

Microtransactions in games – an analysis of a crowdfunding perspective

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Abstract

As computer and video games become more popular and widely accepted in society, there are multiple options for the monetisation of the available business models. Recent scientific efforts have analysed various gaming mechanisms on a social, economic, and technical level. Observing funding opportunities for digital entertainment, crowdfunding as an alternative means of financing is only mentioned for the realisation of projects. This study focuses on shedding light on the issue of whether and how developers and publishers apply crowdfunding techniques. By applying an adapted grounded theory approach to 13 games, resulting in a theoretical framework, the discussion leads to the different benefits crowdfunding has for the organisation running the campaign. The main findings of the study include an overview of different scenarios of crowdfunding and how the crowd can be engaged. Furthermore, the research provides links for potential future business models in the field of gaming. While applying the grounded theory approach in a new, adapted way, all stakeholders involved in digital entertainment can gain useful information from the findings at hand – from marketing ideas to commercial approaches. In respect thereof, the present study adds original value to the economic and financial perspective of the rising digital entertainment industry.

Keywords

crowdfunding, marketing, microtransactions, games, e-commerce, crowd, people-centric, project

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1. Introduction

Digital entertainment has been a growing industry in recent decades (Creus et al., 2019; Kumar, 2021). Moreover, it has an im-

pact on society and culture (e.g. consumer behaviour, emotional connectivity and intercultural communication) (Pyae et al.,

2018; Mangiron, 2018; Green, 2021). The digital entertainment sector includes video and computer games and associated industries such as peripherals and merchandise (Reis et al., 2019). In the last couple of years the revenue earned in the field of gaming exceeded the combined revenues of books and motion pictures (Sadiku et al., 2017; Naik, 2020; Kristanto et al., 2021). Thus, the relevance of this industry is striking.

As a consequence, the responsibilities of the companies involved are rising in different areas: publishers and developers have to take care of data privacy, corporate social responsibility, employee engagement, shareholder profit orientation, as well as youth protection (Young, 2018; Li, 2019; Konhäusner, 2021). The commitment to different stakeholder interests leads to a rising demand for resources (Ninan et al., 2019; Colvin et al., 2020). These resources include, amongst others, expert staff and financial resources (Roos, 2017; Crane & Hartwell, 2019). Therefore, organisations face increased responsibility in terms of sustainability (Sroufe, 2017; da Silva Batista & de Francisco, 2018; Ahmad et al., 2021). To be sustainable as well as competitive when it comes to social, economic and environmental factors (Graessley et al., 2019; Meilhan, 2019; Mirică (Dumitrescu), 2019; Popescu and Ciurlău, 2019; Crişan-Mitra et al., 2020), companies have to ramp up their resources (Herrera & de las Heras-Rosas, 2020; Stahl et al., 2020). This leads to the urge to monetise, as earning money is directly connected with the longevity of the organisation (Dhanda and Shrotryia, 2020). Besides classical means of monetisation, publishers and developers also use alternative methods of fundraising and introducing new goods and services, such as virtual items as well as exclusive gameplay content, to nudge customers (King and Delfabbro, 2018; Perks, 2019; Wardaszko et al., 2021).

Crowdfunding is an upcoming and new way of alternative fundraising

(Assenmacher, 2017; Xu et al., 2020; Yang et al., 2020; Chakraborty and Swinney, 2021). There are multiple studies on crowdfunding campaigns for computer and video games (Planells, 2015; Cha, 2017; Lolli, 2018; Cha, 2019; Islam and Philips, 2020; Szopik-Depczyńska et al., 2020; Shaheer, 2021). Moreover, the interaction of the crowd with the publisher or developer has been analysed (Styhre and Remneland-Wikhamn, 2021; Wachs and Vedres, 2021). Nevertheless, research on the meta level to obtain a broad overview of how crowdfunding can support publishers and developers on their mission is lacking. The paper at hand attempts to narrow this research gap by answering the research question of whether developers and publishers in the digital gaming industry are applying crowdfunding techniques. In addition, the specific usage of crowdfunding and the goal of using this technique will be analysed. As a result, the paper presents a theoretical framework including six identified crowdfunding categories in the digital gaming industry.

Answering the research question will highlight different usage scenarios of crowdfunding as an alternative financing option in the digital entertainment industry. Consequently, the importance of the crowd to sustainable economic success as well as the evolution of the publisher or developer will be made clear. Therefore, the main contribution of the paper consists of the examination of the different ways that crowdfunding can be used in the area of digital entertainment, from both a marketing and a financing perspective. In the theoretical part of the paper, a literature review will highlight the importance of the usage of microtransactions for the gaming industry as one of the possible monetisation methods, before a discussion of crowdfunding in general as a way to engage many people to support a project financially. The research empirically uses an adapted grounded theory approach, extended by the research litera-

ture, to examine 13 different crowdfunding initiatives by publishers and developers to complete the picture and generate a theoretical meta framework for the use of microtransactions as crowdfunding in games (Glaser and Strauss, 1967; Faggiolani, 2011; Corbin and Strauss, 2014; Morse, 2021).

On the theoretical side, the paper adds value by presenting an additional application of the grounded theory in a new area. Furthermore, the grounded theory approach is adapted, combining observations with elements of the literature review. For practitioners, the paper shows how microtransactions can be used in terms of crowdfunding to support the vision of publishers and developers. Besides the organisations mentioned, the paper may also be of interest to crowdfunding platforms and consumers, providing a new perspective on the widely-used microtransactions (Neely, 2019; Wardaszko et al., 2021).

After the introduction, the theoretical part of the paper covers the importance of microtransactions as well as an overview on crowdfunding with a focus on the different categories. In section 3, the methodology used is described, before the research findings as well as the theoretical framework are presented in the fourth part. The discussion compares the research findings with the research already done. The paper concludes with theoretical and practical implications, limitations, as well as further research questions.

2. Theoretical background

2.1. Microtransactions in games

The video game industry and the number of people who play video games are growing steadily (Hollist, 2015). With this growth, the gaming business has become an important industry within the entertainment sector (Marchand and Henning-Thurau, 2013). In 2020 the revenue generated by the gaming industry amounted to US\$175

billion (Kaufmann, 2020), an increase of US\$26 billion in comparison to the previous year (Kaufmann, 2020). This business sector generates revenue from different types of business models (Davidovici-Nora, 2014; Baltezarević et al., 2018). There are direct and indirect ways to generate revenue (Meier and Stormer, 2012), albeit this paper focuses only on the direct ways of generating revenue. One of those direct ways could be to sell the game as a product or in-game items for a specific price. Also, there could be an admission fee required in order for the gamer to start playing the game. Another direct way to generate revenue from video games could be a subscription model where the user must pay a certain amount every month to obtain access to the game. Another way to generate revenue is to place advertisements in the game. Those ads are shown while the user is playing the game and the business receives a payment from the advertiser. Another model to generate revenues is the transaction model, which is especially used when users sell or buy items on a certain platform. The platform receives a fee for those transactions for providing this trade service as a marketplace (Meier and Stormer, 2012). In Table 1, those ways of generating revenue are shown with explicit examples from the gaming industry.

Table 1. Business Model Overview

Business Model	Example	Sources
Specific Pricing Model	The game "Overcooked" is an offline PlayStation game. The gamer has to buy the game itself for a specific price. There are no extra costs for playing the game.	Sony, 2021 Steam, 2021a EPIC Games, 2021
Admission Model	For the online card game "Hearthstone" the user is obliged to purchase a ticket to play against other gamers. For this purpose, he needs to pay a certain amount of money or he pays with the in-game currency which he gains while playing the game. There is also often an admission fee for e-sports events to gain access to the contest.	golem.de, 2021 HearthstoneHeroes.de, 2021 FANDOM, 2021a
Subscription Model	The online game "World of Warcraft" uses the subscription model. The gamer needs to subscribe to the game for a certain timeframe to gain access to the game.	Kimball, 2020 BATTLE NET, 2021 Andoris, 2021
Advertising Model	The free mobile game "Candy Crush" uses advertisements to generate revenue. In this example, there is an option for users to watch ads to gain additional 'lives' or certain boosters.	bearwithme, 2019 FANDOM, 2021b
Transaction Model	With the help of the Steam Community market, gamers can buy and sell in-game items. For every transaction, Steam takes a certain fee.	Conditt, 2012 STEAM, 2021b

Source: Own elaboration based on Meier and Stormer, 2012

Table 1 shows different examples of direct ways of generating revenue. It is clear that there are numerous models by which gaming businesses can generate revenue.

Another way to generate revenue with specific pricing is the purchase of intangible in-game goods (Nojima, 2007; Bradley et al., 2012; Demchenko, 2019; Grunert, 2021). With the purchase of in-game items such as skins or new weapons, the user pays a small amount of money to obtain an intangible in-game good. These kinds of small transactions are called microtransactions because a small amount of money is required for the purchase. Typically, those small transactions do not exceed \$10, but there is no solid definition of microtransactions in general (Makuch, 2018). Revenues generated via microtransactions are rising steadily. According to the German Games Industry Association, in-game and in-app purchases amounted to EUR 3.2 billion in 2020, a rise of 44 percent compared to the previous year. It is assumed that gaming is important

to people during the global coronavirus pandemic and is therefore responsible for such growth (Puppe, 2021). This demonstrates the relevance that microtransactions have for gamers. The virtual goods to be purchased in the game belong exclusively to the classification of cosmetic content (Siemens and Plass-Flessenkämper, 2018; Grunert, 2021). According to the market research company SuperData, a game developed by Epic Games generated over US\$1 billion of microtransactions in the first seven months after release (Zelada, 2018). Microtransactions are also an important revenue component for Electronic Arts (EA) (Narayan, 2020), which in 2020 made three times as much revenue from microtransactions than from selling games (Böttcher, 2020). Those examples show that microtransactions are an important source of revenue for the gaming industry.

2.2 Crowdfunding

A multitude of people working on a given task is also called crowdsourcing if the

task is specified by an organisation (Howe, 2006; Estellés-Arolas & González-Ladrón-de-Guevara, 2012; Poetz and Schreier, 2012; Goodman and Paolacci, 2017; Ghezzi et al., 2017; Füller et al., 2021). There are different variations of crowdsourcing, such as finding ideas, solving problems, the identification of patterns or the distributed sharing of computing power to decode specimens (Feldmann et al., 2013; Chan and Parhankangas, 2016; Wang et al., 2018; Jora and Georgescu, 2017). The term ‘crowdsourcing’ is a portmanteau of crowd and outsourcing, meaning that the integral processes of the firm are carried out by an external group of supporters on behalf of the organisation (Howe, 2006; Wazny, 2017). As consideration for services rendered, the organisation offers remuneration, appreciation, or other material or immaterial benefits (Blohm et al., 2017; Cismaru and Ciochina, 2018). Other variations of crowdsourcing

include crowdsourced production, distribution, R&D or human resource management (Klumpp, 2016; Konhäusner, 2021; Seghezzi and Mangiaracina, 2021).

A special form of crowdsourcing, by which external supporters provide monetary means for an organisation, is called crowdfunding (Assenmacher, 2017; Beier et al., 2019; Cowden and Young, 2020; Elmer et al., 2020). Besides benefitting from the provision of monetary funds, crowdfunding also includes long-term marketing effects (Brown et al., 2017; Sayedi and Baghaie, 2017; Konhäusner, 2021). This special category of crowdsourcing is divided into four sub-categories which use different techniques and also have different financial aims (Belleflamme et al., 2014; Haas et al., 2019). Table 2 provides an overview of the different categories and also includes examples thereof.

Table 2. Categories of Crowdfunding

Category	Benefits for Supporters	Examples
Reward-based crowdfunding	Mentioning the name, product/service itself, as well as additional benefits (meet the team etc.)	Some of the biggest campaigns include Star Citizen, Pebble Watch, Elio Motors
Lending-based crowdfunding	Return of money including interest	Private loan for a new car; business loan for a new project
Equity-based crowdfunding	Return of money including interest; direct contact/influence on company; share of profit	Real estate projects, SMEs and start-ups
Donation-based crowdfunding	Good conscience; sometimes mentioning the name	Different projects similar to offline donations

Source: Haas et al., 2014; Assenmacher, 2017; Blohm et al., 2017; Parker et al., 2018; Beier et al., 2019; García-Teruel, 2019; Cicchiello and Leone, 2020; Konhäusner, 2021; Konhäusner et al., 2021

The reward-based crowdfunding method is widely used for pre-selling campaigns and product innovations (Roma et al., 2018; Beier et al., 2019; Shneor et al., 2021). The campaign runners present a concept and offer rewards to supporters, while the crowd provides monetary funds for developing the product or service (Butticè and Noonan, 2019; Kunz et al., 2020; Raab et al., 2020). In return,

the rewards include mentioning the names of supporters, the product or service itself (as soon as released) and direct contact with the team (Kraus et al., 2016; Chakraborty and Swinney, 2021). The risk for supporters is the loss of their money should the campaign runners fail to deliver the promised rewards (Tuo et al., 2019; Kula, 2020). The lending-based crowdfunding category is also referred to as

peer-lending, where a crowd of people gives money to a specific person or project (Fenwick et al., 2017; Becker et al., 2017; Sanchis-Pedregosa et al., 2020). After a determined timeframe, the money, plus interest, should be returned (Pierrakis, 2019; Moysidou and Hausberg, 2020). Banks increasingly recognise this method as a distribution channel for their services (Blohm et al., 2016). Equity-based crowdfunding offers supporters the opportunity to have direct communication and an influence on the organisation while benefitting from possible profits in the long term (Ahlers et al., 2015; Löher, 2016; Buerger et al., 2017; Hornuf and Schvienbacher, 2018; Cicchiello et al., 2020; Rossolini et al., 2021). This category of crowdfunding links the campaign runner and the supporter together for a longer time (Gábossy, 2016; Eldridge et al., 2019). Donation-based crowdfunding provides monetary funds to projects without the promise

of any returns (Zhang et al., 2020; Behl et al., 2020). Platforms aimed at donation-based crowdfunding target a large audience, but are in direct competition with offline donations, not providing additional benefits on top in comparison (Salido-Andres et al., 2020). Furthermore, platforms suffer the hurdle of abuse of trust as the many projects for donation-based crowdfunding are not screened as strictly as others because of a lack of resources (Dushnitsky and Fitza, 2018; Scataglini and Ventresca, 2019). Critics claim that the typical monetisation method of platforms (commissions based on transactions) do not suit the cause of donations, though they are additionally used for CSR purposes (Rijanto, 2018). The choice of the crowdfunding platform directly impacts the outcome of the campaign (Lacan and Desmet, 2017). Table 3 shows examples of platforms for the respective crowdfunding categories.

Table 3. Examples of crowdfunding platforms

Category	Example of platform
Reward-based crowdfunding	Kickstarter, Indiegogo, KissKissBankBank
Lending-based crowdfunding	Auxmoney, Mintos
Equity-based crowdfunding	Seedrs, Companisto, Wefunder, AngelList
Donation-based crowdfunding	Leetchi, Facebook, JustGiving, GoFundMe

Source: Rossi and Vismara, 2017; Dushnitsky and Fitza, 2018; Parker et al., 2018; Petitjean, 2018; Stallkamp and Schotter, 2019; Konhäuser, 2021; Saluzo and Alegre, 2021; Taeuscher et al., 2021

Although the volume of monetary funds provided by donation-based crowdfunding has risen in recent years, the area has experienced little research interest. The reasons for this could be that the economic interest is low and offline donations have been thoroughly examined over the years (Liang and Renneboog, 2017; Paxton et al., 2020). Donation-based crowdfunding ranks second behind reward-based crowdfunding in terms of volume of funds raised (Schmidt, 2020). With platforms such as Facebook acting as crowdfunding infomediaries, research shows a deviation in terms of total

volume of donation-based crowdfunding due to different definitions. As of 2020, the annual amount raised globally by donation-based crowdfunding is between US\$600 million and US\$20 billion (Massolution, 2016; Fietkiewicz et al., 2018; Sihi, 2018; Cambridge Judge Business School, 2020; Jin et al., 2020).

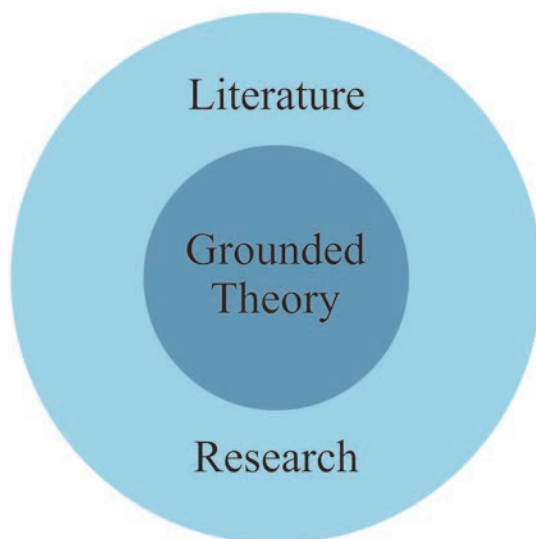
3. Method

As the research question of this paper pertains to how game developers or publishers use crowdfunding techniques to raise mon-

ey, a qualitative overview of the research area should be undertaken. To analyse a previously unknown field of interest and obtain information about possible patterns in a qualitative way, the grounded theory approach can be used (Glaser and Strauss, 1967). The basic steps of the analysis include the observation of cases, concept generation, category development, and the final step of developing a theoretical framework (Faggiolani, 2011; Corbin

and Strass, 2014). Research on gaming projects using crowdfunding to raise money is ongoing, so the present paper aims at the blind spot where game developers or publishers gather a crowd to raise money for projects outside of their organisation. To realise a holistic view of the topic matter, the grounded theory has therefore been adapted and expanded to include the literature research results on known topics in this field (Figure 1).

Figure 1. Adapted Grounded Theory Approach



Source: Own elaboration based on Glaser and Strauss (1967) and Faggiolani (2011)

For this purpose, different games were systematically searched via Google. At first, different free-to-play games were sought and analysed. After collecting information about free-to-play games, especially online games with charity events in the past were searched for. The last category of games that was part of the research were mobile games with a huge community of users. For every analysed game which had held such a charity event in the past, different information was extracted. In the end, 13 games were subjected to analysis to obtain an overview of the topic. These games are well-known and successful. Due to time constraints and limited

research time, those 13 examples are considered sufficient for an overall overview of the general crowdfunding situation within the gaming industry. The collected data is mainly taken from various online websites and online articles in gaming magazines from all over the world. Those sources of information were also documented. For the results of this investigation, a table with the following criteria was created: the title, the publisher/developer, the release, the pricing, the genre, the platform on which it was released, the kind of donation, and the sources of that information (Table 4).

Table 4. Research criteria

Criteria	Usage	Sources
Game	It is important to name the title and the publisher/developer and the release of the game to get a certain understanding of which game is meant. Another interesting piece of information is whether the game is focused on online mode or offline mode. Games which use both modes may be said to have a hybrid focus. Also, the location of the developers' headquarters could lead to interesting information for further research questions.	Smith 2014
Offline/Online		Massarczyk et al., 2019
Publisher/Developer		
Headquarter Developer		
Release (Full Launch)		
Pricing	The pricing of a game shows if it is a free-to-play game or if there are costs involved in the purchasing of this game. The genre of a game shows the type of game and the criteria platform shows the different platforms where the game is available. With the help of this information, it is possible to check if certain pricing models, genres or platforms receive more donations by organising more charity events than others.	Apperley, 2006
Genre		Huang et al., 2017
Platform		
Donation cause	It is important to check the kind of donation for every charity event. This information shows the purpose of the money donations. Also, the amount of the donation is interesting for further research.	Alinikula et al., 2014
Donation amount		
Type of charity	With the type of charity, it is possible to be aware of the timeframe of the charity event. The events are divided into short-, medium- and long-term events. In this paper, short-term events are defined as events that do not last longer than 24 hours; medium-term events are events that take a couple of days; and all events that last one month or longer are defined as long-term events.	own definition

Source: Own elaboration

Table 4 shows the different criteria which were analysed with a corresponding explanation. At the beginning, the game itself was analysed to obtain certain information about the game and its assets in general. After this initial analysis, the charity events of those games were subsequently analysed. The collected data is mainly taken from online articles of renowned game magazines from all over the world. The last column contains these references as well as the date of retrieval.

Following the observation of cases, descriptive statistics were used to find patterns in order to generate concepts. One of the concepts generated indicates the length of the crowdfunding engagement. Other concepts focus on online-centric games and games which need to be purchased. All concepts have in common the fact that more informa-

tion shared tends to lead to a higher level of community engagement.

The concepts generated could be divided into multiple categories, which were merged with the literature research results in the next step of the adapted grounded theory approach. This resulted in a total of six different categories. It was possible to create the theoretical framework in the last step of the approach.

4. Research results

The following research results refer to the adopted grounded theory approach. The research results are stored in a table which is in Table 12 – in the appendix. The following results are arranged according to the framework of the four steps of the adopted grounded theory approach.

4.1. Observation of cases

During the research it turned out that, with the help of the campaigns, money is collected to support charity organisations. The following table provides a short overview over

the 13 games which were the subject of analysis. In this table, the name and genre of the game are shown. The full table is attached in the appendix.

Table 5. Overview

No.	Game	Focus	Genre
1	GTA 5 / Online	Hybrid	Action, Third-Person Shooter
2	Red Dead Redemption 2/ Online	Hybrid	Action-Adventure
3	Halo 5 Guardians	Hybrid	Shooter
4	NBA 2K (19 and 20)	Hybrid	Basketball simulation
5	League of Legends	Online	Multiplayer online battle arena (MOBA)
6	World of Warcraft	Online	Massively Multiplayer Online Role-Playing Game (MMORPG)
7	Hearthstone	Online	Trading Card Game (TCG)
8	Pokémon GO	Online	Location-based Game
9	World of Tanks	Online	Multiplayer Online Game (MMO)
10	Call of Duty: Modern Warfare	Hybrid	Ego-Shooter
11	Neverwinter	Online	Massively Multiplayer Online Role-Playing Game (MMORPG)
12	Star Trek Online	Online	Massively Multiplayer Online Game (MMO)
13	Paladins	Online	First-Person Shooter

Source: Own elaboration

Table 5 shows that most games included in the research sample focus on online gameplay. Furthermore, four of the 13 games are assigned to the Shooter genre. Two of the other games are massively multiplayer online role-playing games (MMORPG), and the remaining seven games are assigned to different gaming genres. On the whole, the Shooter genre is the most common genre for collecting money for charity events via crowdfunding. Overall, the table shows that the games from the research sample represent a broad spectrum of different game types. This re-

search shows that all 13 crowdfunding campaigns are charity events. For this purpose, the gaming industry uses microtransactions, whereby the gamer still receives an intangible good and a certain amount of money from this transaction goes to charity organisations.

4.2. Concept generation

The following research information shows descriptive facts about the different games themselves. An overview about the different descriptive facts and their individual expressions can be found in Table 6.

Table 6. Aggregation of research findings

Descriptive fact	Distribution in %
Platform	
Multiple Platforms	76.92
One Platform	23.08
Pricing	
Free to play	46.15
Pay to play	53.85
Developer Headquarter	
USA	76.92
Scotland	7.69
Cyprus	7.69
Japan	7.69
Type of Charity	
Long-term event	38.46
Medium-term event	23.08
Short-term event	7.69
Timeframe unknown	30.77
Donation Amount (in \$)	
Donation >= \$1 million	30.77
Donation < \$1 million	23.08
No information	46.15

Source: Own elaboration

The summary offers various insights into the research results. Comparing the different platforms, it is shown that most games (10 out of 13) are available on different platforms, while only three games are available on only one kind of device. Consequently, more pos-

sible backers can be found if the game is available on multiple platforms. When it comes to pricing, the gamer is obliged to purchase the game in the case of seven out of 13 games. The table shows that the pricing of the games is balanced. In terms of the location of the de-

velopers' headquarters, it is obvious that most games are produced in the USA. Only three games were developed in other locations. An overview of the length of charity events was also provided, showing that most events are long-term events (five out of 13 events last one month or longer), three events last a couple of days (medium-term events) and only one event is a short-term event (with a duration of 24 hours or less). The results show that there are also four unknown timeframes. In this case an assignment to a certain type of charity is not possible as the information is not available. Observing the type of charity, it is shown that long-term events are often used for gaming crowdfunding events. When

analysing the amount of the donation, it should be noted that if a game had more than one charitable cause, the average donation amount was calculated and categorised (see League of Legends). Most games do not publish details of how much money they donate to charity organisations. In addition, the table at hand shows that the donation amount is balanced between very high donations (US\$1 million or more) and medium donations (less than US\$1 million).

In order to examine different patterns, the development of cross tables is necessary. With the help of the following tables, different patterns may be examined.

Table 7. Cross table – type of charity & pricing

	Long-term event	Medium-term event	Short-term event	Timeframe unknown	
Free-to-play	N/A	7.69%	7.69%	30.77%	46.15%
Pay-to-play	38.46%	15.38%	N/A	N/A	53.84%
	38.46%	23.07%	7.69%	30.77%	100%

Source: Own elaboration

Taking a closer look at the pricing and the type of charity (Table 7), it can be seen that games which a user is obliged to purchase commonly hold long-term charity events. In

comparison, the timeframe for free-to-play games for charity events is often unknown or corresponds to short-term events.

Table 8. Cross table – type of charity & donation amount

	Long-term event	Medium-term event	Short-term event	Timeframe unknown	
Donation >= \$1 million	7.69%	15.38%	N/A	7.69%	30.76%
Donation < \$1 million	N/A	N/A	N/A	23.08%	23.08%
No information	30.77%	7.69%	7.69%	N/A	46.15%
	38.46%	23.07%	7.69%	30.77%	100%

Source: Own elaboration

Table 8 shows that most long-term events do not show how much money was collected through donations. Another standout fact

is that medium-term events especially were quite successful, as a significant amount of money was collected in this timeframe.

Table 9. Cross table – offline/online & donation amount

	Offline	Online	Hybrid	
Donation >= \$1 million	N/A	23.08%	7.69%	30.77%
Donation < \$1 million	N/A	23.08%	N/A	23.08%
No information	N/A	15.38%	30.77%	46.15%
	0%	61.54%	38.46%	100%

Source: Own elaboration

Table 9 shows that there are no offline games represented in this research. Furthermore, it is shown that games which the user plays online make the most money via donation events in comparison to hybrid games.

The research presented seven different clusters.

1. When taking a closer look at those donation events, it is clear that information is often missing, whether information about the donation amount or about the charity type. Generally more information would be needed to make more detailed assumptions based on the research cases (case # 1, 2, 3, 4, 7, 8, 9, 11, 12, 13).
2. With a sufficient amount of information, we may infer that long-term events and medium-term events are quite successful (donation amount >= US\$1 million) (case # 5, 6, 10).
3. Offline games tend not to organise donation events. More data and more cases are needed to draw exact conclusions about this observation (no cases).

4. Hybrid games do not provide information about the amount raised by their donation events. More information would be needed to draw meaningful conclusions (case # 1, 2, 3, 4).
5. Games the user plays online often show information about their donation amounts, and furthermore they are highly successful (case # 5, 6, 10).
6. Games the user needs to purchase often organise long-term events. They do not organise short-term events (case # 1, 2, 3, 4, 6).
7. Games which are free to play often do not communicate in which timeframe they organise donation events. More information for free-to-play games is needed to draw more accurate conclusions about this observation (case # 8, 9, 11, 12).

The seven clusters may be assigned to four main categories. It is also possible that there are overlapping categories. The following table shows the clusters assigned into the four new categories including the case numbers (Table 10).

Table 10. Research categories

No.	Category	Cluster #	Case #
1	Long- & medium-term & successful (>= US\$1 million)	2	5, 6, 10
2	Online games are transparent & successful (>= US\$1 million)	5	5, 6, 10
3	Need to purchase & organise long term events	6	1, 2, 3, 4, 6
4	More information needed for detailed conclusions	1, 3, 4, 7	1, 2, 3, 4, 7, 8, 9, 11, 12, 13

Source: Own elaboration

4.3 Category development

From the concepts analysed and described in section 4.2 and taking the current research status into consideration, categories for the development of a theoretical framework can be deduced. In this step, the adapted grounded theory approach offers the opportunity to amend literature research elements into category development to complete the

picture. Out of the four concepts developed in 4.2, three have been transferred into the category stage, which consequently results in the creation of six categories. Cases providing too little information for conceptualisation have been excluded (see own research 4.2: more information needed for detailed conclusions). Table 11 shows the different categories.

Table 11. Deducted categories

No.	Name / Coding	Description	Source
1	DON-LON-SUC	Donation-orientated crowdfunding campaigns by game companies with enough information and running in the medium or long term are successful	Own research (see 4.2: Number 1)
2	ONL-TRA-SUC	Online-orientated games running a crowdfunding campaign for a charity providing transparent information are successful	Own research (see 4.2: Number 2)
3	PUR-LON	Pay-to-play games organise more long-term donation-based crowdfunding campaigns	Own research (see 4.2: Number 3)
4	REW-CF	Reward-based crowdfunding campaigns for game projects (e.g. on Kickstarter, Indiegogo etc.)	Cha, 2017
5	RUN-COS	Microtransactions in games which cover the short- to medium-term running costs of the organisation (not user binding)	Hart, 2017
6	EQU-BAS	Equity-based crowdfunding for gaming companies (e.g. Fig.co) – no different than other equity-based crowdfunding approaches	Nucciarelli et al., 2017

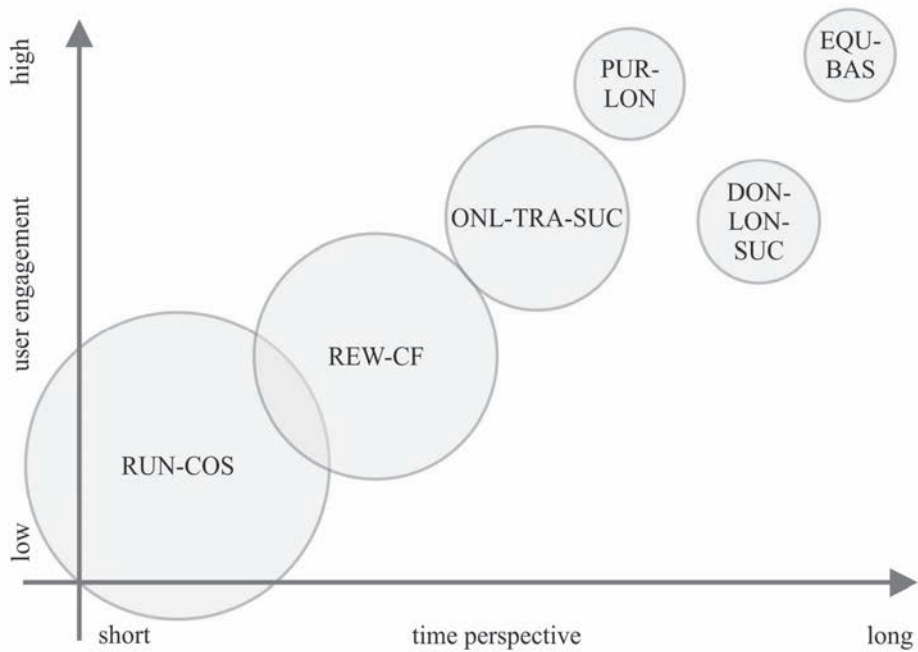
Source: Own elaboration

4.4. Theoretical framework

The theoretical framework deriving from the observations and the application of the adapted grounded theory approach lead

to answering the research question. Taking the six different categories from section 4.3 into account, the theoretical model can be visualised as a two-axis matrix (Figure 2).

Figure 2. Theoretical framework



Source: Own elaboration

Figure 2 shows that the six categories identified cover most of the cases of gaming companies involved in crowdfunding. The different categories are plotted according to their two main characteristics: on the one hand, the user engagement being triggered by the specific model; and on the other hand, the timely perspective which the respective campaigns are typically aiming at. The size of the different circles encompassing the category descriptions in the figure symbolise the perceived influence on the entertainment industry as well as the frequency of occurrence of the respective model according to literature research and one's own observation. Nevertheless, the illustration also shows that there is room for future developments: concepts for high user engagement through crowdfunding in the short term as well as for low user engagement in the long run are missing. A possible answer to the question of why these con-

cepts are missing could be that crowdfunding per se engages more users the longer the campaign runs.

5. Discussion

The research findings at hand complement the ways in which digital businesses monetise their offer (Meier and Stormer, 2012). Apart from demanding a specific price for a whole game or offering intangible goods within a free game, the research showed, from a meta perspective, that game developers use external, third party initiatives such as charities to incentivise their own community to spend money. Furthermore, the campaign runner uses external influences to attract customers, profiting from marketing effects.

The proposed framework (see 4.4) extends the research done by Bradley et al. (2012) and Demchenko (2019) on offer-

ing intangibles by adding new categories, which have gained influence in recent years. Focusing on the gaming business, the study at hand shows new ways of monetising the player base, which is often a major challenge for developers and publishers (Beltagui et al., 2019).

Another interesting finding of the research is that most of the campaigns target desktop/stationary players, while mobile players are not targeted. The reason for this may be the different purchasing power of PC and mobile gamers (Park and Lee, 2011; Yang et al., 2018). Taking the research of Fang et al. (2019) into consideration, the potential for initiatives in the mobile games sector can be vast, as can the social influence of word of mouth.

As Zeddyzed (2019) pointed out, microtransactions per se could be seen as donations to the developers or the publisher. As this represents the common market mechanism and other goods and services are also crowdfunded in this regard (sharing overhead costs), it is merely a promotional re-naming. On the other hand, if talking about a digital entertainment product becoming a platform itself to raise money for an outside initiative, the business model changes. Engaging with third party initiatives through a gaming environment is a means of gamification and can engage new target audiences (Hassan, 2016). In terms of gaming addiction and the negative side effects of digital entertainment consumption (Smeureanu and Isaila, 2017; Bratu, 2019; Drugău-Constantin, 2019; Hollowell et al., 2019; Mircică, 2020), supporting these initiatives can help to connect with society and members of the community (Montag et al., 2019).

From a crowdfunding perspective, the study opens up a new perspective on possible donation-based models. Offering game contents as intangible goods, which inflict low marginal costs (Rifkin, 2019), makes it possible to obtain actual rewards

(as in reward-based crowdfunding), while additionally contributing to a good cause. This ties into the findings of Zhang et al. (2020) on the importance of interaction and collaboration for donation-based crowdfunding platforms. In this regard, an already pre-defined group of individuals with common characteristics (playing the same game) strive to reach a collective goal (support the charity). Moreover, the present study makes it possible to analyse possible gender-based impacts on crowdfunding endeavours in the digital gaming field (Cicchello et al., 2021).

Conclusions

The paper at hand answers the research question of whether game publishers and developers make use of crowdfunding, applying an adapted grounded theory approach in a holistic way. Furthermore, different reasons for using this alternative financing option were highlighted. The chosen methodological approach offered the possibility of analysing an observed compact data set of past crowdfunding campaigns. While traditional sales of microtransactions aim to finance the running costs of a digital entertainment organisation, reward-based crowdfunding campaigns are used to enable the production of specific games, while equity-based crowdfunding offers the option for supporters to become part of the gaming company in the long run. Besides the categories derived from the literature review, our own observations reveal that three different types of donation-based crowdfunding techniques are applied by games publishers: online-orientated, need to purchase, and highly transparent. The study reveals that in this regard the games themselves become platforms for donation-based crowdfunding. While not financially benefitting from commissions earned, the game as a brand as well as the developers and publishers raise aware-

ness and also earn the loyalty of the players by emotionally connecting them with a good cause. The six categories identified, while different in terms of frequency of occurrence and influence, form a theoretical framework, which also indicates that there is still room for alternative monetisation methods (high user engagement in the short term; casual user engagement in the long run). Future research and practical findings will show if these highlighted fields can be populated.

The adapted grounded theory approach used in this research extends the widespread empirical research method and combines it to give a mixed-method approach with a literature review. Future applications will show how suitable this approach proves to be for different scenarios. Furthermore, the addition of other research methods to the adapted approach seems to be of interest. This study highlights how an adapted grounded theory approach is able to open up perspectives on novel subjects of interest. Upcoming studies will show if this adapted grounded theory approach can be used as a general concept.

The research shows that the gaming industry uses microtransactions as a new tool for crowdfunding, revealing that charity events especially were supported via in-game microtransactions. It should be emphasised that long-term events tend to be more successful. From this observation may arise the recommendation that game publishers should organise long-term events to raise money for good causes and, consequently, raise their own brand awareness. The findings also highlight that campaigns providing more information and aimed at desktop players are more successful. It will be interesting to see how the industry can also incentivise mobile gamers. For other stakeholders such as donation-based crowdfunding platforms, possible cooperation with game publishers and developers to reach a new target audience and raise

awareness could make sense. Supporters benefit from the in-game donation events as a mixture of donation-based and reward-based crowdfunding. One of the major practical implications derived from this study consists of the opportunity for game developers to use crowdfunding as a marketing tool to enlarge and use their audience reach.

Limitations of this study include the fact that game developers and publishers are not transparent about their crowdfunding efforts, consequently hindering data gathering and analysis. Generally, data on microtransaction revenues is limited in the industry. The study is limited to popular games, excluding smaller titles, which might also include donation aspects (e.g. titles funded and released on the Steam platform).

For further research, the comparison of the differences in online and offline games regarding donation-based events could open up an interesting perspective. Such research would make it possible to distinguish whether donation events are more common online or offline, and if they are more successful in one kind of gaming. Another question could be if the success of those donation-based events is related to the genre of the game where the event takes place. Overall, more detailed data and information could help to generate more specific conclusions. Also, the kind of donation event could be analysed in more detail, as there are more methods to collect money than only via microtransactions (e.g. crowdfunding streaming). Insights gathered by expert interviews with executives of digital entertainment organisations may add additional value to the picture.

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Appendix

Table 12. Research Findings

Game	Online/Offline	Publisher/Developer	Headquarter	Release (Full Launch)	Pricing	Genre	Platform	Donation Cause	Donation amount	Type of Charity	Sources
Redemption 2 The Sims 4 Warcraft	hybrid	Rockstar Games/ Rockstar North	Edinburgh, Scotland	2013 (PS4, Xbox One), 2014 (PS4, Xbox One), 2015 (PC)		Action, Third- Person-Shooter	PC, PS3/4, XBOX 360/One/Series X	5 % from In-Game revenue from April 20 until July 20 due to the pandemic	no information	long term event	https://www.rockstargames.com/GTAonline https://gta.fandom.com/wiki/Grand_Theft_Auto_Online https://www.rockstargames.com/thesims4/ http://www.battle.net/warcraft https://www.rockstar.com/covid-19-relief https://pc.gamespot.com/en-us/news/rockstar-games-will-donate-5-of-their-revenue-to-covid-19-relief https://https://pc.gamespot.com/en-us/news/rockstar-games-will-donate-5-of-their-revenue-to-covid-19-relief https://www.rockstarnorth.com/ https://gta.fandom.com/wiki/Grand_Theft_Auto_V https://www.rockstargames.com/redemption2/ https://www.rockstargames.com/thesims4/ https://www.rockstargames.com/thesims4/et/2004-CUSADSL19_00REDEMPTION00002 https://news.ign.com/gd/redemption-auto-online-192524-rockstar-games-will-donate-5-of-their-revenue-to-covid-19-relief https://news.ign.com/gd/redemption-auto-online-192524-rockstar-games-will-donate-5-of-their-revenue-to-covid-19-relief https://redemption.fandom.com/wiki/Red_Development_2
Halo 5 Guardians	hybrid	Microsoft Studios / 343 Industries	Redmond, USA	2015 (Xbox One)		Shooter	Xbox One, Xbox Series XS	Entirety proceeds of revenue from April 20 until July 20 due to the pandemic	no information	long term event	https://www.microsoft.com/de-de/halo-5-guardians https://www.xbox.com/games/halo-5-guardians https://www.halo5game.com/news/action-revenue-to-fight-coronavirus https://www.gamingglobal.de/spiele/7113/Halo-5-guardians
NBA 2K (10 and 11)	hybrid	2K Sports / Visual Concepts	Novato, USA	2018		Basketball simulation	PC, PS3/4, Xbox One, Switch, Android, IOS	5 % of sales revenue from April 20 till end of May 20 due to the pandemic	no information	long term event	https://store.steampowered.com/app/941370/NBA_2K19/ https://nba.fandom.com/wiki/NBA_2K19 https://www.gamingglobal.de/spiele/60952/nba-2k20 https://hackr.io/article/nba-2k19 https://store.steampowered.com/app/1088950/NBA_2K20 https://www.gametracker.com/profile/1113/WNB0-5-guardians
League of Legends	online	Riot Games Inc., GMA Tecon Holdings Ltd / Riot Games	Los Angeles, USA	2009	Free 2 play	Multiplayer online battle arena (MOBA)	PC	100% from certain skins purchased due to pandemic; timeframe: 25.06.21-23.07.21 100% from certain skins purchased due to red cross (tsunami Japan); timeframe: 21.03.11-27.03.11	2 million US Dollar 142.000 US Dollar	medium term event medium term event	https://riot.com/pages/aboutus https://leagueoflegends.fandom.com/wiki/League_of_Legends https://www.leagueoflegends.com/de/news/detail/leagues-of-legends-announces-a-new-event-for-the-red-cross https://www.riotgames.com/en/cs/r/players-raise-over-180-000-for-the-red-cross https://www.riotgames.com/en/news/all-hands-off-efforts-to-help-with-the-pandemic https://social.impact2020-update
World of Warcraft	online	Blizzard Entertainment	Irvine, USA	2004		Massively Multiplayer Online Role-Playing Game (MMORPG)	PC	gift as incentive, due to pandemic ("Aztec one Greenleaf V.7, Emerald Isle: 24.03.21-26.04.21.	1 million US Dollar	long term event	https://www.blizzrd.com https://eu.battle.net/warcraft http://www.worldofwarcraft.com https://www.worldofwarcraft.com/news/380634.html https://na.shop.battle.net/en-gb/product/world-of-warcraft-subscription https://worldofwarcraft.com/de/news/39754/daily-leagues-haltes-jetzt

