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The game is changing: business model and value network innovation in the video game industry

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Abstract

Innovation, under both a technological and a more endogenous perspective, has changed the structure of the actors involved in doing business and business models themselves across many different industries. Through the use of both primary and secondary qualitative data in support of an exploratory and inductive research, the objective of this thesis is to present an empirically founded outline of the historical evolution of doing business in the video game industry in order to identify the major innovations occurred, focusing on new business models and new actors and relations emerged in the industry value chain. Furthermore, the study also investigates consumers' attitude towards the latest advancements of the industry in order to explore possible future market developments. Based on the current research of business models and value chain, the author adapted and merged existing frameworks in order to apply them to the video game as a business and to achieve the first two above-mentioned goals. This allowed the identification of innovations in every aspect of the value creation, delivery and capture process, as well as in the succession and the overlap of new and old actors involved in the process. Finally, a survey was distributed among a diversified sample of gamers to investigate their general gaming habits and their attitude towards some selected recent industry advancements in order to explore possible future market developments. Among key findings of the research there is the shift from firm- to user-originated value and from game as a product to game as a service (GaaS), with consumers strongly contributing to the value creation process and customizing their own game experience. Furthermore, revenue models also experienced strong innovations aimed at leveraging free distribution to fully exploit the recent market expansion. Finally, the survey highlighted a high consumers' adoption of relatively new industry advancements such as gaming video contents and their strong interest toward

technologies in development like virtual reality headsets, resulting in recommendations for corporate actors involved in the chain with regards to new channels and technologies to invest on. The study contributes to the existing literature of the video game industry by providing a comprehensive and dynamic understanding of the evolution and innovations occurred in every aspect of doing business in the reference industry, with a focus on consumers' attitude toward its latest advancements.

Introduction

The video game industry has reached a US$138 billion turnover in 2018, qualifying as one of the fastest growing in the broader entertainment and media grouping. Within this larger category, the video game industry is the only one to be digitally "native", therefore being on the cutting edge of novel developments that have been mainly shaped by digitalization in recent times. Digitalization, apart from creating new opportunities, also threatens old ways of creating, delivering and capturing value, enhancing the dynamism of the video game business. As a matter of fact, even though the industry is a relatively young one with its approximate fifty years of life, it has experienced a huge amount of innovation in many different times. These novelties came from both hardware, eased by technology improvements, and, more endogenously, software and managerial intuitions. These innovations and the many creative ways introduced to exploit them resulted in uncountable new ways of doing business that gave life to just as many potential business models to employ, sometimes making old ones obsolescent.

The objective of this thesis is to present an empirically founded outline of the historical evolution of doing business in the video game industry in order to identify the major innovations occurred, focusing on new business models and new actors and relations emerged in the industry value network. Furthermore, the study also investigates consumers' attitude towards the latest advancements of the industry in order to explore possible future market developments.

To fulfill the above-mentioned goal, Chapter 1 introduces the reader to the topic by an overview of two sets of industries the video games one belongs to: creative and cultural industries (CCI) and entertainment and media (E&M) industries. For these categories, business volumes, figures and features and trend affecting all of their subsets are presented. This overview is useful to contextualize the subsequent

analysis of the video game industry and to highlight broader trends and leading phenomena so powerful to affect a huge amount of different businesses. Next, the video game industry history is presented and followed by the analysis of today's gaming market, its leading features, trends and advancements. This landscape, built upon the collection of secondary data, has the aim of introducing the reader to the theme of this thesis and of making him/her familiar with many concepts that reveal themselves fundamental to the analysis conducted in the following chapters and that will be further deepened with regard to players' attitude.

The following part of the study is situated in the business model (Chapter 2) and video game value network (Chapter 3) literature.

For a long time, researches concerning the business model were static, drawing a picture of a firm's business in a specific moment (De Reuver, Bouwman and MacInnes, 2009). Nevertheless, the concept of business model evolution recently increased in relevance in the related literature (Foss and Saebi, 2017). However, strong inconsistencies across researches with regard to business model definition do not allow comparability among studies. This thesis adopts the definition introduced by Osterwalder, Pigneur and Tucci (2005) and the related business model innovation notion together with the business model canvas framework (Osterwalder and Pigneur, 2010), adapting them in order to be applied to a single product (video game) as the reference business instead of a firm. With regard to business model studies in the video game industry, despite innovation has been investigated by some authors, none of them aimed at exploring business model evolution throughout the whole industry of the industry and focusing on all the aspect of doing business. As a matter of fact, some researches present a general comparison between old and new spot business models (Rayna & Striukova, 2014; Goumagias, et al., 2016); others focus on specific segments of the industry like mobile gaming (Lescop & Lescop, 2014) or

specific building blocks of the canvas, such as revenue models (Huang, 2016). These studies fail to provide a comprehensive and dynamic understanding of the business model innovation in the industry through time as this thesis aims. The same happens to value chain, where even less literature treats the concept at the industry level and fewer studies apply it to video games (Normann and Ramirez, 1993; Sawyer, 2005). This research aims at addressing these gaps in the literature. To accomplish the above-mentioned goal, an introduction of the business model concept and the business model canvas framework opens Chapter 2, together with their re-adaptation for extending the scope of the analysis to the video game as a business. Afterwards, innovations occurred from the birth of the industry in all the nine building blocks of the revised framework will be identified and discussed thanks to the information acquired from secondary data. Furthermore, the findings of this chapter, together with some of the main industry recent advancements identified Chapter 1, will be supported by the analysis of business cases of different video games or industry-related products.

With regard to the industry value chain literature, the situation is very similar, with few authors extending the value chain concept to an industry-wide level (Normann and Ramirez, 1993; Allee, 2009) and fewer applying it specifically to the video game industry (Sawyer, 2005). For this topic, the value chain concept will be extended to the value network, comprising all the actors involved in a given industry. Sawyer's (2005) identification of multiple "layers" of roles, performed by different actors active in the video game industry, will follow. This framework will be used to identify, from a value network relational perspective and with the support of secondary data, the main innovations occurred in each layer throughout history. The aim of the chapter is the identification of new actors of the industry network that may

have replaced old ones or started collaborating with them in the fulfillment of old or newly introduced tasks throughout the industry history.

Furthermore, the final part of the analysis (Chapter 4) is a survey regarding players' gaming habits, preferences and attitude towards business model and value network innovations identified in chapters 2 and 3 and recent industry advancements highlighted in Chapter 1. The stated aim is investigating their general gaming behaviors and their perception of and attitude towards the latest advancements of the industry identified through the study. Possibly, the finding of the study will also serve to deduce recommendations for the main actors of the industry value network. In terms of methodology, this survey has been written and published online using the cutting-edge software Qualtrics. The related link has been shared with friends, gamers' communities and social networks in order to ensure a demographically differentiated pool of 246 respondents. Participants were asked to answer 34 to 62 questions related to their video game consumption habits with a focus on some of the latest video games innovations such as online gaming, F2P and freemium models, in-game purchases, virtual and augmented reality, Esports and gaming video content. These questions may be both multiple choices with single or multiple answers, open-ended and ranking questions.

First Chapter: CCI, E&M and Videogames Industry Overview

This chapter features an introduction of two broad categories of industries, which the video game one is included in: creative and cultural industries and entertainment and media ones. This overview is useful to contextualize the subsequent analysis of the video game industry and to highlight broader trends and leading phenomena so powerful to affect a huge amount of different businesses. Next, the video game industry history is presented and followed by the analysis of today's gaming market, its leading features and trends. This landscape has the aim of introducing the reader to the theme of this thesis and of making him/her familiar with many concepts that reveal themselves fundamental to the analysis conducted in the following chapters.

1.1 Creative and Cultural Industries Highlights

Before starting to talk about the videogames industry, its history, features, data and recent trends, it appears suitable to introduce a broader category in which it is classified, that is, creative industries.

Throughout history, people always have had cultural skills and exploited them, giving life to creations whose value was not uniquely functional. Furthermore, the outputs of this process, driven by creativity and inspiration, have often found someone who was willing to purchase them. This represents the core of the creative economy. Nevertheless, the creative economy, as most of us understand it nowadays, was truly born when the above-mentioned ancient custom merged with novel commercial practices such as advertisement, modern marketing and, most of all, with the rise of the digital era. This led to the birth of industries that managed to create both economic and cultural value, therefore called "creative and cultural industries"

(CCI) or "creative and digital industries" or, most recently, "orange economy" or, lastly and more simply, "creative industries"[1].

This combination of different values makes difficult to reach a common definition of creative industries and to measure their extent, also considering that, in 2008, there were more UK's "creative people" working outside the creative industries than inside them, making the scope of the creative economy much wider than the creative industries' one[2]. Nevertheless, throughout years, many institutions and organizations have followed one another giving their definitions of creative industries.

The first definition was advanced by the lately created UK governmental Department for Culture, Media and Sport (DCMS) in 1998, and it was contained in the first mapping document of creative industries that represented the first attempt to measure them[3], succeeded by a follow-up document in 2001[4]. The report opened everyone's eyes with regard to the economic significance of UK's creative industries and defined them as *"those industries which have their origin in individual creativity, skill and talent and which have a potential for wealth and job creation through the generation and exploitation of intellectual property* (IP)*"*. From this definition DCMS also derived a list of 13 industries defined as creative: advertising, architecture, art and antiques market, crafts, design, designer fashion, film and video, interactive leisure software, music, performing arts, publishing, software and computer services, television and radio. This mapping document represents an important milestone since, in spite of the many criticisms it raised, it was the first

[1] Newbigin, J. (2010), *Creative and Cultural Economy Series/1 - The Creative Economy: An Introductory Guide*, The British Council.

[2] Higgs, P., Cunningham, S., & Bakhshi, H. (2008), *Beyond The Creative Industries: Mapping The Creative Economy In The United Kingdom*, NESTA.

[3] Department for Culture, Media and Sport (1998), *Creative Industries Mapping Document*, DCMS.

[4] Department for Culture, Media and Sport (2001), *Creative Industries Mapping Document*, DCMS.

that drew the common attention to the creative sector allowing a greater general understanding and a more conscious and targeted policy making by governments.

Among others, UNESCO has been developing for a long time effective methodologies to properly identify, measure and study creative industries, given its cultural mandate. In doing so through a dedicated statistical unit, the UNESCO Institute for Statistics (UIS), the organization defined the cultural and creative industries as "*those that combine the creation, production and commercialization of creative contents that are intangible and of a cultural nature. These contents are usually protected by Copyright and can take the form of a good or a service. Besides all artistic and cultural production, they include architecture and advertising"*[5]. In 2014, during its third World Forum on Culture and Cultural Industries held in Florence, UNESCO updated its definition, outlining CCI as "*sectors of organized activities whose principal purpose is production or reproduction, promotion, distribution or commercialization of goods, services and activities of a cultural, artistic or heritage-related nature"*. Also, a list of these industries matched the definition: advertising, architecture, books, gaming, music, movie, newspapers and magazines, performing arts, radio, TV, visual arts. For each of these 11 sectors, UNESCO identified its main activities and actors.

Other relevant CCI definitions and frameworks have been proposed by the World Intellectual Property Organization (WIPO) (*"copyright based industries [as] those that are dedicated, interdependent, or that are directly or indirectly related with the creation, production, representation, exhibition, communication, distribution or retail of Copyright protected material"*[6]*)*, the United Nations Conference on Trade

[5] UIS (2009), The 2009 UNESCO Framework for Cultural Statistics (FCS), UNESCO.

[6] WIPO (2003), Guide On Surveying the Economic Contribution of The Copyright-Based Industries, Geneva.

and Development (UNCTAD), the Economic Commission for Latin America and the Caribbean (ECLAC) and others.

This plenteousness of organizations proposing their own framework has helped make policy makers more aware of the importance of CCI and IP to the overall economy. For the sake of consistency, EY's first global map of cultural and creative industries[7] will be used as reference for data regarding CCI, since it refers to the above-presented UNESCO's classification of CCI, probably the most straightforward. The figures are up to date to 2013. Nevertheless, the report is the most comprehensive and exhaustive source of data regarding CCI and it refers to a clear and widely adopted classification. Also, given the introductory function of this focus on CCI, understanding the extent of these industries and their main recent trends is sufficient to introduce the videogames industry in detail afterwards.

In 2013, according to EY, CCI were able to generate a global turnover equal to US$ 2,250 billion, that is, 3% of world GDP of the same year. Meanwhile, jobs created globally by the 11 above-mentioned sectors amounted to 29.5 million. In order to understand the size of these joint industries, it is helpful to know that its turnover was 43% higher than the telecom services industry worldwide, and 20% higher than the whole Indian GDP for 2013. Also, CCI employed more workers than the US, Japanese and European automotive industries combined (18%) and more than the entire South Korean workforce (11%). As this was true for 2013, it is important to keep in mind that creative industries have always experienced, since they started to be measured, an uncommonly exceptional growth. As a matter of fact, their growth rate in terms of global trade of goods and services for the 2002-2011 period equals 8.8%, with a more than doubled turnover. The figure is even higher (12.1%) when

[7] EY (2015), *Cultural Times: The First Global Map Of Cultural And Creative Industries*, CISAC.

taking into account the exports of developing countries over the same period[8]. Given this trend, it is reasonable to expect that the impact of CCI's turnover on the global one is worthily increased nowadays.

Among CCI industries, television and visual arts are the titans, generating together more than one third of both total revenues (39%) and employment (35%) created by CCI. On the other side, radio and gaming are, overall, the less significant sectors, accounting for only 6% of CCI employment and 4% of their turnover in 2013.

For the moment, it is helpful to focus on common features of CCI, valid for all the sectors. CCI are a strong driver of employment of young talents. As a matter of fact, in Europe the creative economy employs workers aged 15-29 more than the overall economy, with a higher impact of this class on total workers (1%). Also, CCI are highly productive, contributing more to GDP than the whole economy average. This is evident in the Chinese movie and TV sectors, where, in 2013, the added value per worker was 78% higher than the same figure referred to the whole national economy. Another important feature is that CCI are characterized by entrepreneurship and, therefore, by a high degree of independence. Historically, the creative economy has always been driven by small and independent firms, if not by individuals: more than a half of Canadian game developers operate independently and US artists are more than three times keener to be self-employed than the national average. Furthermore, people employed in CCI have, on average, passed through more years of instruction than their peers in other industries (17% more in Brazil in 2010). Moreover, CCI contribute to the development of urban economies by enhancing local attractiveness, nurturing creative talents and regenerating under-developed urban areas, a process boosted by the rise of a middle class that is hungry for culture. Last but not least, CCI employ more women that more traditional industries. Nevertheless, this is more

[8] UNDP (2013), *Creative Economy Report 2013. Widening Local Development Pathways*, UNESCO.

a trend than an established feature, being valid mostly for developed countries and not for all creative sectors and job positions.

EY's report highlights five main challenges CCI had to face in 2013 that are still valid today. The most relevant to the topic of this thesis regards promoting authors' rights, ensuring they get appropriately rewarded for their creations through IP in order to promote creation and diversity of cultural content. As a matter of fact, the failure occurred so far in achieving this goal has limited CCI's capability to grow and generate employment and has fostered the underground economy around creative industries, a phenomenon that has strongly affected.

Before introducing CCI trends more vividly affecting the video game industry, it is necessary to understand how the creative industries can generate profits. There are five key revenue areas which can contribute income to these industries: sales from traditional cultural goods and services, digital sales, advertising, training revenues and public or private funds. These sources of revenues are straightforward and do not need of any further explanation and most of them relate to the video game industry.

With regard to general trends and features affecting all CCI but more specifically related to the core topic of this thesis, the ones regarding digitalization appear most relevant. People are gradually demanding more and more cultural content and they want it available anywhere and at any time. This trend makes demand for cultural content a significant driver of the sales of electronic devices (TV, tablets, e-readers and DVD players) while encouraging the creation and proliferation of the latter and boosting creativity and online innovation. On the other side, the increasing portable devices penetration boosts the demand of cultural content, giving life to a virtuous circle that stimulates innovation in industries like the videogames one. Also demand for telecommunication services like 4G strongly relies on the Demand for the above-mentioned type of content. In this setting, video games companies have been lately

exploring new ways to generate revenues by exploiting this trend. As a matter of fact, out of US$65.6billion of worldwide digital cultural content sales (2013), more than a half was generated by online and mobile games.

Another general trend of CCI intensely affecting the videogames industry is the underground or shadow economy. It can be defined as the "*market- and non-market based production of goods and services, whether legal or illegal, that escapes detection in or is intentionally excluded from the official estimates of GDP*"[9]. In CCI, it involves both piracy (illegally copying, replicating and distributing cultural content) and the informal economy (paid exchange of legal content using informal distribution channels, with the author of the content getting no reward for the sale). In the video game industry many countermeasures have been taken throughout years in order to obstruct these practices, according to the status of the technology available. Some examples are Nintendo's cartridges.

As it appears clear, creative industries have thoroughly rearranged with the advent of the digital era, the ubiquity of the Internet and the subsequent new consumption schemes. As a matter of fact, many business models have been redesigned, as well as the content creation activities, in many CCI. Some main features have characterized this process. Firstly, consumers are today used to face a huge amount of content, and they increasingly want it personalized and suited to their personal taste. Also, easier big data gathering has powered recommendation engines that allow guiding consumers' choices. Then, the Internet has given an enormous importance to communities, often making other users the main source of information, and involvement, with companies trying to make the consumers more engaged in order to retain them. Finally, the digital era gave a massive boost to the circulation of illegal

[9] Smith, P. (1994), *Assessing The Size of The Underground Economy: The Canadian Statistical Perspectives*, Canadian Economic Observer, Catalogue No. 11-010, pp 16-33.

content. These conclusions perfectly apply to the video game industry, as it will be explained later.

1.2 Entertainment and Media Industries Overview

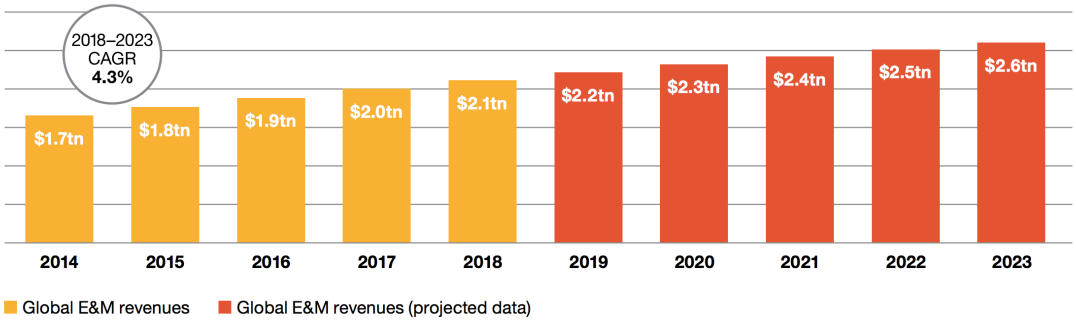
It is now appropriate to introduce another, more restricted category of industries in which the video game one is included, that is, entertainment and media (E&M) ones. E&M industries can be seen in part as a subset of CCI and in part as an extension. Some dedicated consultants include is this term video games, movies, TV shows, radio shows, music, news, books and magazines. Nevertheless, PwC's Global Entertainment & Media Outlook 2019-2023[10] classification is here chosen as reference for its exhaustiveness and for the sake of the availability of data, referred to 2018. Among the 14 identified segments, a sometimes more specific concept than the industry one, there are: cinema, music and radio, newspaper and magazines, TV, TV advertising, over-the-top (OTT) video services, video games and Esports, virtual reality (VR), data consumption and internet advertising.

According to PwC, E&M industries were worth US$2.100billion in 2018, a figure destined to grow at a 4.3% CAGR for the following 5 years. This data was equal to approximately US$1.6 trillion in 2013, the reference year of EY's CCI report. It is useful to remind that EY's and PwC's reports valuate different industries and segments and therefore any comparison would lack of significance. Nevertheless, just as in CCI, digital consumption plays a dominant role in E&M industries, accounting for 53.1% of the above-presented figure and destined to be accountable for 61.6% of E&M industries' turnover in 2023. Global E&M revenues and the

[10] PwC (2019), *Getting Personal: Putting The Me in Entertainment and Media*, Perspectives from The Global Entertainment & Media Outlook 2019-2023.

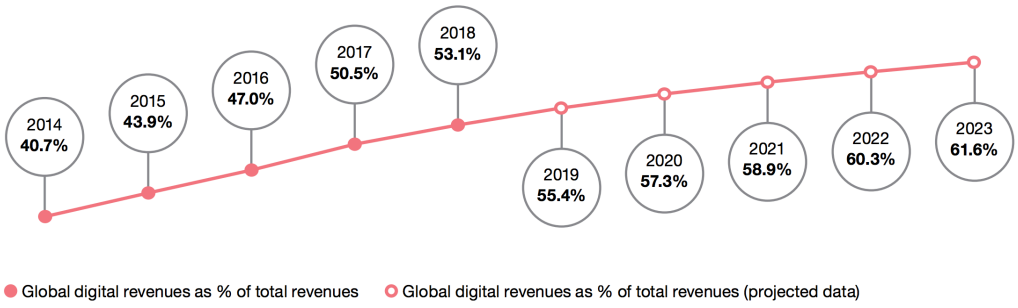
related digital contribution for the 2014-2023 period are displayed in Figure 1 and Figure 2.

Figure 1 – Revenues for The Global E&M Industries



Source: PwC (2019), *The Global Entertainment & Media Outlook 2019-2023.*

Figure 2 – Contribution of Digital Consumption to E&M Global Revenues



Source: PwC (2019), *The Global Entertainment & Media Outlook 2019-2023.*

Another trend affecting also this category is that every individual tends to consume contents as he/she prefers, giving life to countless different ways to do it and willing to have a greater control over distribution channels so that he/she can fit his/her consumption preferences. Good evidence of this is the fact that OTT services are the most demanded, leading content to become unbundled, unlike the more established distribution models dictate. In fact, global OTT revenues are expected to reach US$72.8 billion in 2023 (13.8% CAGR form 2018). Also, since E&M industries are expected to be among the first to exploit the 5G technology, operators are likely to partner with OTT providers to offer connectivity subscriptions bundled with OTT

services' ones. As it emerges from PwC's report, 5G will also pursue VR spread. For this sector, a 22.2% CAGR is forecasted for the 2018-2023 span, leading its revenues to US$6.1 billion. The video game industry is the primary driver, accounting for 53% of VR revenues in 2018. In this context, consumers also demand the widest choice of content possible within one or few solutions. In the video game industry this need gave life to a phenomenon called cloud gaming, which will be deepened in the next chapter together with the Esports and other facts. It is interesting to point out that PwC's report gathers in the same segment video games and Esports, giving an idea of the size of this phenomenon.

Companies are satisfying these new above-mentioned needs by leveraging data in order to know individuals' consumption patterns. In this way, firms are giving the chance to customers to become active consumers, and this is even truer for video games companies. It translates in individuals creating their own selected personal "space" within a single E&M content and also across different ones. A topic-related example is Fortnite, a video game that makes money out of the appearance of the player's alter ego and the interface personalization. Another correlated trend is the tendency of consumers to make purchase decisions in few seconds. This impulsive tendency is of course eased by the above-mentioned leverage on data and personalization of the offer.

In this data-based context, consumers are becoming more aware of the ways their personal data are being used and they are therefore increasing their interest towards forms of control over their data. As a matter of fact, also thanks to many scandals like the FB one, consumers are demanding a more user-disciplined usage of personal data. Regulators all over the world are facing this challenge, which can cannot be seen as a trend, but as the natural evolution of E&M industries and not only.

In conclusion, E&M industries have reached a substantial size and their growth is expected to be strong and steady, with the digitalization strongly affecting the considered segments. The world of E&M is also getting personal, with new technologies just around the corner of the wide commercial success and new challenges in terms of personalization and regulatory issues.

1.3 Video Game Industry: History, Figures and Trends

It is now time to introduce the concept of video games, their history, the size of the industry and its features, trends and challenges.

There is no unanimous definition of video games, with people even arguing about whether to write it as a compound or unique word, having their own identity in the latter case, while being considered a subset of games in the former. In this regard, video games have been often defined as hybrids or trans-media because of their complex configuration, but today it appears clear that they deserve to be considered as a stand-alone medium, given the size of their industry and most of all the great variety and uniqueness of outputs it is able to generate. Therefore, here, the two alternative terms will be used interchangeably, without any lexical nuance.

Many experts tried to define video games giving life to a set of sometimes-divergent definitions. Among others, Nicolas Esposito (2005) did so, defining a videogame as *"a game which we play thanks to an audiovisual apparatus and which can be based on a story"*[11], then deeply analyzing and integrating every aspect of the definition. Also Grant Tavinor (2008) gave his definition of video game as *"an artefact in a digital visual medium, intended primarily as an object of entertainment, and*

[11] Esposito, N. A. (2005), *Short and Simple Definition of What a Video Game Is*, DiGRA 2005 Conference *Changing Views: Worlds in Play*.

intended to provide such entertainment through the employment of one or both of the following modes of engagement: rule-bound gameplay or interactive fiction"[12].

An interesting theory by Espen J. Aarseth considers videogames as part of the so-called ergodic literature, a term coined by the author himself. According to him, "*in ergodic literature, nontrivial effort is required to allow the reader to traverse the text. If ergodic literature is to make sense as a concept, there must also be non-ergodic literature, where the effort to traverse the text is trivial, with no extranoematic responsibilities placed on the reader except (for example) eye movement and the periodic or arbitrary turning of pages*"[13]. The interesting thing about ergodic literature is that, according to the author and consistently to its definition, it is not medium-specific. So, in this view, the medium cease to be the main point of distinction in favor of the way in which the texts functions, with ergodic literature potentially embracing both paper-based and electronic text.

Many other definitions exist (e.g. Mark Wolf (2002)). Nevertheless, regardless of the specific definition to embrace, videogames can be seen as software artifacts that are mediated through software-aided media, which involve computer technology as a central component. The variety of possible platforms through which the artifact can be mediated is huge[14].

[12] Tavinor, G. (2008), *Definition of videogames*, Contemporary Aesthetics Vol. 6.

[13] Aarseth, E.J. (1997). *Cybertext – Perspectives on Ergodic Literature*, Johns Hopkins University Press.

[14] Isigan, A. (2019), *The Video Game as a Medium*, The Ludosphere, Retrieved March 20, 2019, from https://altugi.wordpress.com/articles/the-video-game-as-a-medium/

In order to better understand the video game industry, its evolving value chain, cycles, size and the trends affecting it nowadays, it is useful and interesting to introduce the history of this relatively newborn industry[15].

The earliest recorded digital game, Bertie the Brain, was a tic-tac-toe game realized in 1950 for the Canadian National Exhibition by the engineer Josef Kates. It was installed in a dedicated machine and many people queued to play it, establishing its success[16]. After other occasional experimentations during the 50s, in the next decade, many early video games have been programmed for mainframe computers, those used primarily by institutions for large-scale processes. Their purpose was far from the commercial one that started characterizing video game development from the early 1970s, and mostly the students or employees of universities programmed them for each other, using a language that could only be understood by that specific type of computer, leading to the loss of some early videogames over time[17]. As a matter of fact, the first video game playable on multiple computers was developed for the PDP-1 computer in 1962 by Steve Russell at the Massachusetts Institute of Technology. Indeed, *Spacewar!* was installed on multiple computers at the MIT,

[15] Chapman, A., Foka, A., & Westin, J. (2017), *Introduction: What Is Historical Game Studies?*, Rethinking History Vol. 21 Issue 31, pp. 258-371.

[16] Bateman, C. (August 13, 2014), *Meet Bertie The Brain, The World's First Arcade Game, Built In Toronto*, Spacing Magazine. Archived from the original on 2015-12-22. Retrieved March 28, 2019, from http://spacing.ca/toronto/2014/08/13/meet-bertie-brain-worlds-first-arcade-game-built-toronto/

[17] Some early mainframe games were anyway ported to next-generation computer languages like BASIC. A huge effort in this direction was done in the early 1970s by David H. Ahl, a computer science luminary who ported some games for mere technical purpose, ending up in a success that led him to publish 101 BASIC Computer Games in 1973, a collection of the source codes, sometimes modified by himself, of many early mainframe games written in the BASIC language. The book was a success, selling more copies than computers existing at the time. In the 80s, the new edition of the book was the first computer book to reach the goal of a million unit sold.

becoming the first video game to reach popularity in a community, the programming one, with other individuals modifying it in the following years, and therefore strongly contributed to draw the attention of programmers to this new field. It was also the first digital game to inspire many other videogames that would have appeared in video arcades. Indeed, one of the first arcade machines to be produced was Computer Space in 1971, an extremely similar game.

It is important to understand that the first arcade machines were not initially manufactured for arcade rooms, not existing at the time since there were no games. In other words, when the above-mentioned Computer Space or Pong (1972) were first manufactured, they were put in bars, movie theaters, sometimes grocery stores or any place where people had to stand and wait in line, and they were therefore not programmed with an "arcade mentality", without feature such as high-score list or even top 3 players. The emergence of the arcade came about largely by accident and largely because of one game, Space Invaders (1978). It was a massive hit, especially in Japan, far greater than any other game that had come before it. Space Invaders actually caused a shortage of yen coins in Japan because so many people were getting them just to put in the Space Invaders machines. It was also the first game to give birth to the earliest significant video game competition, the Space Invaders Championship held by Atari in 1980 which attracted more than 10,000 participants across the US and started the trend for gaming tournaments and e-sports, introducing competitive gaming as a mainstream hobby. Shopkeepers soon found out that Space Invaders was more profitable than any other product they had per unit of floor space and therefore started removing anything else and filling their place with many Space Invader machines. In the first year after the release, 60,000 machines were spread all over U.S. This worked and gave life to arcade rooms or video arcades, stores dedicated to being a place where people would go solely to play stand up arcade

games. The idea spread and from about 1979 to 1983 what many experts call the golden age of arcades took place. Game manufacturers came out with much more varied and innovative games during this time and there were all kinds of different forms of gameplay. Another renowned example is Namco's Pac-Man, launched in 1980, that ended up selling 350,000 machines, bringing US$2 billion to the company. In 1981 Mario was finally introduced to the market in the Donkey Kong arcade.

One of the strengths of this system was that arcades were replicating an experience that consumers couldn't really get at home. Of course the first consoles were already on the market, but none of these really came close replicate the arcade experience or to create a new one, however. As a matter of fact, even the game cartridges that were based on popular arcade games were usually some lesser form of that. Indeed, during the same period, consoles like Magnavox Odyssey and its second version (1972-1978), formerly intended for military use, Home Pong (1972), Atari VCS/2600 (1977), Intellivision (1979), ColecoVision (1982), were launched and it was not before 1983 that they started seriously harming video arcades[18].

Nevertheless, before talking about consoles, it would be consistent to see how arcades have evolved over time after the consoles' market success and the 1983 video game industry crash that will be introduced soon. In fact, when consoles started to replace arcades, these adapted. After struggling with the same format as the one they had during their golden age, in the early 90s they recognized that in order to stay alive they needed to introduce a social element in their business model, something that customers couldn't get when playing on the couch at home. Indeed, we had a decline in single player games and games that required multiple players at

[18] Zackariasson, P., Wilson, T.L. (2012), *The Video Game Industry: Formation, Present State, and Future*, Routledge, New York.

once spread. This caused a resurgence of video arcades for a while. Later on, with the advent of online gaming, all of a sudden this became less important. People could play games with other people from the comfort of the couch, leading to another decline of arcades. Arcades had therefore to innovate again in order to conceive an experience different from the one that could be lived at home. It was the time of specialized hardware, with the rise of bicycle games with an actual bicycle control (Propcycle), racing games with a steering wheel or games like Dance Dance Revolution (1998), having an entire stage as a controller where people had to dance, which brought Konami a 260% increase in net income. The latter game spawned a line of dance pads for home use, but people still went to the arcade, again proving the importance of the social element. But again, it was enough for a while. As a matter of fact, towards the early new millennium, arcades once again went into decline and their subsequent evolution could be mostly seen in places that were no longer just dedicated video arcades, but instead arcade plus something else, mostly arcade plus bar and grill, the so-called "barcades", or bowling arcades[19].

As it is clear, what arcades have done to survive throughout history is adapting and innovating themselves in order to keep giving people a valid reason to leave their home. And, incidentally, the home console industry often adapted by finding a way to bring new popular arcade experiences at home, soon or later forcing arcades to innovate again. Right now, with an uncertain future, it looks like VR might be the next big evolution for arcades. Virtual reality headsets, the top tier ones, are very expensive and it's very expensive to develop games for them. They can also take up a fair amount of dedicated floor space, something most people don' want to give away in their living room. This, at a dedicated video arcade, would not be a problem. In

[19] Kent, S.L. (2001), *The Ultimate History of Video Games: From Pong to Pokémon–The Story Behind the Craze That Touched Our Lives and Changed the World*, Prima Publishing.

conclusion, apart from their unclear future, arcades have always survived thanks to innovation and it's something that they are likely to keep doing.

At this point, it is important to understand how home consoles were born[20]. It was Raplh Baer, an engineer, who is commonly appointed as the father of consoles. In the late 60's, he realized that he could actually send a signal to the television and use it in a completely different way than the one everyone was used to. He ended up creating the first prototype of a multiplayer home console, the so-called Brown Box. He then licensed the system to Magnavox which used it to create the first marketed console ever, Magnavox Odyssey, in 1972. The console did not prove to be a success because of its strategy. As a matter of fact, most of the games logic was written into the console rather than into cartridges, making the console quite expensive. This was done by Magnavox because the company's core business was television production, and they hoped that, by marketing a console uniquely compatible with their televisions, they would have acquired new customers and locked-in existing one. Despite the four cartridges the console came together with, its experience on the market didn't go as planned.

There were some other consoles that came out in the early days, but it wasn't until the Atari VCS (1977) that they really took off. It was later rebranded as the Atari 2600, which has become the most popular name of the console. Atari was one of the first consoles to actually have game logic on the cartridges. Interestingly, they did not do this because of any forward-thinking on their part; they did it because it made the VCS hardware itself cheaper to manufacture. It meant that they didn't have to put a bunch of complicated logic onboard in the console itself, so they could sell it at a lower price to the consumer in order to get their console in more hands. It also meant that they could produce potentially an infinite number of games for their console in

[20] Whittaker, J. (2004), *The Cyberspace Handbook*, Routledge.

the future, and without having to redesign the console itself. And it worked really well, with worldwide unit sales of more than 27 million, but it did it for a short time.

In fact, after Atari had been sold to Warner in 1976, the new head of management viewed developers as replaceable assembly-line workers rather than skilled knowledge workers, leading to questions such as the proper treatment of developers and (after some developers left to form Activision) the legality of unauthorized third-party development.

In 1982 Atari made two severe mistakes, massively overprinting two cartridges such that they lost money on what should have been massive "hit" games. Also, with Activision opening the floodgates, many unauthorized third-party developers rushed low-quality Atari 2600 games to market, leading to a flood of low-level games, and no game press to allow consumers to avoid the bad ones. As these third-party developers went out of business, retailers, stuck with the games, had no choice but to offload them at deep discounts, which in turn set consumer expectations that new games should cost US$5 – which was unsustainable for developers who wanted to be profitable. Atari also faced competition from half a dozen other consoles, as well as home computers which were becoming cheap enough to compete with consoles[21].

The success of consoles led to a fairly steady decline in the coin-operated video game business, with many video arcades disappearing form the scene. On the other side, the above-mentioned general loss of publishing control deriving from the birth of the first third-party developers led to a major crash in the North American console game industry in 1983. This crash, also known as Atari shock in Japan, was also caused by a flooded console market, inflation and a saturation in terms of games available and hit mostly North American markets. In just three years, global videogame revenues dropped from an estimated figure of US$42 billion to US$14

[21] Donovan, T. (2010), *Replay: The History of Video Games*, Yellow Ant.

billion, with arcades and consoles being the sole drivers of the loss. Revenues started recovering from 1985, but from that time also PCs started being more and more significant for the global figure[22].

This crash led to the end of the second generation of console gaming, started with the Atari 2600 launch in 1977, and harmed the videogame industry until the market was revitalized by the new-born PCs and by Nintendo in the following years.

In this connection, while console where having market success during the second generation gaming, home PCs were starting being developed and, after some time, marketed. As a matter of fact, the 1983 crash, from a console point of view, was also caused by the fact that, for the first time, the cost of a home PC was coming down enough to be able to viably compete with consoles. Indeed, the first home PC ever marketed, the Commodore 64, launched in 1982, had a lot of ads specifically focused on getting people to buy a Commodore computer instead of a new console, having a similar price, more functionalities, letting saving on disks and so on.

Of course, games had been developed for PCs pretty much since the earliest PCs, like we have seen for *Spacewar!*, but for the purpose of mass market the first half of '80s was the very first time when that started to become a viable model. Game developing for PC, the main fuel for the success of PCs as gaming platforms, had to face some challenges. Of course, console game had already well-developed sales channels and a developer could rely on first parties (console producer) to exploit their distribution network. An individual developing for PC was instead devoid of any mean to distribute its product. A lot of the earliest game sales were indeed done on a door-to-door basis at home or local stores, after having printed the code on a

[22] Naramura, Y. (January 23, 2019), *Peak Video Game? Top Analyst Sees Industry Slumping in 2019*, Bloomberg L.P., Retrieved April 12, 2019, from https://www.bloomberg.com/news/articles/2019-01-23/peak-video-game-top-analyst-sees-industry-slumping-in-2019

disk and a paper manual. Things progressed thanks to certain companies that had a fair amount of success in making PC games, some of them still alive nowadays like Electronic Arts (EA) and Blizzard. They exploited the fact that the hardware for a PC was far more advanced than the average console's, with a gap much wider than today's one. So, the kinds of games that could be developed for PC were far more advanced in the early days than those developed for console and PCs started to proliferate, with new distribution channels for computer games and new attracting and sometimes bizarre packaging, that occasionally actually acted as a form of copy protection. This highlights a certain sense of craftsmanship that has since been lost as PC has gone towards '90s and then digital distribution. For a period, players could access part of games for free and then send money to the developers to get the full version of the game; DOOM and Quake were success stories of this method, called Shareware model, that will be analyzed in the second chapter and that soon adapted to the digital distribution. Later on, as internet access became ubiquitous, PC gaming was revolutionized by the launch of the first hit Massive Multiplayer Online game (MMO), Everquest (1999), which made MMOs emerge from the hardcore gamer community. MMOs are online games, usually open-world, with a huge amount of players enjoying the experience on the same server. The subscription revenue model was introduced with the genre and exploited to its best by Blizzard with the World of Warcraft series, whose first episode was released n 2004, becoming soon a market leader. In the meanwhile, The Sims (2000) was released for PC, drawing a new, more casual audience of gamers. Another milestone release for PC gaming was Minecraft (2010), that, after its release on other platforms, became the best-selling videogame ever after Tetris with over 175 million copies. Today PC gaming has evolved with online digital distribution portals such as Steam, GOG, and Desura. The first and most successful one, Steam, was introduced by Valve in 2003 as a

digital distribution platform for PC gamers initially thought only for Valve's games, that opened doors to third-party developers soon. It has become the market leader nowadays, heavily contributing to global PC sales[23].

The other big player that contributed recovering the video game market after its 1983's crash was Nintendo[24]. Nintendo responded to the crash by addressing each of the factors that led up to it. The company included a chip in its first massively successful console, the Nintendo Entertainment System (NES), launched in 1985, that made unauthorized third-party development much harder. It also introduced quality controls to give consumers (and retailers) a perception that the console was free of low-budget, poor-quality games, so-called shovelware. Nintendo also placed restrictions on how many games a publisher could launch each year to avoid a flood of titles all at once and a subsequent market saturation, and bundled the console with a toy robot to convince retailers to buy it in spite of the perception that the console market was dead. Nintendo also took advantage of its position by forcing third-party developers to sign exclusivity agreements and by publishing hit games like The Legend Of Zelda (1986), effectively preventing any challengers in the market for some years to come. And this proved to be (62 million units sold), with the exception of Sega Master System (1986), the first Sega's attempt at consoles, that was a fair hit, thanks to its two ports and the 3D glasses.

From 1989 to1993, the fourth generation of consoles took place, the so-called 16-bit era. It was characterized by a four-way race between the 8-bit NES, which was still vastly popular, the TurboGrafx-16 (1989 in North America), the Sega Genesis

[23] Anderson, J. J. (1984), *Dave Tells Ahl – The History Of Creative Computing*, Creative Computing, Volume 10, pp. 66-8.

[24] Kohler, C. (2005), *Power-Up: How Japanese Video Games Gave the World an Extra Life*, Brady Games.

(1989) with Sonic the Hedgehog, and the Super Nintendo (SNES) (1991). The TG-16 had many innovative features but struggled in North America due to its launch games being relatively unfamiliar and having only one native controller port, even though it had a strong showing in Japan. The Sega Genesis and SNES both dominated this generation, putting both companies in a strong position for the next generation. In the meanwhile, in 1990 Microsoft decided to offer a bundle of games as part of the Windows operating system package.

Around the same time as the 16-bit generation, handheld consoles appeared for the first time, with the Nintendo's GameBoy (1989) winning handily the first generation of portable devices. It was first to market, giving Nintendo some lead time, and they made the risky but successful choice to bundle the handheld with the popular Tetris game. Its cheap hardware was a curse, but also a blessing: as the only handheld that was monochrome (black-and-white) and the only one to not have a backlight, it had inferior graphics and could not be easily played without light, but it also was the most energy-efficient and thus outlasted the competition on battery life. This was significant since handheld devices were most frequently used where there wasn't access to a power outlet. The GameBoy was also the cheapest of the competition and benefited from Nintendo's positive brand recognition. Later handheld consoles by Nintendo were backwards-compatible, allowing the company to maintain a stranglehold on the market. As their launch library for any new GameBoy would number in the hundreds while a new competitor might have only a few dozen at most, and this advantage lasted until the age of smartphones which finally presented a serious challenge to dedicated handheld gaming devices.

The fifth generation, the 64 or 32 -bit era (approximately 1993-1998), was initially characterized by the last attempt of Atari to survive on the console market with its Atari Jaguar (1993) that turned out to be a failure because of a lack of games and

poor marketing. In the same year Doom reached the masses, the first widely successful first person shooter (FPS), representing an important step for the gaming industry, being the first game to introduce the "deathmatch" mode and Ethernet connection to play with friends. This generation was also characterized by the entrance of a new player, Sony, that, in the long-run, made Sega exit the console market after its last 128-bit console launched in 1999 that started the sixth generation, the Sega Dreamcast, which could nothing in front of Sony's PlayStation 2 (2000)[25]. Sony's first console was the PlayStation, launched in 1995, a game changer in the industry with its 32-bit processor, polygonal graphics and a smooth design. It was a success among players, becoming the first console ever to sell more than 100 million units in 2004. Its main competitor on the market was Nintendo 64 with it 64-bit processor, one of the most loved console of the Japanese firm. The fifth generation ended with the launch of Pokémon on the American market (1996) and the first Grand Theft Auto was released (1997), with one of the first open world maps.

The sixth generation started with the Sega Dreamcast (1999), not able to compete with the Sony PlayStation 2 (2000), like said before. The latter console was a hit, reaching 500,000 units sold in few hours in the US. In 2001 a new console war began, with the launch of Xbox by Microsoft, offering also built-in-ethernet support for online gaming. In the same year Nintendo came out with the Gamecube, its first non-cartridges console using small CDs. It sold 500,000 units in the first week[26].

The seventh generation started with the launch of Nintendo DS (2004), a great success thanks to its cartridges, the backward compatibility and the new versions of

[25] Pettus, S. (2012), *Service Games: The Rise and Fall of Sega*.

[26] Goldberg, H. (2011), *All Your Base Are Belong to Us: How Fifty Years of Videogames Conquered Pop Culture*.

older successes. In December of the same year Sony marketed the PlayStation Portable (PSP), its direct competitor. One year later Microsoft launched Xbox 360 ahead of schedule, monopolizing the Christmas home console market of 2005 and integrating wireless controllers and Kinect, a motion sensing camera whose purpose was to compete with Nintendo's Wii that would have approached the market one year later. Nintendo's new console was the first with all games appositely developed for a dedicated motion technology, revolutionizing family gaming and expanding the potential user base. In 2006 also PlayStation 3 saw the light. Sony's console was the first to use Blu-ray Disc technology with high graphic potential thanks to its 3.2 GHz processor, with PS2 backward compatibility in its first version. It actually reached 83.8 million copies sold.

An early call for the eighth generation of consoles, that is the current one, took place in 2011, with the launch of Nintendo 3DS. In 2012 Nintendo's new console, the WiiU approached the market. It didn't offer much more than its predecessor, apart from display-provided controllers and a bigger hardware, not doing well against Sony and Microsoft's eighth generation releases. The two competitors both entered the current generation in 2013 with, respectively, PlayStation 4 and Xbox One, two great successes, with the Sony's creation having higher sales because of many exclusive titles. In the same year GTA V was launched, a massive open-world making US$1 billion in the first three days, being the most sold video game of modern gaming. In 2017 another game-changer approached the market, Epic Games' *Fortnite*, a battle royale game based on a free-to-play (F2P) revenue model that earned US$2.4 billion in 2018. It contributed to make F2P the most significant revenue generating business model, besides boosting the cross-device gaming trend and the emergence of the Esport and gaming video content (GVC) industry, all topics that will be addressed later on during this chapter. The last huge console launch of

this generation has been Nintendo Switch's, well received in 2017 thanks to Zelda and Super Mario titles and to its portable screen and clip in controllers, making the console enjoyable everywhere.

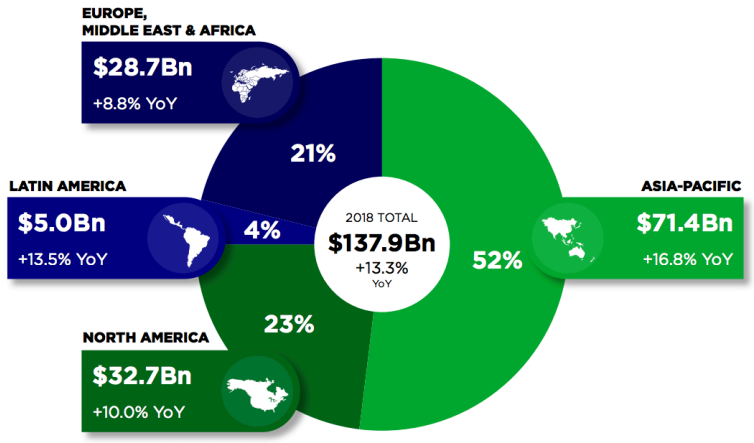
Last but not least, an exhaustive sum-up of videogames history cannot neglect latest-born mobile gaming, contributing for more than 50% to global games market nowadays and representing therefore the most profitable category of gaming.

The earliest phones were not portable, while the earliest portable phones had no computer screen and therefore couldn't play games. The earliest portable phones that could play games had screens of various sizes, many different models with differing hardware and very little standardization, and "app stores" that gave consumers very little information beyond a name, leading to challenging development that mostly relied on name recognition. The first remarkable mobile game was Snake (1997), pre-installed in approximately 400 million Nokia phones, a pioneer of the genre that captivated players worldwide before smartphones existed. In 2007 Apple's iPhone presents itself as a game changer, also thanks to the opening of the App Store one year later. It provided a new, unified platform for developers, making mobile gaming a multi-billion industry. With today's smartphones and their embedded stores, downloadable games are commonplace, and the dominant business model involves some combination of in-game ads and in-app purchases, with most games being free to download (with some notable exceptions). This business model is not unique to the mobile market, however, and in fact was refined first on the social games of Facebook some years before.

Having clear how the videogame industry has gotten to its actual status, it is now time to introduce its figures, the recent game-changing phenomena of the industry, its current trends and possible future pathways to get an idea of its scale and scope.

As made clear by Figure 3, the global videogames market was worth US$137.9 billion in 2018 according to Newzoo, a leading global provider of video games related analytics[27]. It represents a 13.3% year over year (YoY) growth, a significant improvement from 2017, and it is also the eight consecutive year in which videogames industry makes more than music and movie ones combined.

Figure 3 – 2018 Global Games Market Revenues Per Region



Source: Newzoo (2018), *Global Games Market Report 2018*.

The fastest growing market (18.8% YoY) is the APAC one, also being the most influential, accounting for 52% of the global figure. Its impressive growth in the last years is due to the extraordinary spread of mobile gaming, being this area the largest source of user base for this category. The following dominant areas are North America (23%) and EMEA (21%) which have experienced, respectively, a 10% and 8.8% annual growth, with EMEA growing less because of a slower diffusion of, again, smartphone gaming. Finally, Latin America brought US$5 billion to the global turnover of the market, with a higher YoY growth than the two latter-mentioned regions (13.5%), being an emerging market. For the following years, APAC region's contribution to global games market turnover is expected to become even more

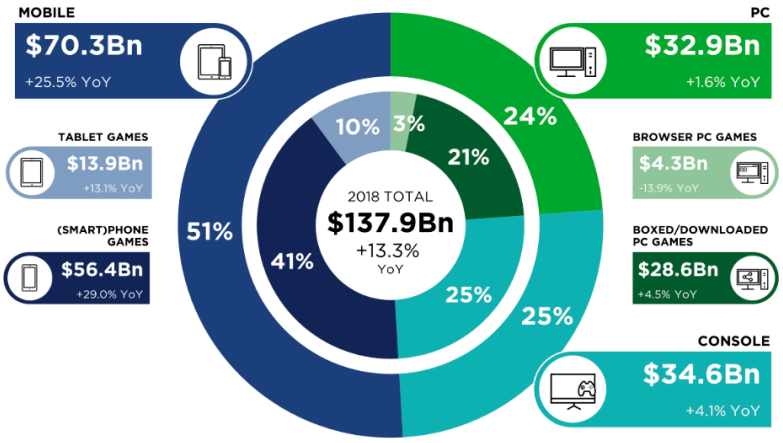
[27] Newzoo (2018), *Global Games Market Report 2018*.

predominant. As 2018, China is the most influential country generating, with its 620 million players, almost US$38 billion in game revenues, with an expected figure of roughly US$50 billion by 2021. It is followed by the US and their about 180 million players and US$30 billion generated, with Japan, South Korea and Germany following. India, which actually ranks 16th and hosts 10% of total world's gamers, is expected to be the fastest growing market for the next few years thanks to its mobile-oriented culture. As a matter of fact, in 2016 India overtook the US in terms of number of smartphone users, becoming the second country after China, and in the following year 89% of the national videogame revenues came from mobile games.

Before analyzing the global video game market revenues at the light of the segment of gaming, it is useful to quickly introduce the gamer's profile. There are more than 2.3 billion players worldwide, with an average age of 37 and a gender ratio slightly in favor of males. APAC area accounts for roughly half of the figure, followed by Americas (20%), Europe (16%) and Middle East and Africa (14%). Furthermore, 95% of global players are mobile gamers and 1.1 billion gamers spent money on games in 2018, making the industry's market base massive. The genre preferences are definitely in favor of action, shooter and sport games.

When taking into account the segments of gaming and their split of total industry revenues, as shown in Figure 4, many other observations arise.

Figure 4 – 2018 Global Games Market Revenues Per Segment



Source: Newzoo (2018), *Global Games Market Report 2018*.

In 2018, for the first time, slightly more than a half (51%) of revenues were generated by mobile gaming, with a 25.5% annual growth mainly determined by smartphone games' one (29%). Indeed, the latter category accounts for 82% of 2018 mobile sales, leaving the rest to tablet games. This segment also has 2.2 billion players, more than any other. Furthermore, smartphone games' impact on global games revenues is expected to increase from 41% to 49% by 2021, with tablet's steady at 10%. The remaining half of videogames global turnover is equally divided between console (25%) and PC (24%) gaming, have grown, respectively, 4.1% and 1.6% annually from 2017. PCs' revenues are mostly driven by boxed or downloaded games (88% and 4.5% YoY, more comparable with the consoles' one), with a slight and declining contribution coming from browser PC games, whose YoY change equals -14% because of the migration of casual browser gamers to the mobile world. Console and PC games are expected to slightly lose relevance to the global sales by 2021, decreasing their incidence by 3% and 5% in favor of mobile gaming.

As it is clear, mobile gaming is not definable as a simple trend or phenomenon anymore, having contributed to significantly change the industry together with the digital distribution in the last decade and playing today the role of the main gaming

segment, also thanks to the recent success of instant gaming intended as games that can be played without a previous download, like social network games. It therefore requires a brief stand-alone analysis. There are 2.1 billion mobile gamers around the world, 50% of which is spending money on these games, generating US$70 billion of revenues. China of course represents the biggest mobile market with its 570 million mobile gamers and a US$23 billion 2018 turnover, accounting for more than 60% of the national game revenues 2018. Another worth-of-note country is India, hosting 10% of the total world's gamers, and being the second country for number of smartphone users after China since 2016 and the first for growth. Here, 89% of the national videogame revenues came from mobile games in 2017. In emerging countries like India, with low average spend per paying gamer, most of the revenues are today generated by in-game advertising. Nevertheless, India is expected to realize the fastest growth of the average annual spend per paying mobile gamer in the 2018-2020 period, 75%, followed by Indonesia (48%), even if the Indian mobile player will still spend half of the amount spent by the Indonesian one. This figure, together with the doubling of the average spending per user that took place in the last two years on Android platforms, constituting 94% of the total Indian smartphones, perfectly expresses the potential of this country on the global mobile gaming scene. Worldwide, as June 2018, Samsung and Apple owned more than 50% of the smartphone market share, with Samsung leading (26.8%) while Apple outpacing the competitor on the less lucrative (in terms of gaming revenues) tablet market (66.6% market share for Apple against Samsung's 17.5%). Furthermore, today's 3 billion smartphone users are expected to become 3.8 by 2021, leading to high revenue potential. The latter is better expressed by app stores revenues' forecasts, from US$92 billion in 2018 to US$140 billion in 2021, with games revenues' contribution constant at 76%. Among top mobile publisher by revenues there are two Chinese

firms, Tencent and NetEase, King, Bandai Namco and Supercell, while the most appreciated genres for mobile games are casual, puzzle, arcade and action[28]. Casual games are the most downloaded in 2018, while battle-royal and the multiplayer online battle arena (MOBA) action genres, embracing games like Arena of Valor or PUBG Mobile, bring the highest revenues to the mobile gaming industry[29]. Finally, among the main trends affecting mobile gaming, it is gradually covering more genres, enlarging its scope far beyond casual gaming. This phenomenon is occurring mostly in Chinese market but it is recently spreading also in the West. This allowed many competitive player-versus-player (PvP) mobile games to become hits, contributing to the proliferation of the genre and also to the E-sports, one of the recent trends of the whole gaming industry that will be presented soon in this chapter. Also, more and more ports of popular game franchises are being launched on the stores, exploiting their popularity. Finally, many companies have lately started producing smartphones that specifically address gamers, given the huge potential of the industry and the rising processors' power allowing mobile games to appear PC-alike.

Another game-changing phenomenon of the videogame industry, that is older than and in many senses precursor of the mobile gaming, has been the advent of digital distribution, the distribution of software as digital codes without the use of any physical good. A highlighted before, the process has started during '80s on developers' websites thank to the shareware distribution model, but it only reached wide market acceptance from the early 2000s. From there on, digital distribution

[28] Newzoo (2018), *Global Mobile Market Report 2018*.

[29] Sensor Tower (2018), *The Top Mobile Apps, Games, and Publishers of 2018: Q4 and Full Year, Sensor Tower's Data Digest*, Retrieved April 18, 2019, from https://sensortower.com/blog/top-apps-games-publishers-2018

took over physical one, accounting for 91% of the 2018 global gaming revenues (US$125.5 over US$137.9 billion) and having F2P business models as main drivers (80%), mainly thanks to mobile gaming, followed by subscription based ones for PCs. The road to this result has been started and boosted by online game distribution portals for PC such as Steam or Origin, later followed by console manufacturers with new branded stores installed on the devices. The advent of downloadable content (DLC) has then further fostered the phenomenon, at least for what concerns consoles. Furthermore, digital sales have recently experienced a boom thanks to mobile gaming and its actual predominance, representing almost the only sales channel of the sector. Another current driver of digital sales' growth that may still have to release most of its potential is the spreading of streaming or cloud gaming, examined in depth later on, that may bring also high-end games sales digital. This type of distribution has not only cut many categories of costs for producers, but also allowed developers to feel more free and independent from publishers, encouraging the rise of many small, independent developers and, therefore, enhancing the variety of the gaming offering with many new genre niches[30].

Another phenomenon that affected videogame industry in the last decade and more is the provision of games as a service (GaaS). It is a well-established way to monetize video games by now, born with MMOs and their subscription models in early 2000s, and consists in ensuring ongoing and, therefore, more stable revenues to developers or publishers after the initial sale of the game or its release for free by trying to keep people playing (and paying) as long as possible. This gives higher financial stability and allows developers to constantly update the games with new features, making Gaas known as "living games" and increasing their lifespan while trying to constantly enhance users' engagement. Mobile gaming has boosted this phenomenon

[30] SuperData Research (2019), *2018 Year In Review: Digital Games and Interactive Media*, Nielsen.

and huge companies like Tencent have built most of their castles of revenues on GaaS foundations. GaaS can take many forms in terms of revenue and business models, among which subscription, micro-transaction, DLC and advertisement emerge. More and more firms in particular are adopting the subscription revenue model as a way of monetization. This is happening with evidence in the console industry, with subscription being used for online services and cloud gaming ones, also affecting the PC gaming market, and in the mobile games one, led by F2P business models.

It is now time to analyze the most recent videogame industry advancements and trends; those that haven't expressed all their potential influence on the market yet but that have sometimes created wholly new related industries and whose size and scope cannot be considered negligible.

As mentioned in the mobile gaming focus, instant gaming is a recent trend, consisting in games that do not require any download to be played. One easily observable example is Facebook's Instant Games, that also opened to third-party developers in early 2018, but the phenomenon is widespread among Asian social networks, with companies like Tencent (China), Kakao (South Korea) and LINE (Japan) leading the way. The benefits of this practice are large. Casual gamers can play games without any previous effort using a familiar platform and hugely enlarging the user base of dedicated developers thanks to social networks' reach. The latter get of course their share of the pie, also enhancing users' engagement. In this context, social networks are able to act as distributors, adding a new channel besides app stores for smartphones and digital platforms for PCs and taking shape as a potential business model innovation driver of the industry.

Another area of recent innovation is hardware. With software technologies already pushed almost to the limit in terms of graphics and physics, many companies are

working on new types of hardware. The main one is virtual reality (VR), visually immersing the player in the video game world. It has to be distinguished by augmented reality (AR), where the game world actually consists of the real one with the addition of some elements. This trend (AR) is part of the PokémonGo game design and can be easily be supported by VR. VR and AR technology are not new ones, but they are now suddenly reaching the point where they are cheap enough and the quality of the hardware and the fidelity of the simulation are good enough that these devices may be ready for wide consumer adoption. The extended reality market (XR), embracing both VR, AR and cameras and capture gear, reached US$6.6 billion revenues in 2018, with VR and AR accounting for, respectively, 55% and 35%. Its turnover is expected to almost double in just one year, with VR revenues growing by 72% and AR's by 87%. The AR market stronger growth is due to the already widespread use of AR-base apps like PokémonGo or simply InstagramFilters. On the other side, VR market is more challenging, with its recent approach to mass markets. Some of the main players are Facebook, which acquired Oculus for US$2 billion in 2014, and Sony[31].

Cloud gaming, or on demand gaming, is another huge trend affecting the industry as part of online gaming. It consists of allowing players to play games without downloading or installing them thanks to powerful severs that executes the game and stream it, with the sole need of a strong internet connection. Many companies have entered the market with their offering, like Sony's PlayStation Now or Google's Stadia, formerly Project Stream, basing their business model on giving the access to huge game libraries and the choice of whatever title to play any time in exchange of a subscription fee, following a Netflix-alike mechanic. The future forecasted

[31] PwC (2019), *Getting Personal: Putting The Me in Entertainment and Media*, Perspectives from The Global Entertainment & Media Outlook 2019-2023.

improvements in Internet infrastructures are likely to set cloud gaming on a favorable pathway in the following years. Furthermore, together with the cross-device gaming trend, driven by more players wanting a single game available on multiple platforms and boosted by the successful Fortnite experience and the like, cloud gaming may eventually put hardware (intended as the console) in the background, shifting the focus on the game itself as driver of the market competition.

Gaming video content (GVC) streaming represents another huge practice in the video game industry, generating US$5.3 billion in 2018. This trend's leading actors are streamers, captivating audience by their high gaming skills and their commentary. The main GVC platform, Twitch, was launched in 2011 and has registered more yearly streams than HBO's online platform since 2014, the year in which Amazon acquired it for US$970 million. Apart from its core business, Amazon acquired Twitch also to exploit synergies by integrating it in its digital distribution model in order to better target the most suitable audience through advertising and therefore pushing game sales. Twitch also enjoys more than double the viewers of Netflix, who declared that it considers Fortnite a stronger competitor than HBO, considering "consumer screen time" as the most influencing variable in its Q4 2018 shareholder letter[32]. In this sense, Twitch has strongly improved in the last years, positively affecting also many games' performance on this metrics. The platform was followed by the launch of YouTube Gaming in 2015, its main competitor. In 2018, Twitch and YouTube respectively generated 31% and 23% of the total GVC revenues, despite the first had a smaller audience (180 million against 590 million viewers). While Youtube's GVC revenue mainly came from advertising

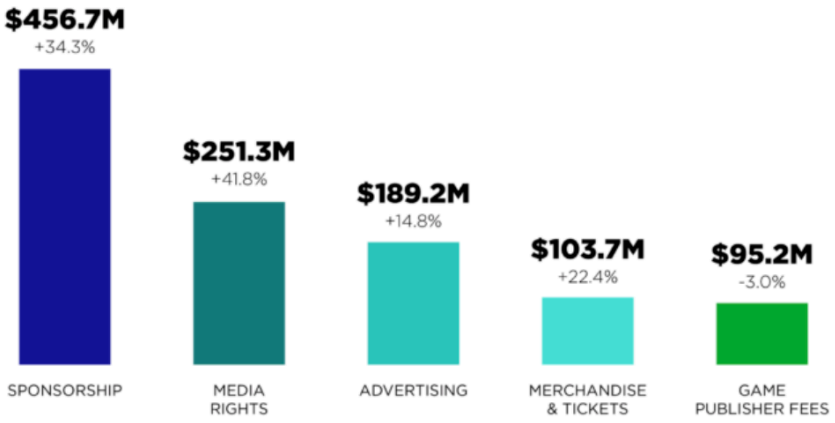
[32] Netflix (January 17, 2019), *Q4 2018 Letter To Shareholders*, Retrieved June 8, 2019, from https://s22.q4cdn.com/959853165/files/doc_financials/quarterly_reports/2018/q4/FINAL-Q418-Shareholder-Letter.pdf

and sponsorships (90%), Twitch exploits wider alternatives of monetization, with donations and channel subscriptions accounting for 32% of revenues. In general, advertising makes the most (51%), followed by donations (25%) and subscriptions (14%), with sponsorship at the bottom. The impact of donations and subscriptions shows how content creators manage to engage viewers, making them willing to support them directly. Furthermore, given the attitude that many adopt when approaching GVC, that is, driven by an information-seeking goal in terms of games, and given its influence as a mass medium, GVC is becoming crucial to a game's success[33].

The success of GVC is mostly due to another interdependent phenomenon rising in the videogame industry, competitive video gaming and gaming tournaments, that is, Esports, today hitting the mainstream. It is not just limited to GVC though, also including tournaments hosted by huge venues with many people willing to pay a ticket to assist. Esports are expected to be a US$1.1 billion industry in 2019, with a 26.7% growth from the previous year, and to reach a US$1.8 billion turnover in 2022, achieving a 22.3% CAGR for the 2017-2022 period. As of 2019, North America is the most influential area, generating 37% of global Esports revenues, followed by China (19%). In terms of monetization methods, as observable in Figure 5, out of the US$1.1 billion Esport is generating in 2019, 82% is made up by endemic and non-endemic brand investment revenues, such as sponsorships (US$457 million,) media rights (US$251 million) and advertising (US$189 million), while the remaining US$199 million are roughly evenly distributed between game publisher fees (-3% YoY growth) and merchandise & tickets (22.4% YoY growth).

[33] SuperData Research (2019), *Gaming Video Content & The New Essential Audience 2018*, Nielsen.

Figure 5 – 2019 Global Esports Revenue Streams with YoY Growth



Source: Newzoo (2019), *Global Esports Market Report 2019*.

The great growth rate Esports revenues are experiencing is attributable mainly to the increase in Esports audience. This figure is expected grow by 15% in 2019, with a total of 454 million people, 44% being Esports enthusiasts. This latter category, opposed to occasional viewers, is destined to increase its impact on the total audience by 2% in 2022, when the total audience will be composed by 645 million individuals (14% CAGR for 2017-2022 period). In 2019 the APAC area alone was home to 57% of enthusiast audience, with EU (16%) and North America (12%) following[34]. As of 2017, League of Legends and Dota 2, both belonging to the MOBA genre, were the most popular Esports games. The first attracted more players, 101 millions of monthly active users, while Dota 2 draws larger prize pools, with US$20 million awarded in one single tournament[35]. This phenomenon ended up in the creation of teams, which now have huge values and are potentially tradable, with many of them created by publishers themselves. Many publishers are also adapting their game developing policies to ensure a ready boom of their titles in the Esports landscape. Also, given its success, Esports may potentially lead to the creation and diffusion of

[34] Newzoo (2019), *Global Esports Market Report 2019*.

[35] SuperData Research (2017), Esports Courtside: Playmakers of 2017, Nielsen.

dedicated TV channels. Furthermore, many Esports betting platforms are arising, where any player can bet on many events within a competition. In conclusion, thanks to all the above-mentioned factors, Esports shapes up to be an industry itself by now.

Lastly, looking at how wide the scope of a videogame can be, it needs to be highlighted that some titles have different purposes than just entertainment. As a matter of fact, as a consequence of the gamification trend, consisting in taking non-fun tasks and building a game to make it more engaging, serious games started spreading around since the beginning of the century. The serious games category covers many types of titles, such as games for health, education (edutainment), research, advertising (advergaming) and many more.

In conclusion, the videogame industry is a relatively young one but is everything but static, having continuously evolved in the last fifty years and more, with new distribution and revenues models disrupting it and then fading away. It is also an economically huge industry that enjoys great growth rates, as always did, thanks to the many proliferating trends that often evolves into new underlying fundaments of the industry.

It is necessary to make clear that from now on, because of the purpose of this thesis, the analysis will take the single videogame as the business of reference. Therefore, all the following business- or firm-sized theoretical frameworks will be introduced and rearranged with the purpose to be applied on the video game intended as a stand-alone business. This allows the view to be wider, closer to the whole industry's one, besides helping to better identify the innovations occurred throughout time.

Second Chapter: Business Model Innovation in the Video Game Industry

It is now time to analyze business model (BM) innovation throughout the history of the video game industry. In this chapter, a literature overview regarding the BM concept, its adaptation for the present purpose, BM canvas (BMC) and BM innovation is presented first. It is followed by the dynamic analysis of business model innovation through time in the industry, carried on by applying the BMC adapted framework to the videogame itself intended as a business and analyzing in depth all nine building blocks.

2.1 Theoretical Framework: Business Model (BM) Concept, BM Canvas and BM Innovation Adaptations

Many researches have been done with regard to the business model concept in the last 60 years and more[36]; nevertheless, a unified definition of business model does not exist. This is probably due to the fact that many authors, when researching this field, have been biased by their area of study[37]. In Table 1, the most commonly accepted and spread definitions of a business model are presented.

[36] According to Dasliva et al. (2013), the business model concept first appeared in 1957 in an academic article by Bellman. Few authors later expanded it until the boom in the popularity of this concept in the '90s.

[37] Ovans, A. (January 23, 2015), *What Is a Business Model*, Harvard Business Review. Retrieved June 19, 2017, from https://hbr.org/2015/01/what-is-a-business-model

Table 1 – Business Model Definitions.

Author(s)	Definition
Timmers (1998)	"An architecture for products, services and information flows, including a description of various business actors and their roles; a description of the potential benefits for the various business actors; and a description of sources of revenues."
Amit & Zott (2001)	"A business model depicts the content, structure, and governance of transactions designed so as to create value through the exploitation of business opportunities."
Osterwalder, Pigneur, & Tucci (2005)	"A business model is a conceptual tool that contains a set of elements and their relationships and allows expressing the business logic of a specific firm. It is a description of the value a company offers to one or several segments of customers and of the architecture of the firm and its network of partners for creating marketing, and delivering this value and relationship capital, to generate profitable and sustainable revenue streams."
Shafer, Smith & Linder (2005)	"A business model is representation of a firm's underlying core logic and strategic choices for creating value within a network."
Chesbrough (2007)	"The business model performs two important functions: value creation and value capture. First, it defines a series of activities, from procuring raw materials to satisfying the final consumer, which will yield a new product or service in such a way that there is net value created throughout the various activities. Second, a business model captures value from a portion of those activities for the firm developing and operating it."
Osterwalder and Pigneur (2010)	"A business model describes the rationale of how an organization creates, delivers, and captures value."

Source: Various Authors.

For the purpose of this thesis the definition of Osterwalder, Pigneur and Tucci (2005), proposed in an article which aimed at reaching the most comprehensive definition possible given the previous studies[38], is here adopted and rearranged in order to match the concept of the videogame as a business:

[38] Osterwalder, A., Pigneur, Y., & Tucci, C.L. (2010), *Clarifying Business Models: Origins, Present, And Future of The Concept*.

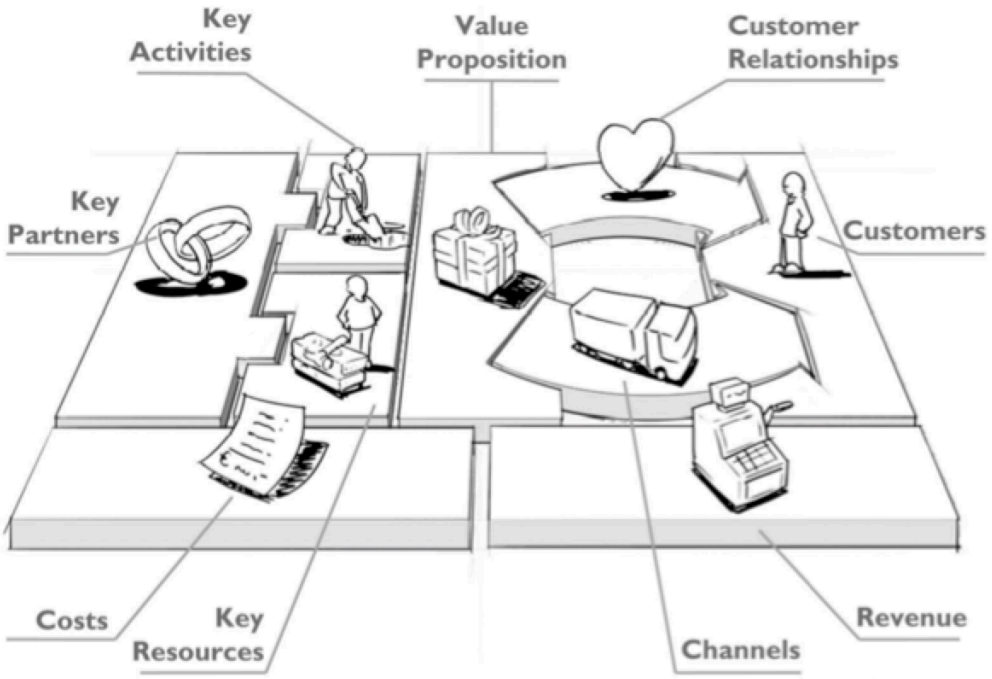
"A business model is a conceptual tool that contains a set of elements and their relationships and allows expressing the business logic of a specific *product*. It is a description of the value a *product* offers to one or several segments of customers and of the architecture of the *product* and *the network of actors involved* in creating, marketing, and delivering this value and relationship capital, to generate profitable and sustainable revenue streams."

This new definition, by introducing the product instead of the single firm and the network of actors involved in place of the single firm's partners, allows a shift of the analysis' focus towards the concept of the product, in our case a videogame, as the reference business.

There is no unanimity also with regard to the components of a comprehensive business model, but the most widespread disaggregation of this concept has been proposed by Osterwalder and Pigneur (2010)[39] and is called business model canvas (BMC). This model has been subsequently enriched, enlarged, adapted to specific niches and so on, but its main form divides a business model into nine so-called "building blocks": key partners, key activities, key resources, value proposition, customer relationship, channels, customer segment, cost structure and revenue streams. According to the authors, the business model must act as a reference outline for the strategy. Nevertheless, when applied to a product and to its evolution through history, the BMC model can be useful to identify the innovations occurred in the pertaining industry and to clarify their nature. Osterwalder and Pigneur also provide a visual representation of the BMC model, as it appears, here modified, in Figure 6.

[39] Osterwalder, A., Pigneur, Y. (2010), *Business Model Generation: A Handbook for Visionaries, Game Changers, and Challengers*.

Figure 6 – Business Model Canvas' Visual Representation



Source: Osterwalder, A., Pigneur, Y. (2010), *Business Model Generation: A Handbook for Visionaries, Game Changers, and Challengers*.

BMC is organized in a way that the left side is related to efficiency and the right one to value, with a logical-emotional juxtaposition. Furthermore, the 9 blocks can be traced back to 4 main areas of business: infrastructure (key partners, key activities and key resources), offer (value proposition), customer (customers, customer relationships and channels) and the bottom line, that is, viability (cost structure and revenue streams). In other words a firm, in our case a product and, by extension, its reference industry, proposes a value that reaches customers through specific channels. The actors of the supply chain then capture this value through revenue streams. On the other side, key partners, in this case key actors, represent here all the firms and other entities contributing to create value through the supply of key resources needed to perform key activities that create the over-mentioned value. Most of these blocks finally result in a cost structure and, therefore, in a model that

describes the rationale of how a product and the actors involved in the related supply chain create, deliver and capture value. The specific content of each block will be discussed later on this chapter, when it will be used to identify innovations in the videogame industry.

This straightforward model has the advantages of being very concise, driving toward a cautious choice of the right terms necessary to give an exhaustive explanation, and of allowing the user to easily compare business models and represent as many variations of a model as possible, besides being easy and quick to share[40]. On the other hand, its concise nature brings the disadvantage of making BMC lose some details, not making clear those features of a business that may have driven some key choices of a game's development, for example. In the context of this thesis, this does not represent a relevant problem since the purpose of the adoption of BMC is to identify the industry's innovations occurred over time. Moreover, the model does not give a clear idea of the business structure, a problem that in this case regards the industry structure. With regard to this issue, the industry structure and the innovations it has experienced through time will deserve a stand-alone analysis in Chapter 3. All this makes BMC, with all the due adaptations proposed by the author, a suitable model for the purposes of the present analysis.

Recently, authors are growingly treating the business model concept with a focus on its capability to drive innovation. Being the video game industry a dynamic and technology-driven one and aiming this chapter at identifying innovations in the industry using the BMC, it is necessary to clarify the business model innovation concept. Innovation as we intend it nowadays was introduced by Schumpeter in

[40] Rodriguez J. (2016), *To Sell or Not To Sell: An Introduction to Business Model (Innovation) for Cultural Organizations*, IETM.

1942[41] and was appointed as the most critical driver of development and change in developed economies. As a matter of fact, in the opinion of the economist, entrepreneurs and big firms are encouraged to innovate by competition and by their aim at increasing profits. A process called "creative destruction" take therefore place and it is the core of capitalist economy according to Schumpeter. This process leads to the destruction of old economic structures and/or to the creation of new ones, with entrepreneurs acting as main actors in finding new ways to do things that are already being done or in coming up with something that has never been done before, leveraging an untested technological improvement or a personal invention. Starting from the '50s, the innovation concept and its relevance for firms with regard to gaining a leading position in their industry attracted more and more attention. Nevertheless, at the time, innovation was perceived mainly as an industrial and technological process, today called "hard innovation" and coming mainly from external factors like, indeed, the technological one. On the other side, we have "soft innovation", regarding processes, management tools, customer experience and so on. This concept also embraces new combinations of existing technologies and processes, with 90 percent of all business model innovations being new combinations from parts of "old" or "other" business models, according to the St. Gallen Business Model Navigator[42]. In few words, soft innovation may come from a valuable idea of just anyone within an organization or, as in our case, a value chain and it represents the innovation that mostly allows a single business (video game) to be successful and sustainable[40]. Indeed, while technological innovations take little time to become

[41] Schumpeter, J.A. (1942), *Capitalism, Socialism and Democracy, Third Edition*, George Allen and Unwin, London.

[42] Gassmann, O., Frankenberger, K., & Csik, M. (2013), *The St. Gallen Business Model Navigator*, Financial Times.

globally accessible most of the times, other kind of innovations can be originated from anything else, from an individual's inspiration to the combination of a (new) process and an (new) industry-wide technology.

All these different types of innovation occurred in a product's history can be easily captured within the dynamic application of the BMC. As a matter of fact, with a definition tied to this model, business model innovation (BMI) is here intended as any innovation or re-invention occurring in one or more of the nine BMC building blocks. This enlarges the scope of the innovation concept when compared to simple product or process innovation. Clearly, even if BMC will be applied to the video game as the reference business in order to identify innovations through the industry's history, it was single companies, thanks to both technological improvement and firm's creativity, which actually put most of these innovations in practice for single titles.

With regards to BMI, many firms concentrate on redesigning their revenue model. This is even more true in the video game industry, where revenue model innovations represent the main ones or at least the ones that left such a big mark that many BMs of the industry are named after the revenue model they adopt (e.g. "freemium BMs"), regardless of any difference in other building blocks. Nevertheless, the key idea to be borne in mind is the fact that innovation is also about value proposition, channels, customer relationship and other blocks, as well as a combination of them. Also, this definition of BMI makes innovation a potentially inexpensive activity, subject of course to uncertainty in terms of outcomes, and therefore a useful one when it come to times of uncertainty and technological transition. Indeed, times of economic turbulence and technological change create many opportunities in terms of BMI, as the videogame industry shows, for example, in the Nintendo's rise during 1983

industry crash, built upon Atari's errors and new use of existing technologies[43]. Finally, innovation needs to be sustainable and therefore not imitable if want to bring to a continuous competitive advantage. Nonetheless, every BM should be considered temporary, and the parties involved should keep an unceasing proactive attitude towards BMI.

Now that the theoretical framework is clear, it is time to explore business model innovation in the history of the videogame industry.

2.2 Business Model Innovation in The Video Game Industry

In this chapter, business model innovations occurred in the videogame industry will be identified, using BMC as reference. Indeed, its nine building blocks will be introduced one by one with a videogame-oriented view, therefore with product-related definitions. Within each block, the main innovations that changed the way something could be done in that area of interest throughout the industry's history will be presented.

The building blocks constituting the right side of BMC have experienced the greatest amount of "soft" innovation that took place in the industry, with many novelties related to their intrinsic nature.

2.2.1 Customer Segments

This building block, according to the authors of the model, *"defines the different groups of people or organizations* [a product] *aims to reach and serve"* (Osterwalder & Pigneur, 2010, p. 20). This block therefore represents the customer segment(s) the

[43] For a deeper analysis of the Nintendo case, please refer to Chapter 1 Paragraph 3.

product is targeting through the marketing efforts of the different actors within the value chain.

Through time, new and different ways to segment the market have emerged in the videogame industry. At the dawn of its history, apart from an initial phase of the arcades when it was the time of early adopters, little segmentation could be made when compared to today's one due to the fact that video games were not an existing need and were in general designed for those who sought new forms of more interactive entertainment during their free time.

Later, after the boom of arcades and the spread of consoles and then home PCs, the number of gamers soared and they started to be able to be segmented on the basis of the game genre. Indeed, a genre embraces many facets that can be mixed by developers in order to target a huge number of different and often overlapping segments, resulting in many different ways to create value and differentiate a game[44]. This concept can be made brighter by an example concerning two titles that belong to the seventh generation of consoles. Naughty Dog's Uncharted series and Gearbox Software's Borderlands series, respectively published by Sony Interactive and 2K Games, are very similar in terms of gameplay (action-adventure shooter), purpose (entertainment), target audience (mature rating), visualization (3D), temporal aspect (real time) and more. But the two games are different in terms of artistic style (realistic and cartoon respectively), point of view (third person and first person), theme (ancient treasures seeking and end of the world), setting (variable natural settings and desert), ancillary genres (platformer and RPG), mood (adventurous and humorous), and type of ending (Finite and Circuitous). Again, this method results in many partially overlapping segments and gives developers many possibilities to create value and differentiate their product.

[44] Lee, J.H. et al. (2014), *Facet Analysis of Video Game Genres*, iConference 2014 Proceedings.

Another method that emerged during the history of the industry is based on the user's age. In fact, many video game content rating systems have emerged, starting from early 2000s, in different countries or geographical areas around the globe, mostly moved by ethical concerns. With governments somehow involved in most of them, the self-imposed use of these systems, a standard of the industry by now, is aimed at rating games on the basis of how appropriate their contents are for specific age groups, resulting in suggested lower bounds for the age of the final users. Nevertheless, this method is not the most effective one since the adults' control over this type of purchase is often not tight[45].

Segmentation through genre is still a valid method, but it has been recently put side by side with new types of segmentation introduced by the wide adoption of the Internet and the rise of digital distribution and online gaming. As a matter of fact, games can address, for example, the competitive player segment (e.g. DOTA 2), thanks also to the popularity of Esports, the social player segment (e.g. FarmVille) by leveraging social networks' user base, or the casual player segment (e.g. CandyCrush). Family gaming and platform segmentation are other methods introduced in the last two decades.

Finally, the most classical type of segmentation is generally the one proposed by the authors of the BMC model, who suggest 5 macro-categories of segments[39], three of which are here mentioned. Mass market refers to a large group with similar needs and comprises, for example, AAA titles like RDR2. On the other side, a niche market is a specific group composed by individuals with specific needs to be addressed. Many indie games aim at reaching niche markets. Finally, a multi-sided market refers to two or more unrelated segments. This is the case of recent games available

[45] Felini, D. (2015), *Beyond Today's Video Game Rating Systems a Critical Approach to PEGI and ESRB, and Proposed Improvements*, Games and Culture Vol. 10 Issue 1, pp. 106-122.

on multiple platforms (smartphone, social networks, tablet, PC, console) like, among others, Fortnite.

Table 2 – Innovation in The *Customer Segments* Building Block Throughout Videogame Industry History

CUSTOMERS SEGMENTS evolution based on author's analysis (segmentation criteria)
Before digitalization (universal good)**:** **Game genre** with all its components: gameplay, purpose, target audience, presentation, temporal aspect, artistic style, point of view, theme, setting, mood, type of ending, plot, etc. **User's age**: rating systems have emerged from early 2000s **After digitalization** (gaas)**:** **New segmentation criteria:** *competitive player* segment, thanks also to the popularity of Esports; *social player* segment, leveraging social networks' user base; *casual player* segment (e.g. CandyCrush*); family gaming*; *platform segmentation* and more. **Classic segmentation** (Osterwalder & Pigneur, 2010): *mass market* (AAA games like Assassin's Creed series), *niche market* (indie games like Firewatch) and *multi-sided market* (many multiple platform games like Fortnite).

Source: Author's Analysis.

2.2.2 Value Proposition

This block *"describes the bundle of products and services that create value for a specific customer segment"* (Osterwalder & Pigneur, 2010, p. 22). This component is therefore related to the value that the product delivers to the reference customer segment.

One way to analyze the evolution of the value proposition in the gaming history is referring to the different types of value proposition presented by the authors of the BMC model. During the first initial phase of the industry, when video arcades were spreading around, value proposition innovation was mainly based on newness and design, factors that can still drive innovation in this block nowadays. This implies delivering value whose innovation is based on game genre, user interface, artistic

style, gameplay, plot etc. Another aspect affecting value proposition innovation at that time was performance, which soon became a main driver consequently to the diffusion of consoles and PC games. This regards mostly the introduction of new hardware and processors with all their implications like better graphics. With the introduction of the shareware model, which led games like DOOM or Quake to commercial success and is further investigated in the *revenue streams* section of this paragraph, also factors like accessibility and (probably just perceived) price started driving innovation in this sense. Usability became relevant when games introduced the possibility to be played with friends, while the status factor when the first collector's edition approached the market, signaling the affection of a player to that title. Customization, on the other hand, became a driver when in-game features customization first appeared. With the advent of the Internet and digital distribution, the above-mentioned factors, together with others presented by Osterwalder and Pigneur, started driving strong innovation in new ways with regard to value proposition. Some examples are F2P games (price), the "modding" phenomenon and auto-updates (usability, customization), not only of the version but also in terms of continuous provision of new contents (e.g. Dota 2's hero skins), multiplatform games and social games (accessibility) like CandyCrush or FarmVille, the possibility to compete online and to live stream game sessions (usability) like occurs in Fortnite.

Another interesting way to identify value proposition innovation in a broader sense is based on the theory of Gidhagen, Persson Ridell, and Sörhammar (2011)[46]. It focuses on the contribution of both the firm and the customer himself to the value proposition of a videogame, with a constant focus on videogame mods that does not prevents the

[46] Gidhagen, M., Persson Ridell, O., Sörhammar, D. (2011), *The Orchestrating Firm: Value Creation in The Video Game Industry*, Managing Service Quality: An International Journal, Vol. 21 Issue 4, pp.392-409.

application of its leading principles to this context. As a matter of fact, the authors affirm that, in a videogame, both the firms involved in its creation and the final users themselves are able to create the related value. It is interesting, given the evolution of videogames in terms of users' involvement, to analyze value proposition innovation from this perspective. Initially, the only source of value of a videogame was the developer through the game itself and the features discussed above, followed by console manufacturers with their processor's power. Local multi-player games, uniquely or sometimes just more enjoyable with friends, were the first cases of user-generated value. This evolved later in Local Area Network (LAN) games, able to run bigger multiplayer matches. Doom and Quake were pioneers of this technology. Then firms started introducing features that allowed value to be originated by users playing a game more than once, like titles having different difficulty levels or several endings on the base of the player's actions. In-game features customization was another way for players to lend added value. In spite of these features, the games produced during the period that goes from the birth of the industry to the advent of the online were proposed as universal goods rather than services, with all players enjoying more or less the same experience and most of the value being generated by developers and console manufacturers.

With the advent of the online many things changed and a strong shift of the origin of value from firms to customers started occurring, marking an increasing attention towards the social aspects of games and gaming communities. Apart from the first online modes of campaign-based games, which enlarged the options for the player on how a game could be played, the first examples of this shift were games playable uniquely online. Indeed, the MMORPG World of Warcraft (WoW) is the first case of a popular game whose value was mostly given by the amount of players playing the game, and this is true not only in the player-versus-player (PvP) mode. This is also

valid for many today's multiplatform online games like League of Legends (LoL). Similarly, in social network games much value is user-generated, but here the value does not involve improving and making more immersive the game experience itself, but regards the possibility to share achievements with other community members. Furthermore, with the boom of GVC streaming, giving the possibility to live stream game sessions opened new doors to user-originated value creation. Besides online technologies, games like *Little Big Planet* (2008) or *Minecraft* are completely customized, being mostly based on the user's utilization of the developer's in game content generating tool. With this regards, the "modding" phenomenon spread from early 2000s, consisting in modifying the source code of games through development kits provided by developers. A great example is Valve's *Half Life*'s mod *Counter Strike*, realized in 1999, whose rights were immediately acquired by Valve itself, which made it a stand-alone commercial success and offered the two developers jobs at the company. Of course, all the above-mentioned different ways players have to create value are based on sorts of "value creation tools" provided by developers, such as online communities, social features (e.g. in-game chats), development toolkits and even beta versions (where the players' feedback generates value for the final phase of developement). Furthermore, sometimes this value needs to be captured by firms through "value capturing tools", such as mod incubators (Valve case) or, more simply, community managers.

Given this evolution, nowadays the larger the users' contribution to value creation, the bigger the network effects and positive externalities enjoyed by the game from having more users. Often, for this kind of titles, the whole business model adapts to this principle resulting, for example, in F2P revenue models in order to obtain a high user base.

Table 3 – Innovation in The *Value Proposition* Building Block Throughout Videogame Industry History

VALUE PROPOSITION evolution based on Osterwalder & Pigneur (2010)

Before digitalization (universal good)**:**

Newness/Design: game genre, UI, artistic style, gameplay, plot, etc. (valid also today)
Performance: new hardware and processors with their implications (e.g. improved graphics).
Accessibility: shareware model.
Usability: (local) multiplayer games.
Status: collectors' editions.
Customization: in game features customization.

After digitalization (gaas)**:**

Price: F2P games and similair.
Usability/Customization: auto-updates of both game version and game content (e.g. DOTA 2 heroes skins), "modding" phenomenon.
Accessibility: multiplatform and social games (e.g. FarmVille).
Usability: online multiplayers and game sessions live stream (e.g. Fortnite).

VALUE PROPOSITION evolution based on source of value (Gidhagen, Persson Ridell, and Sörhammar, 2011)

Before digitalization (universal good, mostly *firm-generated value*):

Firm-generated value: the game itself with its characteristics like gameplay, UI,
etc. (developer), processor' power (console manufacturer).
User-generated value: local multi-player games, LAN games (e.g. Doom and Quake), different difficulty levels and/or endings, in-game features customization.

After digitalization (gaas, mostly *user-generated value*)**:**

Firm-generated value: same as before plus auto-updates and multiplatform games.
User-generated value: online gaming, MMORPG (e.g. WoW), social games, chance to live stream game sessions, in game content generating tools (e.g. Minecraft or Little Big Planet), "modding" phenomenon (e.g. Counter Strike), beta versions' feedbacks.

Source: Author's Analysis.

2.2.3 Channels

This building block *"describes how* [the firms involved in creating, delivering and capturing a product's value] *communicate with and reach* [their] *Customer Segments*

to deliver a Value Proposition". This involves the choice of the right channels on the base of the value to be proposed and the segments to be reached (e.g. multiplatform channels are good for user-originated value based games since, together with a F2P revenue model, they boost the number of users). Video games' channels have evolved a lot throughout history, mostly with the aim to create value. Osterwalder & Pigneur (2010) affirm that a channel can cover one or more phases among awareness, evaluation, purchase, delivery and after sales. In terms of awareness, in the first decades of the industry video games relied mainly upon word of mouth, newspapers, specialized magazines, some events and later also upon TV and free CDs with the first levels of a game (Shareware model). As digitalization took over, new awareness channels like social networks, dedicated websites, bigger events (e.g. E3), online demos and in-game ads emerged. The evaluation phase was initially essentially covered by written reviews on specialized magazines, again, free levels and, in some cases, the arcade version that a console game was inspired from, playable for few cents at video arcades. With the advent of the online, video reviews, video gameplays (coming from both the firm and, later, online streamers), social communities and free online demos became the most used channels of evaluation. With regard to the purchase phase, indirect channels like physical retailers prevailed before the Internet spread, with few cases of developer's distributing the game directly on their websites in order to cut retailer's margin. After that, direct channels proliferated, selling online directly to the device that the game was intended to be played on. Some examples are titles downloadable on the developer's website (e.g. WoW), digital distribution platforms like Steam, consoles' digital stores (e.g. PS Store), smartphone stores, rental services (e.g., GameFly), cloud gaming services like PS Now and browser games. Then, the channels used in the delivery phase historically depended on the purchase mode. When physical purchases prevailed, the

physical-form of the game to be installed was the most used, thanks to brick and mortars. On the other side, as digitalization spread, B2C delivery channels increased in relevance. Digital versions of the game to be installed on devices, or even streamed games that simply need a good Internet connection to be played are some examples. Finally, the firms rarely appointed the after-sales phase before the online took over since universal goods, having short lifecycles, adopted "fire and forget" BMs[47]. Then, bug-fixing services through free patches, online support (e.g. communities with official moderators), social networks, constant updates to game content and, in a way, also downloadable content (DLC) appeared among channels carrying out the after-sales phase.

Steam is an example of a channel that integrates all the above-mentioned phases (omnichannel), since it has expanded into a publishing, selling and promoting platform. Of course cannot be used alone for AAA games, having these blockbusters the necessity to exploit as many channels as possible, using both general and specific ones with regard to channel phase coverage. As said before, these changes led to value creation for both the supply chain's firms (saving production costs) and, mostly, the end users (improved information gathering and after-sales experience, possibility to purchase and play at home).

Table 4 – Innovation in The *Channels* Building Block Throughout Videogame Industry History

CHANNELS' evolution based on channel phases (Osterwalder & Pigneur, 2010)
Before digitalization (universal good)**:**
Awareness: TV, word of mouth, newspapers, specialized magazines, few events, shareware model (sort of demos).

[47] Teipen, C, (2008), *Work and Employment in Creative Industries: The Video Games Industry in Germany, Sweden and Poland*. Economic and Industrial Democracy Journal, Vol. 29 Issue 3, pp. 309-335.

Evaluation: written reviews on specialized magazines, shareware model, the arcade version that a console game was inspired from.
Purchase: indirect channels prevailed, mostly through physical retailers, with few cases of developer's distributing the game directly on their websites in order to cut retailer's margin.
Delivery (purchase mode dependent): physical form of the game to play/install.
After sales: rarely appointed phase.

After digitalization (gaas)**:**
Awareness: social networks, dedicated or general websites, bigger events (e.g. E3), online demos, in-game ads.
Evaluation: Video reviews, video gameplays (both firm- and streamers-originated), online demos, social communities.
Purchase: direct channels prevail, selling online directly to the device that the game was intended to be played on: developer's website, digital distribution platforms, consoles' digital stores, smartphone stores, rental services, cloud gaming services.
Delivery (purchase mode dependent): digital form of the game to install; streamed games.
After sales: bug-fixing patches, online support, social networks, constant updates to game content, downloadable content (DLC).

Source: Author's Analysis.

2.2.4 Customer Relationships

This building block is here defined as the one that *"describes the types of relationships* [the firms involved in creating, delivering and capturing a product's value] *establish with specific Customer Segments"*. This aspect appears important to enhance engagement and retain customers and it has, therefore, increased its relevance since games started being proposed as services. Following the customer relationships categories proposed by Osterwalder & Pigneur (2010), innovation in customer relationships (CR) is here analyzed. In the initial phases of the industry, players created communities on newspapers and specialized magazines. In this cases, the involved firms most of the times were able to read users' reviews and opinions just when it was too late to fix any problem. Some sporadic cases of dedicated personal assistance occurred through correspondence between some players and

developers, but CR were not so relevant[48]. Then, with advent of the Internet, CR started enjoying a higher consideration. Indeed, innovation in this field started aiming at long-term relationships with the users in order to retain them. The CR categories involved were still communities, but also self-service, (dedicated) personal assistance, automated services (web-based portals) and co-creation. As a matter of fact, it became easier for firms to get in touch with the above-mentioned communities and alto to create new, official ones on the developer/publisher's website, on social networks and so on. There, community members can talk about the plot, their game experience, the game world etc., further enhancing the attention paid and the attachment to the title. Furthermore, the Internet allowed developers to gather users' feedbacks and in-game data, resulting in downloadable patches to fix bugs, a goal pursued also by the online distribution of demos before the official launch. Moreover, portals giving solutions for the most common problems were soon incorporated in specific game sections on companies' websites, together with more personalized way of relation, such as e-mails or live chats. Co-creation and user generated content were innovated through, among others, in-game content generating tools and developer toolkits, mostly aimed at creating user-based value and to eventually fulfill users' efforts by, for example, making best mods widely available (Valve's *Counter Strike*) or giving the chance to share one's creations (Little Big Planet). Finally, creating game competitions is another great innovation in the CR field.

[48] Teipen, C, (2008), *Work and Employment in Creative Industries: The Video Games Industry in Germany, Sweden and Poland*. Economic and Industrial Democracy Journal, Vol. 29 Issue 3, pp. 309-335.

Table 5 – Innovation in The *Customer Relationships* Building Block Throughout Videogame Industry History

CUSTOMER RELATIONSHIPS' evolution based on CR categories (Osterwalder & Pigneur, 2010)

Before digitalization (universal good)**:**

Communities: firm interaction with player-generated communities (not effective).

Dedicated personal assistance: sporadic cases of developer-player correspondence.

CR never played a prominent role in this period.

After digitalization (gaas)**:**

Communities: social networks, official communities, Esports competition

Self-service: web-based portals providing solutions to the most common problems.

(Dedicated) personal assistance: live chats, e-mail.

Automated services: web-based portals.

Co-creation: developer toolkits, in-game content generating tools, live streaming of game sessions.

Source: Author's Analysis.

2.2.5 Revenue Streams

This building block *"represents the cash a [*product*] generates from each Customer Segment"*. According to Osterwalder and Pigneur (2010), the revenue streams can belong to two different macro-categories: one-time customer payments and recurring revenues resulting from ongoing payments. Then, all the different specific types of streams (asset sale, subscription fees, ads etc.) can be ascribable to one of or both the categories, with the industry experiencing a clear shift from the first to the second one. Now, before introducing video games revenue mechanics and monetization methods, it is important to have clear the main purchase methods available to users in order to lay their hands on a game, already mentioned in the *Channels* building block.

In the beginning was the arcade era, when one single cabinet could cost hundreds of dollars to produce (developers created the game, hardware manufacturer put it in the

cabinet, distributors acted as local mass purchasers and arcade operators brought the game to users), unlike today's disks. Then, a game had to bring a certain amount of money per unit time in order to cover both operators' investment and rent, before being replaced due to its aging. This is why games were designed to be played for a short time with one single coin (players were supposed to lose in 3 minutes or less with their quarter dollar), some explicitly setting a time limit to win, some others pushing players' skills to the limit until the game was too hard. This time oriented game design then influenced the first console games in terms of gameplay. Nintendo started to shift from this design model during mid-'80s.

After arcades, the first purchase method for home console games was the traditional packaged game software sale. It encompasses both brick and mortars and online retailers that appeared later and that shipped the physical product at home (e.g. Amazon). In this traditional system, the revenues obtained from a single game sale (roughly 60US$ for a full price AAA game in 2000s and still nowadays) is split among all the value chain actors roughly in the following way: the first party gets around 15%, reason why consoles are often sold at loss in order to enlarge the potential market; the developer gathers 10-15% in royalties, varying on the basis of its notoriety, but it never happens before this stake recovers the so called advance against royalties made available by the publisher in order to cover developing costs; then, the publisher gets 25-30%, baring all the financial risks; finally, the retailer gets almost 50% of the revenues, being awarded with the biggest stake. Like explained in the key actors section, other players like middleware companies, licensors or hardware peripherals manufacturers may contribute to the process and therefore compete to win their stake.

The physical asset sale has been flanked and then progressively clouded by a currently leading purchase method, that is, digital asset sale. Also known as direct

download or direct to consumer, this model consists in selling directly to customers the digital version of the game to be installed on the device used to download it. This can happen in many different ways like, for example, directly from developer's website, from smartphone app stores, console stores, digital distribution platforms (e.g. Steam) and others. In these cases, the different actors' stake may strongly vary on the basis on the sale method. As a matter of fact, a developer may get 100% of the price if he/she sells the game on its website, without intermediaries. The downside of this scenario would be that the developer has to handle everything involving payments, credit card fraud, hackers, and pirates. This would imply the need to develop a good digital rights management (DRM) to hedge some of these risks. This gave life to number of digital distribution portals: platforms like Steam that allow players to purchase games, but do not allow them to purchase and share or host the game on another website, that is, providing DRM trough their system. These online portals also work as a marketing tool, trough promotion, ads and so on. Games on online portals are cheaper than retailers, since retailer's cut is cut of when compared to the above-mentioned one valid for physical sales: these platforms retain lower margins. For example, Apple Store started promoting developers by giving them 70% royalties so that they started developing games for Apple devices, but there was no advance against royalties, so developers bared 100% of the financial (and commercial) risk. A problem for online stores is discoverability. There is no shelf space cost so a game remains available forever, and there are many new games launched every month so it is a difficult for a new one to be discovered. Therefore, publishers' entry in the online business model was necessary: they own a large stable base of big-sellers games and they can promote other games within their existing games, broadening their marketing reach (e.g. Zynga, Rovio). But this also implies that developers earn less money, sometimes taking advances and, therefore,

conceptually getting back to the classical above-mentioned developer-publisher model.

The two above-mentioned purchase methods are today flanked by the possibility to rent video games through subscription-based services offered by platforms like GameFly. Here, players have access to wide libraries of games to be rented, played and eventually purchased, with different services available depending on the platform at issue. In addition, many rental service providers have been lately introducing cloud gaming services as well.

Next, a new "purchase" method that can nowadays be seen as a branch of digital sale emerged between late 1990s and early 2000s: free-to-play (F2P). It simply consists in giving away a game for free, either through a download or directly on a browser (browser games), and was firstly introduced with massively multiplayer online game (MMOs) like Furcadia, RuneScape or MapleStory that addressed the children and casual gamers segments. This apparently controversial strategy may be adopted for various purposes and, as made clear later in this section, coupled with many different methods to still profit from players, whose potential in terms of number is virtually enormous, given the free access to the software. As a matter of fact, this essential feature increases ads visibility (ads based F2P) and/or the chance users spend money within the game (micro transaction based F2P). This is why the crucial metric related to F2Ps, and more in general to all online games, is monthly active users (MAUs). The higher the MAUs are, the higher the chance of having paying players among them, the so-called "whales"[49]. It often happens that most players do not spend

[49] Carmichael, S. (March 14, 2013), *What It Means to Be A 'Whale' — And Why Social Gamers Are Just Gamers*, Venture Beat, Retrieved July 2, 2019, from https://venturebeat.com/2013/03/14/whales-and-why-social-gamers-are-just-gamers/

money, while a small percentage ("white whales"), often below 1%, brings more than the half of revenues[50].

Lastly, a new purchasing method that, at a rough glance, may be wrongly confused for a variation of digital asset sale has emerged lately, that is, cloud gaming or on demand gaming. It consists, as stated before, of allowing players to play games without downloading or installing them, thanks to powerful severs that executes the game and stream it, with the sole need of a strong internet connection. In other words, a subscription fee is due in order to have access to huge game libraries and to choose whatever title to play any time, following a Netflix-alike mechanic. In this field, among major publishers, Sony is leading the way, having generated more than 50% of cloud gaming subscription revenues in Q3 2018, followed by EA (33% cumulatively with three different services) and Microsoft's Xbox Game Pass (15%)[51]. This huge phenomenon, together with the cross-device gaming trend, may eventually put hardware in the background, shifting the focus on the game itself as driver of the market competition.

As stated before, nowadays many videogame BMs take their name after the revenue model they use (e.g. ads-based BMs or micro-transaction BMs). This highlights the importance of this building block, even just with regard to customers' perceptions. Many video games monetization methods are now introduced with the purpose to present an exhaustive overview of the tools actually available to producers and

[50] Johnson, E. (February 26, 2014), *A Long Tail of Whales: Half of Mobile Games Money Comes From 0.15 Percent of Players*, Retrieved July 15, 2019, from https://www.vox.com/2014/2/26/11623998/a-long-tail-of-whales-half-of-mobile-games-money-comes-from-0-15

[51] SuperData Research (2019), *Subscription Services: Transforming Games Monetization*, Nielsen.

publishers, also as combination of different models, in order to get the most out from their creations[52].

Many games are of course sold through the well-established one-time asset sale, consisting in one single upfront payment made by the user in order to obtain rights to play the full game. This model can today be applied on brick and mortar sales, online retailers', online portals', developer websites' and many other sale methods, with the only difference of how the sum paid by the user is divided among the actors involved. This is the oldest revenue model (after the arcade one) and nowadays it difficult to find it used in a "pure" way, that is, not combined with at least one of the other methods presented here. Among others, one-time sold games can be supported by downloadable content (DLC), a digital monetization method that is anyway not tied the above-mentioned one. It consists of selling additional digital content of different nature, such as supplementary levels or a new storyline, to an already existing game. This, when applied to one-time sold games, ensures a not long-lasting but effective form of ongoing monetization for the actors involved in the creation of the game. This is even more true when taking into account that many publisher release special editions of already marketed titles including the original game plus all DLC released afterwards. Another way to continuously monetize game content is episodic entertainment, borrowed from the TV series model. A game here consists of different episodes, like it happened for Hitman (2016), that can be bought by the user either one by one as they become available or all together when the whole set is finally released (Hitman: The Complete First Season). The precursor of this revenue model was Dunjonquest series (1979). Also expansion packs, such as Wrath of The Lich King for the WoW series, can be included in this category. Next, there is the trialware method, also known as "try before you buy", shareware, demoware or

[52] Granberg, C. (2009), *David Perry on Game Design: A Brainstorming Toolbox*, Prima Publishing.

timedware. The player is here allowed to play a limited (either in terms of number of levels or time available) version of the game for free, with the aim to convince him/her to buy the whole game. This requires an effort from developers and publishers in order to effectively set the constraint: too much content available for free may prevent users to buy the complete version, finding themselves satisfied, while too little may not sufficiently engage players. Usually, a successful strategy requires the demo to offer a complete level or section ending right before a significant combat like a boss one. The origins of this revenue model lay in the early 90's, when the shareware model appeared: the developer provided the customers the ability to play the first few levels of a game through a free CD and encouraged them to share it with their friends, also by pirating it if necessary, then they could mail money to the developer and receive a disk with the full game on it, with the request not to pirate that. It appears a word-of-mouth based method trying to contain piracy on PC, but also being a way for developers to cut out the retailers' and publishers' role before the Internet allowed that. The shareware model contributed to the commercial success of games like Doom or Quake. Then, when the Internet became ubiquitous, this model evolved in demos downloadable directly on developers' websites. Subsequently, when digital distribution rose, console stores and digital platforms like Steam became the main "demo providers".

The revenue model that ensures the most predictable ongoing revenues is the subscription model. It intuitively consists in requiring players a fee, most of the time monthly and charged automatically, in order to keep playing the game. This method is often coupled with a one-time sale of the files to be installed, like it happens for WoW. This revenue mechanics found its success at the beginning of the new millennium with massively multiplayer online games (MMOs): since these games had ongoing costs like servers' maintenance and constant updates, developers had to

guarantee ongoing revenues and therefore introduced the subscription model that, as stated before, also revealed itself useful to more easily predict revenues.

It is now time to introduce those revenue models that are strongly tied in their origin to the above-presented F2P "purchase" method, not implying that they cannot be used for upfront paid titles.

A common way to profit from users is through in-game (micro) transactions. This revenue mechanic consists of allowing players to buy virtual goods and game features directly within the game, often leveraging on users' emotional impulse. Roughly in early 2000s some developers decided to give their game for free and earn a profit from, indeed, in-game transactions. These revenue models had to take into account that, given credit card transactions, banks retained US$.25 + 1-2% of the amount paid on average. This means developers had to deal with this and it was not convenient for them to sell goods for low prices (e.g. US$.20). The solution was the micro transaction model: allowing players to purchase in-game currency to do in-game purchases, eliminating banks' commission on every single transaction, setting a minimum amount payable for the currency (e.g. US$10). This helped to keep the number of transactions lower and their amount, together with their profitability, higher. Nowadays, most micro transaction-based models use two types of currency. A "soft" one is earned by playing and is used to buy marginal and common goods, while the "hard" currency can be purchased for real money by players, with few cases of limited in-game appropriation (the moment of the download of the game itself or of few specific achievements), and it is the only one that can buy special, useful or unique goods[53]. Specifically, in-game transactions may regard virtual items, either esthetic or functional. In the first case hero skins, rings and similar goods are bought just to make a character more appealing, while in the latter the item

[53] Luton, W. (2013), *Free-To-Play: Making Money from Games You Giveaway*, New Riders.

purchased, sometimes consumable, also improves a character's skill or, more in general, eases the player's experience. A common practice within functional goods sale is selling time. This can take many forms such as selling engine in car games, bullets in shooter games, resource spawns per day, lives and more. Also additional features can be sold, such as server changes, character name changes, faster leveling up and similar benefits, like it happens in WoW. Finally, an interesting variable of this method consists in giving players the chance to obtain currency or specific items by inviting friends to join the game. The rationale of this alternative is given by the consequence of having a bigger number of players, that is, increasing the chance of having profitable users. In this scenario, it is important to highlight how functional goods and time sale represent forms of micro transaction that may harm and limit the game experience, recalling the controversial freemium model, presented later in this section.

Another model useful to profit from players is the advertisement-based one. As micro-transaction revenue mode, ads-based one may take several different forms but the rationale is always the same: promoting a product, a company or the like by exploiting a video game user base and, therefore, offering advertisers a way to obtain visibility. One way is inserting ads within the game world; this technique is called in-game advertising. In-game ads can have, in turn, many sides, like straightforwardly inserting the ad in billboards (more likely in a sport game), branding virtual items, replicating an existing product in the game environment or more subtly implanting the ad within the story line (e.g. a character working for an existing corporation). Another more straightforward method consists in placing banners, skyscraper ads, popup ads and the like around the game world, and it is called around-game advertising. It is widely used on Flash game websites and, most of all, for mobile games. This practice may appear intrusive since it reduces the player's field of action

and it is, therefore, more easily accepted for F2P games, where users are enjoying a free experience and understand that developers need to make money in some way. The revenues for the publisher/developer can be based on one or more of the following variables: cost per thousand views, cost per click, cost per acquisition of a player (virtually paying for the whole pool of users which may be attracted by the ad), cost per paying player (companies are likely to pay more for player who uses to spend money within the game)[54]. Finally, a separate category of the ads-based monetization model is represented by the so-called advert-games. These are games that are created for the unique purpose of advertisement: the whole experience is one huge ad. This feature brings advert-games closer to the serious game category: game developed for purposes other than entertainment like, for example, health, recruitment or education. Advert-games were born in '90s, when they circulated on CDs and floppy disks and were distributed for free, often bundled with other products of the same company but not only. One of the first cases of commercial success is Cool Spot, an advert-game published for Sega Genesis and SNES in 1993 for promoting the 7 Up brand. Nowadays, it is common to find advert-games on companies' websites themselves. Most of the times, the advertiser finances the development and pays the developer on the basis of its reputation and similar factors.
Another strategy that developers may adopt within the F2P framework is giving away a game for free in its entirety, without any feature to be paid or advertisement that may limit the game experience. This method, referred as freeware model, has the purpose of making a game, together with its developers, as known as possible, gathering a large user base with the aim of eventually getting a good offer to sell the studio or good lucrative deals for future games. In few words, it is a way for a

[54] Fields, T., Cotton, B. (2012), *Social Game Design. Monetization Methods And Mechanics*, Morgan Kaufmann Publishers, Amsterdam.

development studio to promote itself. Then, a freeware game may be open-source, meaning that also the source code is released with the game, thus encouraging users to improve and modify it, enhancing its reputation and engagement.

Last but not least, in the context of games given away for free, it is important to talk about freemium models. The term freemium has always been ambiguous, and many authors identify it with the F2P with in-game purchases model explained before. Nevertheless, the intention of the author is, for the purpose of this thesis, making a clear distinction between these two concepts, which part of the survey will be based on. As a matter of fact, the term "freemium" is here intended as the model that encompasses all those freely-available games that, in their free version, limit player's experience to a specific point in the story line or, alternatively, confine it by strongly reducing the content available to a restricted bulk. Of course, these games require a payment to be made in order to unlock the full content (e.g. Wizard101 or Ryzom). In other words, freemium games have a free version embedding only some "core features", with other important ones missing and available just after a payment. This definition sets a blurred boundary between freemium and F2P micro-transaction based games, giving life to a grey area lying in the middle. Some games, for example, even in their free version may not prevent the player from enjoying all levels, but may offer so much more to a paying user that many may perceive the payment as forced. This often happens in MMOs like EverQuest II or Dungeons and Dragons Online, where non-paying players may be excluded from the usage of some features (e.g. selecting all possible characters' races) or from ancillary but still important activities like crafting, exploring or socializing ones[55]. As previously

[55] Hindman, B. (July 9, 2011), *Free For All: Another Attempt At Free-To-Play Vs. Freemium*, Retrieved August 7, 2019, from https://www.engadget.com/2011/09/07/free-for-all-another-attempt-at-free-to-play-vs-freemium/

mentioned, also micro transaction-based F2Ps selling consumable goods necessary to play (time sale e.g. bullets or gas), other functional items that set the buyer in an advantageous position (so-called pay-to-win games) and the like may resemble the freemium model (just like some around-game ads based games with intrusive banners), since the game experience may be harmed and limited. In many of these grey area cases, the distinction between micro-transaction F2Ps and freeware is ultimately a matter of perception, making the distinction also personal: if the non-paying player perceives a substantial gap between him and the paying-players, he will judge that game, either consciously or not, as freemium. This perception may be influenced by many factors others than, of course, the player's general attitude towards being required in-game payments. One of these factors to be taken care of by developers, may be, for example, the distinction between payable items and those obtainable through playing: it has to be sharp, otherwise it may be frustrating for a skilled non-paying player seeing the same item he toiled for on the skin of a new one who "just" paid for it. In the end, the freemium model, intended as it is here, sets itself as a controversial monetization method that, apart from any perceptional consideration, still enjoys a sizeable market.

There are, of course, many other revenue models available to developers like game rental, pre-selling the game (also useful to finance its development), peripheral enticement, commissions on player-to-player trades and wagering, profiting from user generated content (like in the Valve case), selling private game servers and many more. Notwithstanding, in the section the most common and used ones have been presented and analyzed, and they are summarized under an historical perspective in Table 7, preceded by Table 6 that regards the purchase methods.

Table 6 – Innovation in The *Purchase Methods* Throughout Videogame Industry History

PURCHASE METHODS evolution based on author's analysis:

Before digitalization (universal good)**:**

Arcade model: one single cabinet could cost hundred of dollars and a game had to bring a certain amount of money per unit time in order to cover both operators' investment and rent, before being replaced due to its aging. This is why games were designed to be played for a short time with one single coin, some explicitly setting a time limit to win, some others pushing players' skills to the limit until the game was too hard. This time oriented game design then influenced the first console games in terms of gameplay.

Physical asset sale: the traditional packaged game software sale. It encompasses both brick and mortars and online retailers that appeared later and that shipped the physical product at home (e.g. Amazon).

After digitalization (gaas)**:**

Digital asset sale: also known as direct download or direct to consumer, this model consists in selling directly to customers the digital version of the game to be installed on a device. This can happen in many different ways like, for example, directly from developer's website, from smartphone app stores, console stores, digital distribution platforms (e.g. Steam) and more.

Free-to-play (F2P): can be seen as a branch of digital sale. It simply consists in giving away a game for free, either through a download or directly on a browser (browser games), and was firstly introduced in late '90s with massively multiplayer online game (MMOs). Many monetization methods can be applied to this apparently controversial strategy that bases its success on its huge potential in terms of user base.

Cloud Gaming: or on-demand gaming. It consists of allowing players to play games without downloading or installing them, thanks to powerful severs that executes the game and stream it, with the sole need of a strong internet connection. In other words, a subscription fee is due in order to have access to huge game libraries and to choose whatever title to play any time, following a Netflix-alike mechanic.

Source: Author's Analysis.

Table 7 – Innovation in The *Revenue Streams* Building Block Throughout Videogame Industry History

REVENUE STREAMS evolution based on author's analysis:

Before digitalization (universal good)**:**

One-time asset sale: one single upfront payment made by the user in order to obtain rights to play the full game. This model can today be applied on brick and mortar sales, online retailers', online portals', developer websites' and many other sale methods. This is the oldest revenue model (after the arcade one) and nowadays it difficult to find it used in a "pure" way, that is, not combined with at least one of the other methods.

Episodic entertainment: borrowed from the TV series model. A game here consists of different episodes that can be bought by the user either one by one

as they become available or all together when the whole set is finally released (e.g. Hitman series, 2016). This model also encompasses **expansion packs.**

Advert-games: games that are created for the unique purpose of advertisement: the whole experience is one huge ad. This feature brings advert-games closer to the serious game category. Advert-games were born in '90s, when they circulated on CDs and floppy disks and were distributed for free. Nowadays, it is common to find advert-games on companies' websites themselves. Most of the times, the advertiser finances the development and pays the developer on the basis of its reputation and similar factors.

Other models: game rental, peripheral enticement and more.

After digitalization (gaas)**:**

Downloadable content (DLC): selling additional digital content of different nature, such as supplementary levels or a new storyline, to an already existing game, most of the time a paid one. Many publisher also release special editions of already marketed titles including the original game plus all DLC released afterwards.

Shareware/Demoware: the player is here allowed to play a limited (either in terms of number of levels or time available) version of the game for free, with the aim to convince him/her to buy the whole game. Originated form 1990's word of mouth-based shareware model, demos are now downloadable directly on developers' websites, console stores and digital platforms like Steam.

Subscription: it intuitively consists in requiring players a fee, most of the time monthly and charged automatically, in order to keep playing the game. This method, often coupled with a one-time sale of the files to be installed, ensures the most predictable ongoing revenues and is therefore popular among MMOs, being consistent with the ongoing costs of the genre.

In-game microtransactions: This revenue mechanic consists of allowing players to buy virtual goods and game features directly within the game, often leveraging on users' emotional impulse. This is mostly done by selling in-game currency useful to do in-game purchases, eliminating banks' commission on every single transaction, setting a minimum amount payable for the currency (e.g. US$10). Nowadays, most micro transaction-based models use two types of currency: a "soft" and a "hard" one, with the latter being sold. Specifically, in-game transactions may regard virtual items, either esthetic or functional. Also additional features can be sold, such as server changes, character name changes, faster leveling up and similar benefits. An interesting variable of this method consists in giving players the chance to obtain currency or specific items by inviting friends to join the game.

Advertisement: promoting a product, a company or the like by exploiting a video game user base and, therefore, offering advertisers a way to obtain visibility. One way is inserting ads within the game world (billboards, branded virtual items, an existing product replicated in the game environment or more subtly implanting the ad within the story line); this technique is called in-game advertising. Another method consists in placing banners, skyscraper ads, popup ads and the like around the game world, and it is called around-game advertising. It is widely used on Flash game websites and, most of all, for mobile games. The revenues for the publisher/developer can be based on one or more of the following variables: cost per thousand views, cost per click, cost per acquisition of a player, cost per paying player.

Freeware: giving away a game for free in its entirety, without any feature to

be paid or advertisement that may limit the game experience. This method, referred as freeware model, has the purpose of making a game, together with its developers, as known as possible, gathering a large user base with the aim of eventually getting a good offer to sell the studio or good lucrative deals for future games. In few words, it is a way for a development studio to promote itself. The source code of the game may be made available to be modifies (open source).

Freemium: the term "freemium" is here intended as the model that encompasses all those freely-available games that, in their free version, limit player's experience to a specific point in the story line or, alternatively, confine it by strongly reducing the content available to a restricted bulk. Of course, these games require a payment to be made in order to unlock the full content. There is a grey area between micro-transaction F2Ps and freemium games made up by those titles selling relevant functional goods, making the freemium label a matter of perception and, therefore, user-based.

Other models: game pre-sale (also useful to finance development), commissions on player-to-player virtual trades and wagering, profiting from user-generated content, selling private game servers and more.

Source: Author's Analysis.

The building blocks constituting the left side of BMC have not seen great alteration in their nature during the history of videogames, with technology starring as the main game-changer ("hard" innovation).

2.2.6 Key Resources

"The Key Resources Building Block describes the most important assets required to make a business model work" (Osterwalder & Pigneur, 2010, p. 34). According to the authors, resources are necessary to realize the other building blocks and can be either firm- or partner-originated. Nevertheless, in this model this translates into resources coming from different actors through the value chain. Innovation in *Key Resources* is here analyzed at the light of the different nature of resources model proposed by Osterwalder & Pigneur (2010), taking into account only industry-related resources (excluding, for example, offices). Physical resources initially regarded powerful PCs and development tools, lately expanding into servers to make the game available online and to stream games. On the other side, intellectual resources have

always played a characterizing role in the industry that has not changed a lot. These consist of producer's IP rights that allow them to monetize a creation by making a franchise out of it, eventually expanding in other media, by licensing out the right for different purposes (e.g., merchandising) and so on. Also human resources have always been important in the same way over time. They may regard whole development teams, with some of them widely acknowledged to be synonym of quality (e.g. Naughty Dog, Rockstar Games), or even single individuals, like for Shigeru Miyamoto at Nintendo. Finally financial resources have always been one of the main publisher's roles, with some new sources emerging lately like crowdfunding systems for some indie games.

Table 8 – Innovation in The *Key Resources* Building Block Throughout Videogame Industry History

KEY RESOURCES' evolution based on resources' nature (Osterwalder & Pigneur, 2010)

Before digitalization (universal good)**:**
- **Physical resources:** powerful PCs and development tools.
- **Intellectual resources:** producer's IP rights.
- **Human resources:** development teams (e.g. Naughty Dog) and individuals (e.g. Shigeru Miyamoto).
- **Financial resources:** Publisher's financing.

After digitalization (gaas)**:**
- **Physical resources:** servers for online and stream gaming.
- **Intellectual resources:** producer's IP rights (unchanged).
- **Human resources:** development teams and individuals (unchanged).
- **Financial resources:** crowdfunding.

Source: Author's Analysis.

2.2.7 Key Activities

"The Key Activities Building Block describes the most important things [the firms involved in creating, delivering and capturing a product's value] *must do to make*

[the product's] *business model work"*. According to Osterwalder & Pigneur (2010), key activities can deal either with production, problem solving or platform/network. Production activities, relating with product design, manufacturing and delivery, have always been key ones in terms of value creation. As a matter of fact, developers' efforts in creating game content was and still is an evergreen for Key Activities innovation, with new genres being introduced together with new features, such as multiplayer mode, DLCs, continuous content updates and so on. Another production key activity is given by console manufacturers' supply of development kits. Here, innovation consisted in the introduction of open source kits like Steam's one, consistently with the increasing relevance of final users in the value proposition building block. Another key activity being under the responsibility of console manufacturers was CD or cartridge printing, a task whose relevance is becoming marginal because of digital distribution. Innovation has also occurred in game-related advertisement activities, bringing plenty of new channels like digital distribution platforms (e.g. Steam ads), social networks and all websites in general, famous Youtube or Twitch streamers, in-game ads (often employed by companies owning IP of an ads-based game for promoting other company's titles) or Esports competitions. Also, distribution has shifted from retail- to online-based, moving activities like transportation to the background. Then, publishers' financing is another key production activity that has somehow evolved with the introduction of crowd funding systems or small-scale game (e.g., games created with the Steam developer kit and then published by Valve itself on its platform). Finally, IP creation and acquisition activities represent the foundation of the industry, whose innovation mostly consists in the local legal development of the subject.

Problem solving activities make up the second category proposed by the authors, a self-explanatory one. As made clear in the analysis regarding the after-sales channel

phase in the *Key Channels* section, these activities were not relevant in the first decades of the industry, increasing in importance after the advent of online. From that moment, actions eased by simpler data mining and other factors, such as bug fixing patches release, customer contact through communities or in-game moderators (online games) and similar ones became key activities for the firms involved in creating, delivering and capturing a game's value.

Finally, activities included in the platform/network category are the key ones when the related BM strongly relies on a platform as its key resource. This never occurred during the initial phases of the industry, while this category experienced some innovation in the digital era. This happened with the introduction of matchmaking platforms for online games (e.g. WoW's PvP mode or LoL), online servers, social and multiplatform games, with the increased relevance of building websites and communities and, most recently and prominently, with cloud gaming services.

Table 9 – Innovation in The *Key Activities* Building Block Throughout Videogame Industry History

KEY ACTIVITIES evolution based on activity categories (Osterwalder & Pigneur, 2010)

Before digitalization (universal good)**:**

Production activities: developers' creative efforts, IP creation and acquisition, console manufacturers' development kits provision (to developers), CD or cartridge printing (fading nowadays), classic advertisement activities (TV, magazines, etc.), transportation-based retail distribution (fading nowadays), publisher's financing

Problem solving activities: not relevant.

Platform/network activities: not relevant.

After digitalization (gaas)**:**

Production activities: developers' creative efforts, console manufacturers' development kits provision (also to users e.g. open source development tools), new advertisement activities and channels (digital distribution platforms, social networks, Youtube or Twitch streamers, in-game ads, Esports competitions, etc.), introduction of crowdfunding for small-scale games.

Problem solving activities: bug-fixing patches, communities, in-game moderators, etc.

	Platform/network activities: matchmaking platforms (e.g. WoW's PvP mode or LoL), online servers, social and multiplatform games, cloud gaming services.

Source: Author's Analysis.

2.2.8 Key Actors

This building block has here the function to "describe the network of firms and other entities that make the a product's business model work", finding itself completely modified from its original version. As a matter of fact, in order to focus on the videogame as a business and to explore innovation in the whole industry, the originally *Key Partners* building block is here dedicated to *Key Actors*, as stated before. Historically, this has been a quite stable block in the industry, in which innovation introduced new actors without altering their conceptual nature.

Console manufacturers, also called first parties, are key actors since they provide the hardware to consumer often at loss, thus enhancing its diffusion and the size of a game's potential market. This is made possible by the licensing fee they retain from each sale of a game for their platform. They also provide development kits to developers in order to allow them programming on the specific console. Digitalization allowed games to be played on and developed for many other platforms, allowing the entrance of new actors like smartphone e tablet manufacturers. In the meanwhile, the main well-established home console manufacturers (Microsoft, Sony and Nintendo) found a new way to generate revenues, that is, through the sale of a package that allows players to access online services. These products, offered under a subscription model, initially provoked dissatisfaction among players, who were not used to pay for accessing multiplayer online services. Later, either because of the lack of choices and thanks to the introduction of many benefits included in the subscription, Xbox Live (2002),

PlayStation Plus (2006) and Nintendo Switch Online (2016) gained plenty of subscribers.

Developers, on the other side, are the actual creators of the game and they cover therefore a key role. Innovation enlarged the pool of potential developers allowing also the users to be content creators, in addition to the well-established development studios, thanks to open-source development kits.

Publishers historically had the role to fund developer's activities; a task that can be nowadays carried out by crowdfunding platforms in some cases. Furthermore, these actors have always conducted logistics and other marketing activities like distribution, today innovated by online portals and the new channels discussed before. Nowadays, publishers in the traditional sense may find themselves excluded from the supply chain since small-scale games, for example, needing none (user-created) or little (crowdfunding) funding, can be published and promoted by many digital distribution platforms (e.g. Steam).

Retailers, for their part, have always played the role of making the game available to the reference customer segment. It traditionally happened through brick and mortars, while digital retailers, thanks to the advent of the Internet, are nowadays carrying out this role.

At the firm level, other actors may cover key roles, depending on the game taken into analysis. They may be middleware companies, selling software tools to ease developers' work, licensors, providing the specific IP needed (e.g. rights to develop an official Tron game must be negotiated with Disney), manufacturers of hardware peripherals and so on. An innovation in this field is the entrance among key actors of credit card companies to handle payment services for in-game transaction based games (e.g. CandyCrush).

Finally, the final user's role, which was before a sole purchasing one, has now experienced an increase in relevance, mostly tangible in games proposed as services where he/she can strongly contribute in creating value, like stated in the Value Proposition section.

Table 10 – Innovation in The *Key Actors* Building Block Throughout Videogame Industry History

KEY ACTORS (and their role) evolution based on author's analysis: **Console manufacturers** (first parties): providing hardware to consumers often at loss, thanks to licensing fees. Providing development kits to developers. Thanks to digitalization, other similar actors like **smartphone and tablet manufacturers** entered the market. Introduction of online multiplayer gaming and digital media entertainment services (Xbox Live, PS Plus and Nintendo Switch Online) **Developers**: are the actual creators of the game. If before this role was solely covered by studios, innovation (open source development kits and modding kits) allowed also **users** to be content creators. **Publishers:** funding developer's activities (nowadays also possible for **users** thanks to crowdfunding), logistics (being made obsolete by digital distribution) and other marketing activities. For small-scale games, publisher may be nowadays substituted by **digital distribution platforms**. **Retailers:** making the game available to the reference customer segment. It was traditionally done through **brick and mortars**, while **digital distributors**, thanks to the advent of the Internet, are now carrying out this role. **Other corporate actors: middleware companies**, selling software tools to ease developers' work. **Licensors**, providing the specific IP needed. Manufacturers of **hardware peripherals** and so on. **Final user:** covering a sole purchasing role before digitalization. Now he/she contributes creating value (see Table 3) and occasionally covers developers' role.

Source: Author's Analysis.

2.2.9 Cost Structure

This building block "describes all costs incurred to operate a business model" (Osterwalder & Pigneur, 2010, p. 40). Its content, just like its innovation, are clearly strongly related to the *Key Activities* and *Key* Resources blocks, specifying this block the costs incurred in carrying out the first and acquiring the latter.

As a matter of fact, changes in this section regarded solely the origin of the costs, with the industry experiencing a shift from cost-driven to value-driven BMs. Thus, since Cost Structure' innovation is here explained with the evolution of the key activities carried out to acquire key resources, it is sufficient refer to the above-mentioned sections for having a picture of the evolution of the cost drivers.

In conclusion, innovation throughout the history of the video game industry has been here analyzed on the basis of BMC. However, both the BM concept and the BMC model have been readapted to be applied to the videogame itself intended as a business. This methodology resulted, under an historical perspective, in a review of all the elements, techniques and practices that have been and still are available to video game value chain's key actors to be adopted, some alternatively and some jointly, in order to create countless different BMs. Furthermore, this approach, dynamically applied to a product, did not only allow identifying specific innovations occurred in the pertaining industry, but also clarifying their precise nature. As a matter of fact, with a definition tied to the BMC model, business model innovation has been intended as any innovation or re-invention occurred in one or more of the nine BMC building blocks. This enlarged the scope of the innovation concept when compared to simple product or process innovation. What emerged is that innovation regarding the left, efficiency side of BMC mainly came from new technologies themselves, with the product therefore enjoying external sources of innovation throughout history, that is, "hard" innovation. On the other side, the right, value one experienced an inner-originated "soft" innovation process since, despite most of the related new practices being still eased by technological progress, they were mostly new, creative ways of pursuing already existing goals.

2.3 Case Studies

Business models of some specific games and related businesses are here presented under the product BM framework introduced above. By doing this, the framework will be used also statically, not to identify innovation like did above but to get a picture of how a game's value is created, marketed and delivered to final users. This BM analysis will be carried on also for products that are not properly video games: Oculus Rift, Steam and Twitch. As a matter of fact, the above-mentioned VR headset, digital distribution platform and gaming video content portal are some of the products that embodies the most the latest industry trends and also relates to the survey presented in the last chapter.

2.3.1 Candy Crush Saga

Candy Crush Saga (CCS)[56] is the match-three puzzle game that brought King.com to the commercial success. It was released in March 2011 on the company's website and on Facebook in April 2012. Finally, it landed on mobile devices at the end of 2012. It is the one of the first most successful examples of F2P model and it keeps being a hit after 8 years from its first release. It drew the attention of Activision Blizzard, which bought King for around US$6 billion in November 2015.

Customer segments

CCS targets a hugely broad range of people who are on the move, multitask and live their lives across multiple devices. They want to stay connected and want to play and have fun. They play for a moment and then move on with their day and pick up their

[56] King Digital Entertainment (February 18, 2014), *Registration Statement of King Digital Entertainment Ltd.*, SEC, Retrieved August 13, 2019, form https://www.sec.gov/Archives/edgar/data/1580732/000119312514056089/d564433df1.htm

game later, eventually on another device. This makes CCS a casual game that strongly relies on the cross-device feature. By the end of 2017, the game reached 293 million monthly active users (MAUs), with 58% of them being women and 46% belonging to the generation X segment. Nevertheless, younger users are increasing lately.

Value proposition

CCS's value proposition consists in creating an entertaining and rewarding game that addresses all people and that can be played wherever users are, creating moments of bite-sized entertainment. It translates in a game, synchronized across platforms (accessibility), which can be played anywhere, at anytime and potentially by anyone and that engages users also through social features (some degree of user generated value). Furthermore, CCS is easy to learn but hard to master, a feature that boosts the engagement and the probability of in-game purchases. The actual offer consists in around 3000 levels.

Channels

In terms of channels, CCS's nature and history make clear the conformity of the title to the cross-device feature. As a matter of fact, it was released in March 2011 on King.com and on Facebook in April 2012. Finally, it landed on mobile devices at the end of 2012. This wide range of channels available is on of the features on which CCS's success is based on, enhancing accessibility and users' engagement. Awareness is obtained through advertising, rankings and most of all word of mouth, while purchase is eased by the F2P model and direct channels (mobile stores), bringing total downloads to 2.73 billion from its first mobile release to November 2017.

Customer relationships

King puts the long-term retention of the user-base at the heart of its business model. Given the low rate of spending players over the total (around 4%), retaining but also enlarging the customer base appear as two fundamental activities in order to remain economically sustainable. The acquisition of new customers is obtained by advertisement, comments and reviews, rankings and word of mouth (probably the most effective marketing technique for CCS), while the retention of existing ones through cross-promotions, synchronization among platforms and social features (communities). The 71 million fan base on Facebook witnesses the success of King in engage new and existing players.

Revenue Streams

At its initial release, CCS had two main sources of revenues: ads and in-game purchases. In 2013 King decides to eliminate ads as source of revenues for all the company's products. Therefore, apart for a small and not significant (given the reduced user base) time lapse, CCS relies solely on micro-transactions to make revenues. What are sold are items and actions to help clear levels in difficult situations. Before, players were allowed to directly buy lives, but soon King switched the revenue model to an in-game currency based one, also enlarging the offer. As a matter of fact, players now buy in-game currency and then decide what to buy among lives, additional levels (the only non-consumable good offered), additional moves, boosters and so on. Then, there is no monetization on peripheral products like merchandising, movies etc., like the competitor Rovio, creator of Angry Birds, does. Some critically defined this revenue model as freemium, nevertheless, as stated before, it is finally a matter of perception.

Despite the relatively low amount of spending players, historically around 3-4% of total players, CCS grossed US$6.37 billion from its first launch to the end of 2018, actually making around US$391 million monthly (April 2019).

Key resources

The key resources of CCS are many and of different nature. The main physical resources are servers and technologies that allow the cross-platform gameplay synchronization and that create an integrated development and service platform for game studios, and provides scalability and efficiency across core operations. The main intellectual resources are trademarks and copyrights on games. About human resources, small autonomous teams of creative people (developers, data analysts, marketers, HR, etc.) that sit within a strong organizing framework make the difference, together with a strong, skilled and loyal management team. Finally, strong financial resources were made available by the acquisition of King by the titan Activision Blizzard in 2015.

Key Activities

CCS is founded on many key activities here identified. The main production activities are of course the developers' creative effort in conceiving the game as it is, IP creation and acquisition and advertisement activities/channels (mainly digital distribution platforms, social networks, and word of mouth held by users). Another relevant set of activities is the one related to the platform/network: social features of the game, multi-platform feature ones and consequent server maintenance.

Key actors

Different actors compose CCS's value network. Of course, King itself as developer and publisher is the most relevant one, flanked by digital distribution platform providers such as Facebook, King's website itself, Apple (AppStore), Samsung (PlayStore), etc. Some of the latter actors also appear fundamental to the value network as platform (smartphone, tablet and PC) manufacturers. Other relevant corporate actors are involved, such as payment processing providers. Finally, final users make the game successful by constituting the user base and marketing the game though word of mouth.

Cost structure

CCS's costs come from many different sources. Within the costs of revenue area, the most impacting one, payments to partners, such as payment processing providers, platform providers and audio content IP, are the main driver. Then within the sales and marketing expenses, there are employees' salaries and consulting fees. In the R&D area, related employees' salaries, design and test of new games and maintenance of servers and software act as main drivers. Finally, there are general and administrative costs of King to be split among their different products, among which there is CCS.

Conclusion

In conclusion, CCS is a F2P/freemium model based title that relies on in-game purchases of mostly consumable items. It witnesses the potential of the cross-device feature that, well combined with a casual and engaging gameplay, brings the market base to be potentially unrestrained. The title wholly relies on digital distribution channels and, in terms of marketing, on players' word of mouth.

2.3.2 Pokémon Go

Pokémon Go is an augmented reality (AR) mobile game based on the famous Pokémon IP and developed and published by Niantic. This studio was born in 2010 as a Google internal startup, becoming independent in late 2015 with Google's restructuring as Alphabet. Pokémon Go was released in June 2016 as the result of a partnership between Google, Nintendo, Niantic and The Pokémon Company (31% owned by Nintendo).

Customer segments

Pokémon Go customer segments are hugely diversified. There are many brand loyal customers but also new mobile players attracted by the trend (25% of Pokémon Go players never played any top 30 mobile app recently[57]) as well as technology lovers attracted by AR and any others. According to NewZoo, 43% of players are women with an average age of 28 opposed to 25 for men. In terms of geography, around two thirds of Pokémon Go revenues come from US and Japan in a way that is more or less equally divided. Then, when it comes to gamers' taste, Pokémon Go manages to attract both the casual and the competition segment. As a matter of fact, its easiness to pick up and play was the most appreciated factor among users, immediately followed by competition. This is proven by the fact that 80% of DOTA 2 players, a game based on sole competition, plays or has played Pokémon Go according to NewZoo.

Another interesting layer of customers is represented by both small and global businesses, which have the possibility to attract to their venues the foot traffic generated by the game in a way that is made clear in the value proposition section

[57] Newzoo (2016), *Analysis of Pokémon GO: A Success Two Decades in The Making*, Retrieved August 24, 2019, form https://newzoo.com/insights/articles/analysis-pokemon-go/

Value proposition

Pokémon Go gives players the chance to explore the real world experiencing a layer of fantasy. Merging real world with one of the strongest fantasy IP of all time, making the player feel a Pokémon trainer, the use of a new technology like AR that makes users feel pioneers, in-game socialization tools for executing actions like Pokémon exchanges; all these features make Pokémon Go value proposition a unique one. Furthermore, following a pattern similar to the one of the handheld consoles Pokémon games, Pokémon Go started with 150 Pokémon (1st generation), then adding creatures up to 480 nowadays. This enlargement of the offer adds value for collectors but also for casual gamers. Also, Pokémon Go Plus, a wearable watch-alike product, allows players to undertake some basic action like catching Pokémons without using their phone. Finally, a discrete amount of value is user generated in the game, way more than in the CCS case, and it is given by the fact that a large user base implies a greater community and more chances to compete (PvP matches, also at an Esports level) and collaborate (Pokémon exchanges).

Furthermore, there is a parallel value proposition to businesses, as mentioned before. In fact, businesses have the chance to increase consumers' visits to their shops by making them "sponsored location" (gyms, Pokéstops, rare Pokémon spots, etc.). Small businesses can buy this feature as an in-game purchase, while big ones can start partnerships with Nintendo, like Starbucks did. According to Nianatic's Vicepresident Mathieu de Fayet, 500 million people have been driven to sponsored locations in the first year of life of Pokémon Go[58]. An example is the one of McDonald's 3000 sponsored stores in Japan, whose payment was estimated around

[58] Swanner, N. (June 2, 2017), The Unique Way Pokémon Go Makes Money, Retrieved August 30, 2019, form https://insights.dice.com/2017/06/02/pokemon-go-money-sponsor/dofn

US$900.00 at the peak that the game experienced in 2016's summer, right after its release.

Channels

In terms of channels, Pokémon Go has a similar structure to the CCS one, with few distribution channels but more features. The game is available through Apple and Android stores (direct distribution). Furthermore, also the website helps reaching customers. Awareness is obtained through advertising, rankings, live events and most of all word of mouth. Specifically, apart from user to user word of mouth, Pokémon Go enjoyed a great amount of advertising by news related to the game, mostly regarding huge crowds moving together in cities and sometimes creating problems like traffic-related ones. The purchase phase, on the other side, is eased by the F2P model, bringing total downloads to 1 billion after three years of life.

With regards to businesses, as said before, small ones can buy "sponsorships" through in-game purchases of so-called "lures", while big ones directly contacting Nintendo.

Customer relationships

Customer relationships are strongly based on communities. Social networks, official communities and lately Esports communities are strong tools to retain users. Often, also the social pressure among friends to level up and stay at the range of peers helps boosting customers' loyalty. Furthermore, many live events, often organized by fans, help enhancing customer relationships.

Revenue Streams

As a F2P, Pokémon Go strongly relies on in-game purchases of consumable items like Pokéballs. It is done through the purchase of an in-game currency. Another source of revenue is the Pokémon Go Plus device that allows players to undertake some basic without taking their phone out of the pocket. The game had made US$2.3 billion by January 2019.

Finally, with regard to businesses, Pokémon Go gets a fee for the foot traffic generated in sponsored venues. It is not clear if the fee is related to the general foot traffic or if there is a method to calculate every dollar spent by a player in sponsored businesses. In any case, businesses fees are estimated to have reached around US$200 million before June 2019.

Key resources

The main physical resources is the IT infrastructure that manages million of users at the same time. The most relevant intellectual resources are the Pokémon IP, brought by The Pokémon Company and therefore by Nintendo, the AR technology, smartphone technologies (GPS, camera, etc.), data from Google Maps and crowdsourced ones and Niantic's application program interface (API). The latter is the set of routines, protocols, and tools for building the AR software application. Niantic used its API for the development of another game before Pokémon Go, Ingress, which did not reveal itself a commercial success but was a test useful to attract new partners like, in this case, Nintendo. About human resources, highly skilled developers by Niantic (they developed Google Maps and the above-mentioned API) and Nintendo's experienced employees were fundamental. Furthermore, the user base itself is a huge resource, mostly for business sponsorships

but also for the word of mouth activity. Finally, Google, Nintendo and some venture capitalists made strong financial resources available.

Key Activities

The main production activities are the ones related to the development, a hard task, given the AR technology to be implemented, which have been eased by the above-mentioned resources. There are also marketing, brand management, software developments and similar activities. Likewise, IT maintenance appears fundamental in order to ensure a smooth game experience. Another relevant set of activities is the one related to the platform/network: social features of the game like exchanges and matches.

Key actors

The main actors involved are the developers themselves (Niantic), Nintendo as financer and IP owner (through The Pokémon Company), smartphone manufacturers like Apple and Samsung, digital store owners like Apple and Google, then Google also as financer and Google Maps owner. Then, other third parties involved are OpenStreetMap, a project to create editable maps of the world, wireless data providers, which made available offers in partnership with Pokémon Go (e.g., T-Mobile US gave away free data to play the game), Yelp, which introduced a filter that shows only businesses with Pokéstops or gyms nearby and, finally, sponsored businesses themselves. Then, apart from other development technology providers, players themselves are relevant actors for Pokémon Go, both for sponsored businesses and for creating communities and hype around the game.

Cost structure

Many factors impacted the cost structure of Pokémon Go. Software and product development brought of course huge expenses, together with IT infrastructure and maintenance. Branding costs were also huge. Then, agreements with businesses involved expenses as well, just like channel and distribution activities and payment processing providers.

Conclusions

Pokémon Go sets itself as pure F2P title, in the sense that it leaves no chance to be confused with a freemium game as CCS previous case does. It is the first massively successful game exploiting AR technology and this represents a milestone in the industry. It is therefore part of the XR trend explored in Chapter 1 that is expected to take off soon in its AR and VR form. Pokémon Go manages to attract both casual and competitive segments, together with many players loyal to the brand. Also in this case, the title only relies on digital distribution channels and strongly on word of mouth as marketing tool. Furthermore, it is a great example of perfect fit among actors involved: many synergies have been exploited by using Nintendo's Pokémon IP, Google Map's technology and Niantic's tested IPA. Last but not least, a peculiarity of this BM is the coexistence of two parallel BMs: one targeting gamers and one businesses. This idea revealed itself a winning one, allowing a differentiation of the sources of revenues by wholly exploiting the foot traffic created by the game itself.

2.3.3 Oculus Rift

Oculus Rift does not refer to a specific product but to a set of virtual reality (VR) headsets developed and manufactured by a division of Facebook: Oculus VR. Even

if it's not a specific product, this line up can be treated as a single business since every new version presented few merely technological improvements from the previous one. VR and therefore Oculus Rift is a technology in the early adoption phase for the mass market: not many games are available nowadays, even if it does not target gamers only, and the price remains prohibitive for the most, also given the game offer. Anyway, the XR trend promises to take off soon and VR is the major expression of the trend.

Customer segments

With regard to gamers, most Oculus Rift users are in the 20-30 age range. The targeted segment, for now, is the technology-attracted one, which attends gaming conventions, is mostly composed by males, and is willing to spend in new game-related technologies, feeling a pioneer of the sector. In terms of game genre, users must enjoy first person games, which the headset is based on: racing, shooting, horror, sandbox. Furthermore, the majority of the users are console and not PC players.

On the other side, Oculus Rift also targets businesses given its many potential applications: social, industrial/professional, educational, entertainment, etc.

Value proposition

What Oculus Rift proposes is a great degree of interactivity and, most of all, immersiveness, which has never been reached before in the gaming sector. It leverages the user's senses, eyesight in particular, like no other product in the industry did before. For developers working on the Oculus Rift, a development kit is provided as well. Also, for the moment, it makes users, both players and corporates, feel as pioneers of the sector.

Channels

Oculus Rift exploits many channels for the awareness phase: standard advertisement, word of mouth, comments and reviews, communities, developers' blogs, Facebook and the website.

On the other side, channels used to reach final customers are physical and digital distribution, the Oculus Store for buying games, direct sale of development kits to developers and of licenses for applications other than gaming to businesses.

Customer relationships

Customer relationships are nurtured through advertisement, communities, gaming conventions, developers forumsm Oculus Store's offers and maintenance of the product.

Revenue Streams

Oculus Rift gathers revenues as share of game sales, through hardware sales of course (with a chance it is being sold under costs, given the industry's habits), licenses of development kits (often calculated as an additional share of game sales). One possible evolution of the revenue mechanics may be the introduction of licensing to console manufacturers.

For business applications, a pre-determined fee is agreed among parts

Key resources

Key partnership are strategic resources since they bring other key resources like the hardware itself and ancillary software technologies (head tracker, eye tracker, adjustable focus etc.). The reputation, resources and know-how of the developers and

the parent company (Facebook) are surely another asset. Moreover, IP and trademarks are also fundamental, together with developer communities.

Key Activities

Among the main activities, there is in-house R&D, HR management (non-disclosure agreements given the new and quickly evolving technology), mass marketing efforts (ads, roadshows, etc.), direct sales efforts (negotiations with developers for kits and businesses for licences) and distribution-related activities

Key actors

The key actors involved in the Oculus Rift value network are Facebook as owner, Samsung as hardware provider, Surreal Vision (3d reconstruction and mixed reality), The Eye Tribe (eye-tracking technology), digital entertainment platforms (e.g., Netflix) distributors and final users.

Cost structure

Finally, most of the costs come from software developement, externalization of the above-mentioned important activities like software and hardware, manufacturing and distribution costs, IP protection ones and salaries.

2.3.4 Steam

Steam was introduced by Valve in 2003 as a digital distribution platform for PC gamers, initially thought only for Valve's games, which opened doors to third-party developers soon. It has become the market leader nowadays, heavily contributing to global PC sales and, most of all, to the progressive shift towards new value networks without physical retailers and manufacturing activities.

Customer segments

Segmentation, in the case of Steam, is solely based on hardware with regard to users: the majority of the users uses Windows operating system. Demographic characteristics are irrelevant since it targets all PC gamers.

Steam also target developers willing to exploit an omnichannel platform that provides a wide range of services, from publishing to advertising, passing though digital rights management (DRM) and software development kits (SDK).

Value proposition

For users, a huge library of games is made available, with a launcher, a strong and interactive community (reviews, opinions, etc.), frequent discounts and other features like cloud storage of progresses and games themselves.

SDKs are made available to both players and developers (usually casual ones), while publishing and advertising services, based on the largest community of PC gamers, are offered to developers. Such a huge pool of customers also attracts big publishing companies like EA or Ubisoft that use Steam as distribution platform, together with other channels.

A lot of value is user-generated in this case, as Steam users create value for the other by creating content through their community. As a matter of fact, games receive ratings and comments useful to drive purchase decisions and players also create modifications for the games on Steam, playing the modified code through the Steam library platform to ensure it runs more smoothly.

Channels

The main Steam's channel is the PC app for all operating systems, flanked by the website and direct agreements with big publishers. Anyways, Steam is an example of

a channel that integrates all the traditional channel phases (omnichannel), since it has expanded into a publishing, selling and promoting platform. Of course cannot be used alone for AAA games, having these blockbusters the necessity to exploit as many channels as possible, using both general and specific ones with regard to channel phase coverage. As said before, these changes led to value creation for both the supply chain's firms (saving production costs) and, mostly, the end users (improved information gathering and after-sales experience, possibility to purchase and play at home).

Customer relationships

For gamers, Steam allows interaction with a trusted brand, a 24/7self service, automation, a great player community, co-creation opportunities and, most of all, huge discounts every day of the year. With regard to developers, the usage of Steam's services themselves tend to become retentive.

Revenue Streams

Steam ensures a share on every game sale, varying on the basis of the amount of services used (ads, SDK, DRM) and of the counterpart's bargaining power, often given by the scale of a game's reach.

Key resources

The greatest resource of Steam is nowadays its friendly community. Also, Valve's never-ending discount policy makes the user-base even larger and more loyal. The Steam Cloud is also an asset, providing progress and game storage. The UI and the easiness of usage of the app are fundamental, just like the DRM technologies.

Finally, at the firm level, Valve's organizational structure, managed by an influent personality like Gabe Newell (Half Life's creator) is a flat one, enhancing creativity.

Key Activities

The key activities involved in Steam's business are the software development of the platform (UI, social features, etc.), server maintenance, licensing agreements, DRM that does not allow players to share or host games on other platforms and in-app advertisement.

Key actors

Among the key actors constituting the value network, there is of course Valve, the creator company and users themselves, generating value not only by spending, but also co-crating through SKDs. Then we have developers and other publishers.

Cost structure

Finally, most of Steam's costs are incurred because of systems and servers maintenance, software development, R&D and data management activities, employees' salaries and payment system providers' fees.

2.3.5 Twitch

Twitch is a live streaming video platform focused on gaming video content (GVC) born in 2011. It soon drew Amazon's attention that bought it in August 2014 for US$970 million. From that moment on, the exploitation of synergies with the new parent companies and the related management skills brought Twitch to be one of the biggest streaming services globally. It also served as a booster for Esports competitions and for games belonging to the online competitive segment.

Customer segments

With regard to users, Twitch targets players that watch GVC for many different reasons like entertainment, strategies, Esports competitions and so on. This implies the presence of many competition oriented gamers and Esports-related titles gamers. As of end 2017, Twitch enjoyed 140 million unique monthly active users, 15 million unique daily users and an average of 1 million users simultaneously using the platform[59]. On the content creator side, 2.2 million creators can benefit from this huge user base. Finally, business are also targeted in order to sponsor their products within celebrity streamers' live sessions.

Value proposition

Twitch allows users to create channels, broadcast themselves playing games, upload recorded clips, participate in tournaments and competitions, view other players' streams, and communicate with players and viewers via chat. It is a friendly environment that fosters creativity and entertainment. It allows users to access 140 million clips to get informed about titles, enjoy specific streamers' live sessions, watch Esports competitions and many other reasons. Streamers are then allowed to monetize through users' subscriptions, donations and through the Partner Program (share of the advertisers fee) and the Affiliate Program for smaller scale content creators.

[59] Daria, R. (March 5, 2019), *5 Things You Need to Know to Build a Live Streaming Website Like Twitch*, Retrieved August 30, 2019, from https://rubygarage.org/blog/how-to-build-a-live-streaming-website

Channels

Twitch channels are the apps for PC, Xbox, PlayStation and its website. In terms of awareness, Twitch uses advertisement, Amazon Prime's bundle that allows Prime's users to subscribe for free to one channel per month, TwitchCon, a new Twitch-based fair, and word of mouth (rankings, awards and peer-to-peer word of mouth).

Customer relationships

The customer relationships are held thanks to an appealing and immediate user interface, a dedicated service for streamers and the availability of live content than is then stored and available as on-demand content. Last but not least, the aggregation function of the community and the co-creation environment for content creators are factors that enhance customer relationships.

Revenue Streams

Twitch revenue sources from users are represented by their expenses for Twitch Turbo, the freemium service with fewer ads, more storage and improved UI, and fees on channel subscriptions (50%) and donations. Then, Twitch profits from content creators through Partner and Affiliate Programs, from businesses though advertisement, and from other third parties through merchandise partnerships (e.g. tshirts manufacturers).

Key resources

Twitch key resources are its community, the content creators, the platform itself, its well-established brand, the IT infrastructure and the partnerships.

Key Activities

Twitch key activities are streaming services, cloud storage, platform development, IT infrastructure maintenance, marketing and sales activities and data management.

Key actors

The value network of Twitch is composed by Amazon, the parent company, its user base, content providers, third parties, social media, developers and publishers, leagues and teams and gaming events organizers.

Cost structure

Finally, the main costs bared by Twitch are represented by royalties paid to content creators, platform maintenance, data centers, marketing, R&D and event organization.

In conclusion, the business models of different games and related businesses have been presented in this paragraph. The aim was bringing to the reader's attention some real-life case studies that are able to give an idea of how some of the latest BM innovations (cross-device feature, XR, GVC, digital distribution and Esports) are affecting in practice single businesses and, as a consequence, the evolution of the industry beyond existing boundaries.

Third Chapter: Value Chain Innovation in The Video Game Industry

In this chapter, the value chain (VC) concept is discussed and extended to the value network (VN) one in order to be applied on the pertaining product, that is, videogame. Then, a videogame industry-level VC theory, developed by the industry expert Ben Sawyer, is presented. It identifies different layers and, therefore, roles that have always been covered by different actors in the chain. Finally, these two theories, one generic and one industry-specific, will be overlapped in order to identify the nature of specific activities performed by the different key actors in order to contribute to the final form of the product and to its value proposition. As it happened for the model discussed in the second chapter, this framework will come in useful to identify changes and innovation through history in both the activities themselves and the actors performing them.

3.1 Value Chain and Value Network

The value chain, a concept related to the business management discipline, has been exhaustively theorized for the first time by Michael Porter in 1985[60]. The economist indeed claims that "every company is composed of a set of activities performed to design, produce, deliver, bring to market and support the product. All these activities can be represented by a value". A value chain thus takes the form of a set of activities performed by a firm to create and deliver a valuable product or service to its customers. Being this model value-based, it highlights how the fulfillment of these activities contributes creating added value, therefore raising profitability and

[60] Porter, M. E. (1985), *The Competitive Advantage: Creating and Sustaining Superior Performance*, Free Press, New York.

eventually leading a company to a position of competitive advantage. Specifically, the value chain links different internal activities one to the other, investigating them with a customer-oriented view. This methodology helps clarifying in which phases most of the value is created, which ones determine value dispersion, inefficiencies and/or substantial costs and which are the potential differentiation paths. Porter distinguishes between five primary activities and four support ones.

The five primary activities, briefly explained below, directly contribute to the creation of value, which should exceed the cost of carrying out these activities in order to make the firm profitable, and concern the production, storage, sale and support of the product/service at issue. In detail, inbound logistics regards the activities related to the reception, storage and internal sorting of raw materials, both tangible and intangible; operations relate to the transformation of the inputs into the good or service; outbound logistics regards moving the finished product from the firm to the buyer that may be a corporate or individual one; marketing and sales involve all the activities aimed at augmenting the visibility of the product with regard to the targeted segment(s), such as advertising or pricing; finally, service activities pertain to maintaining high the value of the product after it is sold enhancing consumer experience through, for example, maintenance, repair or customer service (e.g., call centers).

On the other side, the four support (or secondary) activities are able to improve the effectiveness of the primary ones while also affecting one another. The first three support activities explained below can be singularly coupled with each specific primary one, virtually giving life to 15 different units of activities. Firstly, procurement activities purchase inputs used in the fulfillment of each primary activities, not only raw materials but also the machinery and the infrastructure. They therefore regard (not only) relationships with the supplier and involve, among others,

activities like choosing supplier themselves and negotiating the price. Then, technological development relates to the improvement of the product and/or the process. As a matter of fact, technology is involved in every value creating activity and can take the form of know how, practices, equipment and more, requiring efforts to be improved. Some examples are IT software development, customer service processes, product design research and other activities that allow R&D departments to be considered in these set of activities. Third, human resource management (HRM) activities, related to the development of the workforce, also permeate every single primary one. HRM involves those practices aimed at recruiting, hiring, training, coaching, retaining and properly compensating employees. Finally, the firm infrastructure supports the whole value chain and not each single primary activity like the other support one. It consists, among others, of the strategic management (firm internal structure, targeting decisions, etc.), accounting, finance, monitoring and institutional relationships. These activities strongly influence every activity in the value chain and are therefore the roots of the firm itself.

Now that this framework has been presented, before expanding it to a whole industry it is necessary to clarify the relations between a firm's business model and its value chain (VC). A VC can be seen as the set of activities that realizes a BM: the value generating activities can give to potential customers an actual reason to buy, making a firm profitable and able to continue relying on and following the business logic expressed in the BM. In other words, while the VC regards the value embedded in a product and the activities carried out to create it, making this model customer-centric, the BM virtually displays the framework that make a firm sustainable for its investors. Nevertheless, having the BM analysis in Chapter 2 an industry-wide and therefore product-oriented scope, for the sake of consistency, a value analysis having a similar range is now needed.

In his work Porter himself, while still stating that the firm is the ideal area of application of the VC model, extends the analysis beyond the single company introducing the *"value system"* concept, that is, the interconnection of the value chains of every single actor involved in the supply chain of a product. This perspective focuses the attention of the model on the total value seen as the sum of the value added at every stage of production, where there is a link between different actors in the supply chain. Nevertheless, this view appears limiting when it is not applied to an industrial process, where the links are clear and/or when the transfer of the ownership of a commodity is easily identifiable in time. Instead, in the case of differentiated products targeting different segments, and even more with regard to services (among which most videogames are classifiable nowadays), there is the need of a more comprehensive viewpoint. It needs to take into account the production, delivery and maintenance process of a product as a whole, being it a good or a service, and to highlight the value creating activities in one single multi-actor co-creation context with a focus on collaborative relationships, subsequently identifying the different actors that carry out each activity.

A huge step towards the conceptualization of a similar perspective has been made by Normann & Ramirez (1993) that introduced the concept of *"value network"* (VN), also called value constellation, defined as an "*inter-organizational network linking firms with different assets and competences together in response to or anticipation of new market opportunities"*[61]. Another definition of VN has been given by Allee (2009), who considers it *"any purposeful group of people or organizations creating social and economic good through complex dynamic exchanges of tangible and*

[61] Normann, R, Ramirez, R. (1993), *From Value Chain To Value Constellation: Designing Interactive Strategy*, Harvard Business Review, July-August, pp. 65-77.

intangible value"[62]. This second definition does not alter the general sense of the VN concept expressed in the first one, that will be immediately further clarified, but it extends it with some features that come useful to the analysis of the videogame industry: it allows to include non-corporate actors ("*people"* encompasses also consumers, a valuable feature given their relevance in the value creation process in the videogame industry nowadays) and points out the inter-network exchange of both tangible and intangible value (essential to the reference industry) necessary to create and deliver the good. In any case, regardless of which definition or combination of the two to embrace, it appears clear that the VN concept is the most suitable for conducting an industry-wide value analysis. As a matter of fact, it goes beyond the Porter's value system sequential philosophy and the related value links, focusing on value co-creation and continuous collaboration among the many network partners and giving life to networks' instead of single firms' competitive advantage.

Having now clarified both the VC model and the VN concept with their underlying logic, it appears that both notions, taken individually, fail to the above-mentioned goal required in this context. In fact, the stated aim is the reach of a comprehensive viewpoint. The reference model needs to take into account the production, delivery and maintenance process of a product as a whole, being it a good or a service, and to highlight the value creating activities in one single multi-actor co-creation context with a focus on collaborative relationships, subsequently identifying the different actors that carry out each single activity. The VN concept gets close but it lacks of a framework identifying and classifying the value-creating activities performed by the members of the network to design, produce, deliver, bring to market and support the

[62] Allee, V. (2009). *Value Creating Networks: Organizational Issues and Challenges*, The Learning Organization Special Issue on Social Networks and Social Networking, Volume 6 Issue 6, pp.427-442.

product. This is what Porter's VC does and it is the solution that can be borrowed to be applied to the whole value network. This accomplishes the stated goal by allowing an understanding of both the value contribution of the fulfillment of each activity at the industry level, with the related actors involved carrying it out (thanks to the VC concept), and the firm-level activities, both primary and support, that are most relevant to each player executing its role (Porter's VC model).

Finally, the notion of value innovation must be incorporated into the VN in order to analyze the evolution of the industry's network throughout history. Based on Porter's VC model, value innovation can be defined as the entirety of new activities or new ways to perform existing activities that are introduced in the processes of any firm in the network. Nevertheless, this definition is not comprehensive since it neglects relationships among key actors. Luckily, the VC concept also allows an evolutionary analysis since, according to the original authors, one of the tasks of the network is *"the reconfiguration of roles and relationships among this constellation of actors in order to mobilize the creation of value in new forms and by new players"* (Normann & Ramirez, 1993). This implies the need of continuously designing and redesigning network systems, bringing innovation to a wider, social level.

In conclusion, despite the usefulness of Porter's value chain model, it appears clear that the perspective that fits the most the intended purpose, that is, identifying all the actors involved in creating a game and what value they bring to the product by carrying on their activities, is the value network one. It stresses the relevance of relationships among VN actors and conceives innovation as a re-invention of these relations, bringing it to a social level.

3.2 Value Network in The Video Game Industry

Having identified the value perspective that is most suitable for the analysis, that is, the VN one, it is time to distinguish each category of actor from the other. It needs to be done on the basis of the role they cover in the network so to classify each industry-level activity as stated in the last chapter. This classification must be as little bound as possible to any historical moment so to be used to identify the evolution of the specific actors that have covered each role through time, matching the concept of innovation presented above.

Ben Sawyer, an influential industry expert and co-founder of Digitalmill, a videogames consulting firm, suggests a theory that aims at fulfilling this goal by dividing the industry VN (he calls it VC but he undoubtedly refers to the VN concept explained above) into "layers"[63].

According to Sawyer (2005), the traditional video games industry VN is made up of six interconnected but well distinct layers.

The capital (or investment) layer provides the funding necessary for every phase, from development to after-sale services and maintenance, passing through production and distribution, most of the times seeking a satisfying return on investment. Traditionally, the main investors have been huge publishing companies like Microsoft, Sony, Nintendo or EA, many of them being also console producers. Nevertheless, trends going towards new directions have been rising lately in the financing phase, like explained in the next chapter.

The product and talent layer encompasses all the game development related activities. It is made up of designers, artists, developers and other people contributing to the creation of the game. Most of the entirety of games is made by development

[63] Flew, T., Humphreys, S. (2005), *Games: Technology, Industry, Culture*, in Flew, T., *New Media: an Introduction Second Edition*. Oxford University Press, pp. 101-114.

studios, which may still differentiate from each other for distinctive features, like shown in the next chapter.

The production and tools layer provides any software or hardware used during the game development phase. It therefore regards content production tools, middleware, game engines and management tools. The actors involved in this layer are the providers of these tools, part of which may be internally developed by development studios.

The publishing or distribution layer encompasses all the activities involved in publishing and marketing the video game for retail and online sale. It involves acquiring and then licensing IP rights for new games, product's manufacturing and advertising, making deals with retailers (in terms of fee and in-store promotion) and other actors (like royalties to developers) and more (localization, packaging, etc.2). These are clearly activities that pertain to publishers in the traditional sense, but lately new actors have become able to perform them.

The hardware layer regards the platform a game is produced for and played on. The alternatives are numerous: a game may be played on console, PC, accessed though smartphones or in many other ways. Clearly, making a game available on multiple platforms increases the customer pool to target and, therefore, the potential amount of sales, but it is not always the adopted solution. Console manufacturers have traditionally been the actors involved in this layer, but recently many games are played on software platforms instead of hardware ones. Some examples are browsers, "virtual machines" (e.g., Java or Flash), social networks (e.g., Facebook) and the like, new platforms that have allowed the entrance of new players in the hardware layer, which would be better called platform layer in order to include also software platforms.

Finally, there is the end-users layer composed, of course, by players. It represents the purpose of the whole industry and since the profile of the typical gamer has been changing through time, firms have always adapted their actions in order to accommodate these changes.

This framework allowed the identification of the main roles to be covered in the videogame production, delivery and support process, in accordance to the VN perspective. As a matter of fact, the most relevant value creating activities have been identified in one single multi-actor context, like VN instructs. Nevertheless, the co-creation and relationships aspects of the VN concept have been here neglected. They will be covered in the next chapter, when this static division will be used to dynamically analyze which actors have carried out these 6 layer's activities throughout history.

3.3 Value Network Innovation in The Video Game Industry

In this chapter the VN concept and the VG industry layer theory are overlapped in order to identify the nature of specific activities performed by the different key actors in order to contribute to the final form of the product and to its value proposition. This will allow an understanding of both the value contribution of the fulfillment of each activity at the industry level, with the related actors involved carrying it out (thanks to the VC concept and to Sawyer's layers), and the firm-level activities that have been and/or still are most relevant to each player executing its role (Porter's VC model).

As it happened for the model discussed in the second chapter, this framework reveals itself useful to identify changes and innovation throughout history in both the activities themselves and the actors performing them. It is useful to remark that innovation in this framework is intended as the reconfiguration of roles and

relationships among the VN of actors in order to mobilize the creation of value in new forms and by new players, bringing innovation to a wider, social level. The co-creation and relationships aspects of the VN concept are therefore covered in this chapter.

3.3.1 Capital or Investment Layer

The capital (or investment) layer, whose main relationship is the one with the developer, provides the funding necessary for every phase and often expecting a return on the investment.

This layer has not seen many changes in the nature of the actors performing these activities for the first decades of life of the VG industry. During that period, apart from the first self- or university-financed non-commercial videogames, the main investors have been huge publishing companies like Microsoft, Sony, Nintendo or EA, many of them being also console producers. In the latter case, the return is also given by licensing the compatibility with a specific hardware. When publishing companies fund a game, they tend to employ a strict control over the developers, keeping the team organized so that the project can remain on schedule and on budget, respecting the expectations. Also, the nature of the relationship can vary: in individual contracts a publisher hires the developer for one single project, having therefore strong bargaining power and, therefore, control; on the other side, in the case of in-house development teams, they are owned by the publisher, setting the preconditions for a classical employer-employee relation.

Publishers have been the almost the only source of financing for many decades, mainly flanked by few developers' self-funded independent projects (freedom of creation, since the two counterparts of the relationship are the same entities), and they probably still remain the most used. Nevertheless, many other actors have

carried the funding activity throughout VG history. As a matter of fact, when governments and institutions began to understand the size and the potential of the VG industry for their economies, they started to invest money on it, therefore funding video game production. Institutional funds are often tied to serious games, that is, those developed for purposes other than entertainment like, for example, health, recruitment or education. Anyway this is not always true, like for the case of the UK Games Fund or the Creative Europe Fund for narrative titles. Being institutional funds often non-repayable, developers are left with a high degree of freedom in creating the content, without any external control in the relationship with their funder.

Another source of financing appeared not so recently in the industry are firms unrelated to the industry itself. As a matter of fact, many companies employ the video game as a mean for advertise their products (advergaming) or to digitalize internal processes like the recruiting one (serious games). In these cases, firms fund the whole development plus a fee to developers. The relationship here is similar to the consulting one: developers have a clear task to complete within a determined life span and respecting a budget.

Then, and this is true for small-scale newborn development teams, angel investors and venture capitalist have also soon started to understand the potential of this kind of projects. In these cases, it is likely that the financing entity enters into the equity of a studio or a stand-alone project since it also owns specific capabilities, having a huge say in the matter.

Moreover, also the so-called incubators and accelerators have emerged lately for start-up projects, bringing a project form the initial idea to the prototype stage and often beyond. They often but not always act as direct funders but, in any case, they

carry out activities like coaching, free rents, networking, etc., indirectly financing developers and establishing a supportive relationship with developers.

Finally, a new way of providing capital to developers has emerged in the last decade and more, that is, crowdfunding. It consists of players themselves financially sustaining the development of videogames through aggregator platforms like Kickstarter. This method has soon reached a substantial size and it opened a world to small-scale projects and small studios or individuals with ideas and capabilities but lacking of the financial resources. Here funders are likely to receive special contents when the game is published, perceiving a sort of personal relationship. Nevertheless, crowdfunding has its drawbacks like, for example, creators not reaching the financing goals while still having spent the initial funds received or ending up developing something different from what was declared and what funders expected.

3.3.2 Product and Talent Layer

The product and talent layer, as stated before, encompasses all the game development related activities. The word "developer" is sometimes used to mean a programmer, but it refers to anyone who works on the development of a game. This layer's main activities have not changed through time in their nature, always adapting to new technologies and market preferences. The main relationship to take care of for developers is the one with the financing entity.

The most common actors that perform these activities are mid/large development studios, made up of different individuals. Game designers create the rules of the game, as well as the content (such as levels, narrative, enemies, and items). Programmers implement the game, turning the designs into working code that allows the game to be played on a computer, console, or another device. Artists and animators create the visuals for the game. Audio people are responsible for the sound

effects, music, and voice acting. Quality assurance plays through the game, reporting bugs where the game is not behaving as designed. Most specialties have multiple sub-specialties and various career tracks that developers can follow from junior to senior level, but all these figures constitute a development studio. In the case of mid/large development studios, the funding entity is more likely to be a huge publisher, making the nature of the relationship a matter of ownership (individual contract vs. in-house development).

Soon, also small studios and (groups of) individuals has entered the industry as developers, with the first non-commercial independently produced games excluded. In the case of small realities, funding entities are more likely to be the players themselves, incubators and accelerators, venture capitalists, etc., making the relationship range from a non-control based one (crowdfunding) to a supportive one (accelerators).

Finally, as stated in the *Value proposition* section in Chapter 2, also the final user can become a game developer with some basic knowledge. As a matter of fact, with (open-source) development kits (e.g. Steam API), modding kits (allowed by open-source codes) and other similar tools made available lately by game developers/publishers and digital distribution platforms, users are more and more engaged in the active development of a game. Also sandbox games where the player can craft the in-game environment at his/her will (e.g. Minecraft and Little Big Planet) can be seen as a way of user's contribution to development. In this context of (co-) creation, the relationship between the user and the providers of the tools materializes into the sole compliance of the creator to right management policies of the firms. Apart from this latter case, please refer to the *Capital or investment layer* section above for more detailed analysis of the developer-investor relation.

3.3.3 Production and Tools Layer

The production and tools layer provides any software or hardware used during the game development phase. It therefore regards content production tools, middleware, game engines and management tools, things that have not changed through time in their nature, always adapting to new technologies and needs. A game engine provides animation models, collision system and other physics, user interface (UI), artificial intelligence (AI), debugging system and more. The main relationship here is the one between tools providers and developers who use these tools.

Some developers have their own engine, while others get the license to use one from an external provider (middleware). The use of middleware can be costly but timesaving. Localization and ports, often made by external companies, fall into this layer. The actors involved in this layer are the providers of these tools, part of which may be internally developed by studios. If, on the other side, these activities are externalized, the relationship between tools provider and developer is a merely contractual one (licensor-licensee). For example, for games produced for one single console, it is often the console manufacturer that provides middleware.

Innovation in this layer has just been technological but the greatest evolution can be found in the entrance of a new counterpart that these tools are addressed to: the user. In fact, as stated in the *Product and talent layer* section above, many development tools have been lately made available to users in order make them able to develop their ideas.

3.3.4 Publishing or Distribution Layer

The publishing or distribution layer encompasses all the activities involved in publishing and marketing the video game for retail and online sale. It involves acquiring and then licensing IP rights for new games, keeping the team organized on

time and on budget, product's manufacturing and advertising, making deals with retailers (in terms of fee and in-store promotion) and other actors (like royalties to developers) and more. Clearly, the main relationship here is the one with the developers, followed by retailers and the main innovation is represented by the shift from physical to digital distribution. The above-mentioned activities clearly pertain to publishers in the traditional sense, but lately new actors have become able to perform them.

Traditionally, all the above-mentioned activities have mostly been performed by big publishers, which also take care of the distribution phase. Large publishers enjoy of course a strong bargaining power with both developers (often owned) and retailers, being able to lower their fee and get a good service in terms of promotion.

On the other side, also small publishers exist, often relying on external companies to distribute their product, increasing therefore publishing costs. In these cases, the bargaining power is more equally distributed between the publisher and the developer. On the other side, retailers are less likely to promote their games. Finally, there are plenty of independent developers that self-publish their own games or, in some cases, establish licensing or co-development agreements with publishers. The status of their relationships is similar to the one described for small publishers.

With the advent if the online, digital distribution platforms proliferated. Some examples are Steam, App Store, PS Store. They take a fee to publish games and manage libraries and other features. Top-tier digital right management is required in order to stem piracy.

In terms of innovation, this layer has been revolutionized by digital distribution. Like said before throughout the thesis and specifically in the *Channels* section of Chapter 2.2, direct channels started prevailing in the last decade and more. This translates in selling online directly to the device that the game is intended to be played on:

developer's website, digital distribution platforms, consoles' digital stores, smartphone stores, rental services, cloud gaming services, etc. Digitalization had huge effects on the industry's value network, putting aside some roles like the manufacturers' and the physical retailers'.

3.3.5 Hardware Layer

The hardware layer regards the platform a game is produced for and played on. The alternatives are numerous: a game may be played on console, PC, accessed though smartphones or in many other ways. Clearly, making a game available on multiple platforms increases the customer pool to target and, therefore, the potential amount of sales, but it is not always the adopted solution. The main relationship here is with the final users, which are able to bring a platform to success or failure, and with the other actors (publisher and developer) in terms of licensing fee.

Historically, Pc have always been the dominant platform until 2000s, when consoles took over, while nowadays mobile, interactive and cloud based digital gaming are dominating the scene.

Console manufacturers have traditionally been the actors involved in this layer, making profits from every game sold for their console (licensing) plus publisher's fee if they act as publishers. They may also provide middleware and be paid for that. The console war to captivate final users has always consisted in a strong push strategy held by selling consoles under cost in order to spread it and then make profit through the above-mentioned methods.

Recently, many games are played on software platforms instead of hardware ones. Some examples are browsers, "virtual machines" (e.g., Java or Flash), social networks (e.g., Facebook) and the like, new platforms that have allowed the entrance of new players in the hardware layer, which would be better called platform layer in

order to include also software platforms. The profit is here made through advertisement ad fees on in-game micro-transactions.

Finally, mobile games took over in a short time span flanked by new trends, like cloud gaming and the cross-device feature, that are putting hardware (intended as the console) in the background, shifting the focus on the game itself as driver of the market competition.

The main innovation in the hardware layer has been the introduction of new technologies and innovations that are making the platform itself less and less relevant, as evidenced by the recent turnovers of console manufacturers intended in the traditional terms.

3.3.6 End-User Layer

Finally, there is the end-users layer composed, of course, by players. The typical gamer has been changing through time, firms have always adapted their actions in order to accommodate these changes. The main relationship of the end-user has always been the one with the corporate actors of the value system, but lately user-to-user interaction has gained a major importance. On the innovation side, the evolution of this layer mainly consisted in the expansion of the reference market from a niche to a mass one.

Players, from few representing a clear market segment to virtually anyone nowadays, have always changed their preferences adapting their taste to technological innovations occurred through time. The most used platform in the beginning of the industry, PC, was supplanted soon by console. Later, with the advent of the online, players started to enjoy online games and then those games with rapid matches, cross-device features, cloud services and so on. F2P is the most successful formula.

A huge innovation in this layer occurred in the counterparts of the main relationships of end-users. As said before, end-users interact with many corporate actors of the value network: developers, through the game and other features; publishers, through tools like virtual coins obtained by playing their games; retailers through the physical store, later digital libraries. Nowadays, not only new ways of cultivating these relations emerged (e.g. development kits that allow users' creations to be published and monetized by both the provider and the user) but also a new main relation emerged, that is, the user-user one. It was allowed by MMORPG games like World of Warcraft and other games where the communities themselves made the player's experience. This genre represents the leading one, as games like Fortnite or League of Legends witness. This peer-to-peer relation is also visible in the gaming video content business.

In conclusion, the VN concept and the VG industry layer theory have been presented and overlapped In this chapter in order to identify specific activities performed by the different key actors in order to contribute to the final form of the product and to its value proposition. This has allowed an understanding of both the value contribution of the fulfillment of each activity at the industry level, with the related actors involved carrying it out, and the firm-level activities that have been or still are most relevant to the value network. Innovation in the value network consisted in new actors, entered mainly in the publishing and distribution and the hardware layers thanks to the digitalization process and technological advancements, and new relations that are putting the user at the center of the attention with regard to many aspects such as funding and development.

Fourth Chapter: Survey Findings

This chapter illustrates the outcomes of a survey[64] written and distributed by the author through different channels in order to explore video game players' consumption habits with a focus on the main industry trends and innovations identified throughout the thesis. After an introduction regarding survey's goals and methodology, considerations about reliability, validity, generalizability and limitations will be presented. The analysis of the most relevant results follows, finally leading to conclusions and recommendations.

4.1 Methodology

Having this thesis as a background, the survey, focuses on some topics of the thesis pooled together by their common relevance for video games industry and business evolution. It investigates gamers' habits with regard to general gaming behaviors and their specific attitude towards some of the latest trends identified in the previous chapters. It finally aims at clarifying consumers' behavior towards the above-mentioned topics and at possibly deducing recommendations for the main actors of the industry value network.

In terms of methodology, this survey has been written and published online using the cutting-edge software Qualtrics. The related link has been shared with friends, gamers' communities and social networks in order to ensure a demographically differentiated pool of 246 respondents. Participants were asked to answer 34 to 62 questions related to their video game consumption habits with a focus on some of the latest VG innovations such as online gaming, F2P and freemium models, in-game purchases, virtual and augmented reality, Esports and gaming video content. These

[64] The whole survey is available at Appendix 2.

questions may be both multiple choices with single or multiple answers, open-ended and ranking questions.

The survey reveals itself valid since it does not aim at measuring what a specific theory states but at investigating gamers' habits with regard to some specific phenomena highlighted in the thesis (construct and content validity). Furthermore, it is generalizable (external validity) given the demographical match between the sample and the gamers' population, with some exceptions like a slight underrepresentation of the female gender (33.6%) and the Asian geographical segment (7%). As a matter of fact, with a 95% confidence level and the considered sample (231 valid surveys), the margin of error (or confidence interval) sets itself around 6 %.

After this introduction about the survey's methodology, reliability, validity, generalizability and limitations, it is now time to present the results.

4.2 Results

The outcomes of the survey are here presented according to the following straightforward logic. Demographic traits of the sample open the overview. Then, a focus on players' behavior in terms of gaming (and spending) habits and a section dedicated to the distribution channels and platforms will follow the way. These sections allow identifying the degree of diffusion of some of the industry's most recent innovations and trends. Next, the outcomes of questions related to main industry-characterizing phenomena are presented: online gaming (in-game micro transactions, F2P, etc.), gaming video content, Esports, and extended reality (VR, AR). These topics have been investigated in order to ensure continuity and consistency throughout the whole thesis, allowing also references to the themes faced in the previous chapters.

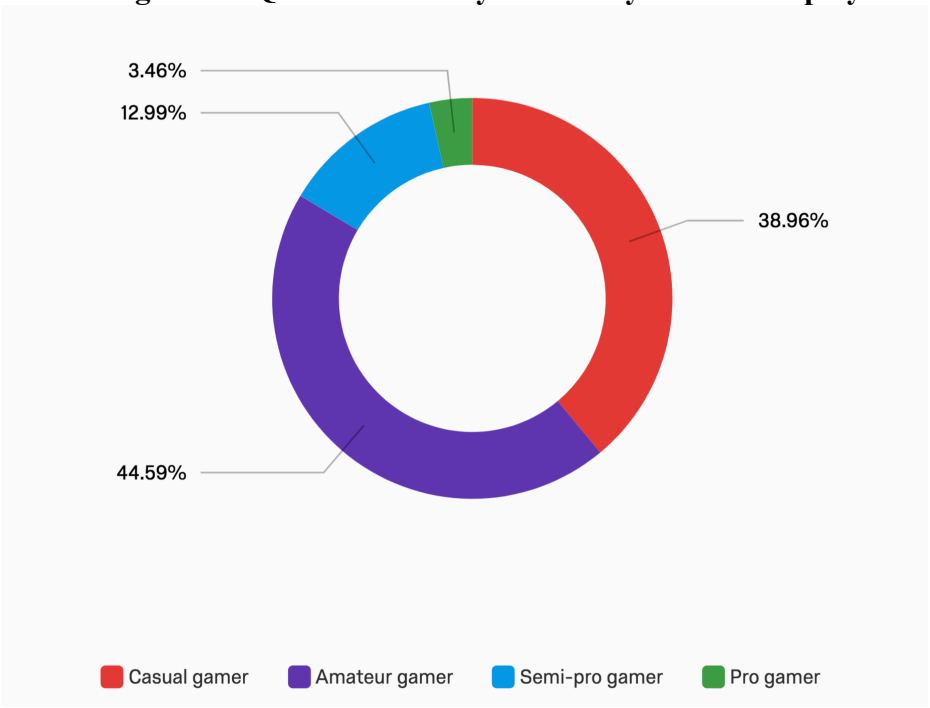
4.2.1 Demographics

Among the 231 valid respondents the average age is 30, with the 21-25 and 31-40 age ranges being the most represented. Furthermore, 34% of interviewees are women, a figure that sets an underrepresentation of the genre with regard to the population. Most respondents (64%) actually live in the US, followed by Italy (20%), rest of Europe, South Americam and Asia (6%). It also lies a problem of underrepresentation, the one of the Asian continent. Finally, taking into account education level, occupation and income, 68% has a university degree and most respondents are fulltime workers or students with an average annual household income of 55k.

4.2.2 Gaming Habits

This section presents the results of questions regarding the interviewees' gaming general habits. Almost two thirds of respondents started playing in their first ten years of life, and 86% in the first fifteen. They spend, on average, twelve hours playing every week, split among almost 4 days. Early starters' time spent is way above than average, witnessing the importance of emotional affection to the industry. Favorite genres revealed to be adventure, RPG, strategy, sports, action, with a non-negligible casual-oriented portion of interviewees. Consistently, most define themselves casual or amateur gamers, while around 16% are (semi-) pro players as shown in Figure 7.

Figure 7 – Q5: How would you define yourself as a player?



Source: Author's survey results (powered by Qualtrics).

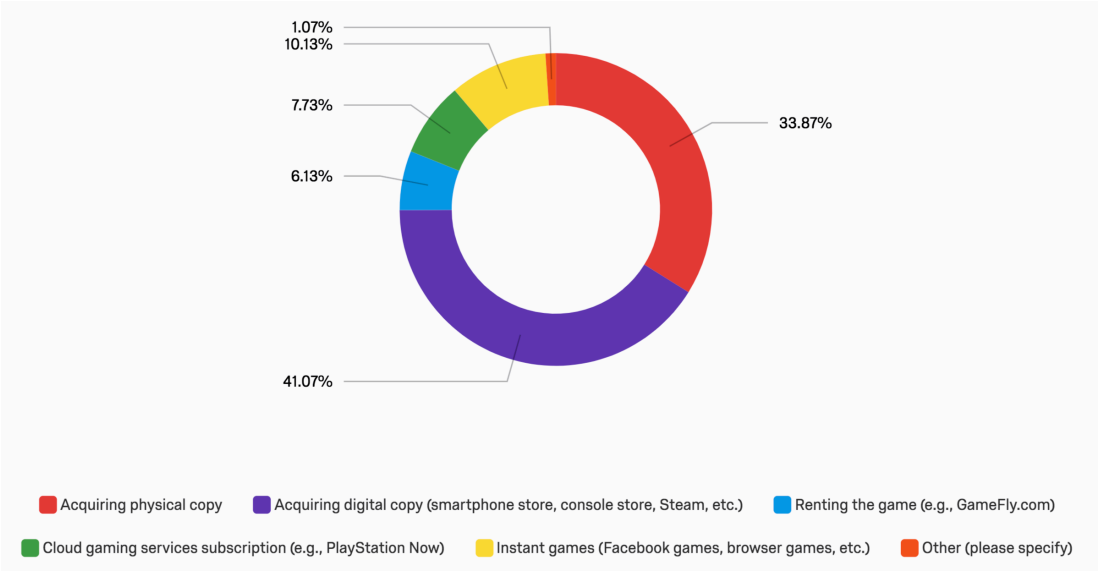
Among attraction factors, the most valued are gameplay, game genre and competition, in line with competitive segment expansion occurred in the last years. With regard to spending, the average amount monthly employed for gaming strictly related expenses (purchase, add-ons, DLCs, subscriptions, in-game purchases, etc.) is almost US$100 Finally, the average gamer is becoming more conscious thanks to new awareness channels. As a matter of fact, 73% of respondents inquire more than rarely about VG world through news, reviews, forums, fairs, a figure that increases to 4/5 with regard to the games they're currently playing.

4.2.3 Platform and Distribution Preferences

Home consoles reveal themselves to be the preferred device for players. Nevertheless, among those who play cross-device titles, 77% of respondents take advantage of this feature. Moreover, in terms of purchase preference, the most used way to take possession of video games is through digital distribution, as shown in

Figure 8, and this channel leads also in players' spending. Finally, the cloud gaming figure is not negligible given the recent introduction of the technology, with 30% of respondents having a cloud gaming platform ongoing subscription.

Figure 8 – Q8: In which way do you usually take possession of video games?



Source: Author's survey results (powered by Qualtrics).

4.2.4 Online Gaming

In this section, online gaming habits of respondents have been investigated, with a particular focus on previously covered topics, such as micro transactions, F2P and freemium models.

A shown in Figure 9 most respondents play more online. Those who don't do it are moved mainly by personal choice, but also because their area does not enjoy a strong internet connect. Shooter games and MMORPG are the most appreciated genres and players give a huge relevance to in-game communication/socialization tools such as chats, microphone, guilds, etc. Interestingly, a win affects the short-term mood of a respondent definitely more than a defeat.

Figure 9 – Q16: Do you usually play more online or offline?

Source: Author's survey results (powered by Qualtrics).

With regard to micro transaction based BMs, more than half spend for in-game purchases, with 6.67% spending between US$2 and US$5 a day. 78% of them are casual buyers (just buying what he wants at the moment, regardless of other factors) or patient ones (waiting for offers). Main reasons are: social interaction (31%) mainly boosted by skins, discounts and offers (28%) and playing unobstructed (25%) (speeding timers, , unlocking game content, removing ads, etc.). Functional items, on the other side, are rated as lowest, highlighting an adverse perception of freemium and similar BMs applied to online gaming. In fact, players are more eager to make in-game purchase for, in order, F2P, premium, freemium and grey area games.

4.2.5 Gaming Video Content (GVC)

Among all respondents, 60% watch live contents and 58% recorded ones, adhering to the GVC phenomenon. Furthermore, more than 1/4 also directly contributes through subscriptions or donations. The main identified drivers are entertainment above all, followed by learning advanced strategies, and watch Esports competition. This witnesses the importance of user relation and content, since streamers become entertainers. Finally, 15% of the eligible respondents are content creators themselves.

4.2.6 Esports

Two thirds of players watchs Esports related content, a phenomenon that goes beyond the game played toward pure entertainment like sports. Few are also athletes themselves. The vast majority enjoys consuming Esports content through streaming platforms like Twitch, followed by team/players official pages on social networks. Just 31% of interviewees watch definitely more conventional sports, with 47% strongly or slightly agreeing on considering Esports competitions comparable to sports, used here in its well-established meaning. This shows a strong affection towards a newborn form of entertainment whose credit is the merger of traditional sports-associated entertainment features with a great passion, that is, gaming. Furthermore, 18% took part to an Esports competition and among them 40% to an official wide-range one. Finally, 17% have bet on Esports competition results at least once and more than a half of them do it often or every time they can.

4.2.7 Extended Reality (VR, AR)

Among all respondents, slightly less than one fourth regularly use VR headsets, either being owners or having a regular access to one. The average usage is 2 hours a week while the expenses are US$13 a month, witnessing the shortage of content due to the early adoption phase of the technology. On the other side, the potential appeal of AR is confirmed by more than half of respondents, which declare they are or have been into an AR game. Nevertheless, VR is ranked way more interesting than AR, on average, since its value propos based on immersiveness and early adoption (pioneer's feeling).

4.3 Findings and Recommendations

This section presents the conclusions that can be deducted from the survey's result, both in terms of latest trends in consumers' habits and recommendations for firms involved in the video game value network. The logic followed is the same displayed in the results section.

Firstly, digital distribution clearly leads over physical one, with players valuing the convenience of its business model and therefore spending way more in digital channels. This is clear to Valve, whose distribution platform's (Steam) success leverages on this feature combined with other strong elements of the value proposition[65], almost monopolizing the market. With regard to the cross-device phenomenon, strongly tied to digital distribution, it revealed to be highly valued by players and developers and publishers should therefore focus on this finding, when it is applicable to their titles. Also, six out of ten players use in-game communication/socialization tools such as chats, microphone, guilds, etc. more than rarely, demonstrating the increased value generated by socialization. It is insightful to note that this value is mostly user-generated, with developers just providing the players with the right tools, confirming the shift form firm- to user-generated value identified in Chapter 2. Then, also cloud gaming is taking off, with more and more players having ongoing subscriptions to different video game streaming services like PS One. This shift may lead to the end of consoles as we intend them nowadays in favor of games being streamed directly to televisions, just like it happened in the TV and movie industries. A strong Internet connection is of course required for exploiting cloud gaming services, as well as any other online feature, but some areas

[65] For a more accurate analysis of Steam's value proposition, please refer to the *Steam* section in Chapter 2.3.

resulted not enjoying it, highlighting a potential for market growth in regions like South America. Finally, the average player reveals to be a conscious one, getting informed about games he/she is playing but at the same degree, also about the gaming world in general. Therefore, new releases, news, reviews, events, etc. play an important role in driving players' purchase decisions and also in signaling their preferences, revealing themselves useful tools for publishers for driving consumption and gathering data. All these findings are useful tips for publishers and developers, as well as console manufacturers, to (re-) think their business models in order to meet consumers' preferences and therefore increase success chances.

With regards to online gaming and micro-transactions, it is useful to notice that players tend to be considerably more emotionally influenced in the short term by a win rather than by a defeat. This feature may advise firms to create titles based on a win-seeking, addictive gameplay grounded on personal improvement and on relatively short matches, like Epic Games successfully did with Fortnite. As a matter of fact, this may result in more time spent playing by users, a great advantage for games that seek a huge user base like F2P ones and aiming at retaining it in order to increase their spending rate. In these terms, micro-transactions seem to be mainly driven by emotional impulse, making skins and similar non-functional items the most valued in-app purchases in multiplayer games. In addition to that, for casual titles like Candy Crush Saga, also "playing unobstructed" related items (speeding timers, boosters, unlocking game content, keeping playing, removing ads, protecting achievements, etc.) are strongly valued. In general, special offers and discounts are able to affect both sides (the multiplayer, possibly competitive and the casual one). On the other side, functional items are the worst ranked. All these in-game purchase preferences reveal a strong market aversion toward freemium and grey area business models that must be taken into account by developers and publishers.

Then, gaming video content (GVC) confirms to be a massive phenomenon with most players enjoying live or recorded video content and many also spending in subscriptions or donations to streamers. This is of course allowed by facilitators like Twitch that make streamers, users and companies meet and act as explained in Twitch's business model analysis in Chapter 2.3. Also, many players personally stream or upload their game sessions online, witnessing, again, the increased share of value created by users themselves. Furthermore, it is interesting to notice how GVC is not conceived just a medium for gaming content, but as a way to enjoy also individual streamers' non-game content: they become entertainers, merging gaming capabilities with entertaining skills and a strong degree of interaction with users. Among the reasons' of GVC success, watching Esports competition is a leading one, confirming the strong interdependence between these two phenomena. In conclusion, the huge scope of GVC, apart from demonstrating the importance of player-to-player interaction and, therefore, of user-generated value, sets gaming video content as a valuable asset for companies. As a matter of fact, it appears to be the most effective mean to reach huge crowds of gamers and to promote games through, for examples, partnerships with influent streamers.

When it comes to Esports, the impact of the phenomenon is hugely relevant and its reach goes far beyond players of the specific related game, getting closer to an entertainment medium similar to traditional sports. This observation, of course still valid just for the gamers segment, witnesses the strong engagement of players to Esports due to its capability to merge traditional sports' entertainment features with a great passion, that is, gaming, increasing the rate of loyalty of viewers. Also, a good participation as competitors, either at an amateur or official level, has been registered, just like relatively high degree of betting viewers, further witnessing the closeness of traditional sports and Esports concepts in the mind of gamers. In fact,

the majority of betters declared that do it frequently. Then, Twitch dominance as medium is relevant like in the GVC case. Also, in Esports, just like for GVC, a more active socialization than the one characterizing traditional sports is required to individual athletes and team members, since they often are streamers as well. This consideration further ties the GVC and the Esports worlds together, just like the consequent recommendation for firms, that is, exploiting this phenomenon as a way to promote their products and to increase their longevity.

Finally, it is time to draw conclusions with regards to the extended reality technologies (AR, VR). VR headsets enjoy good adoption rates so far given the relatively newness of the technology. Nevertheless, because of VR's early stage of development, the content consumption rates are still low with regards to both hours and money spent. On the other side, many players have been or still are into an AR game, mostly Pokémon Go, thanks to its unique value proposition investigated in the Pokémon Go business model analysis in Chapter 2.3. Nevertheless, VR finally triggers an higher market interest when compared to AR thanks to its value proposition investigated in the Oculus Rift business model analysis in Chapter 2.3. As a matter of fact, the appeal of a radically new technology of which early adopters feel like pioneers, merged with distinctive features like an unreachable immersiveness, has the capability to exercise a strong attractiveness to players. In conclusion, despite the narrow offer available nowadays and the many technological improvements to be made, XR technologies and VR overall have a massive potential witnessed by a relatively high adoption rate. The potential of these new technologies, witnessed by the above-presented findings, is able to have substantial implications for the whole industry and for the firms operating in its value network.

Conclusions

This study provided a comprehensive and empirically founded outline of the historical evolution of doing business in the video game industry. Major business model and value network innovations occurred through time have been identified. Furthermore, the study also investigated consumers' attitude towards the latest advancements of the industry in order to explore possible future market developments and suggest recommendations to firms.

In terms of business model innovation, the adapted business model canvas (BMC) framework allowed the identification of the main novelties introduced throughout history in each of the nine building blocks constituting the framework. What emerged is that the wide spread of digitalization occurred in the first 2000s represented a turning point for every building block. As a matter of fact, digitalization disrupted the industry, directly or indirectly triggering many innovations. The advancements occurred in the last century are still substantial, having contributed to the transformation of a newborn industry into mass market-oriented one. Nevertheless, the digital era brought innovation and the whole industry to another level, changing the target market from a mass one to a potentially unrestrained one. Among the main consequences of digitalization, there is the shift in the source of value form corporate actors to players themselves, enhancing the conception of game as a service. As a matter of fact, innovations like online gaming, in-game content creating tools or open-source codes leave the users with a huge freedom of creation and customization of their game experience, allowing them to reach new peaks of gratification previously unconceivable. Also, the greatest amount of innovations attributable to digitalization took place in the revenue streams and most of them are aimed at leveraging free distribution to fully exploit the recent

market expansion. From having one-time physical asset sale as the main revenue driver in the last century, digitalization brought plenty of new ways of monetizing from games. From DLCs and subscriptions to in-game microtransactions and advertisements, developers and publishers can nowadays exploit countless monetization methods. Finally, the dominance of digital distribution channels could not be avoided by physical retailers, given its convenience for players.

On the value network side, innovation consisted in new actors whose entrance in the market has been allowed by the digitalization process and technological advancements, such as smartphones manufacturers, and new relations that are putting the user at the center of the attention also in this field. The player is in fact much more involved in the process of creation, nowadays performing activities such as funding or development.

Finally, the survey confirmed the above-mentioned findings and revealed the huge potential of gaming video content aggregators like Twitch as more than mere streaming platforms. Also, the growth of the related Esports phenomenon appears impossible to be stopped. These two industry advancements get the gaming world closer to the pure (non-active) entertainment sphere where, for examples, traditional sports belong. Also, a strong interest toward virtual reality has been observed.

In this framework of outcomes, the video game industry proves to be a fast-changing one, despite its relative youth, and its future developments remain unknown. Nevertheless, on the basis of the findings of the research, the author is confident to affirm that the trend toward user-centrism and player involvement is likely to continue. As a matter of fact, players hugely value social, co-creation and customization features, probably thanks to the subsequent sense of fulfillment and personalization that creates a parallel reality in their minds. With regard to firms, in

order to fully exploit the potential of this phenomenon, they should find new ways of nurturing customer relationships through, for example, in-game massive events. Indeed, the gaming world is getting closer to the pure (non-active) entertainment sphere where, for examples, traditional sports belong. Another way to create engagement that is likely to be widely adopted is the exploitation of gaming video content providers like Twitch. These platforms, acting as facilitators that make streamers, users and companies meet and interact, qualify as likely points of convergence for the industry in the following years.

On the other side, in the opinion of who writes, the industry is likely to be revolutionized in the long term by the fall of consoles as we intend them nowadays. This may be caused by new technologies like cloud gaming and new hardware like VR headsets that are expected to make software the main point of differentiation, putting an end to the ever-lasting console war.

This thesis finally contributes to the existing literature of the video game industry by providing a comprehensive and empirically founded overview of the historical evolution of doing business in the sector. Moreover, the study also explores possible future market developments by the mean of investigating consumers' attitude towards the latest advancements of the industry, providing recommendations to corporate actors involved in the value network.

Furthermore, the adaptation of existing concepts and frameworks provides tools that could be applied by other industries' experts in order to investigate business model and value network innovation in their field, possibly a digitally-disrupted one. Within the video game industry itself, this framework may be later integrated and possibly updated to explore further evolution of the sector.

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Appendix 2. Questionnaire

"Video games survey Davide Pica", created and distributed in English and Italian through Qualtrics.

Start of Block: Intro

Q0 Hello! I am Davide Pica, a student of International Management at LUISS University that needs your help for his Master's thesis regarding the videogame industry. I would really appreciate if you could take not more than 10 minutes of your time to **complete this survey** but please I recommend you doing it **only if you are a gamer** (also playing smartphone games sometimes to pass time is ok). I assure you that all responses will remain anonymous and will be used only for the above-mentioned purpose. As a token of my appreciation, all respondents who complete the questionnaire and are willing to give their e-mail will be entered into a drawing to win an Amazon gift card with a value of €50 (it will take place on October 2nd).

End of Block: Intro

Start of Block: General questions

Q1 At what age did you start playing video games?

- ○ 1-10
- ○ 10-15
- ○ 15-20
- ○ 20-30
- ○ 30-40
- ○ over 40

Q2 On average, how many days do you play video games a week?

- ○ 1
- ○ 2-3
- ○ 4-5
- ○ 6-7

Q3 On average, how many hours do you spend playing video games a week?

- ○ < 7 hrs
- ○ 7-14 hrs
- ○ 14-28 hrs
- ○ 28-42 hrs
- ○ > 42 hrs

Q4 Which of the following game genres do you like the most? Please select up to three answers.

- [ ] RPG
- [ ] FPS
- [ ] Action
- [ ] Adventure
- [ ] Casual
- [ ] Card
- [ ] Sandbox
- [ ] Indie
- [ ] MMO
- [ ] MMORPG
- [ ] Racing
- [ ] Simulation
- [ ] Sports
- [ ] Strategy
- [ ] Platformer
- [ ] Other (please specify)

_____

- [ ] MOBA

Q5 How would you define yourself as a player?

- ○ Casual gamer
- ○ Amateur gamer
- ○ Semi-pro gamer
- ○ Pro gamer

Q6 Which device do you use the most to play video games?

- ○ PC
- ○ Home console (e.g., PlayStation4)
- ○ Smartphone
- ○ Tablet
- ○ Handheld console (e.g. PS vita)
- ○ Other (please specify)

_____

Q7 If you play any game that is available on multiple devices (e.g., Fortnite) how often do you exploit this cross-device feature?

- ○ I don't play this kind of games
- ○ Never
- ○ Rarely
- ○ Sometimes
- ○ Often
- ○ Always

Q8 In which way do you usually take possession of video games? Please select all that apply.

- [ ] Acquiring physical copy
- [ ] Acquiring digital copy (smartphone store, console store, Steam, etc.)
- [ ] Renting the game (e.g., GameFly.com)
- [ ] Cloud gaming services subscription (e.g., PlayStation Now)
- [ ] Instant games (Facebook games, browser games, etc.)
- [ ] Other (please specify)

_____

Q9 During the last year, did you spend more money for physical or digital (including digital copies of games, DLCs, in-game purchases, any subscription fee) distribution?

- ○ Definitely more for physical distribution
- ○ Slightly more for physical distribution
- ○ More or less the same
- ○ Slightly more for digital distribution
- ○ Definitely more for digital distribution

Q10 Do you have a cloud gaming service subscription (e.g. PS Now)?

- ○ Yes
- ○ No

Q11 On average, how much do you spend a month for video games? Please include expenses related to the game add-ons, DLCs, subscriptions, in-game purchases, etc.

- ○ US$0
- ○ US$0-US$20
- ○ US$20-US$60
- ○ US$60-US$100
- ○ US$100-US$150
- ○ US$150-US$200
- ○ US$200-US$300
- ○ > US$300

Q12 Which aspects are you most interested in when you play a video game? Please select up to five answers.

- [ ] Graphics
- [ ] Gameplay
- [ ] Sound
- [ ] Customization
- [ ] Game genre
- [ ] Online version
- [ ] Realism
- [ ] Combat or military themes
- [ ] Artistic style
- [ ] Plot and themes
- [ ] Exploration
- [ ] Feeling of control
- [ ] Its ability to calm me down
- [ ] Stimulation of thought
- [ ] Constant excitement
- [ ] High difficulty
- [ ] Unpredictability
- [ ] Competition with other players
- [ ] Cooperation with other players
- [ ] Other (please specify)

_____

Q13 Do you ever inquire about the video games world (news, (video)reviews, trailers, fairs, forums, etc.)?

- ○ Never
- ○ Rarely
- ○ Sometimes
- ○ Often
- ○ Every day

Q14 Do you ever inquire about games you are currently playing (news, announcements, dedicated forums, strategies, etc.)?

- ○ Never
- ○ Rarely
- ○ Sometimes
- ○ Often
- ○ Every day

Q15 How often do you play instant games, that is, games that don't need any download to be played (e.g., FB games or browser games)?

- ○ Never
- ○ Rarely
- ○ Sometimes
- ○ Often
- ○ Every day

End of Block: General questions

Start of Block: Online gaming

Q16 Do you usually play more online or offline?

- ○ Definitely more online
- ○ Slightly more online
- ○ More or less the same
- ○ Slightly more offline
- ○ Definitely more offline

Display This Question:

If Do you usually play more online or offline? = Slightly more offline

Or Do you usually play more online or offline? = Definitely more offline

Q17 Why?

- ○ My area does not enjoy a strong Internet connection
- ○ Personal choice (I don't like competing, I prefer enjoying a solid plot, etc.)
- ○ Not my choice (e.g., parent limiting my access to the Internet)
- ○ Other (please specify)

_____

Display This Question:

If Do you usually play more online or offline? = Definitely more offline

Q18 Have you ever played an online game?

- ○ Yes
- ○ No
- ○ Not sure

Skip To: End of Block If Have you ever played an online game? != Yes

Q19 On average, how many hours do you spend playing online every week?

- ○ < 7hrs
- ○ 7-14 hrs
- ○ 14-28 hrs
- ○ 28-42 hrs
- ○ > 42 hrs

Q20 Which types of online games do you prefer? Please select up to two answers.

- ☐ MOBA (League of Legends, DOTA 2, Smite, etc.)
- ☐ MMORPG/MMO (World of Warcraft, Final Fantasy XIV, Archeage, etc.)
- ☐ Action-RPG/RPG (Diablo 3, Path of Exil, Torchlight 2, etc.)
- ☐ Shooter (Counter Strike, Call of Duty, Battlefield, etc.)
- ☐ RTS (Starcraft, Warcraft, Age of Empire, etc.)
- ☐ Sports (NHL, NFL, FIFA, etc.)
- ☐ Other (please specify)

_____

Q21 How often do you use in-game communication/socialization tools such as chats, microphone, but also guilds, etc.)?

- ○ Never
- ○ Rarely
- ○ Sometimes
- ○ Often
- ○ Always

Q22 From 1 to 5, how much does a win/defeat alter your mood shortly after the end of an online match?

	0 1 2 3 4 5
Win	
Defeat	

End of Block: Online gaming

Start of Block: In-game microtransactions

Q23 On average, how much do you spend monthly for in-game purchases (including skins, boosters, ad-removals, etc.)?

- ○ US$0
- ○ US$0-US$20
- ○ US$20-US$40
- ○ US$40-US$60
- ○ US$60-US$100
- ○ US$100-US$150
- ○ US$150-US$200
- ○ > US$200

Skip To: Q26 If On average, how much do you spend monthly for in-game purchases (including skins, boosters, ad-re... = US$0

Q24 In which of the following category do you identify yourself the most as an in-game buyer?

- ○ Hungry collector: I buy items as they become available, possibly inquiring about future releases.
- ○ Patient buyer: I buy items when they get on sale.
- ○ Casual buyer: I don't pay attention to the newness of the item and similar features, I just buy what I want at the moment.
- ○ The grinder: I get items thanks to the repetition of some specific actions.
- ○ Other (please specify)
  _____

Q25 What is the main reason you make in-game purchases?

- ○ Playing unobstructed (speeding timers, avoiding repetition, unlocking game content, keeping playing, removing ads, protecting achievements, etc.)
- ○ Social interaction (personalization (e.g., skins), playing with friends, giving gifts, taking part to special events, etc.)
- ○ Competition (becoming the best (functional items), showing off achievements, etc.)
- ○ Economical rationale (reasonable pricing, special offers, supporting a good game, investing in a hobby, etc.)
- ○ Other (please specify)
  _____

Q26 For the next questions, please refer to the following definitions:

- **Premium games**: all those games that require an upfront payment to be played. This is the classic method predominantly used in the industry before free-to-play games spread, but it is still the most common one for AAA titles (e.g., RDR2 or FIFA).

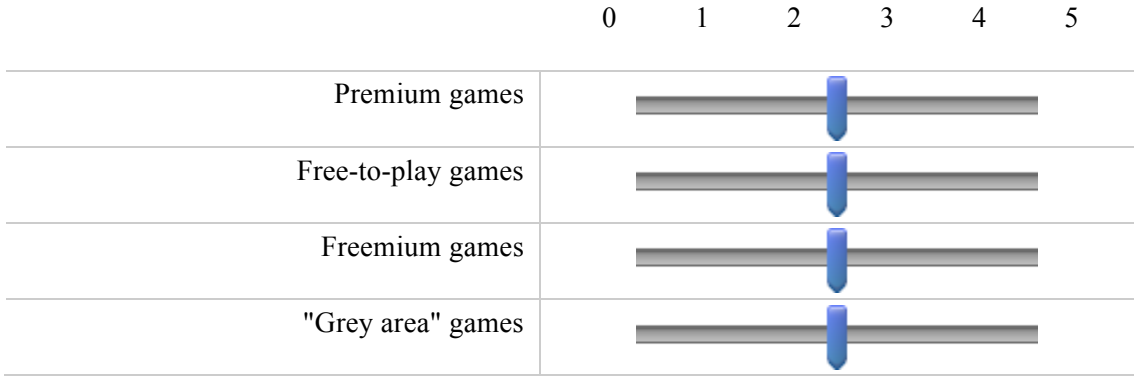
- **Free-to-play (F2P) games**: all those games that are distributed for free in their (mostly) complete form, either through a download or directly on a social network or a browser. Ads or (mostly aesthetic items-related) in-game micro-transactions are the

most common ways for developers/publishers to profit from these titles (e.g., Fortnite).

- **Freemium**: all those freely-available games that, in their free version, limit the player's experience to a specific point in the story line or, alternatively, confine it by strongly reducing the content available to a restricted bulk. Of course, these games require a payment in order to unlock the full content.

- **"Grey area" games**: a category of games that originates from the blurred boundary between F2P micro-transaction based games and freemium ones. Some games, for example, even in their free version may not prevent the player from enjoying all levels, but may offer so much more to a paying user that many may perceive the payment as forced.

Q27 From 1 to 5, all other things being equal, how much would you be willing to spend for in-game purchases in each of the following categories?



Q28
Would you regularly play an online game where paying players are favored when compared to non-paying ones?

- ○ Yes, if I like the game
- ○ Maybe, it depends on how much they are advantaged: it may be a personal challenge
- ○ Maybe, it depends on _____
- ○ Not sure
- ○ Absolutely not
- ○ Other (please specify) _____

End of Block: In-game microtransactions

Start of Block: Gaming video content (GVC)

Q29 Do you ever watch **live streaming** of game sessions of other players or other game related content (e.g., on Twitch)?

- ○ Yes
- ○ No
- ○ Not sure

Skip To: Q34 If Do you ever watch live streaming of game sessions of other players or other game related content... != Yes

Q30 How often?

- ○ Rarely
- ○ Sometimes
- ○ Often
- ○ Every day

Q31 Why?

- ○ To learn how to play (tutorial alike)
- ○ To learn strategies (advanced tutorial alike)
- ○ For entertainment
- ○ To watch live Esports competitions
- ○ Other (please specify)

_____

Q32 Have you ever spent money on donations, channel subsciptions or similar forms of streamers' support?

- ○ Yes
- ○ No
- ○ Not sure

Skip To: Q34 If Have you ever spent money on donations, channel subsciptions or similar forms of streamers' suppo... != Yes

Q33 How often?

- ○ Rarely (few donations in my life)
- ○ Sometimes (not more than one ongoing subscription and/or few donations lately)
- ○ Habitually (more than one ongoing subscription and/or frequent donations)
- ○ Always (many ongoing subscription and/or everyday donations)

Q34 Do you ever watch **recorded** game sessions of other players or other game related content?

- ○ Yes
- ○ No
- ○ Not sure

Skip To: Q37 If Do you ever watch recorded game sessions of other players or other game related content? != Yes

Q35 How often?

- ○ Rarely
- ○ Sometimes
- ○ Often
- ○ Every day

Q36 Why?

- ○ To learn how to play (tutorial alike)
- ○ To learn strategies (advanced tutorial alike)
- ○ For entertainment
- ○ To watch recorded Esports competitions
- ○ Other (please specify)

_____

Q37 Do you personally live stream and/or record and publish your game sessions online for others?

- ○ Yes
- ○ No

End of Block: Gaming video content (GVC)

Start of Block: Esports

Q38 If players could be strictly divided between those who play for entertainment and those playing to compete, where would you recognize yourself the most?

- ○ Entertainment segment
- ○ Competition segment

Q39
For the next questions, please refer to the following definition:

Esports relate to competitive video gaming and specifically refer to organized, multiplayer video game competitions, particularly between professional players/teams, but also between individuals. A participation fee is due and players compete for a prize.

Q40 Are some of your favorite titles associated with Esports (LoL, Fortnite, Overwatch, Counterstrike, etc.)?

- ○ Yes, but I play it casually and don’t watch Esports related content
- ○ Yes, but I play it casually still enjoying Esports related content
- ○ Yes and I play it (semi-)professionally (taking part to competitions, also local ones)
- ○ No
- ○ Not sure
- ○ Yes, but I don't play it (anymore): I just watch Esports-related content

Q41 How often do you consume Esports-related content (live-streamed matches, recorded content, articles, blogs, etc.)?

- ○ Never
- ○ Rarely
- ○ Sometimes
- ○ Often
- ○ Every day

Skip To: Q44 If How often do you consume Esports-related content (live-streamed matches, recorded content, articl... = Never

Q42 What are your favorite ways to consume Esports-related content? Please, select all that apply.

- ☐ Live streams (e.g. Twitch, YouTube Gaming)
- ☐ Recorded video content (e.g. players' vlogs)
- ☐ Social media (e.g., team/player official page)
- ☐ Blogs/news
- ☐ Other (please specify)

_____

Q43 Do you do watch more Esports- or sport-related content (used here in its well-established meaning)?

- ○ Definitely more Esports
- ○ Slightly more Esports
- ○ More or less the same
- ○ Slightly more sport
- ○ Definitely more sport

Q44 Have you ever taken part, as a competitor, to an Esports competition?

- ○ Yes, to an official wide-range one
- ○ Yes, to an local one (e.g. in pubs)
- ○ Yes, but it was just wagering with friends at home
- ○ No
- ○ Other (please specify) _____

Skip To: Q46 If Have you ever taken part, as a competitor, to an Esports competition? = No

Q45 How often do you do it?

- ○ Did it once/few times
- ○ Sometimes
- ○ Often
- ○ Every time I can

Q46 Have you ever bet on Esports competitions' results?

- ○ Yes
- ○ No

Skip To: Q48 If Have you ever bet on Esports competitions' results? = No

Q47 How often do you do it?

- ○ Did it once/few times
- ○ Sometimes
- ○ Often
- ○ Every time I can

Q48 How strongly do you agree/disagree with the following statement: Esports competitions are comparable to sports, used here in its well-established meaning.

- ○ Strongly agree
- ○ Somewhat agree
- ○ Neither agree nor disagree
- ○ Somewhat disagree
- ○ Strongly disagree

End of Block: Esports

Start of Block: Extended reality (AR/VR)

Q49 For the next questions, please refer to the following definitions: **Virtual reality (VR)**: also called computer-simulated reality, it refers to computer technologies using headsets to visually (but not only) immersing the player in an entirely virtual world like a video game one. **Augmented reality (AR)**: it is a live view of the real-world environment, with some virtual elements added by a computer technology. A clear example is PokémonGO, whose entire game design is based on AR. **VR-aided AR**: it is the application of an headset to the AR technology. It may involve going around with an headset in the real world or, more easily, in a room or a house. **Extended reality (XR)**: it refers to all virtual environments generated by a computer technology and wearables. In other words, XR can be defined as an umbrella, which brings all the above-mentioned realities and more together under one term.

Q50 Do you own a VR headset?

- ○ Yes
- ○ No
- ○ No, but I have a regular access to one
- ○ Not sure

Skip To: Q53 If Do you own a VR headset? = No
Skip To: Q53 If Do you own a VR headset? = Not sure

Q51 On average, how many hours do you spend using the VR headset a week?

- ○ < 1 hr
- ○ 1-3 hrs
- ○ 3-7 hrs
- ○ 7-15 hrs
- ○ > 15 hrs

Q52 On average, how much do you spend for VR-related content a month?

- ○ I only download free content (or, if the headset is not mine, I don't spend anything)
- ○ US$1-US$10
- ○ US$10-US$30
- ○ US$30-US$50
- ○ US$50-US$80
- ○ US$80-US$100
- ○ US$100-US$150
- ○ > US$150

Q53 How strongly do you agree/disagree with the following statement: I have been, even for a short time span, into an AR game (e.g. PokémonGO).

- ○ Strongly agree
- ○ Somewhat agree
- ○ Neither agree nor disagree
- ○ Somewhat disagree
- ○ Strongly disagree

Q54 Please rank your interest towards the following practices:
_____ VR
_____ AR
_____ VR-aided AR

End of Block: Extended reality (AR/VR)

Start of Block: Demographics

Q55 What is your age?

- ○ < 12
- ○ 12-20
- ○ 21-25
- ○ 26-30
- ○ 31-40
- ○ 40-50
- ○ > 50

Q56 How do you identify your gender?

- ○ Male
- ○ Female
- ○ Other (please specify) _____
- ○ Prefer not to answer

Q57 Which area do you currently live in?

- ○ North America
- ○ South America
- ○ Italy
- ○ Rest of Europe
- ○ Africa
- ○ Asia
- ○ Australia

Q58 What is your highest educational achievement so far?

- ○ None
- ○ Basic education (primary school)
- ○ High school degree or equivalent
- ○ Bachelor's degree
- ○ Master's degree
- ○ Doctoral degree (e.g., PhD or EdD)
- ○ Other (please specify) _____

Q59 What is your current employment status?

- ○ Full-time worker
- ○ Part-time worker
- ○ Full-time student
- ○ Student with a part-time job
- ○ Student with a full-time job
- ○ Self-employed
- ○ Unemployed
- ○ Unable to work
- ○ Retired

Q60 What is your household income?

- ○ < US$10k
- ○ US$10k-US$50k
- ○ US$50k-US$80k
- ○ US$80k-US$120k
- ○ > US$120k

End of Block: Demographics

Start of Block: Amazon gift card

Q61 Dear respondent, the survey is over and I really appreciated your effort. As a token of my appreciation, if you are willing to leave your e-mail, it will be entered into a drawing to win an Amazon gift card with a value of €50, which will take place on October 2nd on randomresult.com. As a proof of the random result, you will be contacted on the same day with a link to a ticket that will display the contestants and, just at the end of the day, the randomly-picked winner. Thanks again for your help!

○ E-mail address _____

Summary

The objective of this thesis is to present an empirically founded outline of the historical evolution of doing business in the video game industry in order to identify the major innovations occurred, focusing on new business models and new actors and relations emerged in the industry value network. Furthermore, the study also investigates consumers' attitude towards the latest advancements of the industry in order to explore possible future market developments.

Before starting to talk about the videogames industry, its history, features, data and recent trends, it appears suitable to introduce a broader category in which it is classified, that is, cultural and creative industries (CCI). They have been defined and classified by many institutions and organizations like the UK governmental Department for Culture, Media and Sport (DCMS), UNESCO Institute for Statistics (UIS), World Intellectual Property Organization (WIPO), the United Nations Conference on Trade and Development (UNCTAD), the Economic Commission for Latin America and the Caribbean (ECLAC) and others. In 2013, according to EY, CCI were able to generate a global turnover equal to USUS$ 2,250 billion, that is, 3% of world GDP of the same year. Meanwhile, jobs created globally by the 11 above-mentioned sectors amounted to 29.5 million. With regard to common features of CCI, affecting all the subsets, they are a strong driver of employment of young talents. Also, CCI are highly productive, contributing more to GDP than the whole economy average. Another important feature is that CCI are characterized by entrepreneurship and, therefore, by a high degree of independence. Furthermore, people employed in CCI have, on average, passed through more years of instruction than their peers in other industries. Moreover, CCI contribute to the development of urban economies by enhancing local attractiveness, nurturing creative talents and

regenerating under-developed urban areas, a process boosted by the rise of a middle class that is hungry for culture. Last but not least, CCIs employ more women that more traditional industries. When it comes to the main challenge that CCI, just like the video game industry as a consequence, are facing nowadays, it is promoting authors' rights, ensuring they get appropriately rewarded for their creations through IP in order to promote creation and diversity of cultural content. Then, the main recent trends of CCI are the following: digitalization is boosting creativity and online innovation providing firms with new tools; the increase of portable devices boosts demand for cultural content and vice versa, creating a virtuous cycle; piracy is cannibalizing many CCI revenues, obstructing their potential. Finally, CCI have thoroughly rearranged with the advent of the digital era, the ubiquity of the Internet and the subsequent new consumption schemes. As a matter of fact, many business models have been redesigned, as well as the content creation activities, in many CCI. Some main features have characterized this process. Firstly, consumers are today used to face a huge amount of content, and they increasingly want it personalized and suited to their personal taste. Also, easier big data gathering has powered recommendation engines that allow guiding consumers' choices. Then, the Internet has given an enormous importance to communities, often making other users the main source of information, and involvement, with companies trying to make the consumers more engaged in order to retain them. Finally, the digital era gave a massive boost to the circulation of illegal content. These conclusions perfectly apply to the video game industry, as it will be explained later.

It is now appropriate to introduce another, more restricted category of industries in which the video game one is included, that is, entertainment and media (E&M) ones. E&M industries can be seen in part as a subset of CCI and in part as an extension.

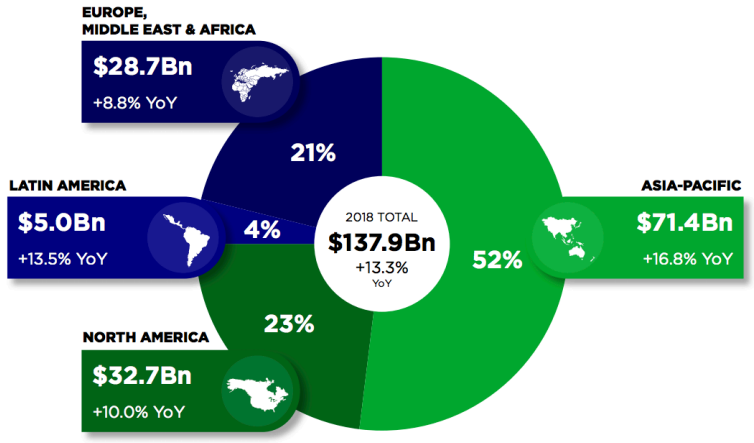
E&M industries were worth US$2.100billion in 2018, a figure destined to grow at a 4.3% CAGR for the following 5 years. Just as in CCI, digital consumption plays a dominant role in E&M industries, accounting for 53.1% of the above-presented figure. Another trend affecting also this category is that every individual tends to consume contents as he/she prefers, giving life to countless different ways to do it and willing to have a greater control over distribution channels so that he/she can fit his/her consumption preferences. Also, since E&M industries are expected to be among the first to exploit the 5G technology, operators are likely to partner with OTT providers to offer connectivity subscriptions bundled with OTT services' ones. In this context, consumers also demand the widest choice of content possible within one or few solutions. In the video game industry this need gave life to a phenomenon called cloud gaming. Companies are satisfying these new above-mentioned needs by leveraging data in order to know individuals' consumption patterns. In this way, firms are giving the chance to customers to become active consumers, and this is even truer for video games companies. It translates in individuals creating their own selected personal "space" within a single E&M content and also across different ones. In this data-based context, consumers are becoming more aware of the ways their personal data are being used and they are therefore increasing their interest towards forms of control over their data

It is now time to introduce the video game industry with its size, features, trends and challenges.

As made clear by Figure 1, the global videogames market was worth US$137.9 billion in 2018 according to Newzoo, a leading global provider of video games related analytics. It represents a 13.3% year over year (YoY) growth, a significant

improvement from 2017, and it is also the eight consecutive year in which videogames industry makes more than music and movie ones combined.

Figure 1 – 2018 Global Games Market Revenues Per Region

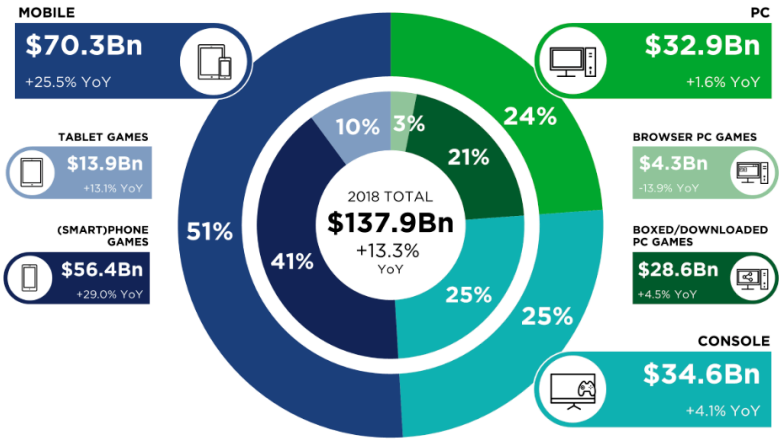


Source: Newzoo (2018), *Global Games Market Report 2018*.

The fastest growing market (18.8% YoY) is the APAC one, also being the most influential, accounting for 52% of the global figure. Its impressive growth in the last years is due to the extraordinary spread of mobile gaming, being this area the largest source of user base for this category.

When taking into account the segments of gaming and their split of total industry revenues, as shown in Figure 2, many other observations arise.

Figure 2 – 2018 Global Games Market Revenues Per Segment



Source: Newzoo (2018), *Global Games Market Report 2018*.

In 2018, for the first time, slightly more than a half of revenues were generated by mobile gaming, with a 25.5% annual growth mainly determined by smartphone games' one (29%). Indeed, the latter category enjoys a user base of 2.2 billion players, more than any other. As it is clear, mobile gaming is not definable as a simple trend or phenomenon anymore, having significantly contributed to the latest industry turnovers and to the huge market expansion of video games, together with digital distribution, and playing today the role of the main gaming segment. Another game-changing phenomenon of the videogame industry, that is older than and in many senses precursor of the mobile gaming, has been the advent of digital distribution, the distribution of software as digital codes without the use of any physical good. Digital distribution took over physical one, accounting for 91% of the 2018 global gaming revenues (US$125.5 over US$137.9 billion) and having F2P business models as main drivers (80%), mainly thanks to mobile gaming, followed by subscription based ones for PCs. These advancements led to the shift of the conception of video games from universal goods to games as a service (GaaS), a phenomenon that consists in ensuring ongoing and, therefore, more stable revenues

to developers or publishers after the initial sale of the game or its release for free by trying to keep people playing (and paying) as long as possible.

With regards to the most recent industry's advancements, six substantial innovations have been identified. Instant gaming is a recent trend, consisting in games that do not require any download to be played. One easily observable example is Facebook's Instant Games, that also opened to third-party developers in early 2018, but the phenomenon is widespread among Asian social networks, with companies like Tencent (China), Kakao (South Korea) and LINE (Japan) leading the way. Another area of recent innovation is hardware. With software technologies already pushed almost to the limit in terms of graphics and physics, many companies are working on new types of hardware. The main one is virtual reality (VR), visually immersing the player in the video game world. It has to be distinguished by augmented reality (AR), whose most representative example is Pokémon Go, where the game world actually consists of the real one with the addition of some elements. These two technologies led to an outstanding growth of the wider extended reality (XR) market (US$6.6 billion revenues in 2018), whose potential still has to take off. Furthermore, cloud gaming, or on demand gaming, is another huge advancement of the industry. It consists of allowing players to play games without downloading or installing them thanks to powerful severs that executes the game and stream it, with the sole need of a strong internet connection. Many companies have entered the market with their offering, like Sony's PlayStation Now or Google's Stadia, formerly Project Stream, basing their business model on giving the access to huge game libraries and the choice of whatever title to play any time in exchange of a subscription fee, following a Netflix-alike mechanic. Together with the cross-device gaming trend, driven by more players wanting a single game available on multiple platforms and boosted by the successful Fortnite experience and the like, cloud gaming may eventually put

hardware (intended as the console) in the background, shifting the focus on the game itself as driver of the market competition. Then, Gaming video content (GVC) represents another huge practice in the video game industry, generating US$5.3 billion in 2018. This trend's leading actors are streamers, captivating audience by their high gaming skills and their commentary. The main GVC platform, Twitch, was launched in 2011 and has registered more yearly streams than HBO's online platform since 2014, the year in which Amazon acquired it for US$970 million. The success of GVC is also due to another interdependent phenomenon rising in the videogame industry, competitive video gaming and gaming tournaments, that is, Esports, today hitting the mainstream. It is not just limited to GVC though, also including tournaments hosted by huge venues with many people willing to pay a ticket to assist. Esports are expected to be a US$1.1 billion industry in 2019, with a 26.7% growth from the previous year. The great growth rate Esports revenues are experiencing is attributable mainly to the increase in Esports audience. This figure is expected grow by 15% in 2019, with a total of 454 million people, 44% being Esports enthusiasts.

In conclusion, the videogame industry is a relatively young one but is everything but static, having continuously evolved in the last fifty years and more, with new distribution and revenues models disrupting it and then fading away. It is also an economically huge industry that enjoys great growth rates, as always did, thanks to the many proliferating trends that often evolves into new underlying fundaments of the industry.

In terms of business model innovation, the adapted business model canvas (BMC) framework allows the identification of the main novelties introduced throughout history in each of the nine building blocks constituting the framework. What emerges

is that innovation regarding the left, efficiency side of BMC mainly came from new technologies themselves, with the product therefore enjoying external sources of innovation throughout history, that is, "hard" innovation. On the other side, the right, value one experienced an inner-originated "soft" innovation process since, despite most of the related new practices being still eased by technological progress, they were mostly new, creative ways of pursuing already existing goals. Among key findings in this area there is the shift from firm- to user-originated value, with consumers strongly contributing to the value creation process. Furthermore, revenue models also experienced strong innovations aimed at leveraging free distribution to fully exploit the recent market expansion. Moreover, being technology evolution the main driver of most of the innovations, the wide spread of digitalization occurred in the first 2000s represents a turning point for every building block, bringing the video game conception from a universal good level to a more customized product, matching the concept of game as a service (GaaS).

With regard to the right side of BMC, digitalization, together with the consequent expansion of the market base, allowed the identification of new customer segmentation criteria others than game genre and users' age, such as competitive or social players segments or segmentation based on the used platform. In terms of value proposition, features like auto-updates of game version and game content (e.g. DOTA 2 heroes skins), the "modding" phenomenon, multiplatform and social games (e.g. FarmVille), online multiplayer matches and the chance to live stream game sessions qualify as innovation that boosted usability, customization and accessibility. This block has experienced a strong shift in the source of value form corporate actors to users themselves, enhancing the conception of game as a service. As a matter of fact, innovations like online gaming, in-game content creating tools or open-source codes leave the user with a huge freedom of creation and customization of his/her

game experience. Digitalization also brought new channels to exploit in all the related phases, from social networks, websites and fairs to digital distribution platforms and after-sale constant updates. Similar innovations affected customer relationship, with a strong emphasis on co-creation between developers/publishers and users through, among others, development toolkits, in-game content generating tools, live streaming of game sessions and other solutions made possible by the advent of the digital era. Finally, with regard to the revenue streams building block, it is the one that has experienced the greatest amount of innovations throughout the history of video games. From having one-time physical asset sale as the main revenue driver in the last century, digitalization brought plenty of new ways of monetizing from games. From DLCs and subscriptions to in- game microtransactions and advertisements, developers and publishers can nowadays exploit countless monetization methods.

When it comes to the left side of BMC, where innovation mainly came from new technologies themselves, new key resources have been enabled by technological development, such as servers for online and streamed games or new wider financing sources (crowdfunding). Furthermore, new activities emerged in relation to production (e.g., exploitation of new advertisement channels or provision of development kits), problem solving (bug-fixing patches and in-game moderators) and platform/network (matchmaking platforms, online and cloud gaming servers maintenance and so on). Key actors also strongly evolved, with smartphone and tablets producers joining the console manufacturers, users being more active in the content creation phase, digital distribution platforms disrupting the publishers' and retailers' structures and new hardware peripherals manufacturers entering the market. Finally, the cost structure innovation is strongly related to the key activities and key resources blocks, specifying the costs incurred in carrying out the first and acquiring

the latter. As a matter of fact, changes in this section regarded solely the origin of the costs, with the industry experiencing a shift from cost-driven to value-driven BMs.

The above-presented findings are supported by some selected case studies, which revealed able to further explore the most recent innovations in video games business model. Candy Crush Saga analysis witnesses the potential of the cross-device feature that, well combined with a casual and engaging gameplay, brings the market base to be potentially unrestrained. The title wholly relies on digital distribution channels and witnesses the power of the word of mouth. On the other side, Pokémon Go is the first massively successful game exploiting AR technology and this represents a milestone in the industry. It manages to attract both casual and competitive segments, together with many players loyal to the brand. Also in this case, the title only relies on digital distribution channels and strongly on word of mouth as marketing tool. Furthermore, it is a great example of perfect fit among actors involved: many synergies have been exploited by using Nintendo's Pokémon IP, Google Map's technology and Niantic's tested IPA. Last but not least, a peculiarity of this BM is the coexistence of two parallel BMs, one targeting gamers and one businesses, which triggers a revenue sources differentiation. Finally, Oculus Rift, Steam and Twitch business models showed the success factors of different business that are born thanks to some industry advancements identified in Chapter 1, such as VR, digital distribution and gaming video content.

Next, the value network historical evolution analysis, based on the industry layer partition proposed by the industry expert Ben Sawyer (2005) shows how the digitalization process and other technological advancements determined the rise of new actors that may have replaced old ones or started collaborating with them in the fulfillment of old or newly introduced tasks throughout the industry history. Some

representative findings of the study are: the entrance of players themselves in the funding phase through crowdfunding platforms like Kickstarter, as well as in the development phase thanks to firm-provided tools such as software development kits (e.g. Steam API) or modding kits (allowed by open-source codes); the revolution of the distribution layer caused by the digitalization process that allowed the entrance of digital distributors in the market, which are jeopardizing the classical physical distribution model; the entrance of smartphone and tablet manufacturers in the hardware layer, with the simultaneous gradual decline in relevance of the hardware intended in its traditional sense due to recent developments of the industry like cloud gaming and the spread of the cross-device feature. The research demonstrated how innovation in the value network consisted in new actors whose entrance in the market has been allowed by the digitalization process and technological advancements, and new relations that are putting the user at the center of the attention with regard to many aspects such as funding and development.

Finally, the survey conducted on a pool of 246 respondents aims at investigating players' gaming habits, preferences and attitude towards some major business model and value network innovations and industry advancements identified throughout the research, allowing also a further exploration of possible future market developments to be taken into account by corporate actors. In terms of methodology, this survey has been written and published online using the cutting-edge software Qualtrics. The related link has been shared with friends, gamers' communities and social networks in order to ensure a demographically differentiated pool of 246 respondents. Participants were asked to answer 34 to 62 questions related to their video game consumption habits with a focus on some of the latest VG innovations such as online gaming, F2P and freemium models, in-game purchases, virtual and augmented

reality, Esports and gaming video content. These questions may be both multiple choices with single or multiple answers, open-ended and ranking questions.

The survey reveals itself valid since it does not aim at measuring what a specific theory states but at investigating gamers' habits with regard to some specific phenomena highlighted in the thesis (construct and content validity). Furthermore, it is generalizable (external validity) given the demographical match between the sample and the gamers' population, with some exceptions like a slight underrepresentation of the female gender (33.6%) and the Asian geographical segment (7%). As a matter of fact, with a 95% confidence level and the considered sample (231 valid surveys), the margin of error (or confidence interval) sets itself around 6 %.

Survey's results show a clear predominance of digital distribution channels. Also, players strongly value the cross-device feature and this, together with high adoption rates of cloud gaming services, highlights how future market developments may lead to a low relevance of home consoles to the industry. Furthermore, communication and socialization, together with other tools putting the user at the center of the experience and of the value creation, result highly valued as well, confirming the shift toward an era of user-generated value.

With regards to online gaming and micro-transactions, the results show that players tend to be considerably more emotionally influenced in the short term by a win rather than by a defeat. This feature may advise firms to create titles based on a win-seeking, addictive gameplay grounded on personal improvement and on relatively short matches in order to maximize the time spent playing by customers, a great advantage for games that seek a huge user base like F2P ones and aiming at retaining it in order to increase their spending rate. In these terms, micro-transactions seem to be mainly driven by emotional impulse, making skins and similar non-functional

items the most valued in-app purchases in multiplayer games. In addition to that, for casual titles like Candy Crush Saga, also "playing unobstructed" related items (speeding timers, boosters, unlocking game content, keeping playing, removing ads, protecting achievements, etc.) are strongly valued. In general, special offers and discounts are able to affect both sides. On the other side, functional items are the worst ranked. All these in-game purchase preferences reveal a strong market aversion toward freemium and "grey area" business models that must be taken into account by developers and publishers.

Then, gaming video content (GVC) confirms to be a massive phenomenon with most players enjoying live or recorded video content and many also spending in subscriptions or donations to streamers. This is of course allowed by facilitators that make streamers, users and companies meet and act as explained in Twitch's business model analysis. Also, many players personally stream or upload their game sessions online, witnessing, again, the increased share of value created by users themselves. Furthermore, it is interesting to notice how GVC is not conceived just a medium for gaming content, but as a way to enjoy also individual streamers' non-game content: they become entertainers, merging gaming capabilities with entertaining skills and a strong degree of interaction with users. Among the reasons' of GVC success, watching Esports competition is a leading one, confirming the strong interdependence between these two phenomena. It can be deducted that the huge scope of GVC, apart from demonstrating again the importance of player-to-player interaction and, therefore, of user-generated value, sets gaming video content as a valuable asset for companies. As a matter of fact, it appears to be the most effective mean to reach huge crowds of gamers and to promote games through, for examples, partnerships with influent streamers.

When it comes to Esports, the impact of the phenomenon is hugely relevant and its reach goes far beyond players of the specific related game, getting closer to an entertainment medium similar to traditional sports. This observation, of course still valid just for the gamers segment, witnesses the strong engagement of players to Esports due to its capability to merge traditional sports' entertainment features with a great passion, that is, gaming, increasing the rate of loyalty of viewers. Also, a good participation as competitors, either at an amateur or official level, has been registered, just like relatively high degree of betting viewers, further witnessing the closeness of traditional sports and Esports concepts in the mind of gamers. Then, Twitch dominance as medium is relevant like in the GVC case. Also, in Esports, just like for GVC, a more active socialization than the one characterizing traditional sports is required to individual athletes and team members, since they often are streamers as well. This consideration further ties the GVC and the Esports worlds together, just like the consequent recommendation for firms, that is, exploiting this phenomenon as a way to promote their products and to increase their longevity.

Finally, extended reality technologies (AR, VR) have been investigated as well. VR headsets enjoy good adoption rates so far given the relatively newness of the technology. Nevertheless, because of VR's early stage of development, the content consumption rates are still low. VR finally triggers a higher market interest when compared to AR thanks to its value proposition investigated in the Oculus Rift business model analysis. As a matter of fact, the appeal of a radically new technology of which early adopters feel like pioneers, merged with distinctive features like an unreachable immersiveness, has the capability to exercise a strong attractiveness to players. As a consequence, despite the narrow offer available nowadays and the many technological improvements to be made, extended reality technologies, VR overall, have a massive potential witnessed by the above-presented

findings, which may contribute to one of the above-identified possible future market developments, that is, the sifht from consoles as we intend them nowadays.

This thesis finally contributes to the existing literature of the video game industry by providing a comprehensive and empirically founded overview of the historical evolution of doing business in the sector. Moreover, the study also explores possible future market developments by the mean of investigating consumers' attitude towards the latest advancements of the industry, providing recommendations to corporate actors involved in the value network.

Furthermore, the adaptation of existing concepts and frameworks provides tools that could be applied by other industries' experts in order to investigate business model and value network innovation in their field, possibly a digitally-disrupted one. Within the video game industry itself, this framework may be later integrated and possibly updated to explore further evolution of the sector.