objective is to establish a transparent framework that not only enhances player satisfaction but also boosts game revenue. This report investigates how to develop a video game monetization framework that prioritizes socially responsibility and player centric monetization model, tackling issues related to loot boxes and microtransactions. At the same time, the thesis aims to evaluate how Artificial Intelligence (AI) and Machine Learning (ML) could be effectively integrated in game development to enhance fairness, transparency and efficacy in the monetization process. The goal is to encourage creativity in player experiences, while improving long-team revenue generation.

The theoretical background aims to give insight into the significance of prioritizing monetization strategies that that could take into consideration players' needs and preferences and give importance to what they want without solely focusing only on making profits. Based on a survey-based data collection strategy, and empirical data analysis, the thesis explores how major monetization strategies like loot boxes and microtransactions can impact player satisfaction. We examine

the criticisms surrounding these methods, and closely examine the potential of using AI/ ML, in game development to enhance fairness, transparency and potentially improve the effectiveness in the monetization process. This sets the foundation for discussions and highlights the importance of this research subject in improving gaming experiences while ensuring long-term sustainability in the industry.

1.1 Problem statement

In the past years, the gaming sector has encountered challenges regarding the moral dimensions of revenue generating tactics, like loot boxes and microtransactions. Despite their profitability, there have been growing worries about player satisfaction and fairness among gamers due to potential exploitation issues and lack of transparency within the community prompting a call for further investigation, into improved monetization approaches.

Video game firms need to rethink how they make money from games, and explore creative methods to enhance the players enjoyment and guarantee lasting success. They should be cautious as their present methods might lead to player discontent and break the trust in the company over time.

1.2 Objectives of the thesis

The primary objective is to develop a game monetization model that aims to balance to player interests and ensure fairness while maximizing earnings. The secondary aim is to suggest how to leverage AI and ML technologies in the process to overcome the associated obstacles effectively. The research also aims to discover ways to enhance gaming experiences holistically.

The thesis investigate how current approaches, to generating revenue affect player satisfaction in the gaming industry. It will delve into the considerations related to loot boxes and microtransactions while also exploring the potential of AI and ML advancements to enhance monetization strategies for developers and industry stakeholders. The focus is, on making decisions that prioritize player wellbeing and enhance the overall gaming experience.

This research is also focused on improving the strategies, for developing and implementing monetization models and investigating AI driven methods to promote fairness and transparency while offering recommendations to help video game developers enhance their monetization strategies successfully with the goal of making an impact on the monetization practices, in the video game industry.

The thesis offers insight into ethical and adaptable monetization strategies without claim to provide a one-size-fits-all solution. The research acknowledges the varied nature of the gaming industry, and it recognizes the unique characteristics of different game genres and player groups that may require customized strategies. Furthermore, it concentrates on ethical considerations and technological advancements rather than exploring the legal facets of monetization techniques. Ultimately this thesis seeks to bridge the gap between financial success and player satisfaction in the video game industry.

1.3 Research questions

Q1a: How do current monetization strategies, particularly loot boxes and microtransactions, impact player satisfaction, engagement, and trust in the gaming community?

Q2a: What are the ethical concerns about using loot boxes and microtransactions?
Q2b: How do ethical concerns manifest in player experiences and perceptions?

Q3a: How can AI and ML be effectively integrated into video game development?
Q3b: Can AI and ML improve monetization fairness, transparency, and dynamism?

Table 1: How research questions are answered

Question	Literature review	Empirical data collection
RQ1a	X	X
RQ2a	X	X
RQ2b	X	X
RQ3a	X	X
RQ3b		X

1.4 Terminology list

AAA games: High-budget, high-quality video games developed by major studios

AI-driven monetization: Using AI algorithms to optimize revenue generation strategies

Dynamic content generation: Use of artificial intelligence to create in-game content that changes based on player actions and preferences

Freemium models: Free-to-play games that charge a fee for additional content or features

Free-to-play: Games that can be played without any initial cost

Gamification: Use of game-like elements, such as points, rewards, and challenges

In-game purchases: Transactions made within the game for additional content or features

Live-service games: Games provide ongoing updates and content after launch, monetized through in-game purchases and subscriptions

Loot boxes: Randomly generated virtual items that can be purchased

Microtransactions: Small purchases made within a game, usually for virtual goods or currency

MMORPGs: Massively Multiplayer Online Role-Playing Games

Personalization algorithms: Algorithms that tailor the gaming experience to the preferences and behaviour of individual players

Player loyalty programs: Initiatives designed to reward and retain loyal players

Subscription models: Require users to pay a regular fee to gain access to the game and its content

User-centric game design: involves creating games with the player's needs and preferences in mind in order

2 Theoretical Background

The chapter explores the theoretical foundations, underlying key concepts and themes surrounding monetizing games, ethical considerations, player satisfaction, engagement, while understanding what literature say about the impact and potential of using AI on game development. The aim of this chapter is to lay down a foundation for grasping the key relationships within these domains and their influence on the gaming industry.

2.1 Monetization models

In recent years, the way games are monetized has changed quite drastically. Subscription models and freemium content have gained significant attention amount gaming companies to monetize their games for more profits, but not without raising concerns. Rita et al. (2024) show that micro-transactions are increasingly influencing how players spend in games, mainly due to gameplay advantages and social influences. The emotional response, often mixed with feelings of guilt and regret, has been examined by Gibson et al. (2023), indicating that players quite often struggle with impulse buying and regret after making small in-game purchases. At the same time, Zendle et al. (2020) explains that loot boxes and cosmetic microtransactions surged in the 2010s, becoming a significant part of popular games like Counter-Strike: Global Offensive and Fortnite.

There are many debates surrounding Loot boxes. Sidloski et al. (2022) make a clear link between loot boxes and gambling-like behaviours, especially for younger gamers. This has sparked major ethical concerns, with Kristiansen and Severin (2020) encouraging tighter regulations to prevent these practices from going out of control. The move by the Belgian Gaming Commission to ban loot boxes in games like FIFA 18 and Overwatch are good examples of how the industry is being forced to rethink their monetization strategies (Baeck & Claeys, 2021).

Freemium models also have taken over large segments of the market. Harviainen et al. (2018) suggest that creating freemium models that focus on ethical design is essential for long-term player satisfaction. Beltagui et al. (2019) point out that Free-to-Play games that also create a sense of community often motivate players to make purchases, especially if the in-game rewards are tied to achievements or social status. In games where social dynamics play a key role, Zendle et al. (2020) point out that cosmetic microtransactions has the potential to bring in more money to the companies.

Players' in-game purchasing decisions are not made just randomly but also influenced by how much value they perceive they’re getting, as shown by Yang et al. (2017). Rahman et al. (2024) further highlights that player engagement is very important in mobile games, as the overall gaming

experience and emotional connection can significantly impact whether players stay engaged or not. On a broader perspective, Ahmad et al. (2017) propose a framework that can be used for game development that includes more focus on continuous content updates and player engagement **(Figure 1)**. They explain that that subscription models that provide updates and exclusive content can effectively maintain player interest while ensuring revenue streams.

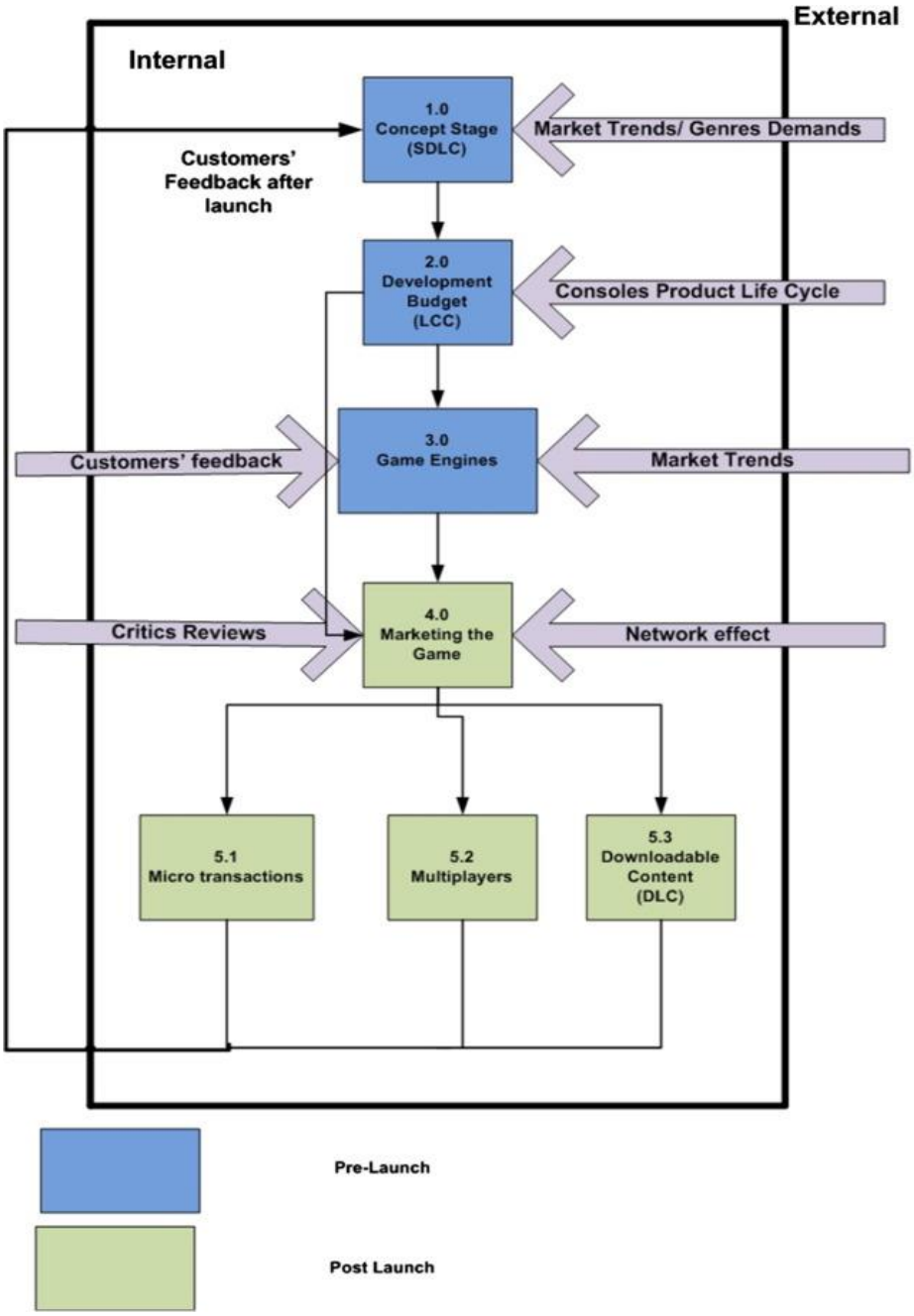

Figure 1: Suggested video games developers' framework

Source: Ahmad et al. (2017)

2.2 Ethical monetization strategies

As most gaming companies are more focused on revenue, ethical concerns related to monetizing their games should be taken into consideration. Loot boxes and pay-to-win have faced significant backlash for being seen as exploitative. Harviainen et al. (2020) note that transparency and fairness should guide monetization strategies, giving players a clear understanding of what they are paying for. With these growing concerns surrounding them, it's evident that avoiding predatory practices such as targeting younger or vulnerable players is the key to maintaining trust. (Harviainen et al. 2020)

Gibson et al. (2023) highlighted the excitement and anticipation players experience when engaging with microtransactions, but the satisfaction usually doesn't last long. The short-lived joy often turns into disappointment if rewards don't match the player's expectations, and too much emphasis on in-game purchases can detract the player and can take away from the core gaming experience.

In relation to the technology, Kapoor and Chatterjee (2023) suggest that AI-driven monetization strategies could offer more personalized and fair pricing models. By analysing player behaviour and adjusting offers accordingly, AI has the potential to maintain engagement while avoiding unethical practices. However various ethical considerations persist, such as safeguarding data privacy and preventing of misusing of user information.

2.3 Ethical considerations in game development

The way games are designed not only impacts how they are played but also how fair people think they are perceived. Petrovskaya and Zendle (2022) highlight that many current monetization strategies are usually unfair, even aggressive. There's a growing need for a move toward more ethical standards as players demand greater transparency and fairness.

The ethics of game design go beyond just monetization. Klemm and Pieters (2017) raise concerns about behavioural designs that promote harmful levels of engagement, mainly in MMORPGs. The responsibility of game developers also extends to protecting players from cyberbullying and harassment, issues as Trudgett-Klose and McLinton (2024) emphasize in their research on professional gaming. Their study shows that a large number of players experienced harassment, highlighting the importance of incorporating protective measures into game design.

Kristiansen and Severin (2020) take these concerns further by focusing on the risks associated with loot boxes, calling for regulatory oversight, particularly when minors are involved. Leahy (2022) believes that consumer protection and the regulation of gambling-like practices must be built into game design to create fairer systems.

2.4 AI and ML in game development

AI and ML has the potential to change the face of game development, not only enhancing gameplay but also personalizing the player experiences. Troussas et al. (2023) discuss how AI-based recommending systems can increase user satisfaction by delivering customized content to players, thereby adapting the gaming experience. These AI systems are not without ethical concerns, as Swacha and Gracel (2023) point out, especially around data privacy and the need for the autonomy of the user.

AI-driven personalization can have both negative and positive impacts as while it can improve player retention by adapting gameplay to individual preferences, it may also create overly repetitive experiences that reduce overall satisfaction (Swacha & Gracel, 2023). Tools like scikit-learn and TensorFlow have made it easier for developers to incorporate these features, but smaller developers may find the complexity and cost is not bearable for them (Sacha & Gracel, 2023).

AI is crucial for creating game content that dynamically responds to player actions, boosting player engagement and satisfaction. However, striking the right balance between AI insights and maintaining gameplay diversity poses a significant challenge for developers aiming for long-term success. (Kolek et al. 2023)

Using AI driven monetization strategies are also becoming increasingly important. Óskarsdóttir et al. (2022) emphasize that leveraging machine learning to understand and forecast player behaviour provides essential insights. These insights can be used to develop more effective strategies for player retention and improve overall game design, helping developers refine their monetization models to better suit player needs and preferences.

2.5 Player satisfaction and engagement

Player satisfaction and engagement are the key factors in determining the success of a game. According to Teng et al. (2022), satisfying players' needs connection, independence, and competency to significantly influence their trust in the game. Player engagement is directly linked to how much they feel involved in the game and its community, with Zein et al. (2023) showing that strong online communities have a greater customer loyalty.

User-centric game design revolves around the needs and preferences of players. Banyte and Gadeikiene (2015) suggest that identifying different types of player motivation is key to enhancing engagement and developing effective gamification strategies. Their study shows that intrinsic motivation contributed 46.1% of the variance in immersion, while experiential motivation explained

54.4% of the variance in presence. This highlights how different motivations significantly influence player engagement (Banyte & Gadeikiene, 2015).

Brown (2024) discusses a case study on Helldivers 2, showing that live-service models can help build strong player communities. By regularly updating the game and listening to player feedback, developers can consistently keep the community engaged and satisfied.

As Tong (2021) explains that player feedback can be a significant factor for developers open to improving their games after releasing. His study on No Man's Sky highlights how continuous refinements to their game based on user reviews helped them to make significant improvements in the game's quality and player satisfaction.

2.6 Industry practices

The gaming industry is always evolving, and keeping up to date with the latest trends is essential for companies long-term success. Cripe (2024) discuss how Warner Bros.' move toward live-service games is helping mitigate the risks lined to AAA games, helping for more constant engagement from players. Lantano et al. (2022) add that innovations, such as integrating mobile features into Sony PlayStation's offerings, is vital for staying competitive in the current gaming market.

Harviainen et al. (2019) note the importance of pricing strategies and delivering value, for sustained growth over time. Akter et al. (2020) propose that AI, blockchain, and data analytics will become central to optimizing game revenues in the future, as they offer new ways to streamline operations and improve decision-making processes for gaming companies.

Strategic alliances also play an important role. Terekhova and Constantinou (2023) discussed how celebrity endorsements, such as Arnold Schwarzenegger's role in World of Tanks game, can boost player engagement, highlighting the potential of collaborations in the gaming world. (Terekhova & Constantinou, 2023)

2.7 Case studies on ethical and profitable monetization strategies

Case studies provide valuable insights into balancing ethical practices with profitability. Jain and Dedezade (2024) highlight the success of games like Rocket League and Final Fantasy XIV, which have flourished by attracting their audience through regular updates and expansions.

Player loyalty programs are now seen as important for retaining players. Zhao et al. (2024) show that a positive gaming experience can build trust and ultimately lead to lasting player loyalty, over time.

According to Macey and Hamari (2019), loot boxes are now a common feature in modern video games, having originated in free-to-play models in China and Japan and being integrated across a variety of business models and genres. While designed to generate revenue, loot boxes have been heavily criticized for encouraging "pay-to-win" dynamics and resembling gambling, as players frequently spend real money to unlock loot boxes. Loot boxes have become popular in games such as Counter-Strike: Global Offensive and Overwatch, raising concerns about their potential to encourage gambling-like behaviours. As a result, global regulators are looking into the legality and potential harm. Although loot boxes appear in a variety of games, they are most prevalent in retail and free-to-play models, particularly in shooter genres. They suggest that other studies should concentrate on particular games in order to gain a deeper understanding of the impact of loot boxes on player behaviour. However, the widespread use of loot boxes in the gaming industry highlights the importance of ongoing research into their ethical implications and wider impact. (Macey and Hamari, 2019)

Hodge et al. (2022) discusses the addictive nature of loot boxes, suggesting that without proper ethical oversight, they can lead to financial and psychological harm for players. This makes ethical frameworks, and clear regulatory guidelines are necessary measures to safeguard against exploitation of players.

2.8 Privacy and transparency

Privacy and transparency are considered fundamental in building player trust, especially in today's gaming environment. Swacha and Gracel (2023) caution that AI-driven personalization comes with a cost of ethical challenges, such as how player data is used. Baeck and Claeys (2021) especially focusing on discussing the importance of transparency in loot box mechanics is vital for protecting players, particularly younger players.

Akter et al. (2020) examines the importance of data governance, especially since many companies increasingly rely on AI and blockchain technologies to enhance the gameplay and monetization in their games. Further highlighting that it is crucial to handle players’ personal data more responsibly to maintain a healthy player-developer relationship.

2.9 Game development ethics

The ethical considerations in game development are crucial and should not be optional for gaming companies. Klemm and Pieters (2017) argue that MMORPGs need more transparency to prevent

encouraging addictive behaviors about their players. They discuss that long hours of gameplay can lead to problematic behaviors and habits and highlighting the need for ethical game mechanics.

Petrovskaya and Zendle (2022) highlight how unethical practices, like pay-or-grind mechanics, can alienate some players and damage the reputation of games in the long run. They recommend integrating standards into game development to focus on promoting player welfare and ensuring fairness.

Paul et al. (2024) discusses the positive effects of gaming on mental health, especially during difficult times like the recent COVID-19 pandemic. They emphasize that playing online games can lessen stress and enhance social relationships during challenging times. This highlights the significance of creating games that prioritize the health and well-being of the players.

2.10 Summary

The literature review explores how video games can generate revenue, and observes the potential of AI and ML technology in gaming, providing a broad perspective on the current state of the gaming industry and its future directions. Existing literature looked into various methods that games use to monetize games, such as loot boxes and microtransactions, which many viewed as exploiting younger players (Kristiansen and Severin 2020; Sidloski et al. 2022). There are concerns among many regarding the ethics of loot boxes, with some demanding transparency and strong regulations due to the perceptions they have on them gambling.

Many worried about the ethics of loot boxes, while some supporters encouraging for more transparency and regulation. The studies show some advantages of in-game purchases, while others highlight the importance of making player-focused modifications in monetization strategies that improve the gaming experience without exploiting gamers (Harviainen et al. 2020; Zendle et al. 2020).

Some see AI and ML as innovative tools for developing fair pricing models, however, more research is necessary to investigate how to effectively implement these ideas while addressing concerns about data protection laws and maintaining compliance with regulatory standards (Kapoor and Chatterjee, 2023).

The existing research suggests that it is essential to have some changes to current methods in order to restore trust and meet players' expectations on game's delivery and also ensure long-term success of the game (Gibson et al. 2023; Ahmad et al. 2017). These changes should emphasize transparency and features that prioritize the player's experience more. However, there are some

unresolved challenges, such as the need for clear and actionable guidelines that recognize the diversity within the gaming community and adequate data regarding the effects of monetization (Macey and Hamari 2019). This suggests that more evidence is required to demonstrate how AI and ML can successfully benefit in monetization strategies.

3 Research Design

3.1 Research and development methods

This study uses a mix of Constructive Research and Case Study Research approaches to explore ethical monetization models within the video game industry. The thesis uses these approaches to thoroughly explore the practical challenges related to monetization, while also using this approach to develop a well-structured monetization framework that could be beneficial to create better monetization models.

Constructive Research is used to develop the Ethical and Dynamic Game Monetization Framework. This approach includes identifying particular problems tied to unethical monetization practices, performing a thorough literature review to find gaps, and also using player feedback to creating a monetization model that emphasizes fairness, and assessing the framework through data collection and feedbacks from industry experts. This involves thorough literature review, creating online survey's targeting casual to hardcore gamers and then assessing the created monetization model based on input from gaming experts.

Case Study Research is used to explore various monetization strategies used in various games or companies. This enables a thorough examination of current monetization models, assisting in identifying weaknesses and possible solutions for ethical enhancement. Concrete actions involve selection of case studies recognized for their monetization challenges and examining their practices within the framework development context.

3.2 Methods of data collection

This research used a combination of methods to gather comprehensive data for the analysis and assessment of ethical monetization strategies. By conducting online surveys and analysing gaming-related articles, gathered both quantitative and qualitative insights into player behaviours, attitudes, and expert opinions.

Statistical methods were used to analyse the survey data quantitatively from both gamers and industry experts. Utilized both descriptive and inferential statistics to identify trends in player behaviour, spending habits, and attitudes on monetization and AI integration. These studies found correlations between key aspects such as player satisfaction and the perceived fairness of monetization strategies.

For qualitative analysis, survey responses and feedback were examined using thematic analysis. This method assisted in identifying patterns and recurring themes related to ethical monetization,

AI/ML integration, and player satisfaction. In addition, content analysis of articles and literature was used to extract industry and public sentiment about gaming monetization practices. This combination of qualitative methods provided rich, contextual insights that supplemented quantitative findings, resulting in a more complete picture of the research topic.

In this study, the first online survey is used to collect quantitative data on player behaviour, spending habits, and opinions on existing and emerging monetization strategies. To reach a diverse pool of respondents, I used a multi-channel recruitment strategy that targeted both casual and hardcore gamers. Survey distribution took place through Discord gaming communities, social media platforms such as Instagram, and WhatsApp groups in academic circles. We collected and analysed 86 valid responses to gain valuable insights into player experiences with monetization practices and the potential impact of AI/ML on future strategies.

The second online survey was used in this study to mainly collect qualitative feedback from industry professionals on the framework that had been developed. This survey was essential for gathering expert feedback on the framework and understanding how ethical monetization models are perceived in the gaming industry. The online format allowed for efficient data collection while also allowing for discussion of important topics such as the ethical use of AI/ML, player satisfaction, and potential industry shifts toward fairer monetization practices. Gaming professionals were approached via LinkedIn, gaming discord channels, and other professional networks and invited to participate in the survey. The responses provided useful insights that helped to refine the framework, providing a broad perspective that increased its relevance and applicability to real-world scenarios.

3.3 Steps for conducting online surveys

Survey Design: Created concise questions to cover various monetization methods and player experiences. The questions focused on gaming habits, in-game purchases, player perspectives on fairness, and the influence of AI/ML in monetization.

Survey Distribution: The survey was shared through different online gaming forums, social media channels, and email lists. This attracted a broad and varied audience for the study, gathering a multitude of player perspectives.

Data Analysis: Once the responses were collected, used statistical methods to examine the data. Trends were identified and explored, including how player satisfaction connects with monetization practices.

4 Results

In this section of the research, investigate further into the survey findings to explore how players view video game monetization strategies and their interactions, as well as the possible impact of AI and ML on developing better monetization approaches for games. It examines a combination of data collected through multiple choice and open-ended questions and those responses to provide a comprehensive understanding of current trends in the gaming industry and player attitudes.

4.1 Introduction

In order to gather a diverse and relevant set of respondents, I used a variety of recruitment strategies aimed at both casual and hardcore gamers. The recruitment process included the use of several Discord channels dedicated to gaming communities and student groups involved in game development. In addition, I promoted the survey on social media platforms, ensuring a broader reach to the target audience. WhatsApp groups within my academic circles were also used to increase the number and diversity of respondents.

Because of my targeted and multi-channel recruitment strategy, 86 people answered the survey. All responses were validated to identify any invalid or bad responses, however, all responses were considered valuable, useful information for my research. However, minor changes, such as correcting country names and standardizing specific responses for clarity, were made to ensure data collection consistency. None of the responses were removed from the analysis due to their poor quality. The appendix section provides detailed evidence of survey distribution and respondent engagement.

The survey was designed to investigate a range of topics such, as gaming habits and attitudes towards purchasing items in games and the use of AI and ML in monetization strategies specifically being explored in detail here. The examination examines the demographics of 86 participants along, with their gaming behaviours and detailed qualitative input gathered from open-ended questions. It's crucial to closely study these insights to understand the effects of existing monetization methods and the potential influence of AI in shaping the future of gaming monetization.

4.2 Demographic profile of respondents

It's important to understand the demographics of participants to gain insight into their viewpoints.

Table 2: Demographic profile

Demographic	Percentage (%)
Age	
18-24	29.10%
25-34	43%
35-44	22.10%
45-54	3.50%
<18	2.30%
Gender	
Male	69.80%
Female	27.90%
Prefer not to say	2.30%
Country	
Finland	48.39%
United States	7.53%
France	5.38%
United King-dom	4.30%
Germany	3.23%
Others	31.18%
Continents	
Europe	84.06%
North America	10.14%
Asia	2.90%
South America	1.45%
Africa	1.45%
Gaming platform of choice	
PC	55.80%
Console	23.30%
Mobile	19.80%

Country of residence

In Table 2 of the survey findings shows that Finland has the highest representation, among the participants compared to regions. However, the feedback from people in North America, Asia, South America, and Africa shows the various cultural factors that influence gaming and ways for monetization.

Primary gaming platform

Table 2 shows that the high interest for PC gaming among those surveyed shows its impact on gamers. Console and mobile gaming also have a large fan base. Understanding how monetization strategies affect players differently based on their preferred platform is important.

4.3 Quantitative analysis

This section focuses on information about gaming habits, game purchases, and AI/ML in monetization methods.

Gaming habits

The survey asked about gamers' game preferences and time spent gaming.

Hours spent on gaming per week

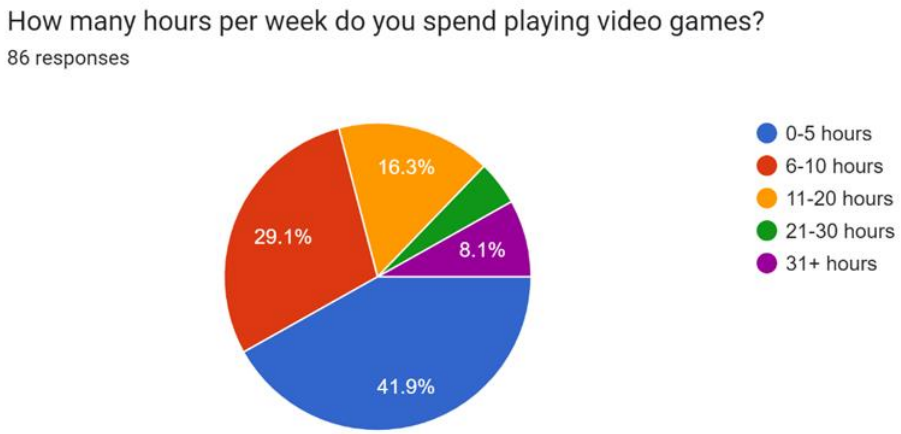

Figure 2: Weekly video game playing hours

Figure 2 shows that most respondents (41.6%) spend 0-5 hours per week playing video games. On the other hand, 29.1% of respondents spend 6-10 hours per week on gaming and 8.1% of gamers spend over 31 hours per week on gaming. The duration may affect how players interact with in-game transactions and their overall gaming experience.

Preferred game types

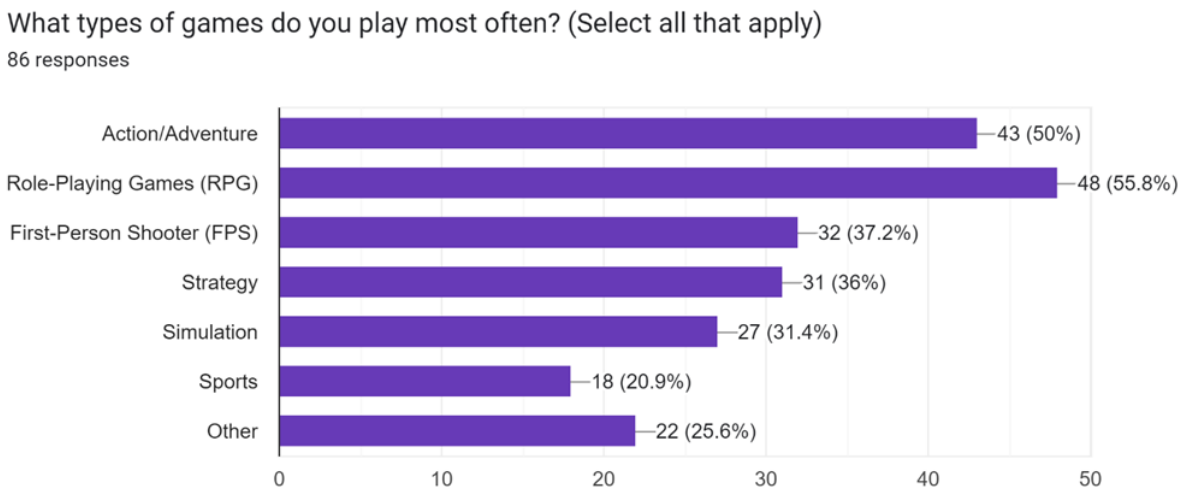

Figure 3: The preferred game genre

According to Figure 3, RPGs were chosen by most respondents. Action/adventure and FPS games were also popular among participants. Studying genre preferences helps with game-specific monetization strategies and understanding player response.

The gaming habits of heavy gamers

RPGs are the most popular genre, with 9 respondents playing over 21 hours per week. Heavy gamers also like action/adventure and FPS games (6 responses). While 5 heavy gamers prefer Simulation, 3 prefer Strategy, Sports, and Others. This analysis suggests RPGs, Action/Adventure, and FPS are ideal for heavy gamers.

In-Game purchase behavior

How players react to different monetization strategies and their satisfaction depends on in-game purchase behavior.

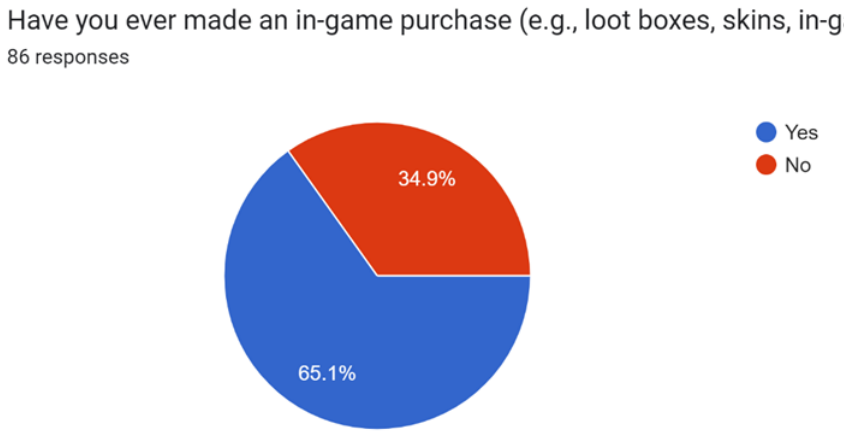

Figure 4: In-game purchases

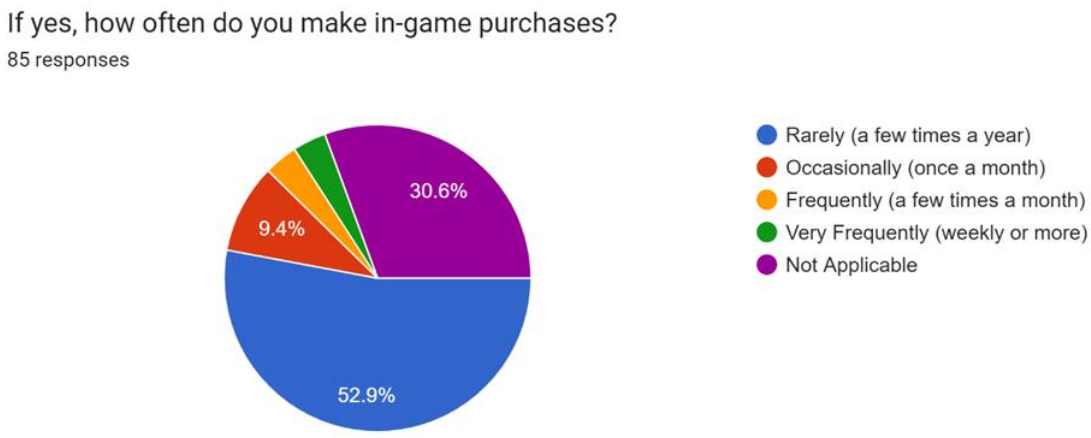

Figure 5: Frequently of in-game purchases

65.1% bought loot boxes, skins, or in-game currency.
52.3% of buyers buy only a few times a year.
9.3% buy sometimes, about monthly.
3.5% bought several times a month.
3.5% make in-game purchases weekly or more.
34.9% have never bought an in-game item.

In-Game purchase habits

Figure 5 shows player spending habits. The majority (53%) of respondents rarely use microtransactions, indicating cautious in-game spending. However, a select minority (3.5%) increases in-game spending due to their gaming needs or preferences. Many players (31%) are still hesitant to buy in-game purchases, suggesting they oppose microtransaction-based monetization.

Primary motivations for in-game purchases

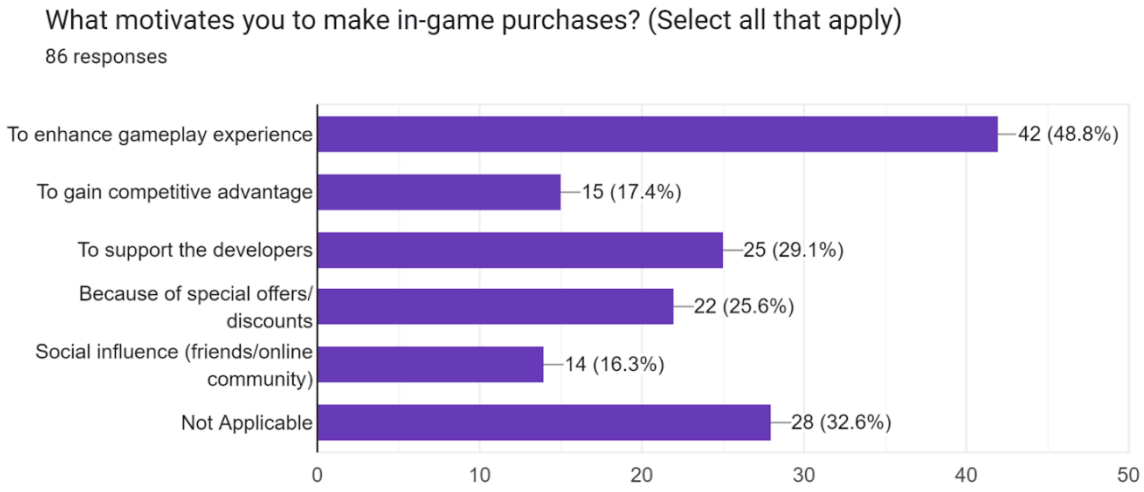

Figure 6: Motivations for in-game purchases

Figure 6 shows the main reason 48.8% of in-game buyers made purchases was to improve their gameplay. Another important factor was developer support, mentioned by 29.1%. Special offers and discounts influenced 25.6% of players, while social influence from friends or online communities influenced 16.3%. Finally, 17.4% wanted a competitive advantage. These findings show that in-game spending is driven by improving gaming experience and supporting game developers.

Game preferences among frequent buyers.

Frequent in-game buyers had diverse game preferences:

Both RPGs and simulations were preferred by 8 respondents.
Both FPS and other genres were chosen by 7 respondents.
4 respondents liked action/adventure, sports, and strategy games.

Frequent buyers prefer RPGs and simulation games, which may offer more in-game purchases. Players may buy cosmetic customization and DLC in these genres to improve their gaming experience. Developers must understand these preferences to optimize genre monetization.

Gaming time vs. frequency of in-game purchases

According to the survey results (Figure 2 and Figure 5), players who spend 11 to 20 hours per week gaming are the most likely to buy in-game purchases, followed by those who play for more than 31 hours per week. This suggests that players with moderate to high gaming engagement are more likely to buy frequent purchases, indicating a wider investment in the games they play. In In comparison, those who spend 21-30 hours per week playing video games are less likely to buy frequent purchases than other groups. This trend shows how gaming time is linked with spending behavior, with the most frequent purchasers are being those who are most involved in their gaming activities.

Overall satisfaction with games

The survey results show the distribution of respondents' levels of satisfaction with their overall gaming experience (Figure 7):

Low Satisfaction (1-5): 10 respondents (11.63%)

Moderate Satisfaction (6-7): 22 respondents (25.58%)

High Satisfaction (8-10): 54 respondents (62.79%)

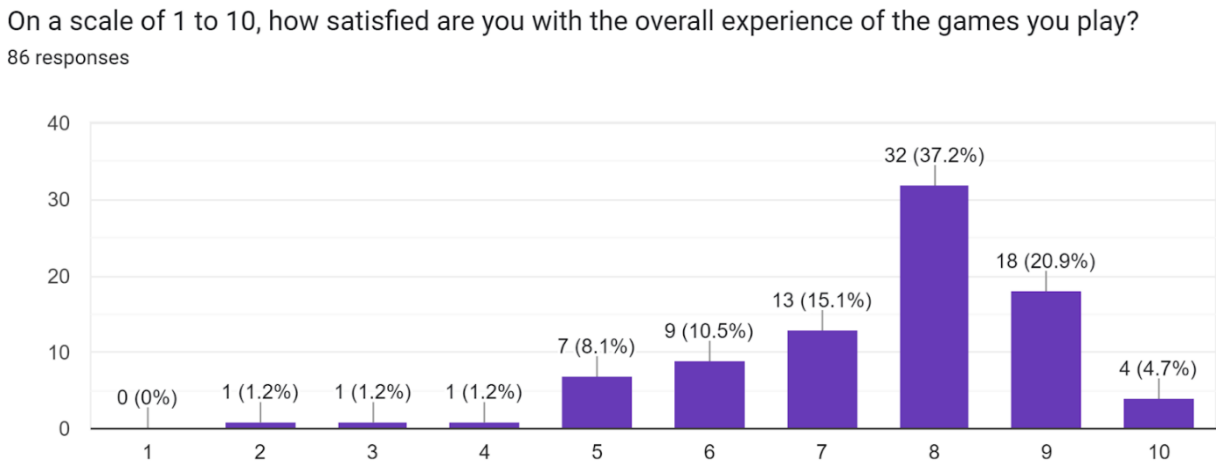

Figure 7: Overall satisfaction with games

Most respondents (62.79%) stated high satisfaction with their gaming experience, with a smaller proportion expressing neutral (25.58%) and low satisfaction (11.63%). This breakdown shows that many players are very satisfied with their gaming experiences presently. The data also show that there is still room for improvement, mostly among the 37.21% of respondents who reported neutral to low satisfaction.

Satisfaction with overall gaming experience based on purchase behavior

The survey also looked at satisfaction levels based on whether respondents had made in-game purchases ("Yes" or "No").

Group 1: Respondents who made in-game purchases ("Yes")

Neutral or less satisfied players: 18 respondents (32%)

Highly satisfied players: 38 respondents (68%)

The majority of those who made in-game purchases (68%) stated as being very satisfied with their gaming experiences. This suggests that in-game purchases may have a positive impact on overall satisfaction, possibly because of the benefits linked to these purchases are improving gameplay or have some addition towards in-game purchases. 32% of respondents in this group rated their experience as neutral or less satisfying.

Group 2: Respondents who did not make in-game purchases ("no")

Neutral or less satisfied players: 14 respondents (47%)

Highly Satisfied Players: 16 respondents (53%)

Among those who did not make in-game purchases, satisfaction levels were more evenly distributed, with 53% reporting high satisfaction and 47% reporting neutral or low satisfaction. This implies that, while some players play games without engaging in microtransactions, a considerable percentage may feel that their gaming experience is lacking.

Perception of fairness in game monetization

The survey results (Figure 8) show that respondents' perceptions of the fairness of the current game monetization practices are divided:

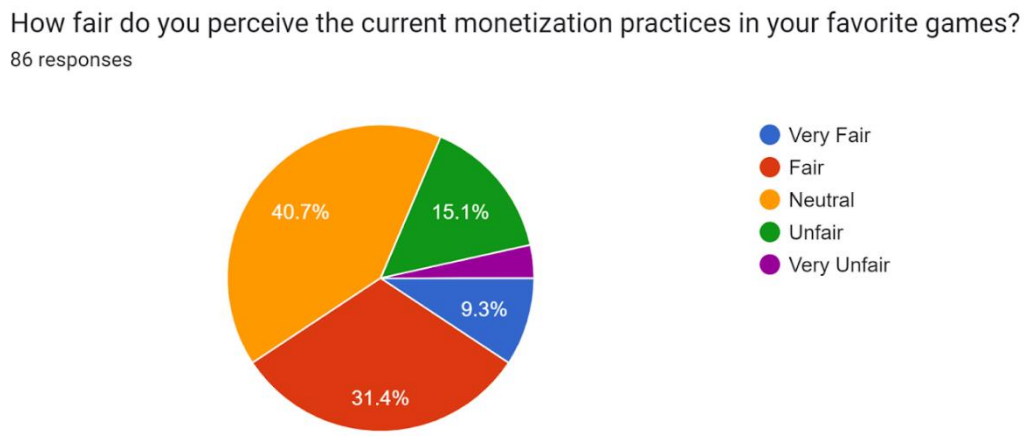

Figure 8: Perception of fairness in game monetization

This distribution shows that, while 31.4% of respondents think current practices are fair, 18.61% consider that they are unfair. The neutral stance taken by 40.70% of respondents suggests that many players are unsure about the fairness of monetization strategies, possibly due to mixed experiences or not experienced in-game purchases.

The impact of loot boxes and microtransactions on satisfaction

The survey looked into how loot boxes and microtransactions affected respondents' overall enjoyment of the game:

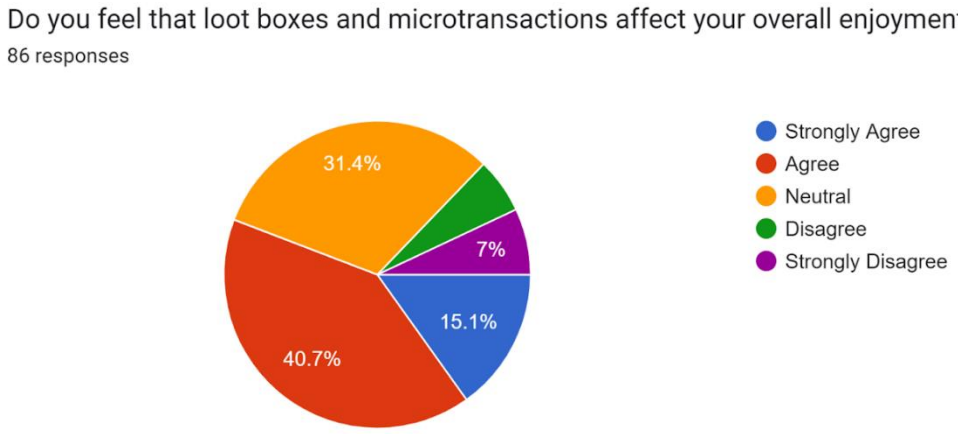

Figure 9: Loot boxes and microtransactions on satisfaction

According to the data (Figure 9), a significant percentage of respondents (55.82%) believe that loot boxes and microtransactions have a negative impact on their enjoyment of the game, with 15.12% strongly agreeing. However, 31.40% of respondents are neutral, indicating that these features do not impact all players equally. The small number of players who disagreed or strongly disagreed (12.79%) suggests that these features may be enjoyable or at least not affecting their gaming experience.

Regret after in-game purchases

The survey revealed a nearly even split in respondents' experiences with regret after making in-game purchases (Figure 10):

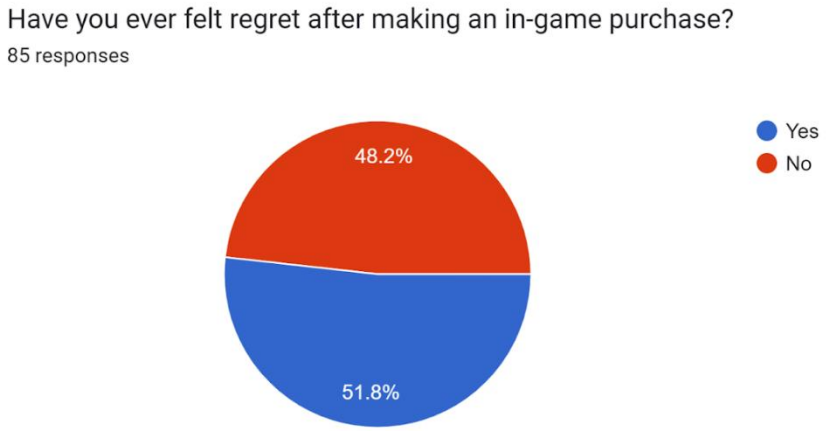

Figure 10: Opinion after the in-game purchase

This close split suggests that a significant portion of players may reconsider their game spending decisions. The frequency of post-purchase regret highlights the importance of game developers taking into consideration the long-term impact of their monetization strategies on player attitude and satisfaction. The data show that in-game purchases can improve gameplay for some, they also increase the risk of buyer's regret, which can have a negative impact on players' overall satisfaction and future purchasing behavior.

Perception of the player experience in current monetization practices

The survey examined respondents' perceptions of whether current monetization practices prioritize the player's experience.

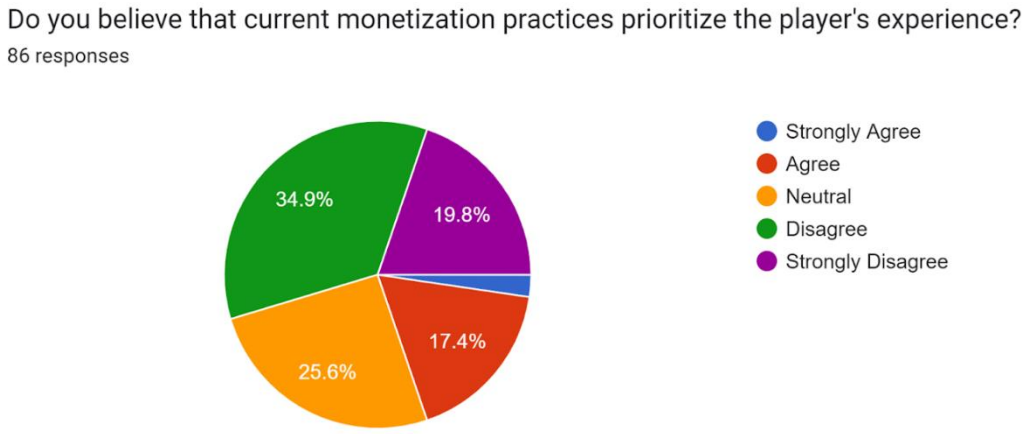

Figure 11: Perception on current monetization practices

According to the data (Figure 11), a large proportion of respondents (54.65%) are skeptical that current monetization practices prioritize the player experience. A sizable proportion of players (25.58%) remain neutral on the issue, possibly reflecting uncertainty or conflicting feelings about the intentions behind these practices. The small percentage of respondents who agree or strongly agree (19.77%) indicates that current monetization strategies are not widely perceived as player-centric, highlighting a critical area for improvement in the gaming industry.

4.4 Correlations and insights derived from various survey sections

Factors influencing player satisfaction

Figure 7 highlighted some key factors that stood out among respondents who rated their game satisfaction between 8 and 10 on a scale of 1 to 10. 28.05% of respondents said gameplay mechanics were the most important factor. Storyline and narrative were next at 21.34%, followed by graphics and design at 20.12%. 11.59% mentioned community and multiplayer features, as well as in-game rewards, while 4.27% voted for other aspects and 3.05% mentioned customer service. Therefore, it would seem that from these findings, gameplay, storyline, and graphics are important for high player satisfaction.

In-Game purchase satisfaction among neutral or dissatisfied respondents

Among respondents who rated their gameplay satisfaction as 7 or lower, 16 suggested reducing pay-to-win mechanics as a way to improve in-game purchase satisfaction. This was followed by a desire for greater value for money (14 respondents) and more ethical monetization practices (11

respondents). 10 respondents recommended purchasing items of higher quality, while 9 indicated a need for increased transparency in purchases. 2 people expressed additional concerns.

Fairness perceptions among highly satisfied players

Among respondents who rated their gameplay satisfaction at 8 or higher, 24 (44.44%) thought the current monetization practices were fair. Meanwhile, 17 (31.48%) were neutral, 7 (12.96%) thought these practices were very fair, and 6 (11.11%) thought they were unfair. This suggests that most highly satisfied players regard the monetization practices in their favorite games as generally fair or neutral.

Regret over in-game purchases among neutral or dissatisfied respondents

Among respondents who rated their gameplay satisfaction at 7 or lower, 16 (50.00%) expressed regret after making an in-game purchase, while 15 (46.88%) did not.

Regrets over in-game purchases among highly satisfied players

Among respondents who rated their gameplay satisfaction at 8 or higher, 28 (51.85%) expressed regret after making an in-game purchase, while 26 (48.15%) did not. This close split indicates that even among highly satisfied players, a sizable proportion have regrets after making in-game purchases.

The impact of loot boxes and microtransactions on highly satisfied players.

Among respondents who rated their gameplay satisfaction at 8 or higher, 24 (44.44%) agreed that loot boxes and microtransactions have an impact on their overall enjoyment of the game, with 10 (18.52%) strongly agreeing. 13 respondents (24.07%) took a neutral stance, while fewer respondents disagreed, with 4 (7.41%) strongly disagreeing and 3 (5.56%) disagreeing. This suggests that even highly satisfied players are concerned about how these monetization features will affect their gaming experience.

Perception of monetization practices among less satisfied players

Among those who rated their gameplay satisfaction as 7 or lower, 11 (34.38%) were neutral on whether current monetization practices prioritize the player's experience. 9 respondents (28.12%) disagreed with this idea, while 8 (25.00%) agreed. A smaller group of 3 respondents (9.38%) strongly disagreed, while 1 respondent (3.12%) strongly agreed. This indicates a high level of skepticism among dissatisfied players about the player-centric nature of monetization strategies.

Perception of exploitative practices among highly satisfied players.

Among the players who rated their gameplay satisfaction as 8 or higher, 20 (37.04%) agreed that loot boxes and microtransactions are exploitative, and another 20 (37.04%) strongly agreed. 9 respondents (16.67%) were neutral on the issue, while 5 respondents (9.26%) disagreed with it.

Perception of exploitative practices among less satisfied players.

Among players who rated their gameplay satisfaction as 7 or lower, 11 (34.38%) agreed that loot boxes and microtransactions are exploitative, while 9 (28.12%) strongly agreed. 8 respondents (25.00%) were neutral, while 4 (12.50%) disagreed.

Loot boxes are perceived as gambling by highly satisfied players.

Among the players who rated their gameplay satisfaction as 8 or higher, 23 (42.59%) strongly agreed that loot boxes should be classified as gambling, while 19 (35.19%) agreed with this sentiment. A smaller percentage, 7 (12.96%), remained neutral, while 5 (9.26%) disagreed.

Loot boxes are perceived as gambling by neutral or less satisfied players.

Among the players who rated their gameplay satisfaction at 7 or lower, 11 (34.38%) were neutral about whether loot boxes should be considered gambling. 10 respondents (31.25%) agreed, while 7 (21.88%) strongly agreed with the idea. A smaller group of 4 respondents (12.50%) disagreed.

Ethical considerations for loot boxes among highly satisfied players

Among the players who rated their gameplay satisfaction as 8 or higher, the most commonly suggested measures for making loot boxes more ethical were the prohibition of pay-to-win items in loot boxes, supported by 41 respondents (74.93%), and age restrictions, supported by 37 respondents (68.52%). Spending limits were also recommended by 30 respondents (55.56%), followed by full disclosure of item probabilities (28 respondents, 51.85%), increased item value and quality (19 respondents, 35.19%), and the complete removal of loot boxes from games (15 respondents, 27.78%). A small group (3 respondents, 5.56%) proposed alternative measures.

Ethical measures for loot boxes among neutral or less satisfied players

Among players who rated their gameplay satisfaction as 7 or lower, the top recommendations were age restrictions, proposed by 21 respondents (65.62%), and the prohibition of pay-to-win items in loot boxes, supported by 16 respondents (50.00%). 13 respondents (40.62%) recommended spending limits, while 9 respondents (28.12%) suggested better item value and quality, as well as full disclosure of item probabilities. 6 respondents (18.75%) supported the complete removal of loot boxes from games, while 5 respondents (15.62%) suggested other measures.

Perception of AI and ML in fairer monetization by highly satisfied players

Among the players who rated their gameplay satisfaction as 8 or higher, 20 respondents (37.04%) were undecided on whether AI/ML can help create more equitable monetization models. 15 respondents (27.78%) agreed that AI/ML could contribute to more equitable practices, while 13 respondents (24.07%) disagreed. A smaller proportion strongly agreed or disagreed (3 respondents, 5.56%).

Perception of AI and ML in fairer monetization by less satisfied players

Among the players who rated their gameplay satisfaction as 7 or lower, the majority, 17 respondents (53.12%), were neutral about the role of AI/ML in developing more equitable monetization models. 9 respondents (28.12%) supported the potential of AI/ML, while 3 (9.38%) strongly disagreed and 2 (6.25%) disagreed. Only 1 respondent (3.12%) strongly agreed with the statement.

Trust in AI for fair pricing among highly satisfied players

Among the players who rated their gameplay satisfaction at 8 or higher, 17 (31.48%) were undecided on whether they would trust a game more if it used AI to ensure fair pricing and ethical monetization. 13 respondents (24.07%) said they would trust the game more in these circumstances, while 12 respondents (22.22%) disagreed. 9 respondents (16.67%) strongly disagreed, while 3 (5.56%) strongly agreed.

Trust in AI for fair pricing among neutral or less satisfied players

Among the players who rated their gameplay satisfaction as 7 or lower, 13 (40.62%) were undecided about trusting a game more if it used AI for fair pricing. 9 respondents (28.12%) agreed with this concept, while 5 respondents (15.62%) disagreed and 3 respondents (9.38%) strongly disagreed. 2 respondents (6.25%) strongly agreed.

View on the role of AI/ML among those who strongly agree with the exploitative nature of loot boxes

Among respondents who strongly agreed or agreed that loot boxes and microtransactions can be considered exploitative, 26 (43.33%) were undecided about whether AI/ML can help create more equitable revenue models. 16 respondents (26.67%) agreed that AI/ML could contribute to more equitable practices, while 10 respondents (16.67%) disagreed. A smaller number of respondents, 6 (10.00%), strongly disagreed, while 2 (3.33%) strongly agreed.

View on the Potential of AI/ML among those who are neutral on the exploitative nature of loot boxes

Among those who were neutral about whether loot boxes and microtransactions are exploitative, 7 respondents (41.18%) agreed that AI/ML can help create fairer monetization models, while 6 respondents (35.29%) were neutral. Three respondents (17.65%) disagreed, while one respondent (5.88%) strongly agreed.

Views on the role of AI/ML among those who disagree with the exploitative nature of loot boxes

Among respondents who disagreed or strongly disagreed that loot boxes and microtransactions are exploitative, 5 (55.56%) were neutral about whether AI/ML can help create more equitable monetization models. 2 respondents (22.22%) disagreed, 1 (11.11%) strongly agreed, and 1 (11.11%) agreed.

4.5 Qualitative insights.

This section compiles responses to key open-ended questions, providing better insights into how players perceive video game monetization practices. Qualitative data adds more context to the quantitative results, revealing more detailed and clear perspectives with in-game purchases, AI/ML in gaming, and overall satisfaction with monetization strategies in video games.

Ethical improvements in monetization models.

Respondents gave detailed feedback on the ethical improvements they prefer to see in video game monetization models. Analyzing these open-ended responses reveals several interesting and common themes.

Many respondents suggested more transparent and fair monetization practices. There is a strong preference for eliminating or restricting loot boxes and pay-to-win mechanisms, which are viewed as exploitative by many.

Many respondents supported limiting purchases to cosmetic items that have no effect on gameplay experience. This ensures that spending money does not provide competitive advantages and create a balanced environment for all players.

Some respondents were concerned about the use of in-game currencies, which can be used to mask the actual cost of purchases. There were suggestions to remove or limit the use of real-money currencies to prevent players from overspending or being misled.

Direct quotes:

"Remove loot boxes that could be bought and just give them for progression (eg. Rocket League) and/or sell the items on item shops with rotations(eg. Call of duty, Fortnite). Last option is to return to regular dlc packs."

"Less in-game currencies that can be bought with real money, easily obstructing how much you actually spend."

"Elimination of pay to win mechanisms."

"Allow to set a limit on game spending so you don't accidentally overspend due to very convenient payment interface."

These quotes highlight the players' desire for more ethical monetization practices. With more focus on transparency, fairness, and the elimination of pay-to-win elements suggests that players want strategies that improve their gaming experience and not distract them.

AI-driven solutions for fairness and player satisfaction.

Respondents were asked to express their opinions on the potential for AI-driven solutions and the responses were mixed, showing both optimism and skepticism:

Many respondents expressed their uncertainty about AI's ability to effectively address fairness in gaming. Concerns were raised that AI could be designed to prioritize profits over fairness.

Some respondents believed that AI could help to promote fair practices, but only if it is carefully designed and regulated. They suggest human oversight to ensure that AI systems are not exploited for profit and that they truly serve the players' interests.

Direct quotes:

"AI-driven solution would drive the issue worse, not inherently because of AI, but because it will be the company behind it and they probably would priorities profits."

"In my case, my nephew spends lots of money in skins for games he is 10yo and completely unconscious of what he is doing, idk AI could detect he is. Akid due to his behaviour and give advice on not spending that much. Is like they manipulate kids to convince parents to buy stuff."

"At the end of the day it's going to function on some sort of data that were created and that it learned from which will strongly influence the way it behaves."

"yes, but need to be regularly reviewed by a human control spot check."

These quotes highlight the complex' attitudes toward AI in gaming. While some support AI's potential to improve fairness, there is also some concern about profit driven AI implementation and suggested for strict oversight to prevent exploitation.

Experience in monetization

The monetization practices were discussed to understand how these practices influenced their gaming behavior. Since the experiences were mixed, this provides a broad understanding of how monetization affects player satisfaction.

Most respondents reported that aggressive monetization practices had led them to stop playing certain games. The way these monetization practices were perceived as disruptive and interfering with gameplay, therefore, causing frustration and disengagement.

Most gamers responded, complaining about pay-to-win models appears to be more about how much money is spent than about gaming experience. This has encouraged some to quit games they feel are unfairly monetized. The respondents felt annoyed by the progress blockers, especially in this new trend of mobile games where, practically, one can hardly progress in the game without spending money. This was seen as a deliberate strategy to force players to spend money rather than enjoying the game through skill and effort.

Direct quotes:

"When monetization is too much ”in your face”, like when the content is basically gated with required purchased (e.g. mobile games with cooldowns) or the monetization is too overt (e.g. Too many ads)."

"Yes. When the pay-to-win scheme became overbearing, and developers focused all efforts on fleecing playerbase instead of developing the game itself."

"If a game is P2W why play if everything is just a credit card check."

"I once uninstalled a singleplayer mobile game for requiring internet connection only for playing ads."

These quotes illustrate the negative impacts of unreasonable monetization practices on player satisfaction. Based on the feedback provided, it would appear that players may tolerate some level of monetization, whereas anything deemed excessive or unfair will alienate them from a game.

Ethical concerns

The need for ethical changes in current monetization practices was highlighted. The responses overwhelmingly support for more transparency and fairness, and the elimination of exploitation practices.

Most of the respondents strongly supported the idea of removing pay-to-win mechanics and loot boxes, which to them were unethical. Players were concerned that such a setup would make the environment uneven, leading to negative experiences such as feelings of exploitation or even gambling addiction.

Respondents demanded more transparency in monetization practices, clearly state what players are paying for and remove all paywalls that block access to the content. Furthermore, strong support was expressed for having all items available to players through gameplay, so that players can acquire the content without feeling that they have to spend money. Others have stated that the pricing needs to be closer to the value created by it and that monetization methods restricted to certain ages can protect younger players from these forms of exploitation. This appeal to fairness and player protection shows the industry's demand for more ethical approaches.

Direct quotes:

"Elimination of pay to win mechanisms."

"Do not ever make loot boxes for real money, they are bad enough without it already. People who pay money for a CHANCE and not even get what they are paying for will either abandon the game entirely or end up with a gambling addiction. The best case scenario is they stay with a very bad feeling. NONE of these outcomes are desirable or beneficial for the game."

"All items should be obtainable in game, and not locked behind a paywall. It just takes more time/resources to get them."

"Better transparency and openness."

"Pit a restriction of how many item you Can buy and totally prohibited for people less than 20 years old."

These quotes highlight the players' concerns about current monetization strategies and suggest focusing on transparency, fairness, and removing exploitative elements. This shows that players are looking for a more ethical approach to monetization that puts their gaming experience and well-being first.

AI and ML in monetization

The survey also inquired about respondents' perspectives on how AI and ML could contribute to the development of fair and ethical monetization models, and the results show a mix, and sometimes skeptical, perspective on the use of these technologies in gaming.

Some respondents questioned whether AI-powered solutions can truly address fairness and player satisfaction. There’s concern that, since AI is developed and controlled by profit-driven companies, it could be used to further exploit players rather than protect their interests.

Respondents also worried that AI might make things worse by being programmed to prioritize revenue over player experience, which could lead to even more of the unfair practices players are already frustrated with.

Some respondents argued that AI alone cannot achieve fairness in gaming because it lacks the human element required to understand and empathize with players. Some believe that companies should prioritize direct player feedback over relying heavily on artificial intelligence to shape monetization strategies.

Direct quotes:

"Ai-driven solutions will most likely emphasize the bad practices."

"Absolutely not because those AI would be programmed to make more money and therefore make the issue worse."

"AI is made by humans and is trained on humans. They have no concept of morality and they can't understand human emotions, how a bad feeling left by bad practices affects the player. Listen to your damn players, they are the ones who experiencing all the good and bad. What is fair for one player might not be fair for other. There is no absolute truth about fairness, but if many people starts complaining about the very same things, listen to them."

"No if they are set up to function under the current market conditions which are inherently exploitative."

These quotes reveal some players' skepticism over the utilization of AI and ML for game monetization. Their concerns about exploitation and the lack of a human touch reveal that players are cautious of AI being used in ways that prioritize profit over gaming experience. The feedback shows some less preference for depending on AI to influence their gaming experience.

The survey results gives more detailed view of players' experiences and opinions on video game monetization practices. While many players confirmed to use these models, there are widespread concerns about their fairness, particularly with pay-to-win systems and loot boxes. The role of AI/ML in developing fairer monetization models is also being questioned, with players demanding greater transparency, ethical considerations, and player-centric strategies. These findings highlight the importance of the gaming industry striking a balance between monetization approaches and player satisfaction, while also ensuring fairness in order to maintain long-term engagement and trust.

5 Development of Monetization Framework

5.1 Overview of the framework

The framework emerged from a combination of theoretical insights and empirical evidence. The literature review provided the conceptual foundation, especially in terms of ethical monetization and control for exploitative practices, while the survey results offered a player-centered perspective, emphasizing fairness, transparency, AI integration, and protection against exploitative practices. Each of these components contributed significant findings that influenced the framework's structure and objectives.

This framework is intended to balance the interests of players and the gaming industry, combining ethical guidelines with dynamic monetization strategies. The framework provides clear steps for integrating ethical monetization practices, protecting players from exploitation, and promoting trust to ensure the company’s long-term success.

Contributions from literature review

The literature review covered monetization strategies, ethics, and AI/ML technologies. Research on monetization models highlights ethical concerns surrounding microtransactions, loot boxes, and pay-to-win mechanics (Zendle et al. 2020; Sidloski, 2022). The emphasis on fair pricing and ethical transparency (Harviainen et al. 2020) shaped the framework by incorporating transparent pricing models and eliminating exploitative pay-to-win features. The framework's guidelines regarding loot box transparency are designed to clarify and simplify the odds for players. Studies show that loot boxes are like gambling and that they need to be regulated (Baeck & Claeys, 2021).

Articles on player satisfaction have highlighted the significance of customization and personalization in enhancing player engagement without causing excessive financial burden (Rahman et al. 2024; Banyte & Gadeikiene, 2015). This directly influenced how the framework's recommendation on AI-driven personalization, customizing content for players according to their playstyles and achievements without using manipulative tactics.

The literature on AI and ML integration (Kapoor & Chatterjee, 2023) informed the framework's recommendation regarding AI-driven personalization, emphasizing the necessity of ethical oversight for AI implementation. Insights into player engagement and satisfaction (Teng et al. 2022; Banyte & Gadeikiene, 2015) informed the framework's approach to personalized player experiences, suggesting content tailored to playstyles and achievements rather than employing manipulative tactics.

Contributions from survey results

The survey results gave players a chance to share their real experiences and concerns about current monetization strategies. A large number of respondents were unhappy with pay-to-win mechanics and loot boxes, seeing these practices as unfair and exploitative. This dissatisfaction suported what's been found in other research, highlighting the need for more transparent and ethical monetization practices. Player feedback helped shape the framework's focus on cosmetic-only purchases and content that can be earned through gameplay, ensuring players don't feel forced to spend money just to make progress, one of the biggest concerns raised by many.

The survey also revealed a sense of uncertainty around the use of AI in monetization. Many respondents were worried that AI might prioritize maximizing profits over ensuring fairness. This concern led to the inclusion of AI oversight measures in the framework, such as regular audits and avoiding personalized recommendations that push unnecessary purchases. Additionally, players' calls for spending limits and protections for vulnerable groups, like minors, directly influenced the framework's introduction of personal spending caps and parental controls.

The survey highlighted the importance of continuous feedback from players in shaping the framework. Respondents stressed the importance of iterative improvements based on player feedback, prompting the framework to incorporate continuous feedback channels and adaptive systems to ensure that monetization practices evolve in line with player needs and expectations.

5.2 The ethical and dynamic game monetization framework

As part of research, an Ethical and Dynamic Monetization Framework was created to balance player satisfaction with long-term financial success for gaming companies. The framework combines ethical principles and AI-powered strategies to create a transparent, player-friendly monetization model that avoids player exploitative practices.

The framework was created based on a combination of literature review findings and empirical evidence gathered from player feedback. Its main objective is to ensure a balance between ethical monetization and dynamic strategies that protect players from exploitative practices while also promoting the long-term success of game developers.

By encouraging a sustainable and balanced approach to monetization, the framework benefits both players and gaming companies. It promotes a fair and enjoyable gaming environment by leveraging AI and machine learning for personalized experiences, while also ensuring transparency and player protection. The goal of this framework is to help gaming companies build trust with their

player base, steer clear of exploitative practices, and create monetization strategies that align with the needs and expectations of the gaming community, ultimately leading to long-term, stable revenue streams.

Table 3: Introduction to the Frameworks

Key Components of Framework	
Component	**Explanation**
Ethical guidelines and transparency	Makes monetization transparent and fair and protects players from pay-to-win models and unclear pricing.
AI and ML integration with oversight	Personalized player experience using AI and ML, with oversight to prevent player exploitation.
Personalized player experiences	Provides personalized content and offers using AI without pressuring players to spend too much.
Fairness and non-exploitation	Looks at non-gameplay factors that affect monetization to prevent players from getting an unfair advantage.
Spending limits and protections	To prevent excessive spending, especially by vulnerable players, uses personal spending caps, alerts, and parental controls.
Continuous feedback and adaptation	Improves monetization strategies based on real-time player and gaming community feedback.
Regulatory compliance and data privacy	Maintains data transparency and player privacy while complying with national and international regulations.

The ethical and dynamic game monetization framework: Refer to **Appendix 3**

5.3 Feedback from industry professionals on the framework

This section provides a clear look at the feedback collected from gaming professionals about the suggested Ethical and Dynamic Game Monetization Framework. A structured survey was employed to gather input, with questions concentrating on critical aspects such as monetization strategies, ethical principles, and the integration of AI and ML to enhance fairness and transparency. The responses were carefully analysed to understand the overall perception of the framework and its potential for practical implementation.

Survey respondent profile

The survey was completed by 9 respondents. There were three game designers, two programmers, two marketers, an advisor, and a tester. Six respondents preferred to remain anonymous. The survey asked for feedback on ethical monetization, transparency, AI integration, data privacy, and the importance of continuous feedback in improving monetization models.

Respondents had varying levels of industry experience: 44.4% had over 6 years of experience, 33.3% had 1-2 years, and 22.2% had 3-5 years.

Examining feedback

When asked **how important real-time player feedback is in refining monetization models**, respondents gave the following answers:

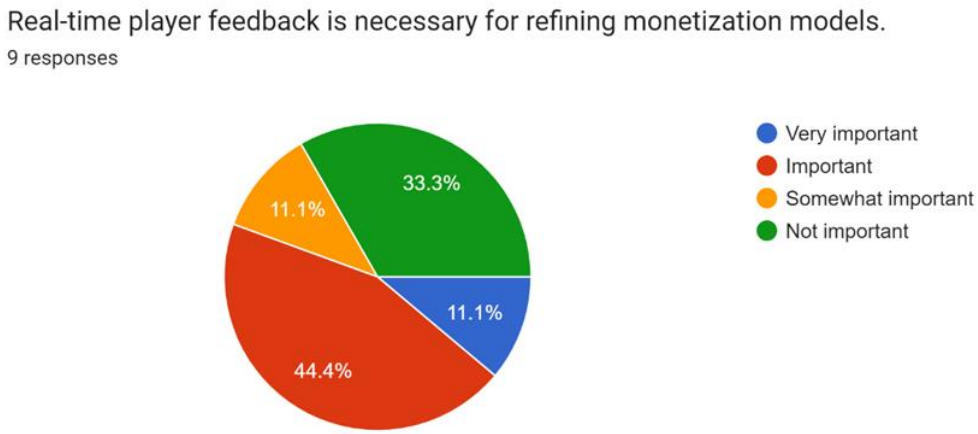

Figure 12: Industry experts' perspectives on "real-time player feedback"

Although 66.66% of respondents agreed that real-time feedback is important for fine-tuning monetization models, open-ended responses revealed some scepticism (Figure 12).

One respondent commented: " Players don't know what they want and especially how much things should cost. They want more for free, but that would just ruin their experience. I don't believe players would give much of a useful feedback to the developers on monetisation since the whole word is tainted in their minds. I believe rewarding loyal players and keeping players in loop somehow would be beneficial still. I don't know how... Probably it depends on the game."

This comment suggests that developers should be cautious when relying mainly on player feedback to refine monetization models, as there is uncertainty about the reliability and validity.

Another respondent supported this with: "from experience I can say that frequently improving based on player feedback is not a really good idea. Few hard facts: Those commenting the game on forums, surveys etc. are usually a minority in the games audience. Their thoughts can be invaluable some times as they are really active players usually, but players don't always know what they want and what 1 player wants is way different from what another would want."

This highlights the risk of heavily relying on feedback from a vocal minority, which may not represent the views of the entire gaming community.

Respondents shared their views on whether **transparent communication improves player trust and engagement**:

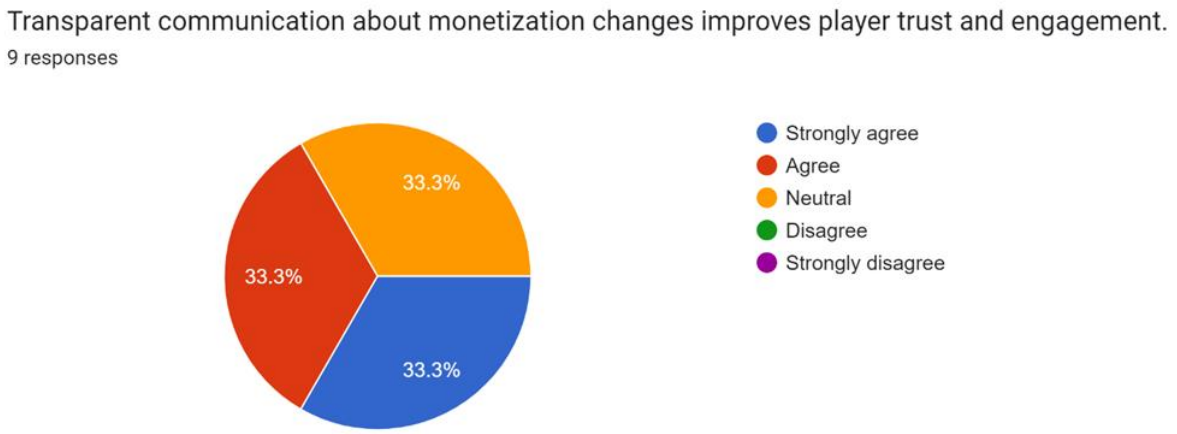

Figure 13: Industry experts' perspectives on “transparent communication and impact”

While transparency is highly valued, some respondents pointed out potential risks.

One respondent commented: "I'm wondering if full transparency will make the experience less exciting and therefore will make players spend less?"

This comment suggests that transparent models can help build trust, it could also make it less appealing for some players who prefer spending. Therefore, it is essential to find a balanced approach to avoid potential revenue losses.

When asked whether **clear pricing and visible loot box odds help address fairness concerns**, responses were as follows:

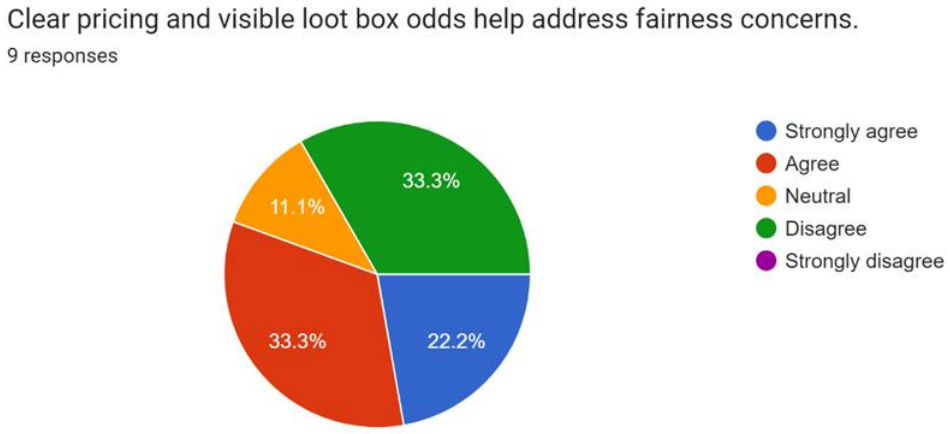

Figure 14: Industry experts' perspectives on “clear pricing and visible loot box odds”

Although more than 55% agreed with transparent pricing, others were not as convinced.

One respondent commented: ”I'm not sure about the showing both in game and real money prices. I understand the ethical side of it, but inherently I don't think the issue is the in-game currency itself vs. how it is been used.”

This comment implies that simply showing prices may not address fairness concerns if the core issue in how in-game currencies are being manipulated.

Regarding whether **AI can ethically personalize player experiences without promoting excessive spending**:

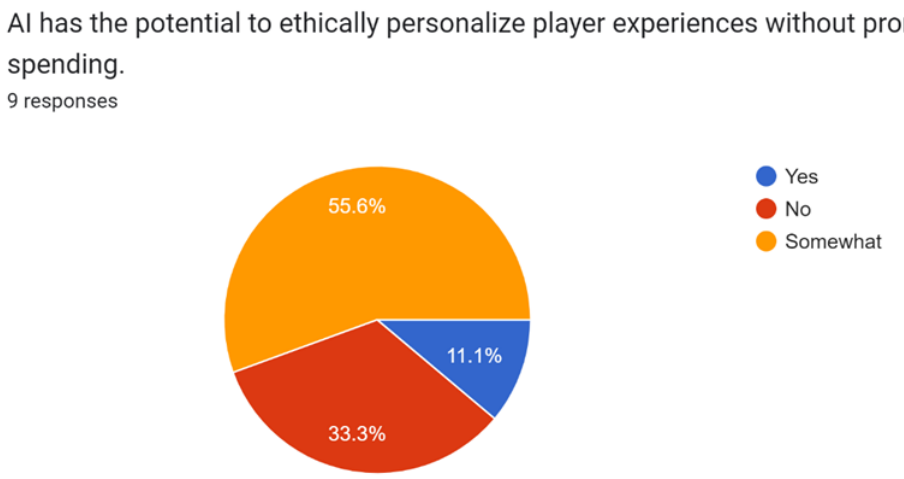

Figure 15: Industry experts' perspectives on “AI and ethical personalization”

While the majority acknowledged AI's potential, many remained skeptical.

A game programmer commented: "AI and ML is a tricky part. AI can be used to monitor what is happening in the players game. And there are for sure ways of making monetization better with AI but I'm not sure if this is the way. One of the biggest issues is with using any sort of personalized offers. The hard fact is that players tend not to be interested in those custom offers AND from fairness standpoint if the game is popular people will talk and get upset if the same offer hasn't been presented for them."

This feedback raises some concerns about fairness when personalized offers are distributed unevenly, which might frustrate some players.

When asked whether **dynamic pricing based on player loyalty and engagement is a fair approach**, the responses were as follows:

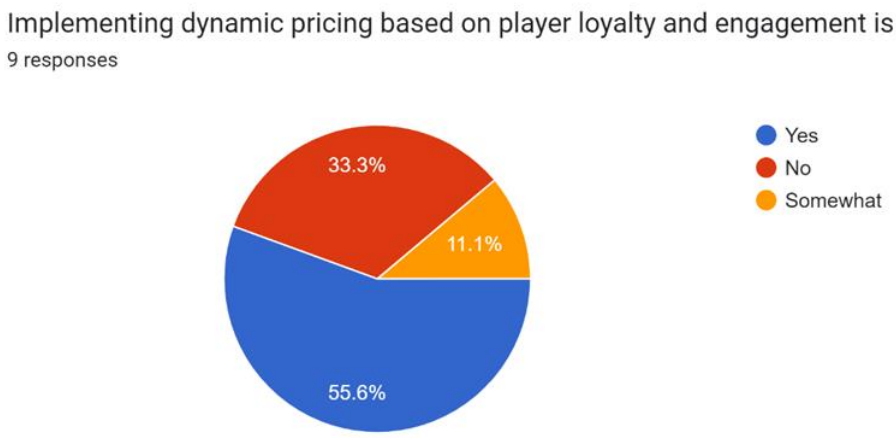

Figure 16: Industry experts' perspectives on “dynamic pricing based on player loyalty”

While the majority supported dynamic pricing, some questioned its fairness.

One respondent said: " I think it needs to be more clearly defined what constitutes as a “loyal player”. Is this a player who has played for a long time, or a player who has spent a lot of money? In my experience, a “loyal player” is just a polite way to say “high spender”.”

This comment highlights the ambiguity surrounding the definition of loyalty and how dynamic pricing may unfairly benefit high-spenders.

Another respondent commented: “Considering the loyalty discounts. That by itself is a potentially predatory idea. It is not particularly exploitative but psychologically people are more willing to spend money if they see that something is discounted for them."

This raises ethical concerns about the way dynamic pricing can trick players into spending more money.

Respondents were asked whether **eliminating pay-to-win mechanics ensures fairness and protects players from exploitation**:

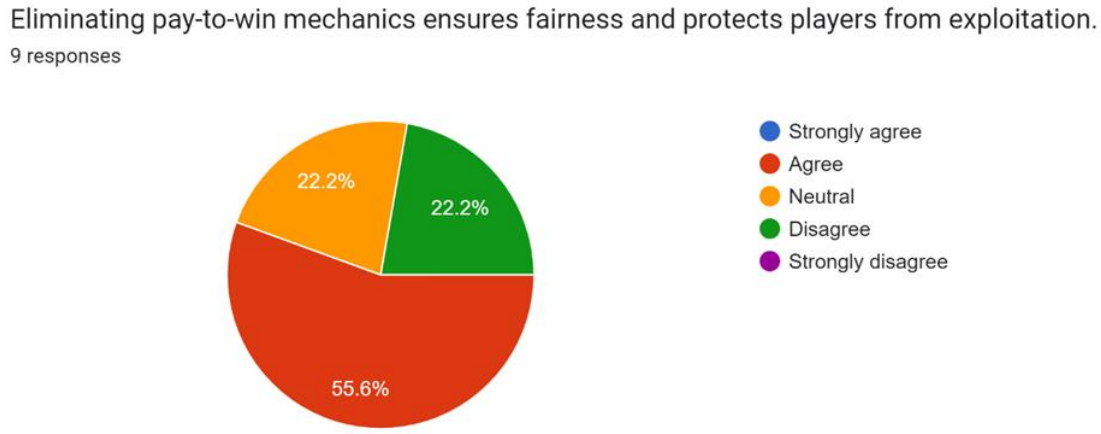

Figure 17: Industry experts' perspectives on “eliminating Pay-to-Win mechanics”

While most respondents agreed that eliminating pay-to-win mechanics important for fairness, there were differing views.

One respondent commented: " In my experience with games that have gacha/ loot mechanics, visible odds is the expected norm and may not be seen as a “benefit” or improvement on the current system by players."

On the other hand, a game designer commented: "I want to clarify on the question about eliminating pay-to-win mechanics that I don't think the existence of pay-to-win as itself causes exploitation of the playerbase. If the players accept that it is possible to gain advantage in the game by buying in app purchases, then offering those advantages should be possible for the developer."

There are split opinions about pay-to-win games, with some seeing them as exploitative while others see them as a valid strategy.

When asked whether **cosmetic rewards should be the main focus of monetization**:

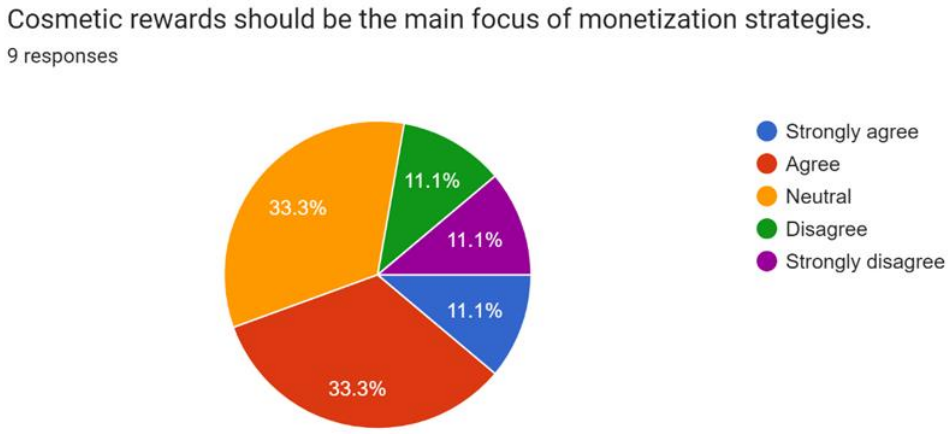

Figure 18: Industry experts' perspectives on “cosmetic rewards as the focus”

One respondent commented: "Offering only cosmetic items as a paid service is a great idea. However, I would like to point out that in practice it only leads to all the other unpaid cosmetics to looking very dull and boring as the focus in development obviously shifts towards the creation of the paid items. (Reference: MMORPGs are a great example of this. Neverwinter, Guild Wars 2, Blade & Soul, etc.)"

This comment, acknowledges the cosmetic-based monetization's advantages and possible drawbacks. The respondent highlights the risk that too much focus on paid cosmetics could result in a lack of interest in free content. This raises questions about how to balance paid and free content in strategies for monetizing cosmetics.

Another respondent said: "Ensure that monetization strategies do not negatively impact the core gameplay experience. Focus on adding value to the game, rather than simply extracting revenue."

These comments highlight the need to balance cosmetic monetization with maintaining a high-quality gameplay experience.

Regarding the **effectiveness of personal spending caps and real-time alerts**:

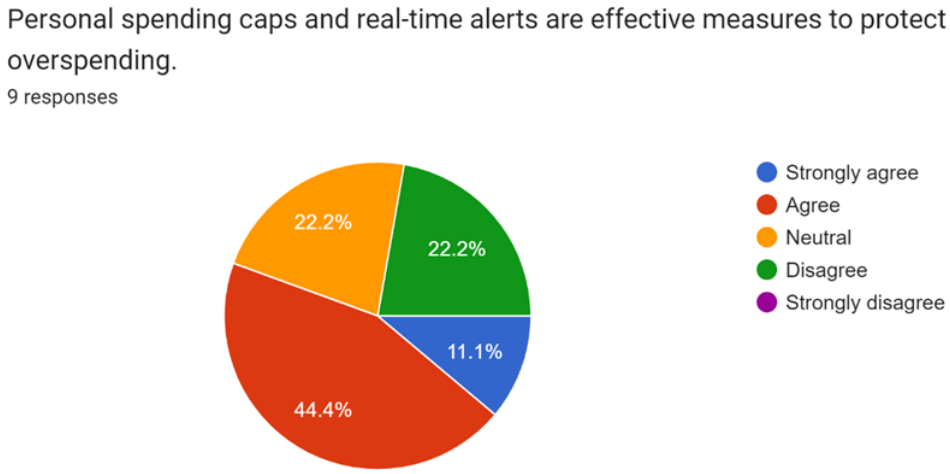

Figure 19: Industry experts' perspectives on “personal spending caps and real-time alerts”

One respondent supported the implementation of spending caps: "Spending caps, alerts and parental controls should be something that can be easily accessed in games, but I think this is something that more and more companies are starting to realize so it's a good part in the framework."

Another respondent warned: "When implemented well they are a great tool, but if done half heartedly they can be navigated pass bit too easily."

These comments stress the importance of putting spending caps and alerts in place to prevent players from overspending.

When asked whether **eliminating hidden costs improves player trust and retention**:

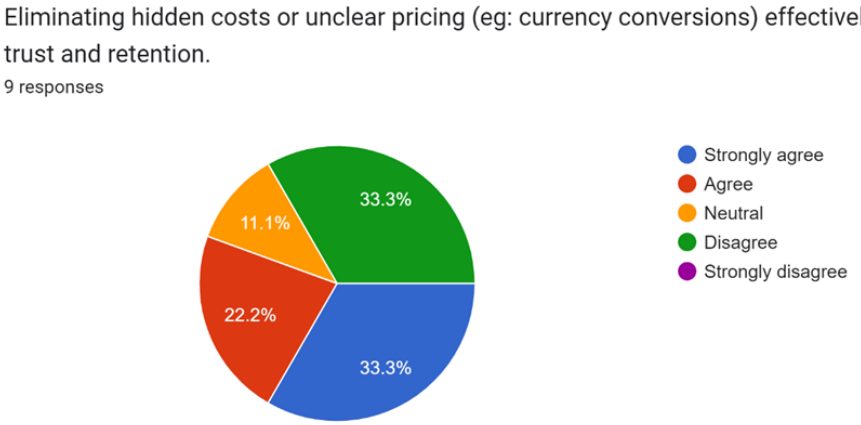

Figure 20: Industry experts' perspectives on “eliminating hidden costs and unclear pricing”

One respondent commented: "I'm not sure about the showing both in game and real money prices. I understand the ethical side of it, but inherently I don't think the issue is the in-game currency itself vs. how it is been used."

These comments suggest that having pricing transparency alone is not enough to resolve fairness issues, particularly when the structure of in-game currencies seems manipulative. To make a difference, these currency systems must be used transparently and ethically.

When asked whether **regular AI audits are essential to ensure fairness in monetization models**, responses were:

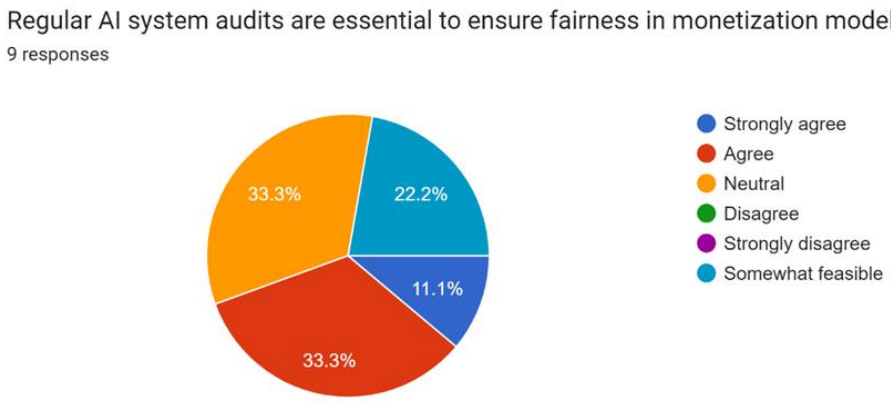

Figure 21: Industry experts' perspectives on “regular AI audits for fairness”

Most respondents agreed on the importance of AI audits, but some raised concerns about their practicality.

One respondent commented: "AI and ML is a tricky part. AI can be used to monitor what is happening in the players game. And there are for sure ways of making monetization better with AI but I'm not sure if this is the way. One of the biggest issues is with using any sort of personalized offers. The hard fact is that players tend not to be interested in those custom offers AND from fairness standpoint if the game is popular people will talk and get upset if the same offer hasn't been presented for them."

Another commented: "When the ML/AI system becomes efficient (and that's the idea of using ML/AI system to begin with) it can be considered exploitative since every time it would recommend the player something, the player would find something that they want."

These comments show that, AI-driven monetization can be effective, it can also become exploitative if not closely monitored and audited on a regular basis.

When asked if **offering paid cosmetic content that can also be earned through quests is essential for fair monetization**, the responses were:

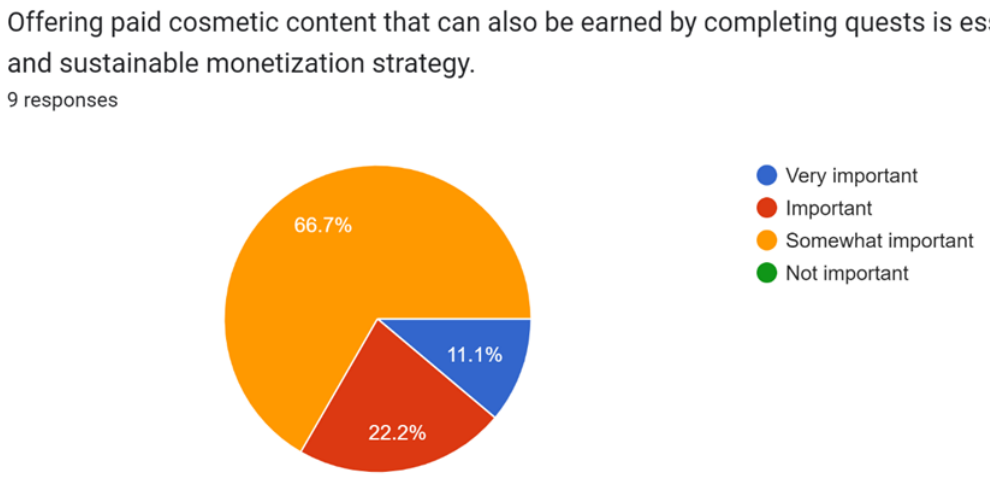

Figure 22: Industry experts' perspectives on “Cosmetic can be earned through quests.”

The majority agreed that providing players with both paid and earned cosmetic content is important to fairness.

One respondent said: "Offering only cosmetic items as a paid service is a great idea. However, I would like to point out that in practice it only leads to all the other unpaid cosmetics to looking very dull and boring as the focus in development obviously shifts towards the creation of the paid items."

Another commented: "For a great monetization and good game design most of the costumes and skins should be part of the gaming grind experience for those that don't want to buy them, but making some obtainable via purchase only is also ok. The grind itself doesn't have to be fast but I does have to be doable."

The feedback indicates the importance of maintaining a approach where same cosmetics can be obtained through gameplay or purchase. This way both paying and non paying gamers can enjoy the content equally and have similar experience.

Respondents were asked if **personalized offers based on playstyle, without encouraging excessive spending, create a more player-friendly monetization strategy**:

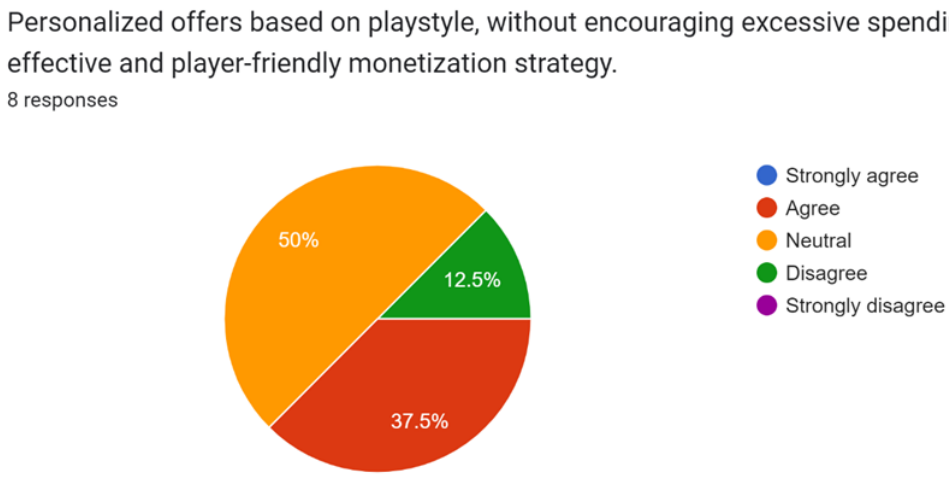

Figure 23: Industry experts' perspectives on “personalized offers based on playstyle”

The responses reveal a clear divide in opinions, with some voicing concerns about potential risks.

One respondent mentioned: “One of the biggest issues is with using any sort of personalized offers. The hard fact is that players tend not to be interested in those custom offers AND from fairness standpoint if the game is popular people will talk and get upset if the same offer hasn't been presented for them.”

This comment highlights concerns about fairness in personalized offers, where different players receive different promotions. This can lead to frustration and a sense of unfairness among players.

Regarding whether the **framework adequately addresses data privacy and transparency concerns**:

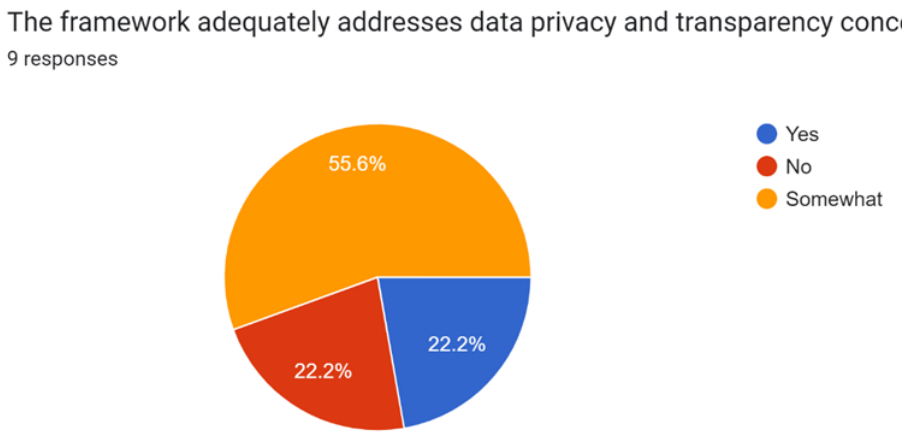

Figure 24: Industry experts' perspectives on “data privacy and transparency concerns”

While most respondents felt the framework addressed these concerns to some degree, a few gaps were pointed out.

One respondent highlighted: "On the topic of data privacy, players need to be informed also on the risk of data leaks if their data is to be stored for personalisation."

This feedback imply that, although the framework covers transparency, it needs to go further in communicating with players about the risks linked to data collection, especially when it involves personalizing and monetization.

When respondents were asked if the **framework effectively emphasizes transparency and ethical guidelines**:

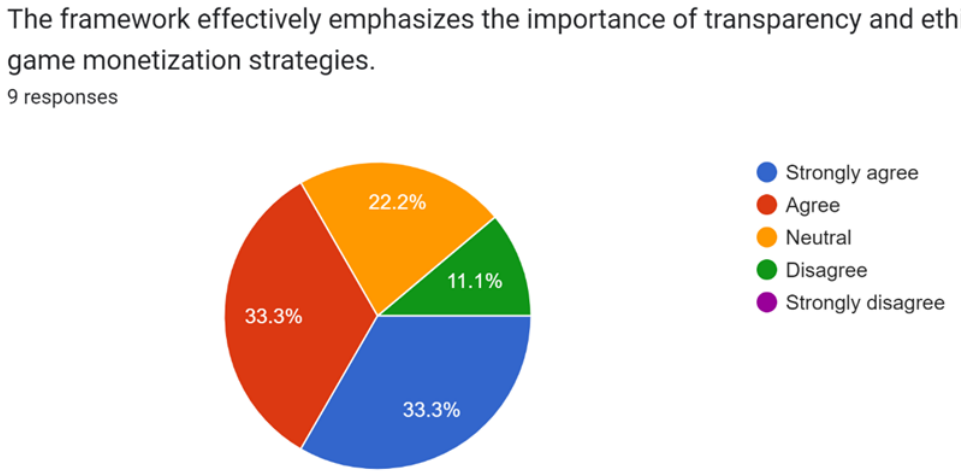

Figure 25: Industry experts' perspectives on “emphasizing transparency and ethical guidelines”

The majority of respondents acknowledged that the framework does a good job emphasizing transparency and ethics, but there were also suggestions on how it could be improved.

One respondent pointed out: "For the framework I would add the spending limits and protection part under ethical guidelines as those are a really important part of a game that has features that might cause issues."

Also added that: “Loot box odds: This is required by law in more and more countries. Belgium has banned loot boxes all together. So as it stands even the legislation will force a change in some of these features."

While transparency and ethics are clearly important to respondents, the feedback makes it clear that player protections, like spending limits and parental controls, need to be stronger and fully integrated into the ethical guidelines. This would ensure the framework doesn’t just focus on ethical principles but actively protects players, aligning with legislation and handling potential risks.

Summary of feedback results:

The survey results offer a solid overview of how the industry views the proposed Ethical and Dynamic Game Monetization Framework. Several key themes emerged, along with contradictions and suggestions that provide real insight into where the framework could be refined for real-world use.

Real-time player feedback is helpful, but it has limitations: 66.66% of respondents agreed that real-time player feedback is useful for refining monetization models, but there is some doubt about its effectiveness. One respondent noted that a vocal minority typically provides feedback on forums or surveys, which may not accurately represent the entire player base. Another respondent stated that "most players do not know what they want" and bring bias to their opinions, while another cautioned that constantly adjusting to feedback can lead to decisions that do not align with long-term objectives. This emphasizes the importance of striking a balance between listening to player feedback and relying on solid, data-driven insights, while avoiding the trap of catering too much to small, vocal group.

Transparency is necessary, but it is not without risks: Many respondents believe that transparency is essential, especially when it comes to pricing and monetization changes. Clear communication can build trust, but some are concerned about the consequences. While many respondents agreed that transparency can boost player trust, there were concerns that being too transparent could effect the revenue, particularly from big spenders. One respondent stated that "complete transparency will make the experience less exciting," emphasizing the difficulty of maintaining engagement across all player segments. It implies that, while transparency is important, it must be carefully managed to keep monetization appealing without undermining excitement among key player groups.

Dynamic pricing and loyalty programs are divisive and tricky. When it came to dynamic pricing based on player loyalty and engagement, opinions were mixed. While most respondents agreed, the issue is how loyalty is defined. One respondent pointed out that "loyalty" favors "high spenders," which can alienate long-term players who do not spend much money. Others expressed concern that loyalty discounts could become manipulative, leading players to spend more than they intended. To avoid alienating certain segments of the player base, dynamic pricing must be transparent and fair, with clear definitions of loyalty.

AI-driven personalization: powerful but needs careful monitoring: The use of AI and ML in monetization strategies sparked mixed reactions, with worries about fairness and potential exploitation. While AI can enhance personalization, several respondents were concerned that without

careful oversight, AI-driven offers could lead to uneven experiences, with some players getting better deals than others. One respondent stated, "players get upset if they don't see the same offer." This underscores the need for regular AI audits to ensure that personalization doesn't cross the line into manipulation and that monetization remains fair and ethical.

Pay-to-Win mechanics are controversial and contextual: Feedback on pay-to-win mechanics was split, with most agreeing that removing these systems is crucial for fairness and protecting players. However, one respondent argued that if players accept the model, it's not inherently exploitative. This highlights how attitudes toward pay-to-win mechanics can vary based on the game's context and target audience. Some markets or player types may be more accepting of these models than others, suggesting that the framework could benefit from a more nuanced approach that considers both player expectations and regional differences.

Monetization focus on cosmetics is effective, but not without risks: Cosmetic items as a monetization strategy received a lot of positive feedback, but some respondents raised concerns about how paid cosmetics might overshadow the free ones. One respondent pointed out that if the focus shifts too much to paid content, free cosmetics could end up "looking dull and boring." While cosmetic monetization is generally seen as a non-intrusive way to keep gameplay balanced, it's clear that free content still needs to be visually appealing. If not, there's a real risk of alienating non-paying players, which can harm the player base in the long run.

Spending caps and real-time alerts are useful, but only if done correctly: Majority of respondents supported spending caps and real-time alerts, seeing them as effective to avoid overspending. However, there were worries regarding the implementation of these measures. One respondent mentioned that if these features are used "half-heartedly," players will find ways to get around them. This emphasizes the need for well-thought-out, strong protective measures that are more than just surface-level features and actually protect players, particularly vulnerable or younger audiences, from excessive spending.

Data privacy and transparency is addressed but needs clearer communication: Although most respondents felt that the framework tackles data privacy and transparency, they also flagged areas for improvement. One of the main concerns was the effectiveness of communication regarding these privacy risks to players. One respondent emphasized the importance of informing players about the risks of data leaks when personal information is stored for personalization. Another respondent emphasized the importance of players fully understanding how their data is being used. Clearly, the framework could benefit from clearer communication about data collection, storage, and privacy, particularly regarding AI-driven.

Ethical guidelines have a good foundation but need more detail: Most respondents agreed that the framework's emphasis on transparency and ethics is a step in the right direction. However, some thought it lacked depth. One suggestion was to directly incorporate spending limits and player protections into the ethical guidelines. Another pointed out how legal changes, like Belgium's ban on loot boxes, are forcing companies to adapt their practices. The feedback indicates that the framework needs to go beyond guidelines and include enforceable protections that hold developers accountable for any exploitative practices.

In conclusion: The Ethical and Dynamic Game Monetization Framework has received positive feedback overall, but there are areas that need improvement. Enhancements like clarifying the role of dynamic pricing, improving the ethical use of AI, ensuring stronger player protections, and communicating data privacy risks more effectively are essential. The framework’s focus on transparency and ethics is commendable, but its real-world application and enforcement will be the key to success in today’s gaming landscape.

6 Discussion of Intermediary Results

In this chapter aim to investigate into the research findings, from both literature and the empirical evidence extracted through the surveys carried out during the study. The discussion incorporates theoretical perspectives on monetization models, ethical considerations, implementation AI and ML to monetization processes and how these impact player enjoyment and engagement. The survey outcomes shed light on player attitudes, perspectives from developers and practical challenges each faced as gamers and game makers. This section examines these components to offer a comprehensive analysis of how ethical and adaptable monetization strategies can be integrated into the gaming sector. It aims to address player concerns while also ensuring industry longevity.

6.1 Relevance to current research

The integration of theoretical insights is critical for this research. There is a comprehensive understanding of current practices and their effects on player behaviour that can be gained from reading the literature on various monetization models, such as microtransactions, loot boxes, freemium, and subscription models. This research identifies the benefits and drawbacks of various monetization strategies by analysing studies such as those conducted by Rita et al. (2024) and Zendle et al. (2020). This research also provides direction for the development of models that are more balanced and player-friendly. This study places a significant emphasis on ethical considerations pertaining to monetization practices. Petrovskaya and Zendle (2022) and Kristiansen and Severin (2020) conducted research that sheds light on the detrimental effects of exploitative practices such as loot boxes. This research also emphasizes the importance of transparency and fairness. This study aims to address these ethical concerns by proposing monetization models that prioritize player well-being and ethical standards. Furthermore, the potential of AI and ML to create more equitable and personalized gaming experiences is a major focus. Kapoor and Chatterjee (2023) and Troussas et al. (2023) provide examples of how these technologies can improve game personalization and detect unethical practices. With the help of these concepts, this research is able to purpose AI-driven monetization frameworks that are both transparent and tailored to the behaviours of individual players. It is critical to have a solid understanding of the factors that influence player satisfaction and engagement. Both Teng et al. (2022) and Zein et al. (2023) have conducted research that offers valuable insights into the ways in which different aspects of a game influence the experiences of players. This study takes these factors into account to ensure that the proposed monetization models not only generate revenue but also increase player satisfaction and loyalty.

Incorporating the Ethical and Dynamic Game Monetization Framework improves the relevance of current research by providing a structured model that fills gaps in the literature. The framework

provides a comprehensive approach to monetization, including ethical guidelines, AI-powered personalization, and player protection. For example, the framework's emphasis on AI system audits ensures that AI is used responsibly, which is a key component missing from some current research. By building on previous research, the framework connects theoretical and practical insights, providing ethically sound solutions while meeting the industry's need for profitability.

6.2 Players' perceptions of monetization models

The theoretical background focuses on the various monetization models used by game developers, such as microtransactions, freemium content, and subscription models. According to Rita et al. (2024), microtransactions, in particular, have emerged as a dominant revenue generation strategy; however, their impact on player experience and satisfaction is varied. According to survey results, 65.1% of participants have made in-game purchases, though a sizable proportion expressed concerns about these practices. More than 34.9% of respondents said they never made in-game purchases, indicating widespread concern about the effects of microtransactions.

The findings indicate that, while microtransactions can provide short-term benefits, they may also contribute to long-term dissatisfaction. Players frequently express regret or dissatisfaction after making impulsive purchases, which supports the literature's finding that microtransactions can evoke feelings of guilt or frustration (Gibson et al. 2023). This aligns with the respondent who commented: "microtransactions should be cosmetic only, should not negatively affect gameplay." Yang et al. (2017) support this viewpoint, stating that when virtual goods purchases are transparently implemented, they can increase player satisfaction by allowing players to improve their gaming experience without disrupting fairness.

Loot boxes, a more controversial type of microtransaction, were heavily criticized by players. With 55.82% of survey respondents stating that loot boxes have a negative impact on their gaming experience, it is clear that players perceive this model as exploitative. As one player put it: "People who pay money for a CHANCE and not even get what they are paying for will either abandon the game entirely or end up with a gambling addiction." This statement reflects literature’s concerns about loot boxes' gambling-like nature, as noted by Sidloski et al. (2022) and Kristiansen and Severin (2020), who found a strong correlation between loot boxes and problem gambling behaviours.

According to survey responses, players prefer predictable and transparent monetization strategies, such as the cosmetic-only approach, which has no impact on gameplay progression. This is consistent with Harviainen et al. (2020), who advocate for transparent pricing models and ethical approaches to microtransactions. These findings highlight the importance of ethical considerations in developing monetization strategies, as players expect fairness and transparency in their gaming experiences.

6.3 Ethical considerations in monetization models

Both players and professionals are concerned about the ethical implications of loot boxes and microtransactions. Kristiansen and Severin's (2020) theoretical research highlighted the problematic nature of loot boxes, particularly their resemblance to gambling and potential to exploit vulnerable populations. This was supported by the survey results, which revealed that players emphasized the importance of regulatory measures and ethical frameworks to protect them from manipulative monetization practices. As one respondent stated, "Pit a restriction of how many item you Can buy and totally prohibited for people less than 20 years old."

This feedback is consistent with Baeck and Claeys' (2021) findings, which show that legal action was taken against games such as FIFA 18 and Overwatch due to violations of national gambling laws. The Belgian Gaming Commission's regulatory actions have established an important precedent for transparency and accountability in game monetization, compelling developers to reconsider how these systems are designed and implemented. The survey results support the idea that players want ethical reforms to keep their trust and engagement in the industry.

Furthermore, microtransactions based on gameplay progression (pay-to-win mechanics) were a major source of dissatisfaction. 55.56% of respondents advocated for the elimination of pay-to-win models, believing they undermine the fairness of competitive gaming. This finding is consistent with Harviainen et al. (2020), who emphasize the importance of fair pricing mechanisms and the removal of exploitative monetization models in order to improve the player-developer relationship.

While ethical considerations are significant, game developers face the challenge of balancing profitability with ethical responsibilities. Implementing ethical monetization frameworks, as proposed in this study, would enable developers to generate revenue while retaining player satisfaction and long-term trust. Developers must strive for transparent models that respect players' preferences while avoiding perceptions of manipulative or predatory monetization practices.

6.4 The impact of AI and ML on monetization and personalization

AI and ML technologies have the potential to transform the gaming industry, particularly in terms of personalised experiences and dynamic monetization. According to Kapoor and Chatterjee (2023), AI-driven personalization can boost player engagement by delivering content tailored to individual preferences. The survey results show a divided view of AI's role in monetization, with some players excited about the prospect of tailored offers and others concerned about manipulation.

One respondent expressed concern about AI-driven monetization, saying, "AI-driven solution would drive the issue worse, not inherently because of AI, but because it will be the company behind it and they probably would priorities profits." This comment reflects a broader scepticism about the use of AI, particularly when players believe it will be used to exploit them financially. This concern is shared by the literature, with Swacha and Gracel (2023) warning that, without proper oversight, AI-driven monetization strategies may lead to unethical practices, especially if AI is used to create personalized offers that encourage excessive spending.

However, there is a compelling case for AI's ability to promote fairness when implemented with transparency and human oversight. Several industry professionals agreed that AI can be used to improve player experiences while maintaining ethical standards, as long as it is combined with audits and ethical guidelines. According to Óskarsdóttir et al. (2022), AI can create dynamic pricing models that align with player behaviour and avoid bias or discriminatory practices. According to survey results, 55.56% of respondents believe AI can improve personalization if used responsibly.

The proposed Ethical and Dynamic Monetization Framework focuses on regular AI audits to prevent price manipulation and ensure transparency. Developers can create monetization strategies that grow long-term engagement and trust by ensuring that AI is not solely profit-driven and instead focuses on improving player satisfaction.

6.5 Industry perspectives on monetization frameworks

Industry feedback is essential for understanding the practical applications of theoretical frameworks. The survey results from industry professionals provided valuable insights into the challenges of implementing ethical monetization strategies. While there was widespread support for incorporating AI and ML into monetization models, respondents were concerned about balancing innovation with financial sustainability.

One industry professional noted: "AI and ML is a tricky part. AI can be used to monitor what is happening in the players game. And there are for sure ways of making monetization better with AI but I'm not sure if this is the way. One of the biggest issues is with using any sort of personalized

offers." This is consistent with the literature's emphasis on understanding of the various types of player motivation to create sustainable models that do not detract from the gameplay experience (Banyte & Gadeikiene, 2015).

Furthermore, industry professionals agreed that transparency is essential for building trust, but cautioned that complete transparency may reduce the appeal of monetization strategies for high-spending users. One respondent mentioned: "I'm wondering if full transparency will make the experience less exciting and therefore will make players spend less?" While another professional commented, "The hard fact is that players tend not to be interested in those custom offers AND from fairness standpoint if the game is popular people will talk and get upset if the same offer hasn't been presented for them." This comment emphasizes the challenges developers face in striking a balance between transparency and profitability, a theme shared by Harviainen et al. (2020).

6.6 Privacy and data transparency

Privacy and data transparency were identified as major concerns in both the survey findings and the literature. AI-driven personalization necessitates the collection and analysis of large amounts of player data, posing significant ethical concerns about data usage and protection. One survey respondent expressed these concerns, saying, "AI solutions are often black box, so the game developer needs communicate explicitly how they are using AI and how it exactly helps to make the game more fair."

Another respondent underscored the importance of transparency in data handling, saying, "On the topic of data privacy, players need to be informed also on the risk of data leaks if their data is to be stored for personalisation." A further ethical perspective was offered, "AI is made by humans and is trained on humans. They have no concept of morality and they can't understand human emotions, how a bad feeling left by bad practices affects the player."

This reflects the broader concerns expressed by Swacha and Gracel (2023), who emphasized the importance of maintaining transparency in AI-driven systems to protect user autonomy and privacy. As AI and ML become more integrated into game development, developers must be careful to ensure that data collection practices are ethical and transparent. The proposed framework includes measures for regular audits to ensure compliance with data protection regulations and to build trust with players by clearly communicating how their data will be used.

6.7 Ensuring player satisfaction and engagement

The survey results consistently show that players value fairness and transparency in monetization strategies. Players who believe the game environment is fair and rewarding are more likely to stay engaged over time. The literature supports this viewpoint, with Teng et al. (2022) and Zein et al. (2023) emphasizing the importance of strategic engagement and community participation in increasing player loyalty.

The survey respondents preferred monetization models that did not disrupt the core gaming experience. Cosmetics, progressive rewards, and player-driven customization were identified as the most effective strategies. One respondent supported this by saying, "Microtransactions should make the game easier for those who choose to play, not impossible for those who don't." This sentiment highlights the importance of monetization strategies that improve gameplay without giving unfair advantages. This is consistent with the findings of Harviainen et al. (2020), who emphasized the importance of non-intrusive monetization practices in improving player satisfaction while maintaining game integrity.

The feedback also revealed that players are more likely to stick with games that prioritize community involvement and feedback-driven iterative improvements, as described by Tong (2021) in the case of No Man’s Sky. The implementation of ethical and dynamic monetization models that encourage player engagement while maintaining fairness and transparency can assist developers in cultivating long-term loyalty and trust among their player bases.

7 Conclusion

This chapter concludes the study by addressing the research questions introduced in this thesis introduction section. The blend of groundwork and survey results has shed light on the challenges faced and opportunities present, in enhancing gaming monetization methods. Moreover, it highlights the key findings, outlines responses to the research questions while sharing closing reflections, on how they impact upcoming game design and monetization strategies.

Answering the research questions

RQ1a. How do current monetization strategies, particularly loot boxes and microtransactions, impact player satisfaction, engagement, and trust in the gaming community?

The current monetization strategies, especially like loot boxes and microtransactions, really affect how satisfied and engaged the players are and how much they trust the game developers. The study shows that lots of players feel like these tactics feel them manipulated and can remind them of gambling traps such, as loot boxes. Players seem to prefer buying cosmetic microtransactions that and do not affect them to progress in the game. The literature supports this too. Stating that loot boxes can make players feel frustrated or disappointed and lose trust in the game (Kristiansen & Severin 2020). Consequently, even though these practices contribute to make some profits now, players could end up pushing away some players over time.

RQ2a. What are the ethical concerns about using loot boxes and microtransactions?
RQ2b. How do ethical concerns manifest in player experiences and perceptions?

Concerns, about the ethics of loot boxes and microtransactions centre on their ability to take advantage of younger players. Due to the nature of loot box rewards resembling gambling practices there are worries about fairness, transparency and the potential for addictive behaviours. Both research studies and feedback from surveys suggest that the lack of openness in loot box systems along with the inclusion of pay to win features harm the trust relationship, between game developers and players. To promote fairness, in business practices and uphold standards, for monetization strategies it is essential to provide odds, fair pricing that avoids exploitation and to eliminate any elements that give paying customers an unfair advantage.

RQ3a. How can AI and ML be effectively integrated into video game development?

AI and ML can enhance the creation of video games by personalizing player experiences and creating developing dynamic pricing models tailored to preferences. However, the integration must be overseen ethically to avoid manipulating players into targeted purchases. AI can enhance fairness

and transparency in monetization by adapting content to player behaviour of capitalizing on buying habits. Yet it is crucial to conduct regular audits and maintain data procedures to prevent misuse of AI.

RQ3b. Can AI and ML improve monetization fairness, transparency, and dynamism?

AI and ML hold the potential to improve fairness, in monetization by offering flexible monetization tactics that offer to preferences while ensuring pricing remains transparent and fair. However, it is crucial to implement them ethically. Cautious oversight of AI powered systems is necessary to prevent any misuse. Transparency regarding data should be given priority.

Final thoughts

Based the research conducted indicates that it is essential for the video game industry adopt ethical and flexible monetization approaches than sticking to methods such, as loot boxes and microtransactions that have lost the player trust lately and led to calls for more openness and fair monetization practices, among players.

Developments, in AI present exciting probabilities to improve personalization and fairness, in revenue strategies in gaming. But it’s crucial to apply them within a framework of ethics. With evaluations and proper handling of pricing and protected data being components to avoid any misuse of AI driven systems targeted at venerable players.

The Ethical and Dynamic Monetization Framework strives to connect the gap, between maximizing profits in the long run and ensuring player satisfaction by emphasizing transparency and fairness while also offering personalized experiences that adapt based on preferences and behaviours.

Implications for future research and practice

Future research should look into how AI and ML fuelled revenue models can be applied in the gaming sector and explore ways to regulate and monitor these technologies for purposes adequately. Furthermore, additional research is needed to investigate the long-term impact of ethical monetization approaches, on player retention, satisfaction and community engagement.

In practice, game development industry professionals need to strike a balance, between fostering creativity and upholding standards to ensure that their methods of revenue generation adapt in line with player preferences and trends, in the field. By incorporating guidelines into their strategies developers can guide the direction of monetization efforts creating an environment where gaming is both rewarding and profitable for all stakeholders.

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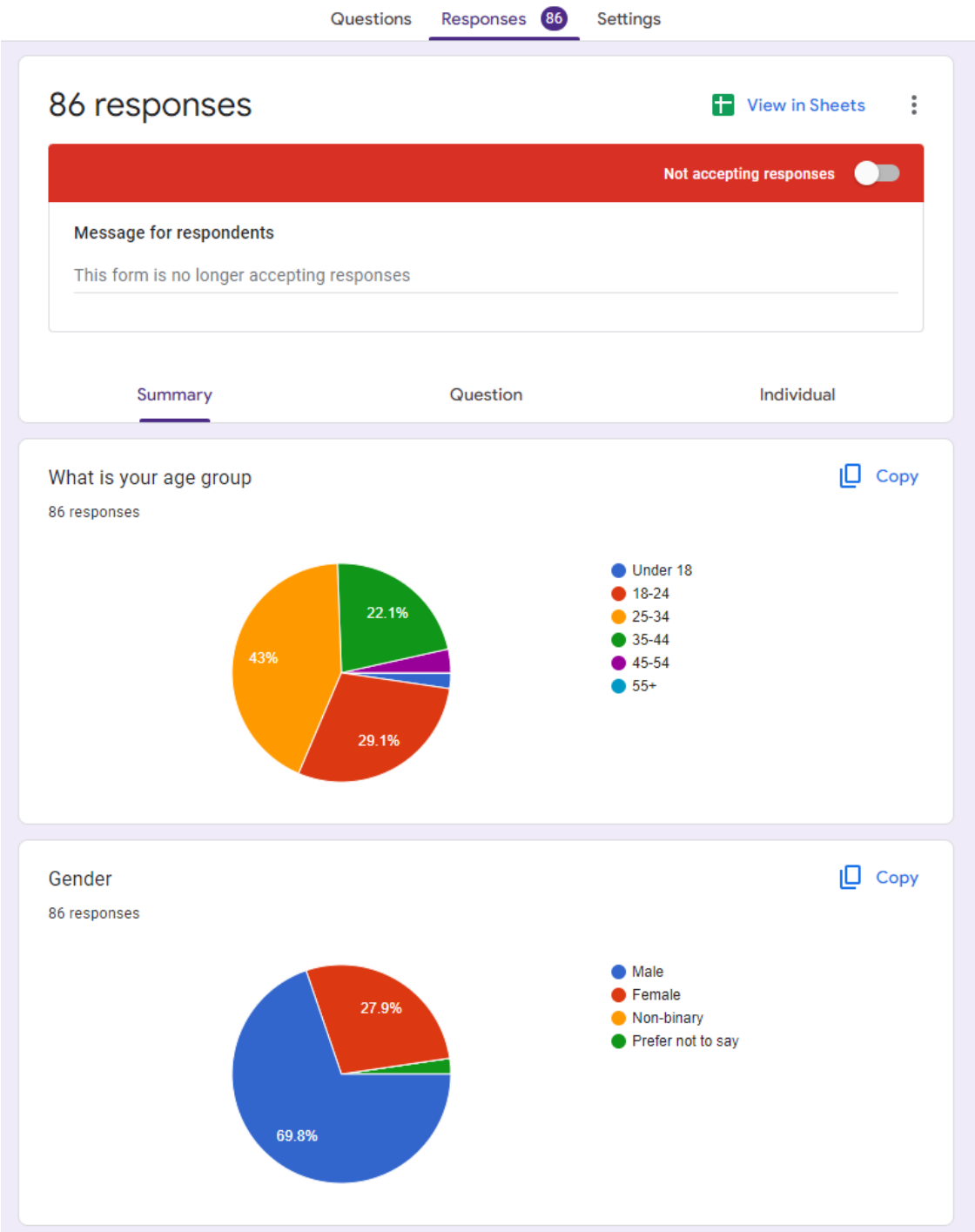
Appendices

Appendix 1. Survey 1 Google Forms and PDF



Your country of residence

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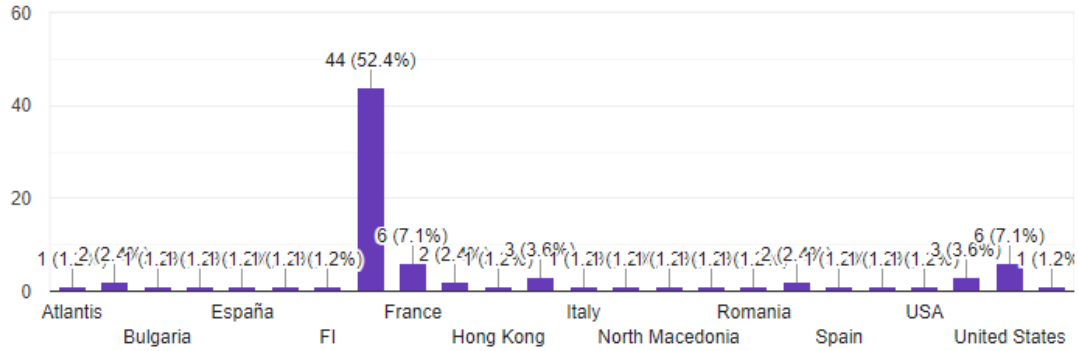

Your primary gaming platform

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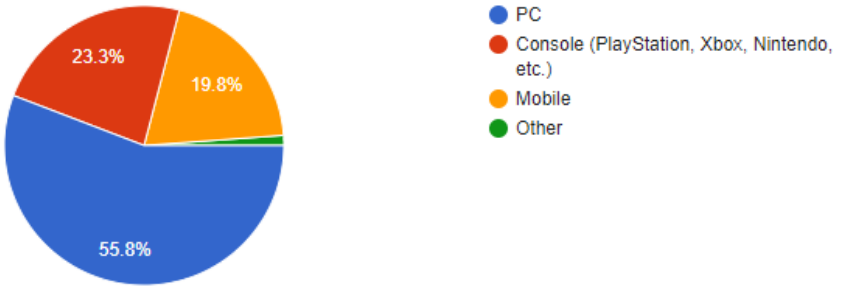

Gaming Habits

How many hours per week do you spend playing video games?

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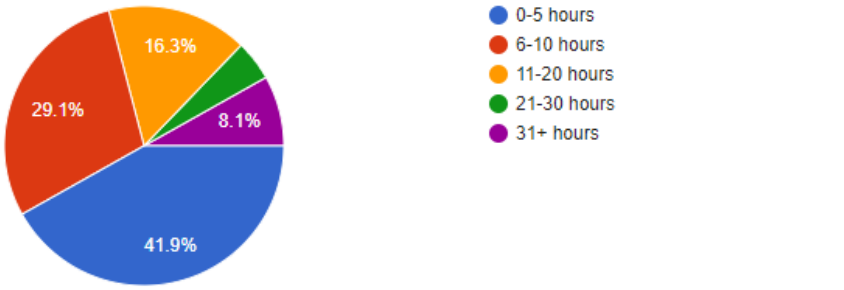

What types of games do you play most often? (Select all that apply)

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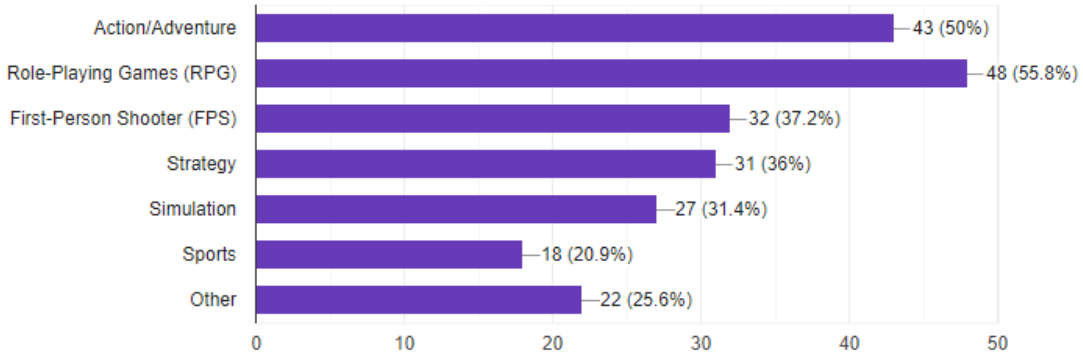

Experience with Monetization

Have you ever made an in-game purchase (e.g., loot boxes, skins, in-game currency)?

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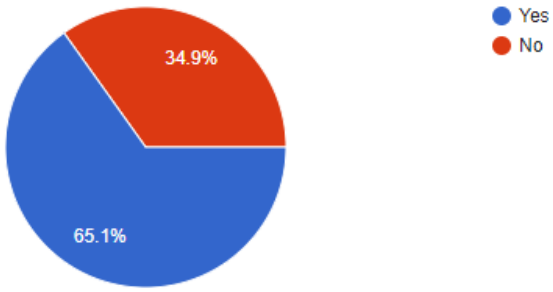

If yes, how often do you make in-game purchases?

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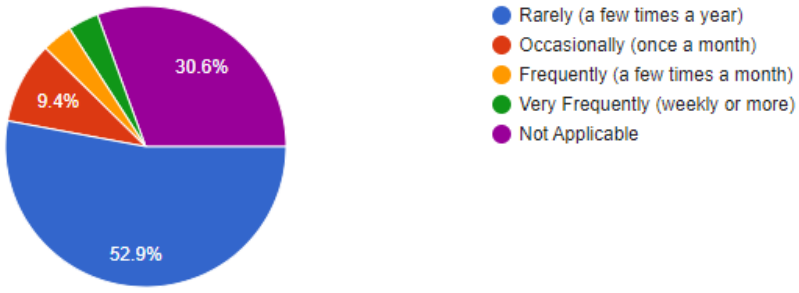

What motivates you to make in-game purchases? (Select all that apply)

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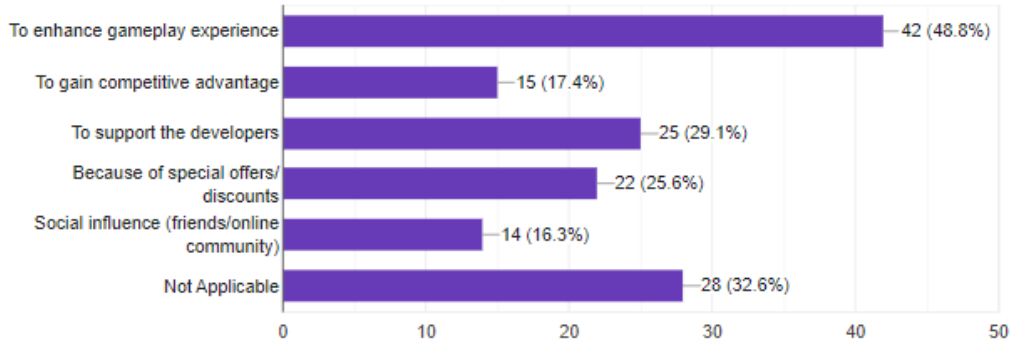

Have you ever **stopped playing a game** because of its monetization practices? If so, briefly explain why.

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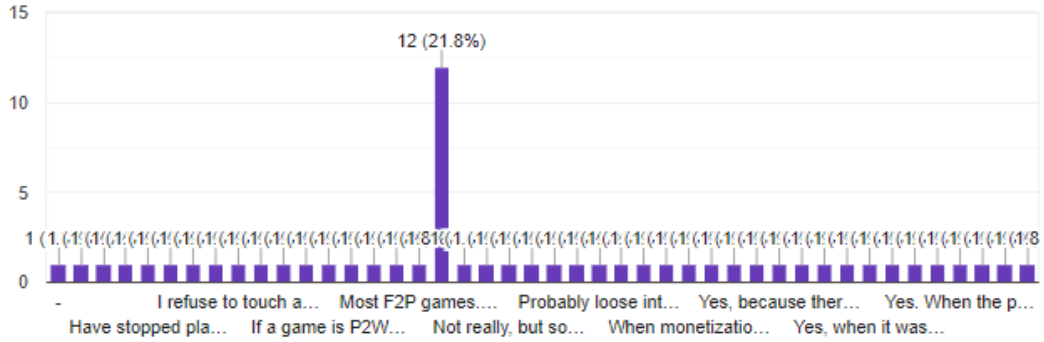

Perceptions of Fairness and Satisfaction

On a scale of 1 to 10, how satisfied are you with the overall experience of the games you play?

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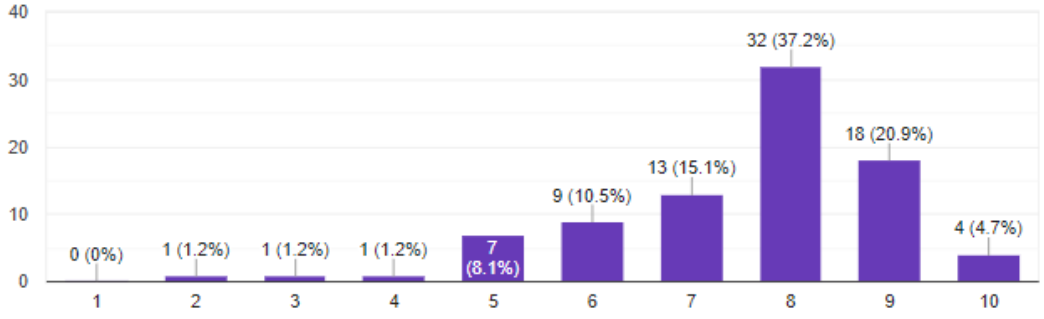

Which aspects of the game contribute most to your satisfaction? (Select all that apply)

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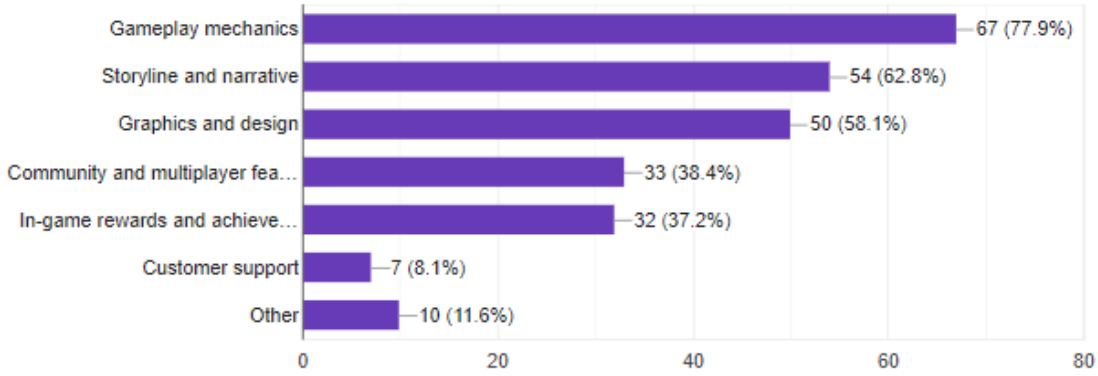

What would improve your satisfaction with in-game purchases? (Select all that apply)

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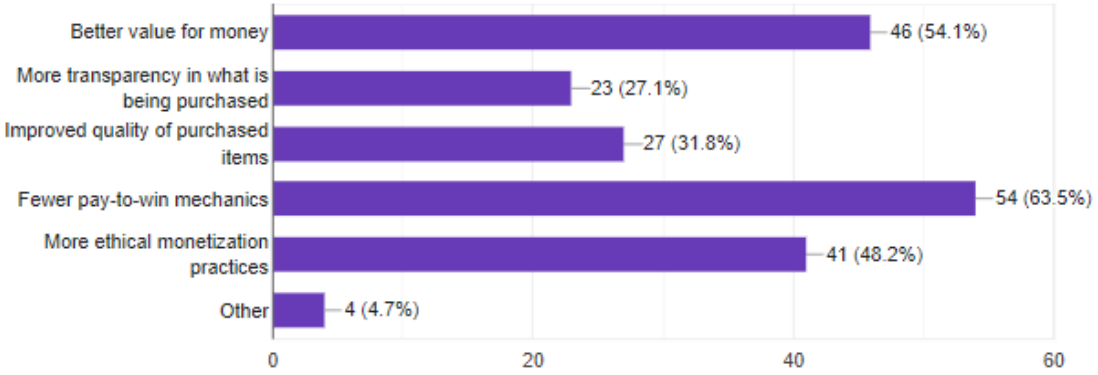

How fair do you perceive the current monetization practices in your favorite games?

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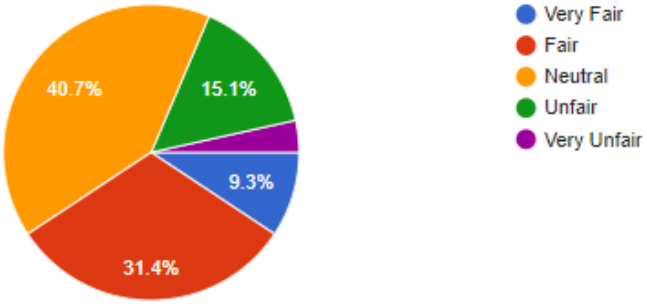

Do you feel that loot boxes and microtransactions affect your overall enjoyment of the game?

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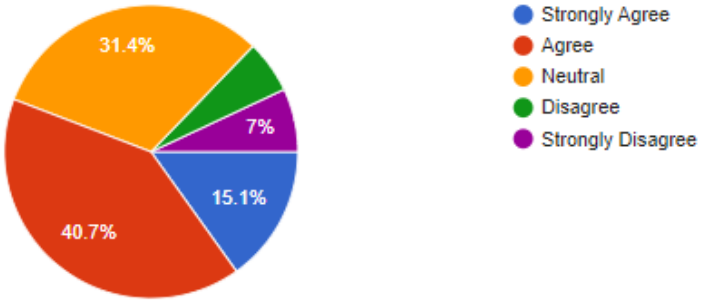
86 responses



Have you ever felt regret after making an in-game purchase?

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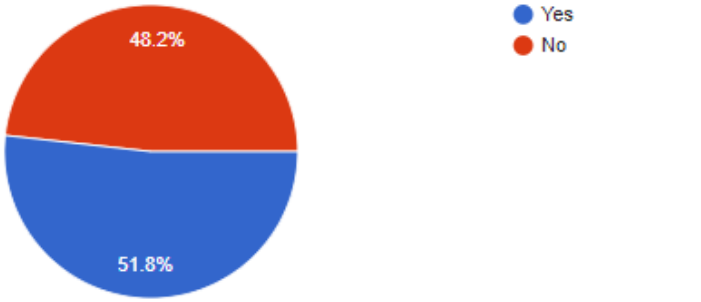

Do you believe that current monetization practices prioritize the player's experience?

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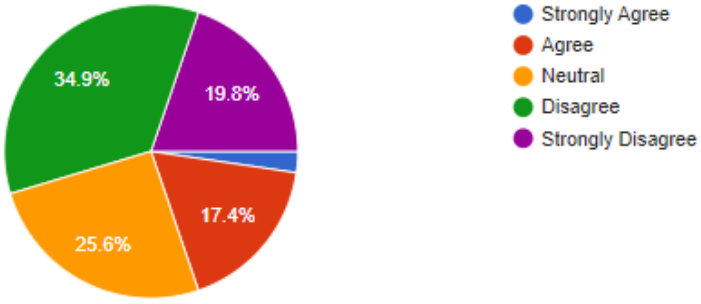

What **player-friendly changes** would you recommend to improve the monetization model?

44 responses

- Discounts based on time spent or in-game performance
- Focus more on players and less on the numbers
- I dont linos
- -
- No strong ideas. Have less "pay to win" mechanisms and instead offer unique experiences
- Remove them all together
- Monetization should be a mean to support smaller indie developers
- New experiences in game and better value
- NA

Ethical Concerns

Do you think loot boxes and microtransactions can be considered exploitative?

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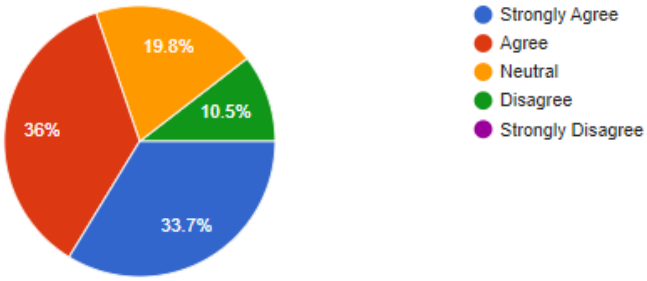

Do you believe loot boxes should be considered a form of gambling?

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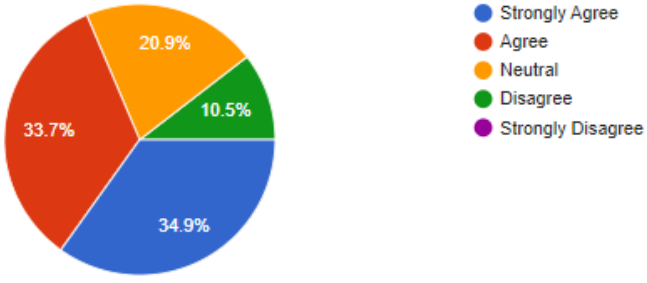

Have you or someone you know experienced issues related to spending too much on in-game purchases?

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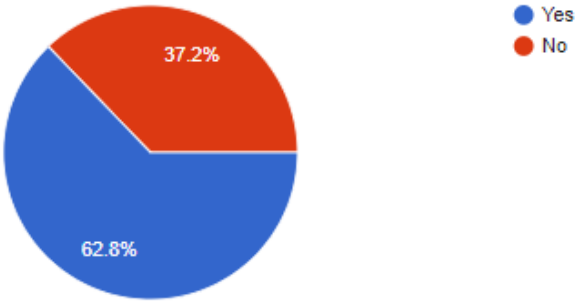

Should there be stricter regulations on monetization practices in video games?

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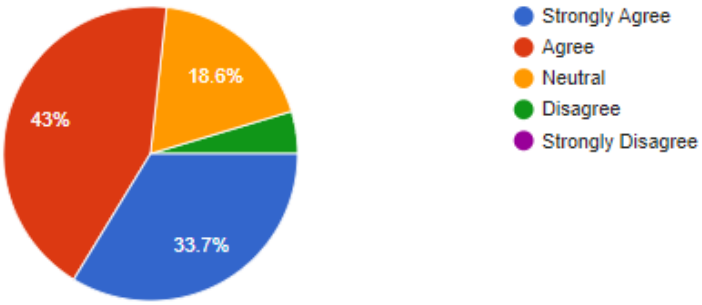

What is your main concern regarding the use of loot boxes in games? (Select all that apply)

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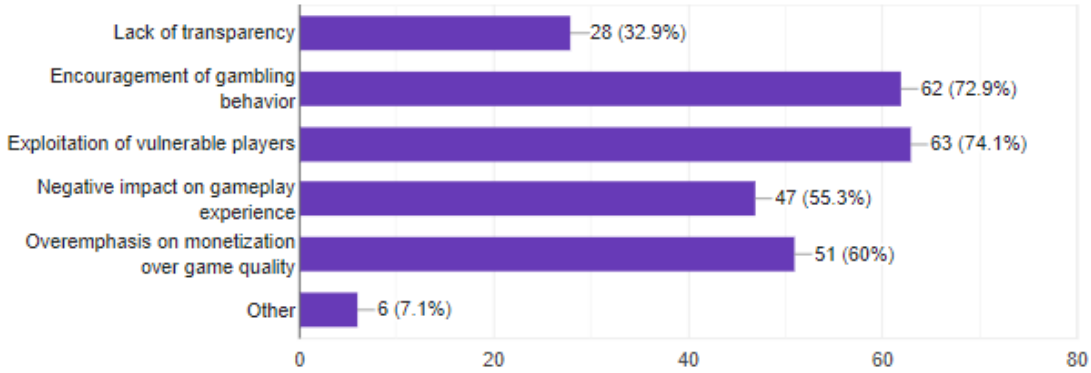
85 responses



What measures do you think should be taken to make loot boxes more ethical? (Select all that apply)

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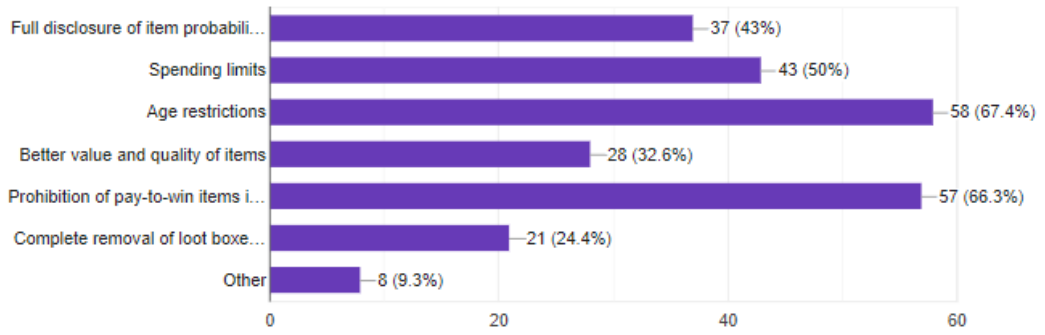

What **ethical improvements** would you recommend for a better monetization model?

40 responses

No comments

Remove loot boxes that could be bought and just give them for progression (eg. Rocket League) and/or sell the items on item shops with rotations(eg. Call of duty, Fortnite). Last option is to return to regular dlc packs.

Less in-game currencies that can be bought with real money, easily obstructing how much you actually spend

There should be a way to get items in-game through gameplay to balance the pay-to-win dynamics

NA

EU to impose Union-wide restrictions, where profits go towards mental health

age restriction and limits

Pit a restriction of how many item you Can buy and totally prohibited for people less than 20 years old

Artificial Intelligence (AI) and Machine Learning (ML) in Monetization

Are you aware of the use of AI and ML in personalizing game experiences and monetization strategies?

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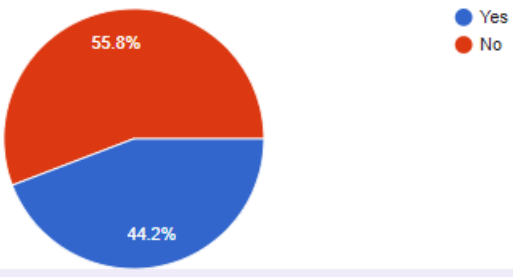

Do you believe AI and ML can help create fairer monetization models?

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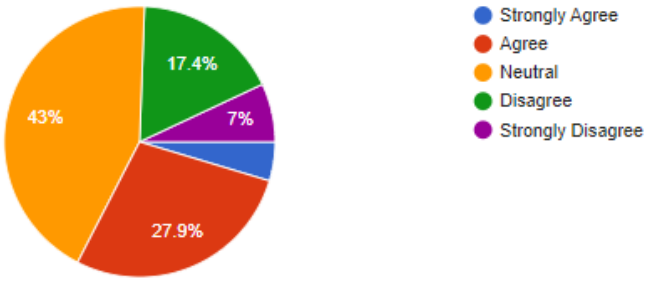

Would you trust a game more if you knew it used AI to ensure fair pricing and ethical monetization?

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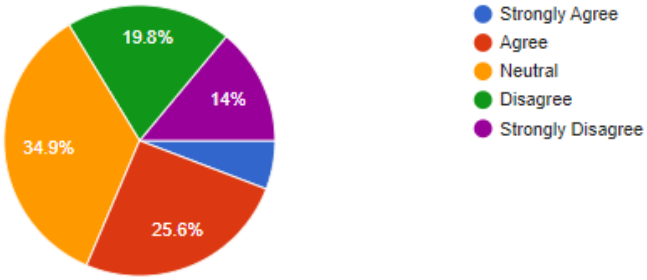


Do you believe that **AI-driven solutions** can effectively address issues of fairness and player satisfaction? Why, or why not?

52 responses

Possible. But it would be a challenge to strike a balance

In my case, my nephew spends lots of money in skins for games he is 10yo and completely unconscious of what he is doing, idk AI could detect he is. Akid due to his behaviour and give advice on not spending that much. Is like they manipulate kids to convince parents to buy stuff

At the end of the day it's going to function on some sort of data that were created and that it learned from which will strongly influence the way it behaves

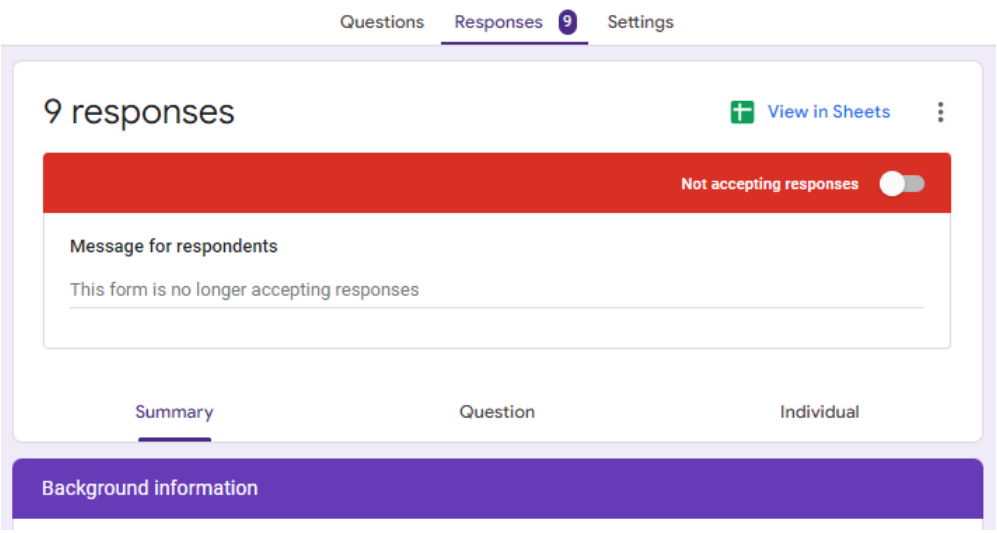
Yes because AI is powerful and efficient

I don't know

I have doubts. I'd question are the AI-driven solutions used to enhance player experience or try to maximise the revenue generated

Ai driven solution might be good, but it all depends on how the ai is trained. If the ai learning input is crooked, we can not expect a fair solution.

Appendix 2. Survey 2



Your role in the gaming industry

9 responses

- Senior Advisor
- Senior Game Designer
- Marketing & Comms
- Lead Programmer
- Game programmer/designer
- Game Designer
- Tester
- Marketing Executive
- Principal Game Designer

Primary focus/ area of expertise

9 responses

- Game Design and production
- Game Design and Live ops
- Community Manager
- Gameplay Systems
- Designing
- Game Design and Level Design
- Game Testing
- Marketing

Years of experience in the industry

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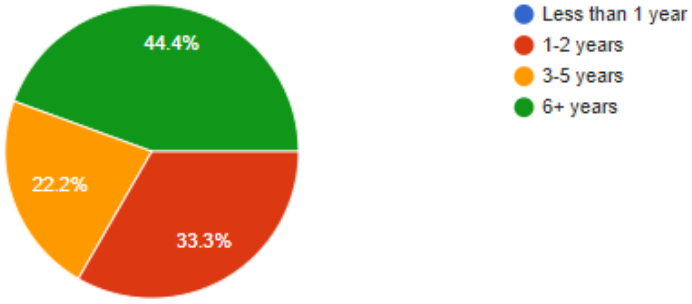
9 responses



General industry perspectives connected to the framework

Real-time player feedback is necessary for refining monetization models.

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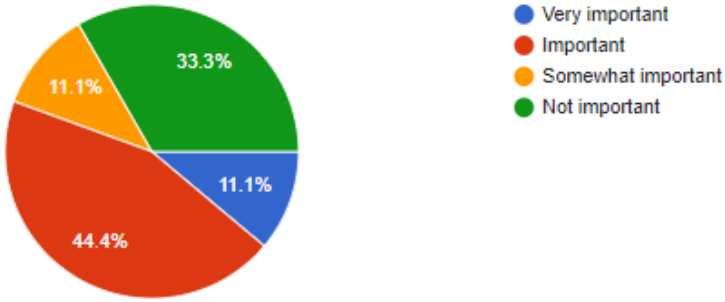

Transparent communication about monetization changes improves player trust and engagement.

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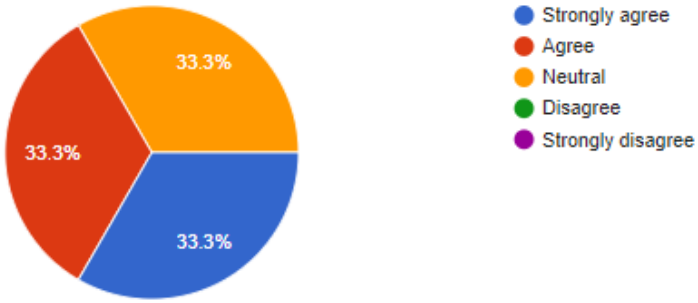

Clear pricing and visible loot box odds help address fairness concerns.

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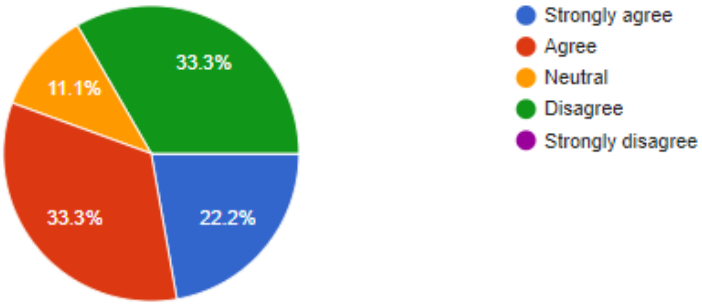

AI has the potential to ethically personalize player experiences without promoting excessive spending.

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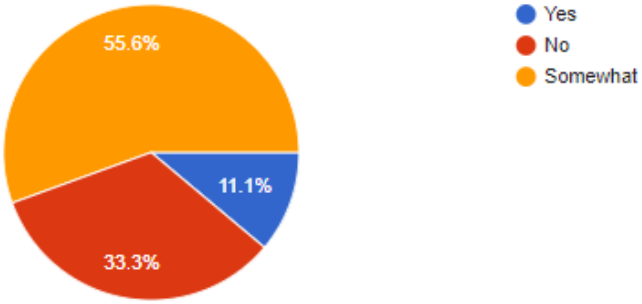

Implementing dynamic pricing based on player loyalty and engagement is a fair approach.

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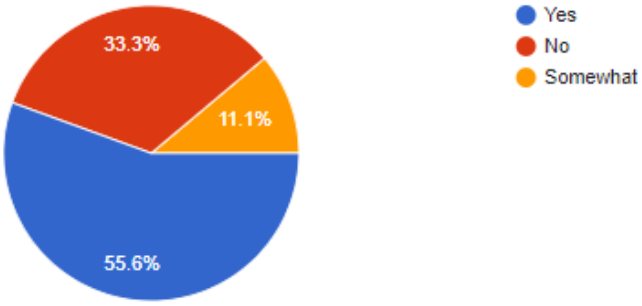

Eliminating pay-to-win mechanics ensures fairness and protects players from exploitation.

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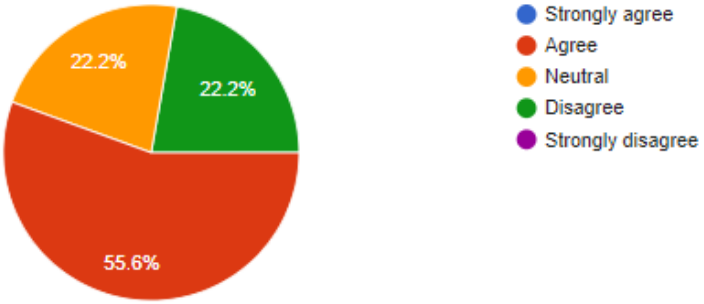

Cosmetic rewards should be the main focus of monetization strategies.

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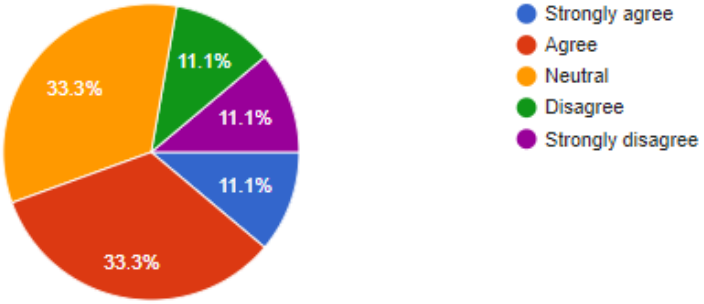

Personal spending caps and real-time alerts are effective measures to protect customers from overspending.

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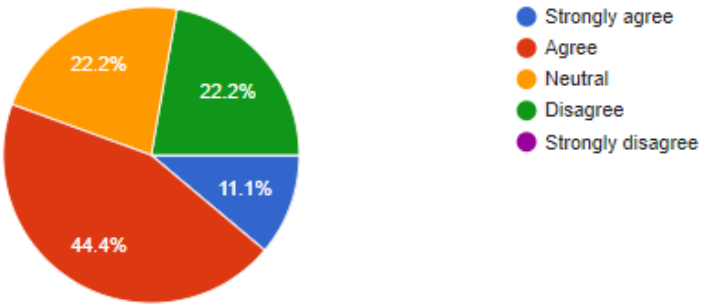

Parental controls and age restrictions on loot boxes are adequate and effective in protecting minors.

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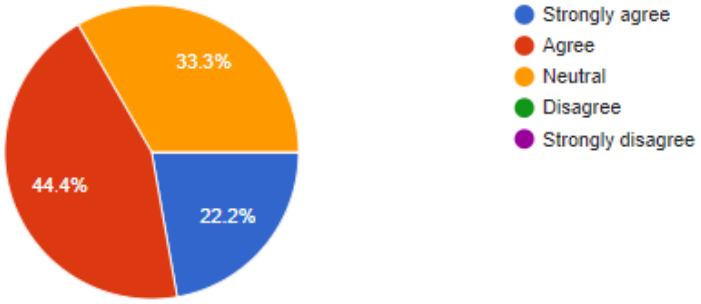

Framework-specific statements

Eliminating hidden costs or unclear pricing (eg: currency conversions) effectively improves player trust and retention.

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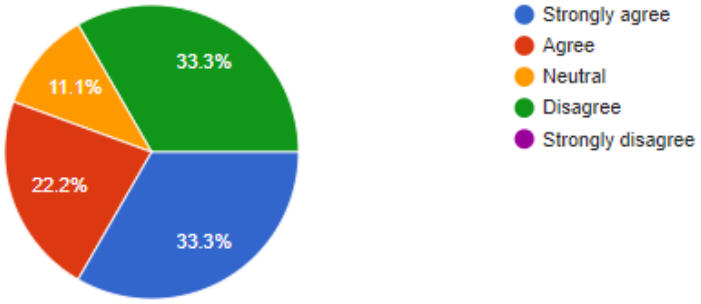

Regular AI system audits are essential to ensure fairness in monetization models.

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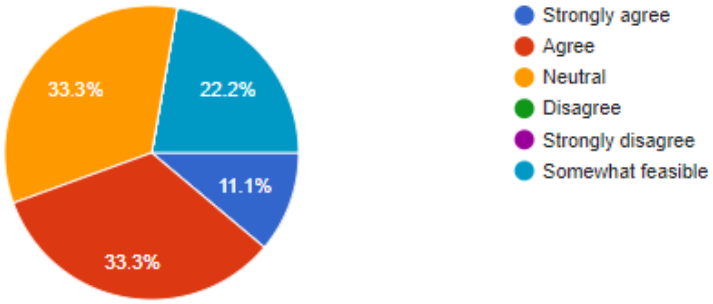

Offering paid cosmetic content that can also be earned by completing quests is essential for a fair and sustainable monetization strategy.

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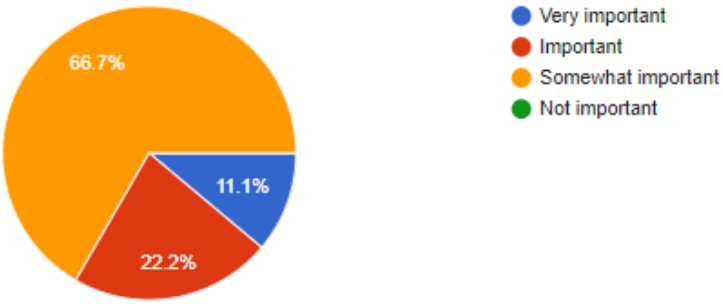

Personalized offers based on playstyle, without encouraging excessive spending, create a more effective and player-friendly monetization strategy.

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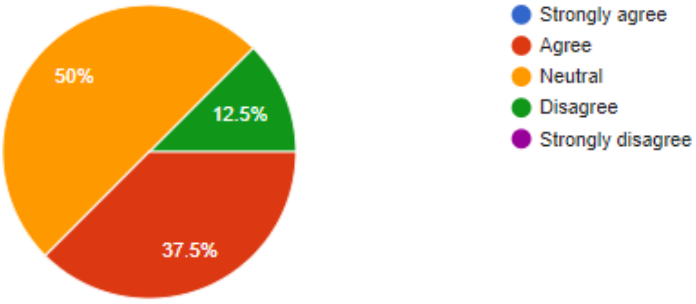

The framework adequately addresses data privacy and transparency concerns.

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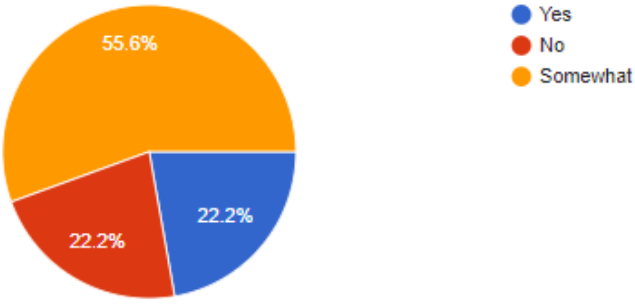

The framework effectively emphasizes the importance of transparency and ethical guidelines in game monetization strategies.

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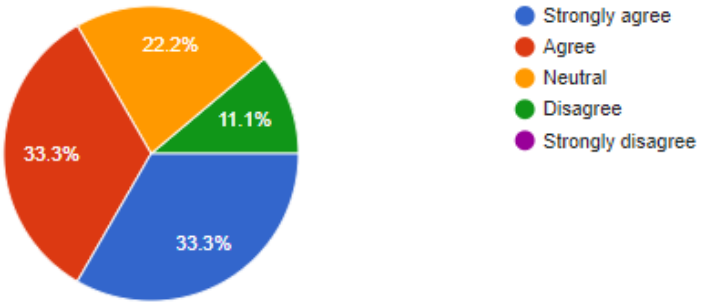

Do you have any additional feedback or suggestions for improving the framework?

9 responses

Players don't know what they want and especially how much things should cost. They want more for free, but that would just ruin their experience. I don't believe players would give much of a useful feedback to the developers on monetisation since the whole word is tainted in their minds. I believe rewarding loyal players and keeping players in loop somehow would be beneficial still. I don't know how... Probably it depends on the game.

I want to state firstly that these are my personal opinions and have nothing to do with my company I work for Small Giant Games. Hence I want to leave that part out.

I think there is a start of something here, but the focus of the framework is too shallow and without proper substance. I'd be happy to review the whole paper to better understand the intent behind this framework as it would maybe help me understand the meaning behind the framework. This does combine two paths that are been worked on currently in the industry: Ethical monetization and AI driven content which both do have their upsides as it states, but the framework could be much clearer on it's intent and components.

As it stands its usefulness is debatable. This whole frameworks seems to be based on cosmetics being only viable monetization structure, which isn't the case depending on what you are making. I think gaming industry is a business on it's own and meant to make money is an inherit part of it. I'm not defending most of the AAA monetization practices as they are in their current state pretty flawed. But as it stands, you are

Appendix 3. Framework Google Docs and PDF

Introduction

The Ethical and Dynamic Game Monetization Framework

I'm Imam Dastakeer from Helsinki, Finland, and I'm a Master's student at Haaga-Helia University of Applied Sciences, specializing in Leading Business Transformation. I'm working on my master's thesis focused on video game monetization practices.

As part of research, an Ethical and Dynamic Monetization Framework was created to balance player satisfaction with long-term financial success for gaming companies. The framework combines ethical principles and AI-powered strategies to create a transparent, player-friendly monetization model that avoids player exploitative practices.

The framework was created based on a combination of literature review findings and empirical evidence gathered from player feedback. Its main objective is to ensure a balance between ethical monetization and dynamic strategies that protect players from exploitative practices while also promoting the long-term success of game developers.

By promoting a sustainable and balanced approach to monetization, the framework benefits both players and gaming firms. It promotes a fair and engaging gaming environment by incorporating AI and ML for personalized experiences while also ensuring transparency and player safety. This framework aims to help gaming companies build trust with players, avoid exploitative tactics, and develop monetization strategies tailored to the needs and expectations of the gaming community, resulting in long-term revenue streams.

Key Components of Framework	
Component	**Explanation**
Ethical guidelines and transparency	Makes monetization transparent and fair and protects players from pay-to-win models and unclear pricing.
AI and ML integration with oversight	Personalized player experience using AI and ML, with oversight to prevent player exploitation.
Personalized player experiences	Provides personalized content and offers using AI without pressuring players to spend too much.
Fairness and non-exploitation	Looks at non-gameplay factors that affect monetization to prevent players from getting an unfair advantage.
Spending limits and protections	To prevent excessive spending, especially by vulnerable players, use personal spending caps, alerts, and parental controls.
Continuous feedback and adaptation	Improves monetization strategies based on real-time player and gaming community feedback.
Regulatory compliance and data privacy	Maintains data transparency and player privacy while complying with national and international regulations.

The Framework

The Ethical and Dynamic Game Monetization Framework			
Component	**Objective**	**Key Actions**	**Examples**
Ethical guidelines and transparency	Maintain transparency, fairness, and player protection from pay-to-win models and unclear pricing.	Create transparent pricing models that show in-game purchases in real currency.	Display both in-game currency and real money prices.
		Display odds to make loot boxes transparent.	Display odds for loot box contents (e.g., "5% chance of legendary item").
		Remove any hidden costs or fees.	Total cost is shown on the final purchase screen.
AI and ML integration with oversight	Create personalized player experiences using AI and ML without exploiting player behavior or encouraging excessive spending.	Use AI to personalize content, but limit recommendations that encourage unnecessary purchases.	Make cosmetic recommendations based on playstyle.
		Make games more accessible with dynamic pricing (discounts for loyal or casual players).	Provide a discount to loyal players while avoiding manipulating high spenders.
		Conduct regular audits of AI systems to ensure fairness and non-exploitation.	Monthly audits ensure that recommendations are fair.
Personalized player experiences	Customize in-game content without forcing players to spend or using emotional triggers.	Tailored content offers based on playstyle and achievements.	Provide exploration-themed cosmetics to players who enjoy RPGs.
		Personalized rewards for in-game performance that do not require purchase.	Give players cosmetic items after completing certain challenging quests.
		Subscription services for exclusive non-gameplay content.	Optional monthly subscription focusing on non-essential gameplay items (cosmetics and events).
Fairness and non-exploitation	Ensure that monetization practices do not give paying players an unfair advantage, focusing instead on cosmetic items and unlockable content.	Focus on cosmetic monetization that has no effect on gameplay.	Provide cosmetic character skins that have no impact on gameplay.
		Allow players to earn paid cosmetic content by completing quests or challenges in-game.	Allow players to acquire powerful skins through quests or purchases.
		Eliminate pay-to-win mechanics from the game entirely.	Prohibit selling skill boosts or weapons.
Spending limits and protections for players	Keep players from overspending, and protect vulnerable groups, such as minors.	Implement personal spending caps that players can set for their accounts.	Notify players when they have reached 50%, 75%, or 100% of their spending limit.
		Send real-time spending alerts.	Parental controls restrict younger players' spending and loot box purchases.
		Implement parental controls to limit minors' spending and restrict access to gambling-like elements.	Limited access to loot boxes.
Continuous feedback and adaptive systems	Use real-time player feedback to adjust monetization strategies to meet changing needs.	Establish player feedback channels (surveys, social media polls, etc.).	Conduct in-game surveys following updates.
		Frequently improve monetization models based on player feedback.	Based on feedback from players, adjust prices or make cosmetic packs.
		Engage the community by providing regular updates and open discussions about monetization practices.	Communicate changes via forums and social media.
Regulatory compliance and data privacy	Maintain transparency and age restrictions for sensitive features, such as loot boxes, to ensure compliance with global regulations and protect player data.	Adhere to regional laws, particularly those governing loot boxes, microtransactions, and gambling-related elements.	Clearly label loot boxes as having chance-based elements.
		Protect data privacy by being open about data use and providing opt-in options.	Provide detailed data usage information and opt-in options for personalization.
		Implement age-based restrictions to prevent minors from accessing potentially harmful monetization features.	Limit loot box purchases for minors.