Monetization Models in Video Games

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On my honor as a University Student, I have neither given nor received unauthorized aid on this

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Introduction

There are 2.58 billion gamers across the globe and each year the gaming industry keeps growing. While "gaming" is an extremely broad category ranging from mobile games in your pocket to full body haptic virtual reality, a particularly captivating sector of the industry is PC multiplayer games. In the decade, the growth of the internet and performance of modern hardware has allowed gamers to share worldwide experiences. Unfortunately, these changes haven't all been for the best. The monetization structure of many of the most successful video games of our time has come from loot boxes and battle passes which use psychological tricks such as gambling addiction or the fear of missing out to coax the player into spending. These effects decrease the mental health of gamers, weaken the community, and decrease the trust between players and developers. Which monetization models can balance ethics and stakeholder value to satisfy both the players and the game development companies?

At the core of the post-fortnite video game monetization model is the Battle Pass (BP). This is a subscription-based monetization model where the player pays a fixed monthly fee to have the ability to unlock exclusive rewards. Importantly, these rewards must still be worked for, requiring in-game efforts such as unlocking achievements. Players who do not have the battle pass but reach the requirements of these rewards will be teased with the rewards they are missing out on which should "rightfully" be theirs according to the effort they put in, thus creating a strong incentive to purchase the battle pass and instantly reap all the fruits of their labor. Most games with a battle pass are Free to Play (F2P). This means anyone can download the game and start playing immediately at no cost. This results in the game having a much larger player base, where most of the players pay nothing, with a smaller percentage of players, referred to as

Whales, who fund the entire game. All monetary transactions can be broken down into two main categories, the base price of the game, which allows you to play the game, and subsequent Microtransactions (MTX) which grant further content once the base game is already unlocked. Most games are either free (no base price) with MTXs, or Pay to Play (P2P) with a non-zero base price and no MTX. Some games, however, feature both. Understanding the nuances of these monetization models is crucial because they significantly impact player experience, developer-player trust, and community dynamics. We must further explore monetization strategies to establish practices that promote healthy gaming communities and sustainable industry growth.

Background

The game industry landscape is complex and has a rich history. To fully understand modern monetization, it is helpful to know some common background information. First I will briefly overview the history of video games to show the broad strokes of the development of the industry. Then I will break down all the different monetization models to date. Finally, I will go over the history of how these models came to be, and who was behind each breakthrough.

To analyze monetization in the current gaming industry, we must first understand how things became the way they are. Gaming is a direct result of the computer revolution, with the first games being created in the 1960s. These games, however, do not really count as forming an industry. In the 1970s, companies like Magnavox and Activision started forming. Personal Computer gaming at this point was very small, and throughout the 80s and 90s the gaming industry was dominated by Arcade and Console gaming (Rao 2023). Then in 2003, Steam was released. Steam is an online video game marketplace where third party publishers can sell their games on a single unified distribution platform. At the turn of the century, a combination of rapid graphical improvements and digital distribution really marked the beginning of the widespread PC market with the market reaching 15 Billion in revenue (Rao 2023). At the same time, the arcade gaming industry was basically dead, with a revenue of a couple billion, roughly 10% of its peak revenue in the 80s, with a steadily declining rate and no foreseeable promises for improvement. The landscape of gaming throughout the 2000s would continue to evolve, but instead of juggling between different options like console vs arcade, all sectors of gaming would just continue to increase in revenue and popularity as gaming became more mainstream. One of the most important developments was mobile gaming, which exploded in popularity at the release of the iPhone in 2007 (Rao 2023). A common trend among each of the respective platforms: console, PC, and mobile, is that they each saw massive growth immediately following the release of third party game inclusion. This was already baked into the console formula, but was only introduced to PC thanks to Steam, and later alternatives like Epic Games Store. With mobile this came with the iPhone which introduced the App Store. Currently, the mobile industry is around 100 billion dollars in revenue, while PC and console sit at \$45 and \$30 billion respectively. Monetization models can be mapped to any platform, however, this paper will put more emphasis on PC and console, as the mobile gaming industry has many quirks of its own and could use an entirely separate analysis.

In modern gaming, there are a variety of monetization models. Pay to Play (P2P) is the most basic model where the user pays a one time fee to purchase the product and subsequently owns a copy of the game forever. Free to Play (F2P) is the main alternative to P2P in which the game is free to download, however, the game has optional content which can be purchased in-game, known on PC as microtransactions (MTX) or on mobile as In-App Purchases (IAP). In addition to the main choice of being P2P or F2P, games can have various monetization features: DLC, Cosmetics, Mechanics (P2W), subscription, Lootboxes, Battlepass, or in-game ads (Davidovici-Nora 2013). A game can sell optional Downloadable Content (DLC) which will give an extension to the ways to play the game, such as more levels, environments, characters, etc. A game can offer cosmetic MTX where players can buy character outfits, weapon skins, and other stylistic modifications which do not alter the gameplay itself whatsoever. Alternatively a game can offer mechanics through MTX such as abilities, heroes, power ups, etc which will alter the gameplay, often giving the owning player an advantage over others, referred to as Pay to Win (P2W) (Ivanov 2021). A game can offer a subscription service where players who purchase the subscription will get access to recurring rewards which can be cosmetic and/or mechanical. When a subscription service is paired with the F2P model, this is referred to as the Freemium model. Lootboxes or Gacha are a specific type of MTX where the player can purchase the ability to open a lootbox, granting them a random chance of winning highly rated cosmetics or mechanics. The battlepass is a specific type of subscription service where the player must play the game and earn points towards unlockable cosmetics, but can only redeem the cosmetics they earned by owning the subscription service (Joseph 2021). Lastly, in-game advertisements are shown to the player to promote products and services outside of the game, thus allowing the developer to receive money without taking it from the consumer. Often there is an option for the user to remove all ads by paying a one time fee.

Monetization models have a much more recent history, since up until the 90s, games were treated just like every other consumer product, requiring a single payment up front, followed by full access to the game. In 1999 Nexon released QuizQuiz which has been called the first free to play game with microtransactions (Khripin, 2024). QuizQuiz was mostly a social game about trivia where players could purchase an in-game currency which would allow them to buy different cosmetic elements to stylize their avatar. Other games would follow suit in the early 2000s and onward like Habbo Hotel and Second Life (van Berlo & Liblik, 2016). In 2004, MapleStory, another Chinese free to play game, would release with Gachapon or loot boxes (안, 2015). These became addictive to players who were susceptible to gambling tendencies and marked the start of popularity of loot boxes. More mainstream games would follow suit like FIFA 09 which featured randomized "packs" and Team Fortress 2 which let the user purchase loot-crates. These companies saw a massive increase in revenue after transitioning to the loot box monetization model (Burns, 2017). In 2006, Bethesda pioneered Downloadable Content, with small \$1-3 add-ons to extend the game's lifetime (Bethesda Softworks, 2006). This also started the first resentment towards microtransactions when offers like the Horse Package for \$2.50 simply changed the look of the horse's armour. Many games after this followed suit, releasing the base game which was still paid, but allowing options for additional spending once users were inside their ecosystem and captured by the initial hook of the game. Finally fast forward to 2017 at the release of the free to play game, Fortnite, and the advent of the Battle Pass. This monetization model proved to be absolute dynamite earning Epic Games multiple billions of dollars every year since launch (Howarth, 2025). Since then, many games have tried to replicate the formula with varied success. Fortnite's success helped establish the legitimacy of the free to play model on

consoles and PC, and has pushed many developers to try to be creative with how they monetize their game.

Methodology

Technological Determinism (Tech Det) is an STS theory which proposes that technology governs human behavior and the path of society. A technological innovation, once discovered, has a set course upon which it will alter humanity and any actions by the creators and users of the technology to disrupt this path will fail (Adler, 2006). On the other hand, Social Construction of Technology (SCOT) is an essentially opposite theory which argues that the people and society surrounding the creation and use of a technology have the main influence over how that technology is used (Bijker, 2015). Monetization in the gaming industry is a highly socio technical problem. Technology controls the possibilities of how a game can be monetized through the development of game software and computer hardware available. Likewise society, mainly the gaming community, shapes the monetization landscape by deciding, at an individual level, where they will spend their money. This back and forth clash of new technologies exploring new monetization models and the community, through social discourse and spending, choosing monetization models they prefer, presents a dichotomy. I would like to use both Tech Det and SCOT to show the back and forth nature of developments which might seem deterministic, like the battle pass, versus social developments like community rejection of The Concord, to illustrate why monetization models succeed and fail, and more importantly, what models can reconcile the benefits of successful models while avoiding their casualties. I will employ multiple research methods, combining literature review, media analysis, and statistical aggregation. The literature review will focus particularly on academic and peer-reviewed studies

that explore the psychological impacts of monetization strategies on player mental health. For assessing the financial viability and overall market success of monetization methods, I will use statistical aggregation, since there is a lot of public data in this domain. For public opinion and popularity, I will use media analysis from reputable gaming journalists to reddit posts. This will help contextualize the real-world application and public reception of different monetization approaches.

Literature Review

The Pay to Play (P2P) monetization model, also known as the premium model, requires players to make a one-time purchase to access the full game. This traditional approach ensures that, after the initial payment, players can experience the complete game without encountering mandatory in-game purchases or advertisements. Developers benefit from immediate revenue upon sale, allowing them to focus on delivering a comprehensive and polished product. However, in a market increasingly dominated by free-to-play alternatives, convincing consumers to pay upfront can be challenging. Despite this, the P2P model remains appealing to players who prefer an uninterrupted and fully accessible gaming experience without ongoing financial commitments.

The Free to play (F2P) monetization model allows players to download the game for free, and optionally spend money in-game afterward, known as microtransactions. Becoming wildly successful, microtransactions now account 72% of all PC game revenue (Straw, 2025). Davidovici-Nora examines F2P through the lens of *Game as a Service* (GaaS) business model. A spin off of the traditional Software as a Service (SaaS) business model. In traditional P2P games, the marketing is focused mainly on getting as many downloads as possible at launch, and then

riding that wave until the board declares its time to make a new game. In games as a service, the business model is centered around Acquisition - Retention - Monetization (ARM).

Acquisition is the same process that P2P games must go through which involves getting people to download your game. The execution relies heavily on traditional advertising and social media. In F2P games, there are two Sub-Stages. Attraction happens outside the game via traditional marketing, store visibility, or social media. Conversion occurs once the player tries the game, the focus shifts to ensuring a seamless, enjoyable first experience. To maximize acquisition a game must have low barriers to entry (no mandatory payment upfront, easy login), engaging tutorials to guide new players quickly, and immediate fun and feedback to hook players in the first 20 minutes. Social features (e.g., inviting friends, gifting systems) are also very helpful to encourage viral growth. Acquisition can be expensive, especially if players churn quickly. Zynga, for example, spent \$15 million on user acquisition in a single term, despite low conversion rates.

The next step is retention, which just means keeping acquired users coming back regularly. This is more cost-effective than constant acquisition and essential for monetization. The main methods of retention are creating commitment, such as rewarding progression, offering meaningful goals, and promoting routine play. This is very practically implemented in most games through features like Daily/weekly rewards and events. Social mechanics like cooperation, competition, and communication also provide avenues for long term play. The key metrics that a F2P game must analyze are Daily/Monthly Active Users (DAU / MAU), the K-factor or virality number which is a measure of how many new players are invited by existing players, and Churn rate which measures how many users leave over time. Early lifecycle

retention is a strong predictor of long-term engagement as games like MapleStory found 90% of 60-day players had played 3+ sessions in their first week.

Lastly, once a player is retained, they must be monetized. The final and overarching goal of the F2P business model is to convert engagement into revenue. To achieve this, it is imperative that the players must enjoy the main game without paying to feel it's worth investing in. "The player must be free to pay." (Davidovici-Nora 2013) Buying should enhance fun, not be required to progress. This can often come in the form of Cosmetic/Vanity Items which are purely aesthetic (clothing, pets, skins). Other alternatives include Booster Item which speed up progression and comfort items which offer UI or game automation tools. Power Items are a more controversial option which give the player a competitive advantage. This is known as Pay to Win (P2W) and can be a massive turn off for the core free player base, however, does give a very strong incentive to engage with the monetization. A final and less common alternative is to allow User-Generated Content to be monetized, giving players a chance to also make money and taking the load off of developers exclusively. There are several key metrics for monetization. Conversion Rate (CVR) measures the percent of users who make purchases. Average revenue per user / per paying user (ARPU/ARPPU) studies how much the company can expect to get out of a user. Lifetime Value (LTV) is total expected revenue from a player, and once the cost per player exceeds their LTV the business model can be considered unsustainable. It is important to note that not all paying users, once converted, are equal in F2P culture. There are three main segmentations of users into Whales, Dolphins, and Minnows. Whales usually make up 10% of spending players and contribute to 50%+ of the game's total revenue, whereas Dolphins are

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mid-tier spenders, usually taking up around 40% of the spending player base and Minnows are small spenders but make up 50% of the spending player base.

The growing prevalence of the battle pass exemplifies F2P monetization strategies. A Battle Pass (BP) is a seasonal, voluntary payment structure that blends in-game progression with consumption, rewarding players for completing challenges or achieving milestones. Originating in Dota 2 in 2013, battle passes have since become widespread, shaping top-grossing games like Fortnite, PUBG, and Apex Legends. Joseph critically analyzes this system through "platform capitalism," identifying battle passes as "contingent commodities" that constantly evolve based on player behavior and economic incentives. By combining progression and spending, BPs transform games into ongoing commercial spaces. Joseph characterizes this evolution with the observation: "Games are now shops," which highlights the influence of monetization embedded within gameplay.

Internet Gaming Disorder (IGD) describes an addiction to video games severe enough to significantly disrupt mental health and daily life. Listed in the DSM-5, IGD manifests similarly to substance addiction in the brain's response patterns, characterized by uncontrollable gaming behaviors that may lead to anxiety, depression, impaired cognition, and social dysfunction. Chih-Hung Ko explicitly emphasizes the severity by categorizing IGD as genuinely addictive behavior, underscoring its neurological basis.

Recent studies suggest that the monetization strategies employed by games can substantially influence the development of IGD. Frida André and her colleagues have highlighted how monetization model could potentially be more influential in predicting IGD symptoms than traditional genre classifications. Using the Game Addiction Scale for Adolescents (GASA) to

quantify players' addiction levels, André found notable differences correlated with monetization types: players in P2P games had lower addiction scores (mean GASA score of 23) compared to P2P games incorporating MTX (24), while F2P games with microtransactions scored highest at 24.5. This clearly indicates a direct relationship between shifting game payments away from initial purchases towards recurrent in-game spending and the rise of IGD.

The ethical concerns around F2P monetization have increasingly come under scrutiny. Damian Bank argues that microtransactions infringe on players' human right to economic self-determination. He examines manipulative designs such as loot boxes, virtual currencies, artificial scarcities, and habit-building techniques, identifying these as methods of exploitation, domination, and subjugation. This is more disheartening when you consider big players in the industry like Activision Blizzard who make over 61% of their income (\$5.1 billion) from in-game microtransactions (in 2021). Players know this technology is bad, with one study finding that 74% of gamers strongly disagree with loot boxes (Ahonen, 2022). While this might seem grim, the voices of these players have been heard. Belgium, the Netherlands and Slovakia have all declared loot boxes illegal without proper license (Simmons & Simmons, 2023). This demonstrates that, despite the beckoning of profits, it is us, the people, who shape how games can be sold to us, following the social construction of technology. On the other hand are virtual currencies. The problem with virtual currencies is in the name: virtual. By separating the concept of real money from "in-game" money, the player can distance their spending in game from their money in the real world, even though these two things are directly correlated. In a comedic excerpt of The Simpsons, Homer falls victim to virtual currencies:

Park attendant: "and would you like to buy some Itchy and Scratchy Money?" Homer: "What's that?" Park attendant: "Well it's money that's made just for the park. It works just like regular money but it's uh... fun."

Bart: "Do it, Dad."

Homer: "Well OK, if it's fun. Let's see, uh, I'll take eleven-hundred dollars' worth."

This dissonance is a psychological trick which allows the player to spend more freely and carelessly than they would with real dollars. "Virtual currencies undermine consumers' ability to engage in informed, rational decision-making" (Bank 2023). Viewing monetization through human rights highlights the need for robust digital consumer protection frameworks. This would prevent companies from playing the most common psychological tricks on their users and hopefully cut out a large amount of misinformed or irrational spending decision making that the large companies in this industry have come to rely on. This is an area which seems to behave according to technological determinism since the invention of virtual currencies and subsequent discovery of their effects on human decision making seemed relatively inevitable as other industries such as retail were adding membership "points" or starbucks and apple allowing users to store money within their systems (Woods & Wong, 2023). The technology was also greatly aided by the interconnectedness of the web, allowing video games to directly embed common monetary platforms like paypal to make the purchasing process easier and more trusted. This is especially prevalent since players are encouraged to go through the in-app purchasing process many times, so the process must be frictionless.

Another alternative which should not be left without mention is cryptocurrency and Non Fungible Tokens. These can be seen as an add-on to an existing monetization model, since the base game could still be either free or paid, but adding crypto into a video game will have a huge impact on the way players perceive and interact with the game. The premise of a cryptocurrency monetization system involves players being able to earn crypto currency through gameplay and then spend it on in-game purchases, and possibly even exchange it with other currencies. Additionally, this crypto can be used to purchase Non-Fungible Tokens, which provide a type of digital ownership of the NFT good. A new and upcoming mix between battle royale and extraction shooter, Off The Grid, is creating their own crypto token GUNZ, which can be exchanged with Ethereum Virtual Machine chains (Berragan, 2024). Extracting "hexs" and eliminating other players will earn you GUNZ token that can then be used to buy better gear for future rounds. The power of crypto, however, allows players to take GUNZ beyond the game, exchanging the token elsewhere on the web. The uphill battle is mainly legitimizing the token, since crypto is already not well trusted, let alone a new token which is tied to the existence and relevance of a video game. On top of this, Off The Grid has a subscription which yields you cryptocurrency at a faster rate, which adds on the effect of a freemium monetization model. Some critics are already writing this off as pay-to-win, since paying players will get higher tier gear at a faster rate, outpacing free players in a spiraling positive power feedback loop (Kalita, 2024). Off the Grid is not the only game which has tried crypto, however. Ubisoft announced in 2021 that they were releasing Ubisoft Quartz. This was a new coin which would allow you to buy NFTs in one of their titles: Ghost Recon Breakpoint. Unfortunately it was met with scathing criticism and the announcement video had an astounding 96% dislike ratio (Plunkett, 2021). The game played out to have eight different NFTs which could be bought with a couple hundred US dollars worth of XTZ crypto. To no one's surprise, it was a complete flop and in the first two weeks they only managed to sell eighteen NFTs (Smith, 2021). In a developer survey at GDC in

2022, 70% of game devs were against adding crypto to the projects they were developing with some of the few developers working on crypto even quitting their jobs because of how disgusted they were by it. "I'd rather not endorse burning a rainforest down to confirm someone 'owns' a jpeg," said one anonymous developer (Brown, 2022). Overall crypto and NFTs are in an early stage still, but look to be promising more than they can actually deliver.

Discussion & Results

As the video game industry increasingly shifts toward free-to-play (F2P) monetization models, it's critical to scrutinize the hidden costs that come with this seemingly generous format. While F2P games appear more accessible by eliminating the upfront purchase, they often substitute one barrier with another: relentless microtransactions, psychological manipulation, and design practices that prioritize monetization over player well-being. Unfortunately, this seems to be a product of technological determinism. As the human psyche is constantly being surveilled through millions of online gamer data-points, it is clear to the engineers, and more importantly, shareholders, that free to play generates more revenue. The, "if not us, them", mentality gives rise to only the companies who are willing to go down the path of maximal revue which, in a capitalist society, is inevitably filled by someone. One way to prevent this would be introducing legal regulations, which sounds extreme, however, it just might be appropriate. The most serious concern with F2P monetization is its strong association with Internet Gaming Disorder. If IGD can truly be considered an addition, then there must be more regulations to protect players from this disorder and one of the primary targets of these regulations would be microtransactions, as discovered by André. The more a game fragments its costs into an ongoing series of rewards and purchases, the more it risks hooking players into harmful feedback loops. This is only

compounded by loot boxes which are a purchasable consumable which can be "opened" to reveal the chance of winning something valuable. "Microtransactions are engineered to trigger anticipation." (Bank 2023) This is most definitely a form of gambling and has been the cause of uproar from many gamers, especially on EA titles like Battlefront which rely heavily on microtransactions, loot boxes, and P2W mechanics. Despite how obvious it is that loot boxes are a form of gambling, a twelve year old can download Apex Legends for free and, using their parents credit card, easily engage in this form of gambling. In no other form of gambling can a minor legally participate because the states recognize gambling to be psychologically manipulative and too risky for a minor to engage in, yet the primary audience of many video games, minors, are freely allowed to engage in these activities every day. In P2P models, the minor would have to request the consent of their parent to purchase the game, and once inside of the game's ecosystem, the parent can be assured that their child will not have any risk of being tricked into spending additional money or becoming addicted to microtransaction cycles like a battle pass.

The F2P model's business logic is also inherently designed to keep players in a cycle of acquisition, retention, and monetization. Through features such as daily rewards, seasons, and time-gated content, moderately engaged players need to keep coming back. The fear of missing out (FOMO), puts the pressure on players to stay in a vicious cycle of playing and paying to feel that they are keeping up with the community. Monetization only kicks in once players are hooked, converting their engagement into revenue through cosmetic purchases, boosts, and even power-enhancing items. Though not all purchases are mandatory, the game's design subtly pressures players to spend in order to maintain pace or status. It is clear that this is an

unsustainable model that, over time, frustrates its users, that's why more than 63% of gamers prefer full-paid premium games with no microtransaction gauntlet (<u>source</u>).

F2P models also ruin the design of the game. "The F2P game combines the design of the gameplay with the design of the monetization" (Davidovici-Nora 2013). By committing the F2P, you need to structure your game in such a way that game design must support your monetization, this restriction can cause serious consequences for the players. The most infamous example of this is P2W mechanics, where monetization simply gates powerful mechanics in the game, but there are other more subtle ways the monetization pervades game design. Valorant, a F2P bomb shooter, focuses primarily on releasing gun skins and has no character skins, this is because the game design of valorant is first person, where you can see your gun up close, but not your full character. In contrast, Fortnite is third person so the majority of their microtransactions are focused towards character skins. Character skins can end up affecting gameplay because of the different hitboxes and visibility / clarity of the skins. The famous banana skin is extra large and its top can poke out of certain areas where a regular skin wouldn't, but some female skins are extremely small and give the most competitive advantage. None of these restrictions would be present in a P2P model because all content is either instantly accessible or acquired through gameplay which is available to all players. In this way, P2P games can focus exclusively on the experience they want to deliver to the player, keeping maximal integrity in their design since they have already earned their revenue once the player is inside the game. The absence of intrusive monetization allows designers to focus on crafting a coherent experience, not optimizing user spending.

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Lastly, for live service games, the long term monetization of P2P games is much more ethically sustainable for existing players than F2P games. A live service game must continuously generate revenue in order to justify the live service expenses such as running game servers, etc. For a P2P game, the continuous revenue must be generated by new acquisition. In order for existing gamers to suddenly feel convinced to purchase an already released game, the game needs to come out with new and exciting content. This is massively beneficial to existing players as well who continuously get new content for free. This has been the monetization model of No Man's Sky, and has been sustainable for 9 years! Alternatively F2P models continuously generate revenue through microtransactions, which are often cosmetic, power, or booster items that don't really enhance the experience but just recycle ways that players already interact with the experience.

In regards to cryptocurrency and NFTs, it seems they are not ready to be endorsed by the gaming industry and will not be a viable replacement for any existing monetization models, strongly due to the public sentiment against it. This can be explained by SCOT, since, while the technology is sound in theory and implementation, our society has deemed it unfit to consume, and gamers have contributed their votes via their willingness to pay and play with crypto-based video games. Additionally, in the games that are adding crypto and NFTs, they serve as merely an additional way to spend, instead of the replacement to the base monetization model. Once the hype-cycles, scams, rugpulls, and news headlines about cryptocurrency fade away, if the technology is enduring, we will likely see more stable cryptocurrencies which have legitimacy and credibility to their tokens. Then, developers could potentially utilize these tokens in-game, however, the gaming industry is likely not going to pioneer stable crypto. NFTs are also heavily dependent on a stable cryptocurrency, so until then these methods seem more like a pipe dream.

Conclusion

In conclusion, while Free-to-Play monetization models dominate the current gaming landscape due to their accessibility and initial attractiveness, they come with significant ethical, psychological, and gameplay drawbacks. As evidenced by research linking monetization structures directly to Internet Gaming Disorder, the ongoing fragmentation of game payments through microtransactions increases the potential for addictive behavior. These monetization tactics, including loot boxes and battle passes, are intentionally created to exploit psychological vulnerabilities such as anticipation and fear of missing out, often undermining a player's capacity for rational decision-making. This ethical compromise extends even further into design integrity, as some games embed monetization directly into their core mechanics, limiting creative freedom and affecting the players' experience.

Conversely, Pay-to-Play models prioritize a transparent transaction where the player makes a single upfront payment to enjoy the full content without future coercive financial pressures. This approach encourages developers to invest in creating cohesive, balanced gaming experiences rather than optimizing for repeated micro-spending. Additionally, P2P models protect younger players from involuntary gambling-like experiences prevalent in F2P environments, thus aligning more closely with responsible gaming principles. Over time, live-service games using P2P strategies, like No Man's Sky, demonstrate that sustained profitability is achievable without compromising player welfare or game design integrity. In the mix is also crypto and NFTs, which are a hot buzzword in the monetization space, however, not much more than that, requiring still further development, conversion of public sentiment, and more stable crypto-coins. As gaming continues to grow in cultural and economic importance, the industry must reconsider

monetization ethics, recognizing that player trust, mental health, and long-term engagement are better fostered through Pay-to-Play structures that provide quality experiences rather than through relentless monetization tactics that prioritize revenue over player wellbeing. Ultimately, adopting more responsible monetization strategies will benefit both developers and players, fostering a healthier and more ethically sustainable gaming ecosystem.

- André, F., Bore, P., Toresson, T., Andersson, M., & Claesdotter-Knutsson, E. (2024). The relationship between game genre, monetization strategy and symptoms of gaming disorder in a clinical sample of adolescents. Upsala Journal of Medical Sciences, 129. https://doi.org/10.48101/ujms.v129.10386
- Bank, D. (2023). Problematic monetization in mobile games in the context of the human right to economic self-determination. Computers in Human Behavior, 149, 107958. https://doi.org/10.1016/j.chb.2023.107958

Bycer, J. (2022). Game Design Deep Dive. https://doi.org/10.1201/9781003265115

- Davidovici-Nora, M. (2013). Innovation in business models in the video game industry: Free-to-play or the gaming experience as a Service. The Computer Games Journal, 2(3), 22–51. https://doi.org/10.1007/bf03392349
- Harviainen, J. T., Paavilainen, J., & Koskinen, E. (2019). Ayn Rand's Objectivist ethics applied to video game business. Journal of Business Ethics, 167(4), 761–774. https://doi.org/10.1007/s10551-019-04159-y
- Rao, P. (2023, December 31). *50 years of video game industry revenues, by platform*. Visual Capitalist. https://www.visualcapitalist.com/video-game-industry-revenues-by-platform/

- van Berlo, K., & Liblik, K.-C. (2016). The business of micro transactions: What is the players' motivation for purchasing virtual items? [Master's thesis, Jönköping International Business School]. DiVA Portal. https://www.diva-portal.org/smash/get/diva2:937793/fulltext01.pdf
- 안, 정빈. (2015, April 7). 태초에 '부화기'가 있었다! 확률형 아이템, 그 시초와 역사 [The origin and history of probability-based items]. This Is Game. https://www.thisisgame.com/webzine/news/nboard/4/?n=58406
- Burns, B. (2017, November 24). The loot box stink: How did we end up in this mess? VG247. https://www.vg247.com/the-loot-box-stink-how-did-we-end-up-in-this-mess
- Ivanov, M., Wittenzellner, H., & Wardaszko, M. (2021). Video game monetization mechanisms in triple A (AAA) video games. Lecture Notes in Computer Science, 389–404. https://doi.org/10.1007/978-3-030-72132-9_33
- Bethesda Softworks. (2006, December 23). Oblivion downloads: Store catalog. The Elder Scrolls. https://web.archive.org/web/20061223190230/http://www.obliviondownloads.com/StoreCat alog ProductList.aspx?SubCategoryId=1
- Khripin, M. (2024, January 17). The beginning of free-to-play. LinkedIn. https://www.linkedin.com/pulse/beginning-free-to-play-michael-khripin-3thff

Joseph, D. (2021). Battle pass capitalism. Journal of Consumer Culture, 21(1), 68–83. https://doi.org/10.1177/1469540521993930

Lee, J. H., Jett, J., & Perti, A. (2015). The problem of "Additional content" in video games. Proceedings of the 15th ACM/IEEE-CS Joint Conference on Digital Libraries, 48, 237–240. https://doi.org/10.1145/2756406.2756949

Thorhauge, A. M. (2023). Games in the Platform Economy. https://doi.org/10.46692/9781529223064

Zhou, N. (2024). Digital Labor in free-to-play games: Player as commodity and interaction as labor in mmogs. Critical Studies in Media Communication, 41(2), 137–152. https://doi.org/10.1080/15295036.2024.2346226

- Howarth, J. (2025, March 5). Fortnite user and growth stats 2024. Exploding Topics. https://explodingtopics.com/blog/fortnite-stats
- Straw, M. (2025, April 10). 58% of PC gaming revenue came from microtransactions in 2024. Insider Gaming. https://insider-gaming.com/58-of-pc-gaming-revenue-came-from-microtransactions-in-2024
- Ahonen, A. (2022). Player perceptions of loot boxes and battle passes: Exploring how monetization strategies have affected player perceptions of monetization (Master's thesis, Tampere University). Trepo. https://trepo.tuni.fi/handle/10024/139478

- Simmons & Simmons. (2023, January 10). *Status of loot box regulations in Europe Q1 2023*. https://www.simmons-simmons.com/en/publications/clgm1i0ko0020upv4ipezwfz4/status-of -loot-box-regulations-in-europe-q1-2023
- Woods, D., & Wong, W. (Hosts). (2023, August 10). Is this a bank? [Audio podcast episode]. In The Indicator from Planet Money. NPR. https://www.npr.org/transcripts/1193331363
- Berragan, C. (2024, October 10). *A guide to crypto game 'Off The Grid'*. Thirdweb. https://blog.thirdweb.com/complete-guide-to-off-the-grid-game
- Kalita, R. (2024, October 12). Is Off The Grid another pay-to-win blockchain game? Possibilities explored. Sportskeeda.

https://www.sportskeeda.com/esports/is-off-the-grid-another-pay-to-win-blockchain-game-p ossibilities-explored

Plunkett, L. (2021, December 8). Ubisoft's NFT announcement has been intensely disliked. Kotaku.

https://kotaku.com/ubisofts-nft-announcement-has-been-intensely-disliked-1848182203

Smith, M. (2021, December 20). *Nobody is buying Ubisoft's Ghost Recon NFTs*. TechSpot. https://www.techspot.com/news/92711-nobody-buying-ubisoft-ghost-recon-nfts.html

- Brown, T. (2022, January 25). Game Developers Conference report indicates most developers frown on NFTs. TechSpot.
 https://www.techspot.com/news/93075-game-developers-conference-report-indicates-mostdeveloper-frown.html
- Porokh, A. (2023, July 31). Monetization in games: How to make money from your game. Kevuru Games. https://kevurugames.com/blog/monetization-in-games-how-to-make-money-from-your-gam e/
- Hellström, C., Nilsson, K. W., Leppert, J., & Åslund, C. (2023). The relationship between game genre, monetization strategy and symptoms of gaming disorder in a clinical sample of adolescents. Upsala Journal of Medical Sciences, 128(1), 1–9.
 https://doi.org/10.48101/ujms.v128.10386
- Ko, C.-H. (2014). Internet gaming disorder. Current Addiction Reports, 1(3), 177–185. https://doi.org/10.1007/s40429-014-0030-y
- Yıldırım, M. (2020). The effect of YouTube reviews on video game sales. Journal of Business Research-Turk, 12(1), 1–10. https://doi.org/10.20491/isarder.2020.1504

- Bijker, W. (2015). Social construction of technology. In J. D. Wright (Ed.), *International encyclopedia of the social & behavioral sciences* (2nd ed., pp. 135–140). Elsevier. https://www.sciencedirect.com/topics/social-sciences/social-construction-of-technology
- Adler, P. S. (2006). *Technological determinism* [Draft entry for *The International Encyclopedia of Organization Studies*]. University of Southern California.
 https://faculty.marshall.usc.edu/Paul-Adler/research/revisingTechnological%20Determinism .pdf