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The Consequences of a Switch to Free-to-Play for Overwatch and Its Esports League

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Abstract: Videogames and their business models have evolved significantly over time, with consumers preferring a shift towards free-to-play (F2P) without any initial purchase, as evidenced in the popularity of Fortnite, Warzone and others. The aim of this research is to establish the viability of a switch from a buy-to-play (B2P) to a F2P model for the game Overwatch and the impact on its associated esports. The relevant literature within the subject area was identified. A framework was then developed to determine whether a switch to F2P would be successful for Overwatch, based on the criteria seen as significant within the literature identified. These criteria represent a mix of quantitative and qualitative approaches, and a mix of styles, with some being more descriptive with biographical elements of the author's experience, and others being more analytical. The main conclusion drawn from the analysis undertaken is that Overwatch would be well suited for a switch to F2P. The sequel to Overwatch, Overwatch 2, is due to release in the near future, which would have opened the possibility of Overwatch being free, while Overwatch 2 is paid. However, Overwatch 1 is confirmed to be shutting down completely. It is also concluded there would be a likely increase in player numbers, and that a switch to F2P is likely to improve the problematic esports scene associated with Overwatch.

Keywords: Overwatch; business model; free-to-play; buy-to-play; esports

1. Introduction

Overwatch is a first-person team-focused shooter-based game released in 2016 with large player base (50 m players towards the end of 2019; Valentine 2019) and an esports community. The game was not designed specifically for esports but has since embraced it, using a league-based system with franchising, high-level branding, and professionalism. Overwatch League is the associated group managing the elite level of gameplay, with teams being permanently linked with a specific city and players being assured a salary and benefits based on team performance (OverwatchLeague.com 2020). In 2016, the year Overwatch launched, Twitch announced that it was the most popular game on the platform, as outlined by Curtin (2017). In the following years, Richman (2021) underlines that the game sustained its success, reaching 35 m players in 2017, then peaking at around 50 m players in 2018. However, only around 800,000 people played Overwatch concurrently in June 2021 (TechACake 2021). Besides, Twitchtracker.com (n.d.) reports that Overwatch is currently the 27th most watched game with 2.63 m viewers, including 1.55 m viewers for the Overwatch League finals 2020, while it was 3rd in January 2018 (TechACake 2021). This means that, since its launch, Overwatch has suffered from a decline, leading to its current position. These points are confirmed by Das (2021) who argues that a lack of new content is causing the "death" of the game and a severe reduction in viewership.

Overwatch has faced suggestions it should convert from a buy-to-play (B2P) to a free-to-play (F2P) model, under pressure from other free games such as Fortnite and Valorant. For example, Holt (2020) argues that due to a lack of future content development,

the planned sequel not being released imminently and a potential stagnation of profit sources, Overwatch should embrace a F2P model. Broadly speaking, three different options for monetisation exist within the videogame industry: B2P, F2P and pay-to-play (P2P) (Massarczyk et al. 2019). B2P is a conventional system where players would make an initial investment then expect to play without any further significant investment (Coldewey 2019). F2P costs nothing for players initially but often offers players options for in-game items like characters or cosmetic items (Varghese 2022). P2P is the last of the popular business models used, often employed by massive multiplayer online (MMO) games, where a monthly or yearly subscription is paid to access a game which then updates its content periodically, although sometimes an initial purchase is required too (Asavei et al. 2016). This model is decreasing in popularity, with its peak being around 2010 where Blizzard estimated they had 12 million subscribers for World of Warcraft, which is the most popular P2P game. Since then, there has been a decline to 4.59 m in 2022 (Statinvestor n.d.). For this reason, P2P is not considered as a viable potential option for Overwatch in the current study.

It must be noted that Overwatch has been given away for free in the past. McWhertor (2020) explains that Overwatch was given away by Boston Uprising, one of its esports teams, for a few months. This was short lived and cancelled early "due to high demand". In addition to this, Overwatch has had multiple free weekends where "you may access Overwatch as though you owned the game" (Blizzard Inc. 2021). Both of these are examples where the game has been given away for free. However, both are not examples of the game being fully F2P. The F2P weekends are time-limited, with a requirement to purchase the game to continue with the progression unlocked. Furthermore, these weekends would only be focused on those currently without the game, where a switch to a F2P system would affect all players. The handout of copies by Boston Uprising, similarly, was small in scope, and stopped prematurely without the intention to be a full scale F2P transition.

The initial popularity and recent decline of Overwatch, as well as the potential remedy of fully moving from B2P to F2P (as opposed to the short lived or time-limited attempts in the past) provide the motivation of the present research. This article explores B2P and F2P as the two potential options for Overwatch going forward, along with the implications and effects on Overwatch League as the associated esports to Overwatch. The aim of this article is to examine whether Overwatch would benefit from a transition to F2P through the identification of relevant criteria for assessment, and the potential implications that such transition would have on its associated esports. Three subsequent research questions are formulated:

RQ1: What are the criteria that should be included in the assessment of the switch of business model for a videogame?
RQ2: Based on these criteria, would Overwatch benefit from a switch from B2P to F2P?
RQ3: What would be the impact on Overwatch League?

These are important issues as Overwatch and its associated esports represent a significant population of players and viewers, and a change of business model would impact this population. Furthermore, developing a framework to assess relevant criteria based on recent, appropriate, and complementary sources can also open the door to extend findings and discussion of this article to other videogames and their associated esports. Thus, in terms of contributions, this article intends to inform the relevance of a switch of business model for Overwatch, while providing a framework for future assessment that may help decision-making for other videogames.

The switching of business model is something any firm will consider extensively whether it is related to video games or not. Making decisions like this inherently hold a significant amount of risk. Risk and business/economic model in esports have already been tackled, respectively, in relation to governance (Peng et al. 2020) and economic peculiarities (Scelles et al. 2021). In the case of Overwatch, there are motivations as to why a switch of business model would be beneficial. Johnson et al. (2022) suggest that, while the switching of business model is not something to be undertaken lightly, there are steps to be taken to identify when the switching of a business model should take place which help mitigate

this risk. They suggest that switch should occur when significant change is needed to four different areas of an existing model: the customer value proposition, profit formula, key resources, and key processes. If all these areas require change, it is less risky to engage with a switch in business model. The authors also find that there are a number of situations where it is conducive to switch business models to mitigate risk. There are a couple of examples here which could be applied to Overwatch and the situation it finds itself in, namely the need to fend off low-end disruptors, and the need to respond to a shifting basis of competition. The videogame industry is growing in size, with for example a 50% increase in the number of developers in the UK from 2021 to 2022 (GameCentral 2022), and the US video game market is expected to grow from $30.4 bn in 2021 to $48.2 bn in 2027 (Wood 2022). This has the effect of both introducing lower-end disruptive companies, and shifting competition for Blizzard and Overwatch, which motivates making a decision to address the shifting landscape. There are inherent risks in either decision made. If Blizzard were to maintain its current business model, players could move away from the game, ultimately causing its failure. Alternatively, if Blizzard were to switch to a F2P it would signal a significant upheaval in its current processes.

The rest of the paper is organised as follows. The next section describes the materials and methods, enabling the identification of relevant sources leading to a framework for assessing the relevance of a switch of business model. These sources are then applied to Overwatch in the results section, including the impact of a switch of business model on Overwatch esports league. The framework and findings are subsequently discussed, including the generalisation of the application of the framework to other videogames, further critical discussion of the main results and consideration of the process to transition to a new business model. Finally, the last section concludes.

2. Materials and Methods

In order to inform the relevance of a switch of business model for Overwatch, relevant criteria need to be used. This can be done through identifying the literature having considered such criteria. This justifies the sequential methodological approach chosen in the present research, starting with the identification of relevant literature about the criteria to be assessed when evaluating videogame business models; then applying these criteria to Overwatch; comparing the outcomes reached with different criteria; and finally making a recommendation based on the comparison of the outcomes.

More specifically, this paper adopts a case study approach examining Overwatch and the potential for a switch to F2P. It employs mixed methods to evaluate whether or not the switch is meaningful from a business perspective. First, a thematic review is undertaken on Overwatch and on video game business models, identifying relevant research in the area. This is then explored in the context of Overwatch and its current system. Some of the literature selected has qualitative elements (Luton 2013), while other literature has quantitative elements (Seidl et al. 2018; Massarczyk et al. 2019), which results in the mixed methods approach when these quantitative frameworks are used to evaluate Overwatch. Their identification as suitable sources followed a precise search process in line with the expectations of a scoping review (Peters et al. 2020). The methodology for creating a framework of analysis begun with Google Scholar, ScienceDirect and Web of Science, which were used to create a catalogue of relevant literature. The search terms used included esports, esport, free-to-play, videogames and business model, with Boolean searching employed (for example, "videogames" + "business model") to align with the scope of the review, i.e., the identification of literature informing about F2P in esports that can be applied to the specific case of Overwatch. Because esports are a recent topic, no restriction was set for the date range. A five-step process was followed to obtain the final results forming the basis to build the model used for analysis: initial search (1); removal of duplicates (2); removal of records considered not appropriate based on the review of their abstract (3), their brief review (4), and finally their in-depth review (5). For steps 3 and 4, the criteria for removal were the content considered not relevant and/or the methods not suitable. For step 5, they were the content considered not relevant to Overwatch and/or F2P

and/or B2P. Figure 1 displays the overall process, as well as the associated number of records for each step.
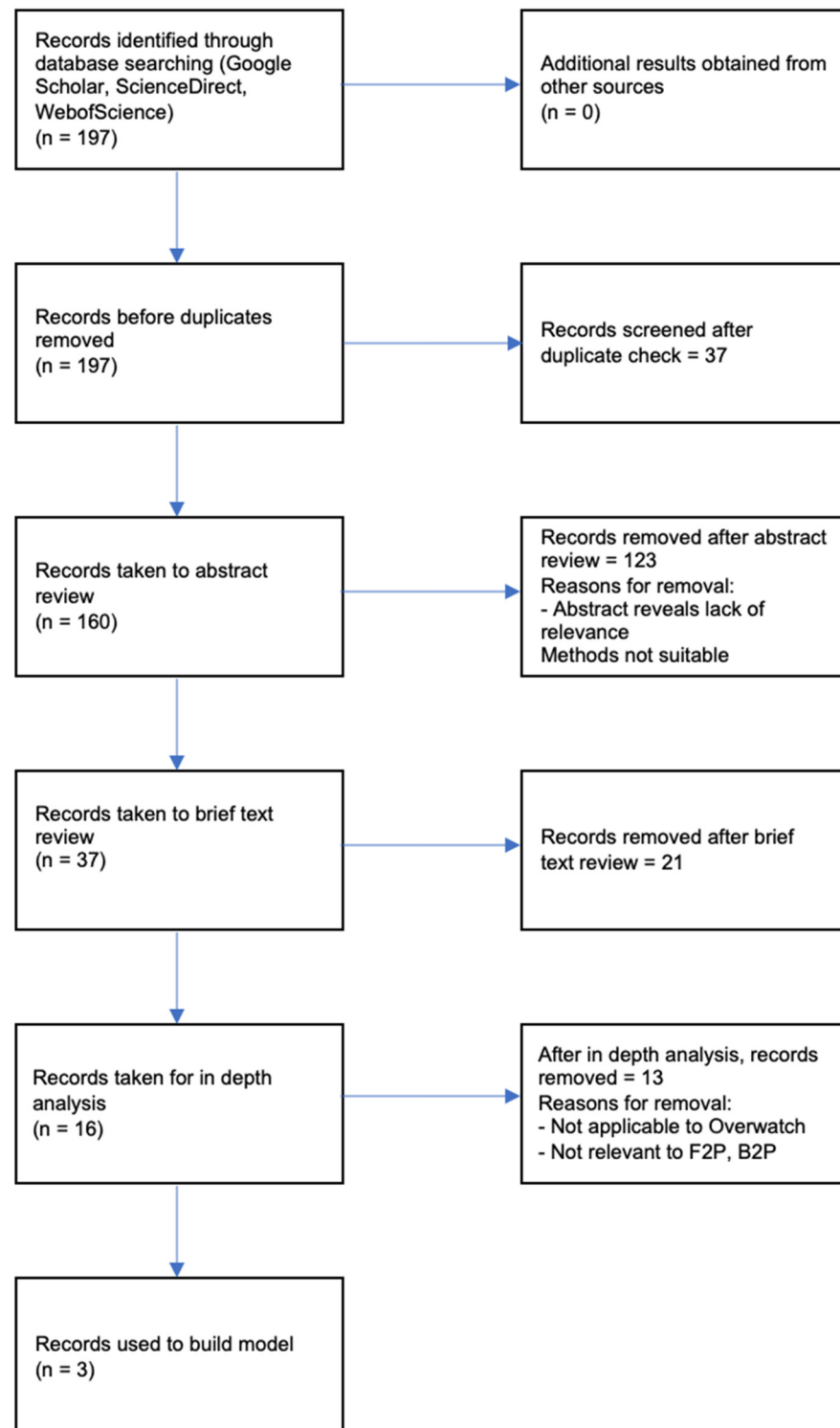
Figure 1. Process used, and associated number of records for each stage.

The design of the framework used in the present study is necessitated by the area of research being relatively new, particularly when contemplating areas around esports. Based on a review of the literature, there appears to be a paucity of research investigating the switch between business models in esports. Consistent with this, the amount of literature

produced as a result of searching was not extensive. This necessitated the model being limited to the three sources used, as they were among the limited number of sources at the time. The use of three separate sources is designed to incorporate different viewpoints and approaches to the analysis of F2P. The framework will be applied by considering each source individually before assessing whether a switch is well advised or not through comparison the outcome reached with each of the three different models. Instead of describing the elements to consider here and eventually applying them to Overwatch in the results, both their description and application are done in the latter section. This is to prevent redundancies between both sections, unavoidable if the application is separated from the description.

3. Results

3.1. Application of Massarczyk, Winzer and Bender: The Pros and Cons of F2P vs. B2P for Overwatch

Massarczyk et al. (2019) explore the potential business models a publisher could pursue based on what model best fits each game, and which model promises the best financial returns. This paper can be considered significant as one of the only examples of trying to survey the whole industry and the variety of available models. The advantages and disadvantages of the three most prominent models are considered, while also developing a ranking system to establish a method of comparison. It is argued that despite increasing complexity, more competition and development costs increasing, prices for video games remain stable, meaning videogames struggle to break even (Massarczyk et al. 2019). However, this method presents some issues. The "self-developed evaluation system" lacks a level of analysis, with generalised statements made without providing examples or evidence, such as "In the B2P model, only one-off revenues are generated, there is no possibility of current income (valuation = 0)" (Massarczyk et al. 2019, p. 483). Nevertheless, the system provides valuable insight into the nature of the business models outlined. As such, it is taken forward.

The point is made that regular payments are better than one-off payments, which is a negative for Overwatch's current model, as it relies on a B2P model with one initial payment. This payment has varied, averaging around £11.50 depending on the platform considered (PC/Xbox/PlayStation) (PriceSpy.com n.d.). While these payments are always one-off, it could be argued that Overwatch has a system closer to that of a F2P game already. It has a heavy focus on regular cosmetics being added to the game, encouraging players to spend money on in-game currency. However, this system has been accused of being "out of touch" due to focusing on randomised lootboxes rather than a battle pass-like system seen elsewhere. This is where boxes are opened, and currency is spent to purchase items and additional boxes. Overall, it could be seen that Overwatch and its obtainment of payments would lend itself to a F2P model with some adjustments.

The second consideration by Massarczyk et al. (2019) is about customer data. This is seen as valuable due to the ability to cross-sell to existing users, and to sell data to third parties. Given Overwatch is a B2P model, it would not be valued highly due to minimal customer data being collected due to minimal information. On the other hand, it is hard to determine potential gains or changes to be made with regard to customer data with a switch between B2P and F2P or P2P. As such, it is difficult to assess whether a switch to F2P would be a positive move on the customer data dimension.

Another criterion explored by the authors is compulsory permanent internet connection, where a user would have to stay connected while using the game. The authors give three reasons for this being beneficial: software piracy can be prevented, additional content can be provided more easily, and individual behaviour can be recorded (Massarczyk et al. 2019, p. 484). Overwatch does not require connection, but all its central modes are focussed on player vs. player interaction, which does require online connection. In this regard, Overwatch is well suited for a F2P model, as it is usually accepted part of the 'free' content is a permanent internet connection.

The next criterion considered by Massarczyk et al. (2019) is the in-game shop, which is an area to be seen as both a strength and a weakness for Overwatch. Its lootbox-based system is popular, and by 2019 had generated over \$1 bn in revenue (Moncav 2019). The system has a link with Overwatch's esports system, with a different currency available to purchase for team-specific skins, while the currency is also earned when watching matches in Overwatch's esports league. On the other hand, the lootbox system is often accused of being a form of gambling, or at least to encourage it, and it is often argued that a B2P system should not need lootboxes (Parker 2020). Based on this, Overwatch would be again well positioned for a switch to F2P.

Ongoing costs are considered due to the importance of how long it makes economic sense to continue operation of a game. There will be a time where ongoing costs outweigh ongoing revenues, and this will vary depending on the type of game, and the payment model employed. As explained by Massarczyk et al. (2019, p. 485), "In a single-player video game, there is no "real" economic lifespan, as such a game could usually be played on almost "indefinitely". This is then split into three sub-criteria, namely ": (a) provision of servers for continuous gaming, (b) provision of patches, and (c) provision of further content".

Considering these three sub-criteria, Overwatch is perhaps in a strong position to offer strong server availability as it runs on a platform alongside other games which are among the most popular (Call of Duty, World of Warcraft, StarCraft). Thus, there is likely some synergies to be gained. Provision of patches is something which has not been an issue with Overwatch, with regular patches and patch notes, and a test server to iron out issues. Nevertheless, the regular provision of content is a problem, with the developer working towards a sequel rather than continuing development, causing discontent (Holt 2021). There are cosmetic updates issued regularly. Overall, Overwatch sits between F2P and B2P rather than seeming a classic B2P system, meaning that a switch to F2P would not be as radical as one may initially think.

Advertisement is the final consideration for Massarczyk et al. (2019), as in-game advertising can generate additional revenue, thus potentially improving profitability. Nevertheless, there could be issues in terms of player acceptance, and advertisement may interrupt the flow and intensity of the game. Overwatch does not have in-game advertisement. However, it is uniquely positioned to offer advertising via its esports league, which has high-end sponsors and high-profile owners. Furthermore, it has a potential to gain more players and buyers of the game through the publicity gained, and more high-level players to join the esports. On the other hand, it could be questioned how much revenue Overwatch gains from its esports system, and it has some acknowledged issues such as those outlined by Castello (2020). Advertisement may result in an overall positive impact, depending on the success of Overwatch League.

Each of the six elements outlined by Massarczyk et al. (2019) are summarized and applied to Overwatch in Table 1. Overall, they support a move to F2P, with four supportive elements vs. two unknown.

Table 1. Application of Massarczyk et al. (2019) to Overwatch.

Element	Application to Overwatch	Support a Switch to F2P?
Obtainment of payments	Currently one payment collected at initial purchase, with optional in-game purchases. No ongoing subscription-based payments	Yes–system in place to obtain payments via in-game purchases
Customer data	Some data likely to be connected, but extent unknown	Unknown
Compulsory permanent internet connection	Compulsory internet connection for multiplayer	Yes
In-game shop	Set-up will potentially change from lootbox to battle pass system (Searl 2020) which would support a F2P model	Yes, more so if a battle pass system
Ongoing cost	All three criteria outlined are fulfilled	Yes
Advertisement	Advertising depends on the success of Overwatch League	Unknown

3.2. Application of Luton: Additional Pros of F2P and Whether They Could Apply to Overwatch

One of the most comprehensive statements around the F2P structure in videogames is developed by Luton (2013), who provides a well-constructed account around the business considerations of F2P games that are complementary to the ones provided by Massarczyk et al. (2019). Much justification can be drawn for the research being conducted. A few examples are given, specifically related to mobile gaming but still applicable: "When in-app purchases finally made their way to the App Store, we tested the waters by adding a few purchasable themes to Scoops (our most profitable game at the time) and making it free. Again, people thought we were crazy, but the game ended up making the same amount of revenue as when it was a for-purchase game and generated ten times the audience" (Luton 2013, p. 8). This shows how a shift from a P2P to a F2P model can create opportunities. The point is also made that "having a much larger fan base and exponentially larger word-of-mouth marketing for our games because they are free are valuable benefits" (Luton 2013, p. 9). Justification is also offered for how to encourage players to come back, how to monetise, and how to understand and serve players. These characteristics have implications for this paper as they can be used to establish the suitability for Overwatch pivoting to a F2P system.

Luton (2013) considers F2P games in an informal, casual way, but aims to synthesise knowledge about F2P and explain how the system works. In doing so, he indicates areas of concentration and consideration which can be related to Overwatch, namely: Economic considerations, Gameplay, Monetization, Analytics, Marketing. Each of these elements are considered and related, looking at the context outlined by Luton (2013) and applied directly to Overwatch. This method lacks a degree of scientific rigour, with no consideration given to bias, methodology, analysis or interpretation of the author's own presented results, with a more subjective tone adopted. This, however, seems to be the aim, with a focus on an informal tone presenting more as an instructional guide to F2P than a full scientific analysis. Despite this subjectivity, it was decided to retain the criteria identified for the present analysis due to their complementarity with the two other sources and methods selected.

Economic considerations around F2P are about how to make profit out of a free product. The point is made that advertising, product placement and merchandise are all key to making profit, but in-app purchases are "king of them all" (Luton 2013, p. 11). In this way, Overwatch is well positioned to capitalise, as already raised previously. It does not offer any of the first three sources of finance in its core game, but the esports system is well positioned to offer at the least a high level of advertising and merchandising, with less emphasis on product placement.

Gameplay is also suggested as a key component of F2P. The aim is to keep players coming back, via three levels of incentives: minute-to-minute loops of repeatable actions, hour-to-hour loops of gameplay, and day-to-day with motivations and goals keeping players interested such as rewards and upgrades. This system relies on four elements: social, competitive, achievement and exploration. While it is difficult to judge the exact measure of players that return to Overwatch either in the short or long term, these four elements can all be seen in Overwatch. The competitive element of the game relies on social communication and grouping up, they are shown to all players in their season rank, the achievement is contained within the gaining of higher tiers of rank (gold/diamond, etc.) and exploration can be seen in new maps being introduced to the game.

Monetisation is considered next by Luton (2013). Four types of monetisation are suggested: content, convenience (anything that skips players ahead), competitive advantage and customisation. Overwatch, with its current system of randomised lootboxes, is an effective way of monetisation, but does not specifically align with its B2P model. These lootboxes are exclusively about customisation, offering no convenience or competitive advantage, and nothing else within the game does either. This is an approach often embraced by games with an eye on encouraging an esports scene, like Counter Strike: Global Offensive (CS:GO) or Valorant. There is no additional content offered for money either by Overwatch. These areas could represent a way of offsetting any cost or opportunity cost with a switch to F2P.

The final two elements outlined are Analytics and Marketing. Analytics is explained as using in game statistics to inform decisions, like when the game should be released or what type of in-game advertising should be used. It is difficult to discern the exact level of analytics undertaken within Overwatch. However, websites like Overbuff.com offer an insight into the level of data collected by the publisher, with basic information like wins, kills and deaths, but also character specific information at a granular level like in-game accuracy of specific abilities and number of kills while in a specific form during gameplay. It is not possible to judge if or what this information is used for, but it is all collected in the source code of Overwatch.

As with Analytics, Marketing and its impact and importance to Overwatch is difficult to judge. Luton (2013) proposes a number of techniques to incentivise players, including viral marketing, encouraging players to gift to friends and introducing challenging elements. Given it is a part of a larger holding company, Activision Blizzard, which is one of the largest videogame publishers globally, it is known that it has a large marketing budget of over $270m per year (Statista 2021). However, it is not known how this budget is employed.

A summary of the five elements outlined by Luton (2013) is shown in Table 2. Overall, their application to Overwatch supports a move to F2P, with four supportive elements vs. one unknown.

Table 2. Application of Luton (2013) to Overwatch.

Luton (2013) F2P Element Considered	Applicable to Overwatch?	Example
Economic considerations	Yes, highly applicable	Battle pass system being embraced, loot boxes used previously
Gameplay	Yes, highly applicable	Some social elements within Overwatch, very robust competitive system, sense of achievement through progressing through ranks, exploration less applicable
Monetization	Yes, highly applicable	Content, competitive advantage not too applicable. Content is available from start, and there is no pay-to-win element to the competitive aspects. Customisation is the biggest source of monetisation through purchasing skins, with rare and time-limited skins encouraging purchase. Convenience is often used to skip tiers in battle pass systems, so likely to be more important for Overwatch 2
Analytics	Yes	Lots of elements can be measured and data readily available for analysis to inform decision making
Marketing	Potentially, difficult to judge	Blizzard has a significant marketing budget, could use OWL as a form of marketing

3.3. Application of Seidl et al.: The Pros and Cons of a Switch Applied to Overwatch

There is little research done about a publisher switching a game from one payment system to another. Yet, there is a relevant research paper by Seidl et al. (2018), who create a quantitative theoretical model considering a subscription-based system and a F2P system. The focus of the switch between systems is based on revenue coming from those who use the game heavily, with the optimal situation depending on a number of factors, including "how rapidly casual users escalate to this more intense playing state, the willingness of users to pay for additional content, and the costs of changing the business model" (Seidl et al. 2018, p. 714). The biggest advantage of the F2P model is identified as being that it can attract higher levels of new players initially, due to the lack of initial purchasing costs. As a result, "if the initial willingness of players to pay for additional content is low but general interest in the game is high, then it is optimal to start with a subscription model and then switch to F2P later at an optimally determined time" (Seidl et al. 2018, p. 714). Costs of switching are also identified, with the need for some adaptations in software and hardware development. This has implications when switching systems. For example, if costs are too high, a switch cannot take place; and if there is a lack of heavy users, the necessary costs of switching cannot take place. Other significant findings are that advertising is particularly effective in F2P models; and if games do not have a flow of players consistently converting from casual to heavy, a subscription-based model is better suited. This research can be

used in the applied context being considered in this paper relating to whether Overwatch is suitable to be switched from B2P to F2P.

Seidl et al. (2018) develop a model which considers different business models in the video game industry, and the willingness of players to pay for content. As a part of this model the authors identify a list of criteria to either strengthen or weaken the possibility of a switch between systems being optimal. The model developed considers specifically a switch from a subscription-based system to a F2P model, meaning some of the conclusions cannot be applied to a switch between B2P and F2P, as would be the case with Overwatch. Yet, the parameters identified are considered qualitatively to assess how they would impact on the switch, and whether they would suggest it to be beneficial. One potential issue with the model employed is the level of generalisation undertaken. Videogames are heavily influenced by marketing and advertising, as well as trends. As explained by Faber (2021) there are numerous games which have increased in popularity solely due to being viewed on platforms such as Twitch and Youtube. These games provide numerous examples of potential anomalies which do not fit with the logic required for the paper to function. However, these dimensions are controlled for in the two other sources and methods used. Besides, the model developed by Seidl et al. (2018) does add to these two other methods, hence why it is considered here.

The variables considered are applied to Overwatch in Table 3. State variables describe the mathematical state of a model, control variables describe what is being held constant during investigation using this model, and parameters are used to define the conditions and limits of what is being investigated. In this way, the state variables used, heavy and light users, are observed during the switching process from B2P to F2P in this model, the control variables are not changed as to not influence the model, and the parameters are adjusted, varied and measured to investigate whether a switch would be beneficial. When considering Table 3, there are many unknowns due to restricted access on the required data. However, a few specific points can be drawn which provide justification for a switch between B2P and F2P for Overwatch.

Table 3. Application of Seidl et al. (2018) to Overwatch.

Variable or Parameter	Relation/Link to Overwatch	Support a Switch to F2P?
State variables		
Number of "light" users	10 m monthly users	Likely yes
Number of "heavy" users		Likely yes
Control variables		
Subscription fee	No subscription fee	N/A
Unit price for a virtual good	Various	N/A
Advertising rate	$270 m per year	N/A
Switching time	Unknown	N/A
Parameters		
Switching costs	Assumed to be marginal	Likely yes
Inflow rate to heavy users (degree of addictiveness) in Stage i, I = 1,2	Unknown	Unknown
Advertising costs in Stage i, I = 1,2	Unknown, could be amalgamated with the existing marketing costs	Likely yes
Initiation rate if the subscription fee is zero	Unknown, assumed to be higher than zero	Likely yes
Flow to heavy users if the unit price of a virtual good is zero	Unknown, assumed to be higher than zero	Likely yes
Demand of virtual goods if the p2 = 0	Unknown, assumed to increase	Likely yes

Distinguishing between light and heavy users (L, H) is difficult. However, Blizzard confirmed that there were 10m monthly players in 2020 (Richman 2021), which displays a level of longevity which could have an impact on a number of elements that relate to player numbers and demand (d1, d2, d3). This will also likely have an impact on addictedness and the level of quitting (bi, gi, v). Overwatch is also well positioned for a successful switch to F2P if the situation with its virtual goods is considered (p2). Overwatch has various options for in-game purchases. Two lootboxes cost $1.99, up to 50 lootboxes for $39.99. This system has helped generate over $1bn in revenue from in-game purchases alone. Activision-Blizzard, the publisher for Overwatch, has five other titles which have reached this point, two of which are F2P, namely Hearthstone and Candy Crush (Bailey 2019).

Overall, out of 12 variables highlighted by Seidl et al. (2018), seven are likely to support a move to F2P for Overwatch, one is unknown and four are not applicable. Based on this overview, it is concluded that the application of Seidl et al. (2018) to Overwatch is likely to support a switch to F2P.

3.4. Synthesis of the Three Models Used

Table 4 displays a synthesis of the three models used. Their methodologies refer to the criteria that should be included in the assessment of the switch of business model for a videogame, answering to RQ1. Although the three models present some limitations, using all three enables to assess the relevance of a switch of business model for a videogame against different set of criteria, to compare the outcome reached with each of them (i.e., supportive of a switch or not) and to make a recommendation based on such comparison. Overall, the three models are supportive of a move from B2P to F2P for Overwatch, answering RQ2; this is the case for the first two models and likely the case for the third model.

Table 4. Summary of seminal research employed.

Titles	Authors	Methodology	Primary Findings	Limitations	Application to Overwatch
Economic Evaluation of Business Models in Video Gaming Industry from Publisher Perspective	Massarczyk, E., Winzer, P. and Bender, S. (Massarczyk et al. 2019)	Catalogue of criteria is used for analysis including costs and revenues of video games. Results for each of the business models are summarized in a combined index.	F2P is seen as the highest ranking in the model developed from a publisher perspective. Traditional business models (B2P, P2P) are unattractive, to a lower extent for B2P. P2P is seen to have high running costs and limited potential revenue.	Lack of in-depth analysis, lack of evidence and examples.	Supportive of a move to F2P
Free-to-Play: Making Money From Games You Give Away	Luton, W. (Luton 2013)	Qualitative and narrative method, considering economics, gameplay, monetization, analytics and marketing.	F2P is seen as "better" as players can decide on how much to spend, more people can access the games.	Lacks scientific rigour, no real method explained or used. Subjective considerations.	Supportive of a move to F2P
Serious strategy for the makers of fun: Analyzing the option to switch from pay-to-play to free-to-play in a two-stage optimal control model with quadratic costs	Seidl, A., Caulkins, J., Hartl, R. and Kort, P. (Seidl et al. 2018)	A two-stage optimal control model analysing a switch between business models. Stage 1 considers a subscription business model, Stage 2 considers a microtransaction or F2P business model.	Optimal model depends on numerous factors such as how rapidly casual users escalate to this more intense playing state, the willingness of users to pay for additional content, and the costs of changing the business model.	Large amount of generalisation undertaken. Logic used to develop the method not specific to videogames.	Likely supportive of a move to F2P

3.5. Impact on Esports

Overwatch is widely considered as one of the most significant esports, with franchises worldwide, large companies like Budweiser, Coca-Cola, State Farm, Kellogg's, Toyota, and T-Mobile sponsoring events (Stern 2019). Broadcasts have also featured on ESPN and team owners include Robert Kraft and Stan Kroenke (Wolf 2018). Viewership often peaks around large events. The in-game competitive system was likely developed with a focus on esports. Players see after every match exactly how good they are in the form of a numerical ranking, with those excelling knowing so, and being more likely to advance. Overwatch also has a robust framework for progression within its esport, with four tiers. Open Division is a competition of amateur teams and players, allowing them to compete formally. Teams or players can then move up into Contenders, which, as explained by Garst (2019), runs as a minor league to Overwatch League. This offers an opportunity to develop from a casual, amateur player to a professional playing at the highest level. However, Garst (2019) highlights that there are fundamental issues with the Contenders, outlining that any two-tier system should be aiming to develop and shed light on talent. A confusing mix of academy and unsigned teams with different approaches towards competitiveness coupled with restrictive rules around sponsorship result in a failing system that does not perform as it should do.

Overwatch had outlined a roadmap for 2021 and the fourth season, but since then has not provided much detail on the future. Blizzard has provided no official roadmap for the 2022 season and beyond (Sciberras 2022). There were changes to the 2021 structure due to COVID-19 related travel restrictions, but the league intends to develop and expand. However, there are some issues with the foundation of Overwatch esports. The three formal competitions have seen withdrawals and negative changes. For example, Team Envy's dissolution of their T2 team, alongside ten other teams who have disbanded their T2 teams. Contenders has arguably gone from a robust competitive league to struggling to fill all of its positions. Since the conclusion of the 2021 season, a number of issues have arisen which alter the landscape of Overwatch and OWL. Heinisch (2022) outlines how one of the teams is trying to sell its players as it has lost trust in the finances of OWL. No new sponsors have been signed, the deal with Google for YouTube to host the broadcast of its events is ending, and a lot of teams preferred the league system during COVID when no travelling was required (Samal 2022).

It could be argued that embracing a F2P system could benefit Overwatch esports significantly. Switching to F2P, as shown in the popularity of Rocket League after its switch, would likely create an increase in the number of players. An increased number of players would result in more players entering T5 the competitive play within the base game. This would then feed into T4, T3, T2 and T1, as more active players would provide a larger pool of talent to draw from for the professional T1 and T2 leagues. It could be argued that the largest esports in terms of player numbers, audience size and prize money, namely DOTA 2, League of Legends and Fortnite, all being F2P, could provide enough justification alone for Overwatch to complete the switch. Furthermore, Macey et al. (2020) prove that watching intention fuels both gaming and buying intention, which, in turn, could justify how Overwatch could transition to F2P while maintaining profitability for the publisher if embracing a modified microtransaction-focused system. Overall, a switch from B2P to F2P would not only benefit Overwatch but also its esports league, answering RQ3.

4. Discussion

The results are supportive of a move from B2P to F2P for Overwatch and its esports league. However, it is acknowledged that there are some uncertainties around some variables of the switch. Besides, the application of the framework developed in the present paper to a single videogame raises the question as to whether it can be generalised to other videogames. Accordingly, the discussion considers first the application of the framework to other videogames. There are also additional points which should be addressed regarding the potential shift to F2P for Overwatch, tackled in the present discussion. These additional

points include the current popularity of Overwatch compared to relevant F2P games and what can be learnt from other games having moved from B2P to F2P. This is an important consideration because one limitation of the current study is that it neglects the process on how to transition to F2P.

4.1. Application of the Framework to Other Videogames: Illustration with Call of Duty

The framework developed in this paper can be applied to other videogames. This is illustrated here through the example of Call of Duty. This game is also published by Activision-Blizzard. Call of Duty is one of the most significant video game franchises in the world, with a reported $27 billion in revenue across the franchise so far (Apolinario 2022). Similarly to Overwatch, decisions made around Call of Duty and its monetisation will have considerable consequences for consumers, employees and shareholders, and is likely to have a significant risk factor attached. The league system utilised in Call of Duty is similar to that of Overwatch, with a focus on in-person events, a global reach and a tiered system similar to Overwatch and its Contenders division. Call of Duty shares some of the issues Overwatch has experienced too, with a lack of attention paid to the competitive system below the top tier Call of Duty League events, and a level of viewership of official events which is inconsistent (Byers 2022). Viewership has varied since the Call of Duty League was established in 2020. The final for that year attracted a peak of 331,558 viewers (Esports Charts n.d.). In 2021, this decreased to 238,794, then increased back to 275,244 in 2022. This does not seem to be significant when compared to, for example, League of Legends which attracted a peak viewership of 2.1 m in 2022, or Valorant, a much newer title, which peaked at 1.5 m viewers in 2022.

There are some differences between Call of Duty and Overwatch, however. These differences would have to be addressed and accounted for in the model used here. Examples include the existence of related games Call of Duty: Mobile and Call of Duty: Warzone, both of which are F2P already. Similar issues would be met as those which occurred when examining Overwatch. Given Call of Duty is published by the same company (Activision-Blizzard), who does not release comprehensive statistics on its titles, not all information could be accessible. Yet, an informed examination could be undertaken. Call of Duty could be seen as a suitable title for examination with the model employed, with justification coming from the disparity between the number of players it gets from its range of titles, especially those which are already F2P, and the popularity of its flagship esport which is played on its B2P title.

4.2. Overwatch Popularity vs. Relevant F2P Games

One key point to consider when contemplating potential transition for Overwatch is whether or not it is really likely to benefit, based on a further look at its current situation. One limitation of the present study is that it did not put the decline of Overwatch into the perspective of the growing videogame market. One explanation may be the growth of the number of videogames and, in particular, F2P games, leading to a higher competition. To some extent, it may be that Overwatch used to 'overperform' in the past and its current situation is simply normal given its potential. Besides, it could be argued that the Overwatch community is far from dead, casting potential doubt about the opportunity of transitioning to F2P. In 2019, it was reported that Blizzard made over $1bn in lootbox transactions alone from Overwatch since its launch (Castelot 2019). Miller (2020) reports that Blizzard has posted better than expected earnings despite the COVID-19 pandemic, and stated that Overwatch has over 10 million monthly players. This is compared to, for example, CS:GO having 26.2 m players in May 2020. It is difficult to obtain accurate data on the popularity of any game published by Blizzard as they do not announce regular figures on player numbers, but a measure of popularity can be gained by looking at Twitch viewership, for example through using Twitch Tracker.

Overwatch sees regular cyclical fluctuations, with a consistent average over the game's lifetime, but it could be argued that the audience size has stagnated. However, when

compared to Valorant, a similar, competitive team focused F2P game launched more recently, there has been a sustained drop off in popularity, decreasing from its launch to a low point of around 50,000 total viewers in November 2020. On the other hand, CS:GO has been operating for a much longer period of time, and also established itself as a popular esports. Viewership has remained fairly consistent over time, seeing a significant rise in early 2020. Both of these games are F2P but have differing experiences; CS:GO was initially B2P so could be used as a model for Overwatch on how to transition to a F2P system.

4.3. How to Transition to F2P? The Example of CS:GO

CS:GO launched in 2012 with a fee of $15 to purchase the game. It has seen extraordinary success in terms of longevity and popularity, in part encouraged by its particularly popular esports events. CS:GO is also popular on streaming platforms like Twitch, fuelled by the strength of its professional scene (Moore 2018). The publisher (Valve) also had experience handling a title like CS:GO in the past, through predecessors CS Source and the original Counter-Strike, meaning there was an existing player base, networks in place for considerations like monetisation and marketing, and an existing level of demand. CS:GO transitioned to F2P in 2018 (Švejda 2018). Since then, CS:GO has introduced a system where a player can upgrade to a higher tier, called "Prime Status" (Steam n.d.), which gives players access to ranked, competitive gameplay, and additional cosmetic items. The core of the game can still be access for free however, meaning there are likely to be players who try the game, becoming first "light" users, and a proportion becoming "heavy" users, as Seidl et al. (2018) outline. A more unique feature of CS:GO is its infamous skin system, where cosmetic items can be purchased via loot crates. This system is acknowledged as being successful, with players investing in specific items, loot boxes and cosmetics with the aim of making money (Williams 2022). This further encourages players to spend money with the publisher Valve. CS:GO transitioned from B2P to F2P at a time where it was not particularly fashionable to do so. It had a number of characteristics (strong esport associated, an existing player base, methods of monetisation) which are not common, but to some extent the plan used could be replicated for Overwatch or more exactly Overwatch 2, the new sequel of the game.

As previously outlined, Overwatch has a strong associated esport and an existing player base, even though these have waned over the course of the game. Activision-Blizzard have a strong history of other releases, so would have a large amount of players willing to try a game, even if it was not a sequel. The monetisation utilised by CS:GO is being emulated by Overwatch, with a battlepass being utilised in Overwatch 2 alongside their already popular lootbox mechanic, but the publisher has also decided to lock certain characters behind a premium battle pass or through investing a significant amount of playing time (Toms 2022). This means that for the first time there is an option to spend money on something other than cosmetic items. This is not something CS:GO has focused on, the publisher has tended to provide as level a competitive field as possible and focus efforts to monetise on cosmetic items. Whether or not this will be an issue for Overwatch 2 remains to be seen.

5. Conclusions

This research aimed at evaluating the opportunity for Overwatch to switch from a B2P to a F2P model and the impact on its associated esports. It presents the caveat of not being an all-encompassing study of every possible route for the future of Overwatch. Instead, it is more an exploratory consideration of how Overwatch could transition to enhance the system currently in place. The novelty of the research from a methodological perspective is its sequential approach, starting with the identification of relevant literature having considered different sets of criteria to assess the relevance of a switch of business model for a video game, then applying these different sets of criteria to Overwatch, comparing the outcomes reached with the different sets, and finally making a recommendation based on the comparison of the outcomes. Looking forward, this exploration could be generalised

and applied to other videogames and their associated esports, with the same model being adjusted for contextual differences, as illustrated in the discussion with the example of Call of Duty. This research could also inform future decisions taken by publishers around the suitability of their videogames for the models examined, for example a publisher may identify that their yet-to-be-published game would suit F2P over B2P or P2P.

Based on the analysis undertaken in this study, it is likely that a transition to F2P would be beneficial. The decision has been made for Overwatch 2 to be F2P, with a move away from the problematic loot box system to a battle pass (Apsey 2022). The switch could also benefit Overwatch esports due to a potential increased number of players translating in more high-level players and, as such, an improved quality at the highest level. This would likely lead to a higher and/or more sustained viewership, which, in turn, would benefit Overwatch due to watching fuelling gaming and buying. It remains to be seen if the move will occur and, if so, if the virtuous circle described here would be confirmed.

Ultimately, Blizzard has made its final decision on the future of Overwatch. Overwatch 2 was announced in August 2019, and after a number of delays is due to launch fully in October 2022 (Sirani 2019). The move to F2P represents a shift which aligns with the recommendations made in this paper. This is a decision which is positive for players, as it could result in more people experiencing the game. It could be beneficial for the associated esport (OWL), but it will remain to be seen if it is the correct decision for Blizzard and the risk taken with the switch of business model will pay.

References

Apolinario, Tisha. 2022. How Many People Play Call of Duty? (User & Growth Stats 2022). Fiction Horizon. Available online: https://fictionhorizon.com/how-many-people-play-call-of-duty-user-growth-stats/ (accessed on 6 October 2022).

Apsey, Joe. 2022. Overwatch 2 Battle Pass Revealed: How it Works, Tiers, Rewards. The Loadout. Available online: https://www.theloadout.com/overwatch-2/battle-pass (accessed on 6 October 2022).

Asavei, Victor, Alexandru Gradinaru, Alin Moldoveanu, Sorin-Andrei Pistirica, Ovidiu Poncea, and Alexandru Butean. 2016. Massively multiplayer online virtual spaces–classification, technologies and trends. *UPB Scientific Bulletin, Series C* 78: 3–16.

Bailey, Dustin. 2019. Loot Boxes Lead Overwatch to $1 Billion of in-Game Revenue. PCGamesN. Available online: https://www.pcgamesn.com/overwatch/revenue (accessed on 3 August 2022).

Blizzard Inc. 2021. Overwatch Free Trial. Blizzard Support. Available online: https://eu.battle.net/support/en/article/55029 (accessed on 7 October 2022).

Byers, Preston. 2022. Despite Delays, Challengers Criticism, and Vanguard, 2022 CDL Championship Proved CoD Esports Still has Potential. Dot Esports. Available online: https://dotesports.com/call-of-duty/news/despite-delays-challengers-criticism-and-vanguard-2022-cdl-championship-proved-cod-esports-still-has-potential (accessed on 6 October 2022).

Castello, Jay. 2020. Don't Worry about the Overwatch League, Worry about Its Workers. Polygon. Available online: https://www.polygon.com/2020/1/28/21083588/overwatch-league-player-caster-talent-burnout-season-3 (accessed on 10 October 2022).

Castelot, Ophelie. 2019. Overwatch Has Generated $1B USD From In-Game Purchases Since Launch. Esports News Network ESTNN. Available online: https://estnn.com/overwatch-has-generated-1b-usd-from-in-game-purchases-since-launch (accessed on 6 October 2022).

Coldewey, Devin. 2019. Free to Play Games Rule the Entertainment World with $88 Billion in Revenue. Techcrunch.com. Available online: https://techcrunch.com/2019/01/18/free-to-play-games-rule-the-entertainment-world-with-88-billion-in-revenue/?guccounter=1&guce_referrer=aHR0cHM6Ly93d3cuZ29vZ2xlLmNvbS8&guce_referrer_sig=AQAAAGP1o54KnHnsni2yfu61DDsuWWfPxXhXFGQRh9iIp4wWzCXsfh66d6An9gIYiCPPqT3_q6ta66BcjqpJKdOSLrZW_qc81hb6Lw9MhOnIkGzAXXAMx3Q3IUf_rPQmZC_iBwtQ87ta4rf_c-_vwYfyGb2bcIpRNY6wc4oLakL4RAlI (accessed on 3 October 2022).

Curtin, Paul. 2017. Twitch's Most Watched Games of 2016. Githyp.com. Available online: https://www.githyp.com/twitchs-most-watched-games-of-2016 (accessed on 7 October 2022).

Das, Abhimannu. 2021. Is Overwatch Dying in 2021? What Is Its Player Count? AFK Gaming. Available online: https://afkgaming.com/esports/news/7039-is-overwatch-dying-in-2021-what-is-its-player-count (accessed on 3 October 2022).

Esports Charts. n.d. CoD-Esports Viewership and Statistics Esports Charts. Escharts.com. Available online: https://escharts.com/games/cod (accessed on 6 October 2022).

Faber, Tom. 2021. Twitch, YouTube and the Rise of Video Game Live-Streaming. Ft.com. Available online: https://www.ft.com/content/4e91112c-8f99-422e-be3c-d9e6ad686cdd (accessed on 6 October 2022).

GameCentral. 2022. Number of UK Video Game Developers Jumps by almost 50%. [Online] Metro. Available online: https://metro.co.uk/2022/06/07/number-of-uk-video-game-developers-jumps-by-almost-50-16783589/ (accessed on 7 October 2022).

Garst, Aron. 2019. After Three Seasons, Overwatch Contenders' Problems Haven't Been Solved. Heroes Never Die. Available online: https://www.heroesneverdie.com/2019/2/25/18239998/overwatch-contenders-overview-tier-two-esports (accessed on 29 September 2022).

Heinisch, Sascha. 2022. Sources: Washington Justice Trying to Sell Its Players After Loss of Trust In OWL Finances. Ggrecon.com. Available online: https://www.ggrecon.com/articles/sources-washington-justice-trying-to-sell-its-players-after-loss-of-trust-in-owl-finances (accessed on 4 September 2022).

Holt, Kris. 2020. It's Time For 'Overwatch' to Go Free-to-Play. Forbes. Available online: https://www.forbes.com/sites/krisholt/2020/07/21/overwatch-free-to-play-opinion/?sh=3e152ad110fc (accessed on 29 September 2022).

Holt, Kris. 2021. 'Overwatch 2' Is Looking Fantastic, But the Lack of New Content for the Original Game Remains A Letdown. Forbes. Available online: https://www.forbes.com/sites/krisholt/2021/02/19/overwatch-2-is-looking-fantastic-but-the-lack-of-new-content-for-the-original-game-remains-a-letdown/?sh=bd958cf2f7ec (accessed on 2 October 2022).

Johnson, Mark, Clayton Christensen, and Henning Kagermann. 2022. Reinventing Your Business Model. Harvard Business Review. Available online: https://hbr.org/2008/12/reinventing-your-business-model (accessed on 18 October 2022).

Luton, Will. 2013. *Free-to-Play: Making Money From Games You Give Away*, 1st ed. Indianapolis: New Riders Press.

Macey, Joseph, Ville Tyrväinen, Henri Pirkkalainen, and Juho Hamari. 2020. Does esports spectating influence game consumption? *Behaviour & Information Technology* 41: 181–97.

Massarczyk, Erik, Peter Winzer, and Sina Bender. 2019. Economic Evaluation of Business Models in Video Gaming Industry from Publisher Perspective. In *Games and Learning Alliance*. Cham: Springer.

McWhertor, Michael. 2020. Overwatch free PC Giveaway Shut Down. Polygon. Available online: https://www.polygon.com/2020/9/30/21495654/overwatch-free-download-pc-blizzard-battle-net (accessed on 9 September 2022).

Miller, Chris. 2020. Overwatch Is Far From Dead; Recent Financial Reports Show 10 Million Monthly Active Users | Happy Gamer. HappyGamer. Available online: https://happygamer.com/overwatch-is-far-from-dead-recent-financial-reports-show-10-million-monthly-active-users-90177 (accessed on 8 September 2022).

Moncav, Melany. 2019. Overwatch in-Game Sales Generate More Than $1 Billion—OVERWATCH News-WIN.gg. WIN.gg. Available online: https://win.gg/news/1800/overwatch-in-game-sales-generate-more-than-dollar-1-billion (accessed on 7 September 2022).

Moore, Ben. 2018. Counter-Strike: Global Offensive (for PC) Review. PCMag UK. Available online: https://uk.pcmag.com/pc-games-2/117250/counter-strike-global-offensive (accessed on 7 October 2022).

OverwatchLeague.com. 2020. 2021 Player Contract Status. Overwatchleague.com. Available online: https://overwatchleague.com/en-us/news/2021-player-contract-status (accessed on 9 September 2022).

Parker, Jason. 2020. Want to Know Overwatch Loot Box Drop Rates? The Secret is Revealed. Esports Talk. Available online: https://www.esportstalk.com/news/want-to-know-overwatch-loot-box-drop-rates-the-secret-is-revealed (accessed on 3 October 2022).

Peng, Qi, Geoff Dickson, Nicolas Scelles, Jonathan Grix, and Paul Michael Brannagan. 2020. Esports Governance: Exploring Stakeholder Dynamics. *Sustainability* 12: 8270. [CrossRef]

Peters, Micah D., Christina Godfrey, Trish McInerney, Zachary Munn, Andrea Tricco, and Hanan Khalil. 2020. Chapter 11: Scoping Reviews. In *JBI Manual for Evidence Synthesis*. Edited by Edoardo Aromataris and Zachary Munn. Adelaide: JBI. Available online: https://synthesismanual.jbi.global (accessed on 1 September 2022).

PriceSpy.com. n.d. Overwatch (PC) (PC Games). PriceSpy UK. Available online: https://pricespy.co.uk/games-consoles/computer-video-games/pc/overwatch-pc--p2891420/statistics (accessed on 7 October 2022).

Richman, Olivia. 2021. Is Overwatch Dying Heading into 2021? How Many Still Play it?-OW News-WIN.gg. WIN.gg. Available online: https://win.gg/news/6884/is-overwatch-dying-heading-into-2021-question-mark-how-many-still-play-it-question-mark (accessed on 7 October 2022).

Samal, Rohan. 2022. Overwatch: The Land of Missed Opportunities. Esports. Available online: https://esports.gg/news/overwatch/overwatch-the-land-of-missed-opportunities (accessed on 4 September 2022).

Scelles, Nicolas, Qi Peng, and Maurizio Valenti. 2021. Do the Peculiar Economics of Professional Team Sports Apply to Esports? Sequential Snowballing Literature Reviews and Implications. *Economies* 9: 31. [CrossRef]

Sciberras, Gabriel. 2022. Overwatch Esports 2022-Esports Roadmap. Esportsguide. Available online: https://www.esportsguide.com/news/overwatch-esports-2022-esports-roadmap (accessed on 4 September 2022).

Searl, Nate. 2020. Overwatch Battle Pass? *Blizzard Teases Major Changes for Franchise. Dexerto*. Available online: https://www.dexerto.com/overwatch/overwatch-battle-pass-blizzard-teases-major-changes-for-franchise-1442728/ (accessed on 25 September 2022).

Seidl, Andrea, Jonathan Caulkins, Richard Hartl, and Peter Kort. 2018. Serious strategy for the makers of fun: Analyzing the option to switch from pay-to-play to free-to-play in a two-stage optimal control model with quadratic costs. *European Journal of Operational Research* 267: 700–15. [CrossRef]

Sirani, Jordan. 2019. Blizzard Announces Overwatch 2 at BlizzCon-IGN. IGN. Available online: https://www.ign.com/articles/2019/11/01/blizzard-announces-overwatch-2-at-blizzcon (accessed on 4 August 2022).

Statinvestor. n.d. Number of World of Warcraft Subscribers from 2015 to 2023. Statinvestor.com. Available online: https://statinvestor.com/data/27003/wow-player-count/ (accessed on 4 October 2022).

Statista. 2021. Activision Blizzard: Ad Spend in the U.S. 2019 | Statista. Statista. Available online: https://www.statista.com/statistics/308955/activision-blizzard-advertising-spending-usa (accessed on 10 September 2022).

Steam. n.d. Steam Support: CS:GO-Prime Status and Free to Play. help.steampowered.com. Available online: https://help.steampowered.com/en/faqs/view/4D81-BB44-4F5C-9B6B (accessed on 7 October 2022).

Stern, Adam. 2019. Overwatch League Sponsors Literally Jump Right in. Sportsbusinessjournal.com. Available online: https://www.sportsbusinessjournal.com/Journal/Issues/2019/10/07/Esports/Overwatch-activation.aspx (accessed on 1 October 2022).

Švejda, Milan. 2018. CS:GO Becomes Free-to-Play, Battle Royale Mode in New Update. HLTV.org. Available online: https://www.hltv.org/news/25581/csgo-becomes-free-to-play-battle-royale-mode-in-new-update (accessed on 7 October 2022).

TechACake. 2021. Is Overwatch dead in 2021: How many people play Overwatch? Available online: https://techacake.com/is-overwatch-dead/ (accessed on 4 October 2022).

Toms, Ollie. 2022. Overwatch 2: How to Unlock Every Hero in the Game. Rock, Paper, Shotgun. Available online: https://www.rockpapershotgun.com/overwatch-2-unlock-heroes (accessed on 7 October 2022).

Twitchtracker.com. n.d. TwitchTracker. Available online: https://twitchtracker.com (accessed on 4 October 2022).

Valentine, Rebekah. 2019. Overwatch 2 Announced, Will be Cross-Compatible with Original Game. GamesIndustry.biz. Available online: https://www.gamesindustry.biz/articles/2019-11-01-overwatch-2-announced-will-be-cross-compatible-with-original-game (accessed on 3 September 2022).

Varghese, Daniel. 2022. The 6 Best Free-to-Play Video Games. *Wall Street Journal*. April 1. Available online: https://www.wsj.com/articles/free-to-play-video-games-11648833109 (accessed on 2 October 2022).

Williams, Kenneth. 2022. Antwerp Major Stickers are on Sale, Are They Worth Investing in? WIN.gg. Available online: https://win.gg/news/antwerp-major-stickers-are-on-sale-are-they-worth-investing-in/ (accessed on 7 October 2022).

Wolf, Jacob. 2018. Sources: Paris and Guangzhou Teams Expected to Join Overwatch League. ESPN.com. Available online: https://www.espn.co.uk/esports/story/_/id/24200145/sources-paris-guangzhou-teams-expected-join-overwatch-league (accessed on 1 September 2022).

Wood, Laura. 2022. The United States Video Game Industry is Expected to Reach $48.2 Billion by 2027. GlobeNewswire News Room. Available online: https://www.globenewswire.com/en/news-release/2022/06/03/2455778/28124/en/The-United-States-Video-Game-Industry-is-Expected-to-Reach-48-2-Billion-by-2027.html (accessed on 4 September 2022).