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BUSINESS MODELS AND MONETIZATION OF VIDEO GAMES²³

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***Abstract:** The industry of video game entertainment has been out of the scope of economic academic studies up until the past two decades. Game publishing studios employ a variety of methods for the monetization of their products and the goal of this paper is to summarize and categorize said business models, drawing conclusions regarding their comparative advantages or disadvantages. In this paper we also discuss how fundamental, theoretical economic problems relate to the gaming industry and IP, in search of the best and most just financial model for realizing profits through gaming products.*

***Keywords:** video games, video game monetization, video game business models*

***JEL Codes:** L11, L21, L24,*

INTRODUCTION

The video game industry has generated more than \$130 bln. during 2018 in sales, making it one of the fastest growing entertainment sectors. Video games have become a staple of everyday life for many people around the world, especially with the consistent introduction of different platforms of product delivery – a process that has democratized gaming – personal computers, game consoles (and handheld consoles), and more recently – mobile and virtual reality devices. Aside from the technical aspects of gaming, academic research pertaining to video games as a business is still underdeveloped compared to other media formats, mainly due to its novelty and rapid development in the past three decades (for summarized game usage statistics see: Markopoulos & Markopoulos & Liimila & Almufti & Aggarwal, 2020).

Within this paper we attempt to tackle one of the fundamental economic problems of game design and implementation – the choice between different monetization models for video games. The subject is approached through the categorization of the different methods of monetization in order to determine their standing within a relative logical framework. As follows, a new term is proposed to name the real-world phenomenon of providing a gaming product free of charge and monetizing at a later point in time, through donations. This paper argues that such a model provides the most value for the consumer and solves some of the problems stemming from imperfect information, but is more suited towards independent titles (“indies”). Keeping the global trends of the game development industry in mind we speculate that more and more independent developers will employ such a model for monetization in the future.

EXPOSITION

Business models of monetization in video games

There are many different approaches to monetizing video games and unlike other goods, the revenue generating model isn't an external affair that can be analysed separately from the design of the product itself. Within the life cycle of the production of a video game one of the key design features that has to be clarified relatively early is the monetization model – usually, the design philosophy that determines the type of the game (and its intended audience) and the chosen business model (or models) have to be synchronized in order to maximize the engagement and retention of the end product (potentially maximizing profit). Some combinations between game type and

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monetization models are easier to integrate together – for example, mobile games are usually less complex due to the relatively lower system capabilities of the devices in comparison with consoles and PCs, thus developers are more inclined to create simpler products that can appeal to a larger audience. As such, mobile games employ a buy-to-play model rarely, rather preferring the free-to-play or freemium routes, garnering a wider audience in the hopes of generating revenue from the selling of virtual items in-game and not the game itself. Regardless of the particular combination, video games as a whole have the distinctive feature that the creative approach towards the content might pre-determine the monetization model to a large degree.

Within the current literature on video game business models most researchers designate a central dichotomy between two major approaches to constructing the revenue streams from the product itself – the so-called “pay-to-play (P2P)” and “free-to-play (F2P)” models, and variations thereof (for a detailed economic analysis of F2P vs. P2P see: Davidovici-Nora, 2014). Such a dualistic division, although appropriate, does omit a large swath of other, supporting methods for monetization, which can stand on their own or in combination with standard practices in either P2P or F2P. On top of that these two categories are quite broad and do include many variations and specific practices, not all of which can be generalized through a universal supply-and-demand framework alone.

In order to encompass as many monetization methods as possible and provide points of reference for structural integrity, the subject matter is approached by segmenting the creation and distribution process of a video game in three distinct stages – “development”, “release” and “utilization”. The developmental stage refers to the time period from the conceptualization of an idea for a game up to alpha- and beta-testing with real players. The “release” stage encompasses alpha- and beta-testing; having a playable copy of the game ready for distribution and releasing that copy to the public. It is important to note that we will not use the official release as a point of interest, because many modern games have very extended testing periods, some never making it to an official release, which is commonly viewed as a bad practice (the developers purposefully delay the first official version to mitigate legal or informal complaints for low product quality, glitches or other defects – “bugs”). The final period will encompass revenue streams that usually occur after the game has been disseminated among a wide audience up to the point where people stop playing it altogether.

As it stands, the plethora of various monetization methods poses a difficult challenge when it comes to their classification. Following the life-cycle of a game’s creation and distribution does not mitigate this problem entirely – most of the monetization methods represented can be (and usually are) combined with each other, also – some methods can be attributed to more than one of the aforementioned stages (e.g. a game can have a discount sale just before release, or can be discounted as a part of a bundle on release). The proposed taxonomy is represented on Fig.1.

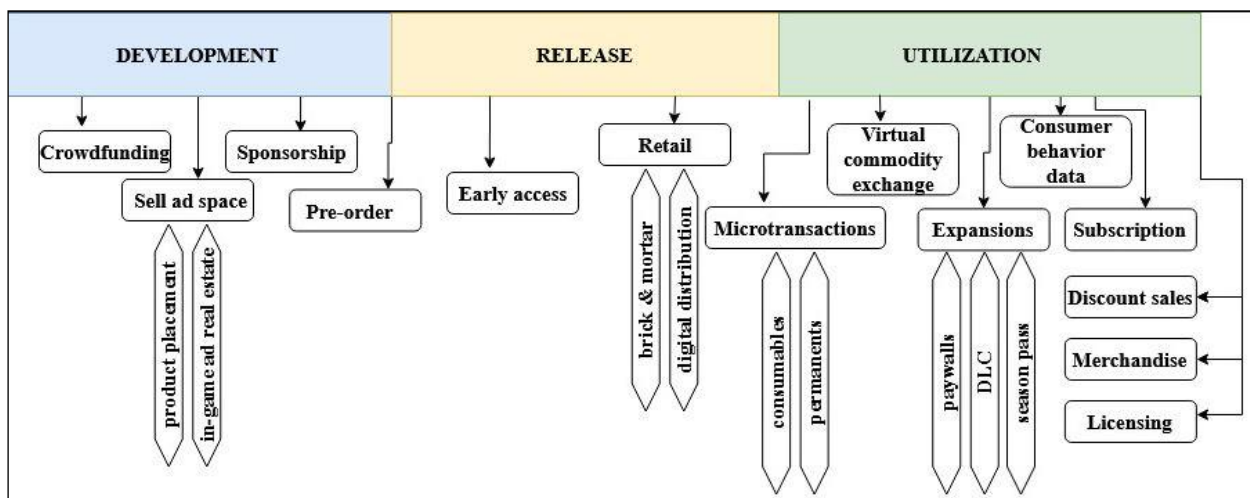


Figure 1. Monetization methods of video games according to the stage of the game
Source: author’s research

Starting from the “development” stage, the three main ways to monetize a game during its conceptualization are – through crowdfunding, by selling ad space and through sponsorship.

Crowdfunding as a method of funding game projects has been steadily gaining traction (mainly through websites like Kickstarter.com, IndieGoGo, etc.), managing to produce a myriad of very successful titles (such as Wasteland 2, FTL, Divinity: Original Sin, Darkest Dungeon and many others). The crowdfunding approach is well-suited to video game content creation, allowing smaller studios (even 1-man developer teams) to attract enough external funding to secure a project, provided they can market their idea in an attractive enough manner. The main drawbacks of crowdfunding are planning the whole project ahead and managing to keep up with the expectations set within the funding campaign (otherwise the studio becomes liable if unable to deliver, also – supporters can withdraw funding within certain time limitations). Crowdfunding campaigns can also be used during the “release” stage, when the game is already playable, as a marketing platform for boosting attention. Sponsorships, on the other hand, are usually hardware-related, as games are the main driver of hardware sales (often, AAA titles ship with a recommendation for a particular graphics card or processor). The third option, “selling ad space”, refers to two possible variants – product placement and in-game real estate for advertisement. Product placement works as in any other media, with the developers exposing their players to certain brands (for example, the protagonist might be drinking a particular brand of beverage), and in-game ad real estate refers to positioning signs and billboards where they’d usually be in the real world (this is widely spread in sports games; signs on in-game shops, etc.). Ads, in some mobile games, can also be found in the utilization step, as a means of stuttering gameplay (forcing players to watch ads in order to progress).

During the “release” step of a game, suitable methods of monetization are “early access” and, of course, retail sales – a single purchase for the whole game. Provided that the game in question uses a P2P model (or a P2P hybrid model), publishers can distribute it through physical (“brick and mortar stores”; customer buys a physical copy of the game) and digital channels (digital platforms; personal digital library, customer purchases access to the game). Global trends show that brick and mortar video game retailers are getting phased out, from gamers buying 69% physical format in 2010 down to only 26% in 2016²⁴. With gaming console (PlayStation, XBOX) producers announcing no more physical discs, the proportion should gradually approach 100% digital format purchases during 2021/2022. A free to play title gains no revenue at this step, but it is a prerequisite for monetizing later on.

“Pre-order” refers to guaranteed, single-purchase retail sales done before the official release date. Early access is another way to distribute the game to the wide public provided it’s not ready for an official release. Early access titles offer potential players the option of playing the game before it is completed and thus – participate in the development process. Early access is very beneficial for the developer, since they can monetize the product earlier and often get direct (through reports) or indirect (through metrics) help from players who bought the game for testing purposes. In order to entice players to buy their unfinished game publishers usually offer it at a discount price or provide additional bonuses for early supporters. Early access and a normal, retail release are not mutually exclusive – most titles are developed for 1-2 years then released officially. As we mentioned earlier, there is also the bad practice of artificially keeping a game in a perpetual “early access” state.

The “utilization” stage encompasses a lot of options, starting with “microtransactions”. Microtransaction (MTX) refers to relatively small in-game purchases of virtual items or content that improve the player experience. MTX are a staple of - but are not limited to - free-to-play titles. MTX can be further decomposed into two categories – purchasing consumables and permanents, depending on the type of virtual item the developer is offering. Consumables are items that help the player gain a particular advantage (increase experience gain, recover energy, gain resources faster, etc.), but disappear after being used a set number of times, while permanents remain in the player’s possession no matter how many times they are used (permanently unlocking a hero, a set of levels, etc.). Notable microtransaction variations are cosmetics shops and loot boxes. Provided that video games and games of chance are differentiated by the element of “skillful play”, there is an overwhelming disdain within the gamer community for MTX which provide you with a significant advantage over other players (called “pay-to-win”). Thus, in order to “balance” the game for all players, but keep the revenue from

²⁴ Source: <https://www.npd.com/>

microtransactions, reputable developers usually focus on creating a “cosmetics” or “consumables” shop, allowing paying players to get a temporary boost or a permanent upgrade to their visual representation within the virtual world. One of the most popular (in terms of player base) free-to-play games in the world, “League of Legends”, peaked at monthly active users of 111 mln. during 2018, and coming in at second place globally in terms of revenue for 2019 (\$1.5 bln.) for a F2P title, is mainly monetized through a cosmetics shop. MTX can also be employed throughout an early access release of a game (Epic Games’ “Fortnite”, the top F2P game in terms of revenue, employed this approach for three years until finally removing the “early access” label in 2019).

Loot boxes are another popular mechanic for rewarding players for paying and they have sparked recent debates within the academic fields of psychology, economics and regulatory practices. Loot boxes generally follow the MTX model, but instead of purchasing a specific item, the player buys a “bag” or a “box” that he/she can “unpack”. In order to engage non-paying players too, the game is made so that boxes can be acquired by playing the game, but at a slower pace. The boxes can contain consumables, permanents, cosmetic items, in-game currency; the main characteristic being that the rewards for opening a box are random. This creates a behavioral loop of searching for the “rare” items – the ones encoded to be hard to acquire, thus incentivizing the player to make more purchases (buy more boxes). Examples of games that rely on this mechanic for both free and paying players – Blizzard’s Overwatch and Hearthstone. Although non-paying players can seem redundant in a F2P environment, most multiplayer games require a healthy population in order to maximize the game’s potential. Thus, as it stands, it is a good strategy for a developer to attract a large non-paying audience to provide an exciting environment for the small percentage of players who’d be willing to make purchases. On the topic of social responsibility and tackling player addiction – see (King and Delfabbro, 2018). Nicholas Lavell has created a taxonomy of players within a F2P environment, classifying a group of non-paying users and three groups of paying users with incrementally increasing spending habits (respectively – “minnows”, “dolphins” and “whales”, the proportions between the groups varying from game to game) (Lovell, 2011).

Although microtransactions are the logical choice for funding a F2P title for the long term, they are also used in conjunction with retail and subscription business models very often. As an example we can point to the massive multiplayer online role-playing game /MMORPG/ Guild Wars 2, concurrent players ~250 000 out of peak 460 000²⁵; base monetization model – retail digital + microtransactions /cosmetics and consumables shop/, later changed to free-to-play + microtransactions /cosmetics and consumables shop/. Also, the developers employ a dual currency system and an in-game item exchange for players.

An in-game virtual commodity exchange between players can function with either a virtual or fiat currency (or a combination of both). Usually, developers implement a percentage of each transaction as a fee for using the exchange. This approach has a twofold purpose – firstly, it is used as a “money sink”, to reduce the monetary base present in the game and deflate the in-game currency, which is a separate economic problem in itself; secondly – as a way of monetization (especially if the exchange uses fiat or dual currency). A popular example was the exchange with fiat money present at the release of Blizzard Entertainment’s Diablo 3 title, which was later scrapped due to public outcry and regulatory pressure. A common practice among game devs is to introduce one or many virtual currencies that represent a certain value in fiat money – this is done as a psychological trick to separate the user from the real value of the payments (these currencies can have different names – “gold”, “gems”, “credits”, etc.) and also serves a legal purpose. In that way a game functions with parallel economies that may or may not intertwine – one with the basic in-game currency and one based on a fixed exchange ratio with real-world currency.

Another way to monetize a game post-launch is through expansions. Expansions can be defined as additional content that the user adds to the base game (some games offer them for free, depending on their model). Within themselves, expansions can be divided into three approaches – paywalls, DLC and recently popular season passes, all three functioning in a similar way. Downloadable content (DLC) refers to introducing a payed extension of the game (new heroes, levels, spells, etc.; for

²⁵ Source: <https://playercounter.com/guild-wars-2/> at 26Oct20

example – the MMORPG World of Warcraft has successfully launched 6 expansions and is currently preparing for its 7th one). Paywalls are a form of content introduction where the content is already in the game, but users are barred from accessing it before paying (for example – the MMORPG Rift, where expansion content is partially locked behind a paywall). Season passes are a relatively new phenomenon – they consist of a larger payment that guarantees the acquisition of all newly created, additional content for the player, for a set time period (or, in some cases - until the game is no longer being supported). Other games, like Defense of the Ancients 2 (DOTA2) implement a season pass (called a “battle pass” in-game) on top of their free-to-play, MTX-driven model, by providing users who purchase access to the pass with exclusive, cosmetic content (skins, announcer packs, different couriers, etc.).

Publishers can also monetize the behavioral data gathered from their users by selling it to game platforms, game studios, social network platforms, marketing agencies. A different approach to revenue that is widely popular with high-budget, online multiplayer games is the subscription model (e.g. World of Warcraft). Subscription refers to regular, periodic payments for accessing and playing the game, usually on a monthly basis. Subscription is very advantageous for the game owners, as it provides a stable, long-term stream of revenue, but the model is hard to initiate at the beginning stages, as it imposes a barrier to entry and requires player commitment to the title (since if a user stops paying the fee he/she no longer has access to the content). Thus, it is usually softened with alternative options (for example, in World of Warcraft, users can pay for their subscription with the in-game currency); also, in order to attract new players and lower the barrier to entry, such games offer a free “demo” experience, where players’ progress is capped at a certain point.

Further from the release stage of the game and relatively late in its product cycle, the appropriate approaches for monetization are as follows: discount sales, selling merchandise and licensing. Discounts sales have become extremely popular as of late, especially with the rise of new gaming platforms, making the market a lot more competitive (Steam has dominated for a long time, but now faces competition from Epic Games Store, GOG, Origin). A subset of discount sales is the process of “bundling” games, meaning packing several titles together and selling them at a discount price lower than their combined costs. Bundling is notable because a high-budget title can “carry” the sales of several smaller, independent titles, by compiling them together. Discount sales and bundling are a strategic way to capture a larger swath of consumers located in the lower parts (the “tail”) of the demand curve and are especially useful when the title has gotten older.

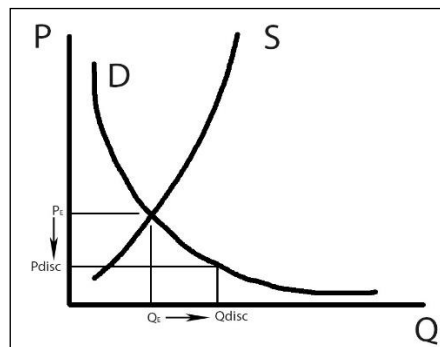


Figure 2. Discount sales and bundling – effect on demand

Other ways of monetizing a video game product that has already established itself among users is by the selling of merchandise, which can include various paraphernalia (keychains, plush toys), articles of branded clothing (backpacks, t-shirts, hoodies, etc.), comic and art books, miniatures and other toys. A notable subgroup is the selling of tickets to game conventions and the organization of e-sports events (the largest prize pool to this day is DOTA2’s “The International” tournament, at \$34 330 069, funded through the aforementioned “battle passes”) which, albeit costly, can be a potential revenue stream through advertisement and sponsorships. Another way for a well-established, high-budget title to monetize is by licensing technical aspects of the game to other game creators (for example – licensing the graphics engine). Both avenues are reserved for highly reputable companies and well-established games (or game franchises).

The imperfect information problem and monetization

Economic theory points out that one of the fundamental problems of imperfect competition market structures is information (or, rather, either the lack thereof or its unbalanced distribution). Approaching the subject of gaming from the standpoint of the consumer it seems that he/she is at a disadvantage – as with other entertainment products (movies, books) there is a fundamental lack of knowledge ahead of time pertaining the value that one might derive from playing a particular game. Couple that with the subjective nature of enjoying or not enjoying a particular gaming experience and the individual character of games as a creative endeavor and the problem expands to an analytical dead-end. The key notion in resolving this issue seems to be logically focused on the moment of payment – paying before or during the act of playing the game. As we already pointed out there are monetization models that use one (or both) of these approaches. The problem is mitigated somewhat through the use of playable “demos”, “free period access”, gaming platform refunds (ability of users to refund a game before a certain time threshold) and similar, free-of-charge, but content-limiting means. But there is always the argument that liking a certain portion of a game does not necessarily translate to liking the whole product.

Literature on monetization of video games thus far has ignored a small, but significant third option – paying *after* playing the game. The one example proposed in this paper is the donation model that some indie developers (usually one- or two-man teams) use as a means to continually support the development of their games. For the purposes of classification we will name it the “donate-after-playing” method. The basis of such a model is the completely free access that all users enjoy to the full extent of the game. After playing, users have the choice to donate a small amount to the developers so that they can keep improving the game and adding new content. The completely F2P approach attracts a large audience, but it’s the small percentage of donators who actually, of their own volition, support the game long-term. This method of revenue provides the most power to the consumer, as the informational disbalances are mitigated and the user is the one that directly determines the value received from playing. This might seem unprofitable at first glance, as it transforms games from a private or a club good into a purely public one (non-rivalrous, non-excludable), with all accompanying challenges (especially the “free rider” problem). But, as an argument in support of this method it is important to point out that video games, in a digital environment, have their marginal cost for producing an additional copy approaching zero, thus the main factor driving production costs upwards becomes the size and complexity of the project itself (it is important to note that the law of diminishing returns still affects game makers, but “quantity produced” has to be replaced with “game complexity” in a micro-level analysis). In that line of thought it follows logically that smaller, indie and not that hardware-demanding games can employ a donate-after-playing method of monetization relatively successfully. Current examples of games that exist through “donate-after-playing” are: Bay12’s fantasy management simulation Dwarf Fortress, Enormous Elk’s bronze age survival title - UnReal World (offered on the Steam platform for €10.99, but also completely free of charge on the developer’s site), Seatribe’s survival and crafting MMO title Haven & Hearth (H&H uses a donation system that includes small in-game cosmetics and very minor perks as rewards for donating).



Figure 3. Screenshot from the game Dwarf Fortress by Bay12 Games /procedurally generated world map/. The game uses ASCII graphics and is considered among the most complex simulations in existence

The two-man studio behind Dwarf Fortress, Bay12 Games (Tarn and Zach Adams), are transparent about their donation amounts and they can be viewed (see Table 1) as a point of reference (should be noted that the game is 14 years old, which for the majority of games is way past their product cycle).

Table 1 Bay12’s Dwarf Fortress monthly donations by players for 2020 so far, in US dollars.
Source: Bay12 monthly reports²⁶

2020	Jan	Feb	March	Apr	May	June	July	Aug	Sep	Average
Donations	9710.97	15187	10052.21	12380.7	9921.44	10560.49	10578.03	10369.24	10681.97	11049.12

UnReal World by Finnish developer Enormous Elk holds two Guinness world records for “Longest update support for a video game” and “First open-world survival videogame”²⁷, its roots beginning in 1992. Since 2013 the game adopted a “donate-after-playing” approach, while also releasing a paid version on the Steam platform in 2016, with both models coexisting to this day.

An attempt to position the fundamental monetization practices relative to the levels of mitigation of the imperfect information problem for consumers can be seen on Fig.4., with the basic assumption that the more gameplay is revealed to the customer before paying – the better he/she is informed on the subjective value that the game has brought him/her, thus the choice of making a purchase (or donation) is better informed. We’re going to focus solely on revenue generated through the game itself and omit revenue streams unrelated to the informational problem (sponsorships, merchandise, selling ad space, etc.).

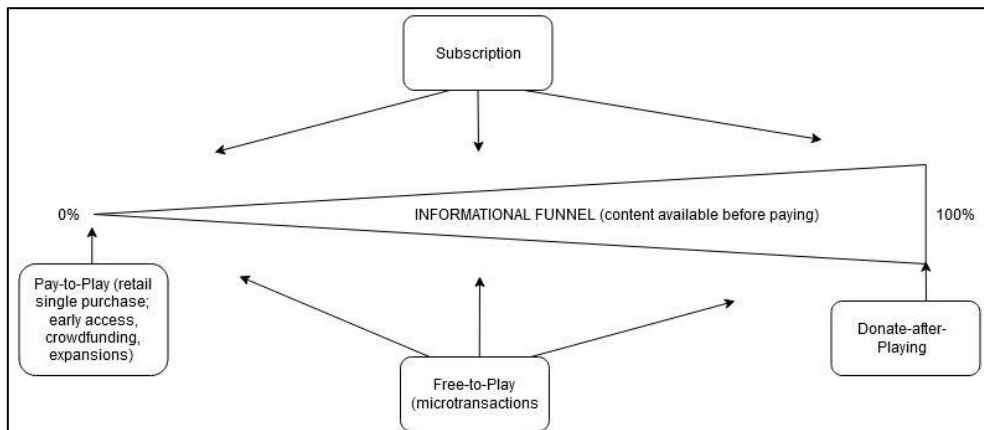


Figure 4. Information funnel and video game monetization

Games provided through a pay-to-play model usually suffer the most doubts from consumers about whether they are priced correctly and are they worth the purchase. In itself, this can limit the outreach of the game. Developers employ a number of tools to combat this (as we already mentioned – demo versions, free trials, refunds), but not every game is suitable for these formats. In all cases, utilizing some or all of these tools does move a pay-to-play game significantly up the information funnel. Still, a 100% informational awareness can only be reached through a user experiencing the full content of a game unlimited, which, as speculated, is only attainable through the donate-after-playing model. Subscription and free-to-play (or freemium) models can be situated anywhere between the standard P2P and DAP depending on user retention and severity of micropayment paywalls. Since playing a game requires time, content can be expected to be revealed gradually, thus the subscription model, being a cyclical regularity of payments, will consecutively allow more and more content to be experienced, up to the point that the user decides to stop paying. Microtransactions can also vary greatly depending on the severity of their implementation – meaning the level by which the purchases

²⁶ shorturl.at/fHJSX on 28Oct20

²⁷ respectively in Guinness World Records Gamer's Edition 2017 and 2019

affect gameplay (or the level by which the lack of said purchases hinders core gameplay). Purely cosmetic items from microtransactions usually don't affect gameplay, edging games that solely use such a system for revenue very close to the 100% mark on the funnel. In some cases they can be so severely intertwined with the core gameplay that they practically pose a "paywall" for the users, barring them from content progression or artificially slowing down gameplay (a lot of mobile games use a limited resource system for in-game actions, pushing players towards micropurchases that boost said resource so that the user can play more).

CONCLUSION

The video game industry is growing at a staggering pace. Recent developments have "democratized" game creation, with universal engines being more accessible than ever (e.g. Unity). Game studios use a variety of monetization methods and picking the right one is both an economic and a design choice at the same time. Aside from the most popular methods, we discussed the inclusion of the "donate-after-playing" business model as a viable alternative. Considering the global trends of game development, the unprecedented rise of independent games, created by small, self-publishing studios, it becomes apparent that the ever increasing competition on the gaming market will force creators to employ new and more user-friendly monetization methods in order to attract players. The "donate-after-playing" model can be given a serious consideration by independent video game makers as a way to enter and thrive in the market long-term.

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