Unveiling Video Game Monetization Dynamics: A Sociotechnical Analysis through Actor-Network Theory

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On my honor as a University Student, I have neither given nor received unauthorized aid on this assignment as defined by the Honor Guidelines for Thesis-Related Assignments

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Introduction

As more advanced computing and internet access started to grow across the 21st century, the video game industry has experienced significant growth, starting from retro arcade games to virtual reality. Throughout the evolution of video games, the gaming industry has needed to rely on ways to optimize revenue. Before, arcade games utilized a concept called pay-to-play, which required the consumer to insert money, mostly coins, to continue playing the game. However, this model slowly died off in favor of owning a copy of a game, since personal computers and consoles became more popular. Through this change, the video game industry must develop different manipulative techniques and exploit human vulnerabilities to increase revenue, especially from the consumer.

Many large game development companies, like Electronic Arts (EA) Games or Epic Games have tried various game monetization strategies. One example of this is the game *FIFA Ultimate Team*. EA introduced their version of loot boxes, where the consumer can pay to get rarer football players to add to their roster. In 2021, EA Games made $1.6 billion from the game, showing the loot boxes are very profitable (Lemmens, 2022). Despite the high revenue generated by loot boxes, loot boxes have gained a bad reputation among the gaming community because of the similarities they hold to gambling, which is known to be addictive. Loot boxes are just one example of gaining profits from their games. This issue is significant because of how the manipulative tactics raise many concerns about the ethics of exploiting human vulnerabilities, given that many minors have easy access and are constantly exposed to gambling-like transactions. However, this can give insight into ways to foster a financially healthy relationship between the consumer and developer. Thus, by exploring this research question: *How do human and non-human actors within the video game monetization network interact and influence*

consumer spending behavior, it is possible to improve and understand the one-sided relationship that exists between the two groups.

Background and Context

The convenience factors that emerged from technology, such as cashless transactions, have allowed consumers to spend money with a single click. Before, consumers could shop in-person to examine the product/services, but now online platforms, such as Amazon, have made it easier to purchase products. As the user browses through the online store, the store collects user data, such as how long the user looks at a product, how often they search for a product, and much more. Using this collected data, data analytics can use the information to create individualized consumer profiles to target consumers' spending patterns and preferences. This allows the stores to advertise products and services that the user may want to buy in the future. In the video game industry, this data can be used to create specific in-game purchases to target each category of consumers. For example, some groups may only be willing to spend about $10, $100, or $1000. To appeal to these different groups, video game companies design certain in-game packs for these price ranges and advertise them. However, this can lead to irresponsible financial decisions made by the consumers, since these packs are targeted towards the consumer, making it seem like a necessary purchase rather than a luxury.

One of the most common products advertised to consumers are loot boxes or in-game currency to purchase loot boxes. However, the way that loot boxes work is that they offer a guaranteed prize, but that prize may not be what is highlighted in the advertisement. For example, going back to the game *FIFA Ultimate Team,* a premium loot box may contain the advertised gold football player, but may contain other football players of lesser value. In fact, the probability of acquiring such a rare football player is about 1% (EA, n.d.). Due to how loot boxes

play on the concept of chance, many researchers have asked whether loot boxes are a form of gambling. Common elements of gambling include, the exchange of money for a future outcome, the resulting outcome are based purely by chance, and any losses can be avoided by not doing the activity (Griffiths, 2019). However, loot boxes are in the gray area of allowing users to exchange in-game currency to open the loot boxes. This slightly deviates from the elements of gambling because the player is at least guaranteed at least an outcome, although the desired outcome may not be what the player wants.. Another important consideration about loot boxes is their accessibility to minors. Zendle and Cairnes (2018) performed a large-scale survey where about half of the participants who engaged in loot box spending were between the ages of 18-24. They suggested that the "gambling-like features of loot boxes are specifically responsible for the observed relationship between problem gambling and spending on loot boxes." (Zendle & Cairns, 2018, p. 1). The authors concluded that the interaction with loot boxes can lead to gambling issues and that the design of loot boxes can appeal to gamblers. This gamble-like mechanic can lead to many problems with physical and mental health, social problems, and even academic performance among university students (Yani-de-Soriano et al., 2012).

To make loot boxes appealing to the player, video game companies use many advertising techniques. In this research done by Petrovskaya and Zendle, they note that games use predatory advertising. This means that the consumer is led to a false promise of getting the prize due to how the information is obscured. In the *FIFA Ultimate* Team example, the pack shows a rare football player, but the rates to acquire that player are hidden in an info button or shown in small text. Some other factors that may influence spending are quality of life features, such as reducing the time it requires to complete daily tasks in the game, and the competitive nature of some games (Petrovskaya & Zendle, 2022). However, it is argued that the "magic circle", which is

defined as player immersion in the game, is not ruined by the introduction of commerce (Lin & Sun, 2011). For example, in many free-to-play games, cosmetics are the main source of revenue. Players who choose not to purchase anything will still be able to enjoy and immerse themselves in the gameplay experience. Moreover, the revenue generated from these microtransactions often supports ongoing development and updates to the game, which can enhance the overall player experience and contribute to a more vibrant and engaging game world. Thus, in this example, the introduction of commerce does not necessarily disrupt the "magic circle" of player immersion, but rather coexists with it, contributing to the sustainability and growth of the game ecosystem. However, if I game were to introduce a pay-to-win mechanic, this may destroy this magic circle, since frustration among player who chose not to pay will become frustrated and choose to engage less with the game. Keeping a player's "magic circle" is important to the life of the game.

Actor-Network Theory

There is a complex balance between consumer choice, technological advancements, and regulation of data usage. Data analysts use data collected from the consumer to create a unique profile that retailers can use to promote their services with the intent that the consumer will purchase them. As a result, consumers face constant advertisements influencing the consumer to make an unnecessary purchase. Policymakers try to help consumers, but with the rapid change in technology, policies must be changed to accommodate the newer technologies. All of these individual social groups involved create a dynamic and complex network of interactions. To understand and analyze these interactions, I will apply Actor-Network Theory (ANT) to address this problem. By applying ANT, we can map the network of human and non-human actors involved in video game monetization, including players, developers, and psychological

principles embedded in game design. This analysis allows us to understand how these actors influence each other and contribute to increased spending.

ANT, introduced by scholars such as Bruno Latour, Michel Callon, and John Law, offers a framework for understanding the complex interaction between human and non-human actors in shaping socio-technical networks. ANT treats all actors as equal participants with agency, emphasizing how they come together to form networks. It explores how these networks are constructed, maintained, and transformed by tracing the connections and associations between actors, shedding light on the processes through which they mobilize resources and stabilize or destabilize over time (Callon & Latour, 1981).

In the socio-technical network of the gaming industry, various human and non-human actors interact and shape the development, marketing, and monetization of video games. There are two main categories of human actors which include the players and game developers/marketers. Players actively shape the video game through gameplay behavior, and spending habits, which generate valuable data that is collected and analyzed by game developers and marketers to promote and improve the video game. The key non-human actors are the data analytics tool/algorithms and the monetization strategies being used. In this network, money is an important factor to ensure that the network does not disassociate. If neither consumers nor game companies pay or receive money respectively, the connection between the two would slowly disassociate. Thus, games must be enticing enough to encourage spending, while not affecting the intended experience of the game, since it is the connecting line between the two groups. ANT is used to examine how the actors interact with the evolution of the gaming industry over time and how it led to what it is now.

Methods

This research employs a qualitative approach, utilizing case studies of different video games to explore the application of ANT in understanding video game monetization dynamics. Case selection is guided by theoretical sampling, aiming to capture diverse instances of monetization strategies across various gaming genres and platforms. Criteria for case selection include the popularity of the game, the diversity of monetization tactics employed, and the availability of relevant data and literature. The data collection process involves gathering information from multiple sources, including academic literature, industry reports, developer interviews, and gameplay observations. To analyze the resources, qualitative content analysis was used to provide a comprehensive analysis of the actor networks involved in video game monetization, shedding light on the interactions between human and non-human actors and their influence on consumer spending behavior.

Case I: *Fortnite*

Fortnite is a popular battle royale game, where the goal is to become the last survivor out of the other 99 players. In 2021, *Fortnite* had about 400 million registered players and generated an estimated 20 billion USD (Clement, 2024). Because of its free-to-play (FTP) nature, popularity, and financial success of the game, this allows for a deeper understanding of how the various player segments respond to the monetization strategies.

Fortnite's Battle Pass is a seasonal system that offers players a progression path with various rewards. Each season lasts for approximately 10 weeks. Players can purchase the Battle Pass for 950 V-Bucks (*Fortnite's* in-game currency), which equates to about $10. By completing challenges and earning experience points, players level up their Battle Pass and unlock rewards along the way. These rewards include cosmetic items such as skins, gestures, dances, and other

customization options. The Battle Pass features 1000 tiers, where most of the desirable rewards fall between the first 100 tiers. Players can also purchase additional tiers with V-Bucks to accelerate their progress and access rewards faster. Additionally, *Fortnite* offers a subscription service called *Fortnite Crew* which offers the Battle Pass and an additional 1,000 V-Bucks for $12 (Epic Games, n.d.).

To further monetize the Battle Pass, Epic Games utilizes the psychological phenomenon called fear-of-missing-out (FOMO). FOMO is defined as "a pervasive apprehension that others might be having rewarding experiences from which one is absent" (Przybylski & et. al., 2013, p. 1841). Epic Games enforces FOMO by making each cosmetic in the Battle Pass exclusive. Once a season ends, the Battle Pass rewards can no longer be acquired, and the Battle Pass expires. This results in the player having to commit a lot of time to earn the rewards or face the harsh punishment of missing out on a limited skin. Moreover, most of the legendary skins are at the end of the Battle Pass, which further frustrates and punishes players who are close to acquiring the skin, but unable to due to time limitation. To make sure that there is still a last-minute opportunity to acquire the skin, Epic Games provides an option to purchase the missing levels. This can only be done during the duration of the Battle Pass. However, this comes at a cost to the wallet and enjoyment of the game.

To mitigate some of the issues of the Battle Pass, many players in the community have come up with different ways to maximize the progression of the Battle Pass, while minimizing the need to actually play the game to progress. A controversy arose when Epic Games placed the last 500 V-Bucks into the 141st tier. Previously, players would only need to get to the 100th tier to get all 1,500 V-Bucks (Armughanuddin, 2024). However, the community found a loophole where it is possible to gain experience in a specific mode, with the requirement of moving the

character once in a while. Due to the major backlash of the community, Epic Games reverted the changes, satisfying the community.

Case II: *Battlefront 2*

Battlefront 2 was developed by EA DICE. This is an action shooter game set in the *Star Wars* universe that features iconic locations and characters. However, the game sold poorly. Only about 9 million copies were sold within the first three months of its release. This was one million copies fewer than what EA DICE estimated (Sarkar, 2018). The cause of this poor sale was the introduction of loot boxes in the game. *Battlefront 2* serves as a unique case where the player base controlled the direction of the game.

Initially, EA DICE wanted to implement loot boxes in the game's release. The system worked by allowing players to pay to acquire "star cards" which are used to make your character stronger. Each star card comes in different rarities with the epic rarity giving the highest boost to your character. However, to encourage spending, the loot boxes also contained other items aside from the star cards such as weapons, cosmetics, and crafting materials (GameSpot, 2017). One of EA DICE's developers, who defended the decision to include loot boxes, quoted from Reddit, "your effectiveness is going to come down to skill, not the Star Cards that you have" (BattlefrontModTeam, 2018, n.p.). The developer's response was that the game was purely skill-based and that having more star cards than the opponent did not create an unfair advantage. However, in the same forum, many concerned players compared the disparity between players who paid to those who did not pay. They stated that a person with a powerful character is like "cheating" and that the player can easily "one-shot" their opponent (BattlefrontModTeam, 2018).

Eventually, EA DICE listened to the community and removed the loot boxes from the game. Star cards can now only be obtained through playing the game only, and all playable

characters are initially unlocked. Although there are still microtransactions in the game, they are only limited to cosmetic items and do not offer any advantages to the player. Nonetheless, the damage to the game's reputation has already been done, and the game left a sour taste in many players. Oskar Gabrielson (n.d), who is the General Manager of EA DICE, stated "And we've heard that this is overshadowing an otherwise great game. This was never our intention. Sorry we didn't get this right" (para. 3).

Interaction between Human and Non-Human Actors

In the case of *Fortnite*, human actors such as players and developers, along with non-human actors like the Battle Pass system and in-game cosmetics, form a complex network that shapes consumer spending behavior. The Battle Pass system serves as a crucial intermediary, translating players' desire for progression and customization into a monetized progression path with exclusive rewards. Through FOMO tactics and time constraints, Epic Games leverages non-human actors to incentivize spending, exploiting players' psychological tendencies to encourage engagement and purchases. This constant use of fear and player engagement helps strengthen the network between Epic Games and the player base. However, the moment Epic Games attempted to change something the community did not like, the network started to disassociate. To stabilize the network, players found loopholes and gave feedback, illustrating that players also have agency in shaping the network.

In contrast, *Battlefront 2* illustrates how human and non-human actors can destabilize the video game monetization network when consumer interests clash with corporate strategies. EA DICE's implementation of loot boxes, containing pay-to-win elements, sparked controversy among players who perceived unfair advantages for those willing to spend money. Human actors within the community expressed concerns about the disparity between paying and non-paying

players, leading to a backlash against the monetization model. Ultimately, community pressure forced EA DICE to remove loot boxes from the game, demonstrating the agency of human actors in influencing corporate decisions and shaping the network dynamics.

Negotiating Power Dynamics

ANT allows us to examine how power dynamics are negotiated within the gaming ecosystem. In *Fortnite*, players have agency in deciding whether to purchase the Battle Pass and engage with the game's monetization features. However, developers also exert power through the design and implementation of these features, influencing player behavior and spending patterns. The Battle Pass system offers players a progression path with exclusive rewards, creating a sense of achievement and status within the gaming community. However, the time constraints and FOMO tactics employed by developers can also lead to feelings of pressure and anxiety among players, impacting their overall gaming experience.

Similarly, in *Battlefront 2*, players and developers negotiate power dynamics and value propositions through their interactions with the game's loot box system. Players have agency in deciding whether to purchase loot boxes and acquire star cards, while developers have the power to design and implement these monetization features. The controversy surrounding the pay-to-win mechanics of *Battlefront 2* highlighted the ethical implications of exploiting player vulnerabilities and fostering gambling-like behaviors within the gaming community.

Implications for Player Experiences and Industry Practices

The manipulation of human psychology and behavior through the design and implementation of monetization features has significant implications for player well-being and consumer welfare. While developers seek to maximize profitability and revenue generation, they must also consider the ethical implications of their monetization practices and the potential harm

they may cause to vulnerable players. Furthermore, the interactions between human and non-human actors within the gaming ecosystem have broader implications for industry practices and regulatory frameworks. The case of *Battlefront 2* demonstrates the importance of player feedback and community activism in shaping industry practices. By mobilizing social networks and leveraging online platforms, players can influence developer decisions and advocate for changes to exploitative monetization practices.

Conclusion, Limitations, and Future Research

Through these case studies, it becomes evident that the success of video game monetization strategies hinges on the alignment of interests between all actors within the network. Developers must carefully consider the implications of their monetization systems on player experience and community dynamics to foster healthy relationships and sustain player engagement over the long term. Moreover, transparency, ethical considerations, and responsiveness to player feedback are crucial in maintaining trust and goodwill within gaming communities. By understanding the complex interactions between human and non-human actors, developers can navigate the challenges of video game monetization while fostering positive player experiences and sustainable business practices.

While ANT offers a comprehensive framework for understanding the socio-technical networks underlying video game monetization, it may overlook certain socio-cultural and economic factors that influence player behavior and industry practices. For example, competition is an important part many Asian cultures, such as China or Korea. Being able to pay money to get an upper-hand advantage will appeal to these people. Additionally, the case studies of *Fortnite* and *Battlefront 2* provide only a snapshot of the broader landscape of video game

monetization, and further research is needed to explore other games and monetization models across different genres and platforms.

For future research, it would be valuable to investigate the long-term effects of video game monetization on player well-being and consumer welfare. This could involve longitudinal studies tracking player spending habits, gaming behaviors, and psychological outcomes over time to assess the impact of monetization strategies on player engagement and satisfaction. Furthermore, comparative studies examining the effectiveness of different monetization models, such as subscription-based services versus microtransactions, could provide insights into the optimal approaches for balancing profitability with player enjoyment.

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