Importance of the independent video game phenomenon and how it is pushing forward the video game industry

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Introduction

Video games are a relatively new medium that has accomplished in little more than thirty years a cultural status of its own, and has gained a spot in peoples' lives since the first home consoles and personal computers were available to the main public. Like every other cultural industry, video games have an enormous market, full of titanic publishers and developers, that produce big budget video games aiming to sell in the millions every year. It can be said that the video game industry has reached a level of industrialisation where video games are mass produced, where focus groups are the main source of inspiration for many publishers, leading to unimaginative and serialised video games year after year.

Fortunately, a small but important revolution is taking place in the video game industry, led by the so called "indies", or independent developers, who are responsible for new and exciting projects and experiences. Independent video game development is not something new in the industry, but it has experimented a huge impulse in the last ten years, evolving from a few brave developers trying out new things, into the global phenomenon that the indie scene is today. Independent video games, and its developers, are exponentially gaining awareness every year, resulting in a indie movement that has become a key protagonist in the video game industry. This is the perfect time to look into this independent phenomenon and research its different characteristics.

Key points such as when did this phenomenon start to take off or the reasons behind it will be relevant to our research. This investigation will try to find out, by various methods such as interviews and case studies, the logic behind

1. INTRODUCTION

this independent movement and look at it from different perspectives. Social and cultural impact of independent video games will also be analysed, as they are important factors often omitted and that will help understand even better this movement. Just as important as the social aspect of the independent movement, will be the analysis of its economic impact, and how independent developers are starting to own a relevant spot in sales and market share. In addition to these features, and in order to establish a solid base, this research will try to come up with a substantial definition of independence in relation to video games, and determine what is considered independent, or how its meaning can alter depending on the angle from where it is studied. Finally, it will be interesting to find out how video games are studied in the academic community as a cultural medium, and not as a complementary vehicle to subjects like psychology, medicine or computing. Due to its multidisciplinary nature, video games are hard to analyse, or, at least, it is difficult to obtain a general methodology. Some researchers have proposed methods of analysis, but there is still ground to cover in this area.

In conclusion, it is important to study video games and its industry in general, and independent video games in particular, because they are a new economic and cultural engine that is redefining the way people interact, socialise and consume culture. Video games offer complete experiences, where artists, musicians, programmers, writers, designers and many other professionals join their passion and expertise to create interactive entertainment. And the indie phenomenon amplifies this feeling of cultural revolution.

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Proposal

2.1   Justification of topic interest

Video games are at the peak of their popularity and quality and independent developers and its games are impacting positively on players, the medium and the industry. It is interesting to study and analyse all the different aspects that resulted in the indie phenomenon and there is very valuable information that will help our research extraordinarily. However, there is room for improvement, to fill some spaces, and to offer a wider and deeper analysis of the indie phenomenon. The motivation and passion of everyone involved in the independent scene is outstanding and is clearly responsible for the push this medium is experiencing. This research will be a great opportunity to study and present thoroughly all the big and tiny details and offer a work where anyone interested in independent video games can resort to.

2.2   State of the art

Video games in general, and independent video games in particular, are probably, due to their short age and their "gamey" nature, not so thoroughly studied as other cultural media like film and music by the academic community. However, there is a growing interest by researchers in the past years, and there is a clear trend that shows lots of efforts aimed at solving this absence of academic papers.

Every year, new journals and magazines focused on video games are created, where passionate researchers are eager to add knowledge to this young medium.

This state of the art will try to cover every key aspect this research is looking to analyse, and gather together every bit of useful information published and that is believed to help this work.

2.2.1 Definition of independent

The first concern in our research is the definition of independent, or "indie" as many authors refer to independent video games. As we will see further along in our study, independent games have evolved and changed their meaning and purpose many times in gaming history. This fact makes it really important to define the term at hand from the beginning, and know the different sides authors and developers have taken in a debate that is still active nowadays. Zimmerman asked himself more than ten years ago if independent games existed in his essay "Do Independent games exist?", answering his own question by offering pros and cons of the trend. He used a comparison with the film industry to define independence:

- 1. Independence from finance: where the money for the production, distribution and marketing come from.

- 2. Independence of the media itself. The length or budget of a movie can define the production independent.

- 3. The spirit and culture of the film. Many definitions and definition makers of independent movies are being drifted. You know an indie when you see one.

Lipkin (2013) also tries to determine the term "indie" by giving it cultural and core values, analysing the concept of mainstream video games as well as offering an opposition to the term "indie". Mainstream can be defined as corporate, capitalist games that emphasize popularity and profit over creativity and artistry, made by huge development teams. However, this idea can be proved wrong when many of today's independent video games manage to achieve popularity and profit

with extreme detail on creativity and artistry. So, in paper, independent games and mainstream games can have more things in common than not. This is why Lipkin argues that the term "indie" can be historically specific to a contemporary movement in game development more than a game classification. So, in order to give a somewhat clear definition that divides independent and mainstream, Lipkin states that "indie" games can be defined by what is not mainstream, specifically in its core values, and not in its profits or popularity levels. Independent games tend to rival the set rules, and often are rebellious to the system. A popular trend in "indie" game development is the nostalgia for 8 and 16 bit era games, those that could be played on the Nintendo and Master System consoles. These games are now regarded as pure forms of interactive entertainment, being fun to play and hard to master. This is why many "indie" games look back at these games and refuse to display photorealistic graphics and water-down experiences such as the ones mainstream games offer nowadays.

Westecott (2013), again, shares the thought that many different practices can be shown as "indie", like small studios signed to major publishers, self-financed developers that try to achieve a commercial hit, or restless studios chasing artistic expressions. However, Westecott firmly believes that: "... whilst the growing success of the indie game community is relatively recent there have always been digital games made outside of the mainstream publisher-led industry framework." Mainstream appears again as the antithesis of "indie" games in Westecott's definition, reinforcing the idea that most mainstream games don't offer much apart from shallow and serialized manufactured experiences, in opposition to "indie" games, which are usually exposed as artistic expressions in galleries and art shows. The individualistic "do it yourself" approach of independent development is also highlighted, comparing it to a craft.

Ruffino (2013) coincides with the opinions above, and defends that independence in video games not only relates to the current shift that democratizes video game development via new economic and technical practices, but also comes from artistic, cultural and creative values from other media that influence the creation of these games.

It is clear that there are some varied opinions on the definition of independence, and it depends on the terms discussed. Some say independent relates to

economic reasons, whilst others think that it goes further and involves artistic and cultural values. This makes us believe that there is more than just pure numbers behind the phenomenon, and this phenomenon should be researched beyond the economic repercussion these indie games have in today's market.

2.2.2 Importance of game studies

As it has been established in the previous section, most authors consider that the essence of the independent video game phenomenon is not purely economic, but also cultural and artistic. Therefore, investigating the legitimation process of video games as works of art and as objects subject to the interest of the Academy is fundamental for our analysis. Due to the relative novelty of video game cultural media studies, it is important to investigate the state of the art on scholar research focused on this perspective. There has been an emerging trend in recent years that involves video game studies as a cultural phenomenon with a scholar status among the academic community, a trend that tries to look at video games as a legitimate medium, one that deserves a spot next to film, music, or art.

This trend is evolving slowly, but thanks to some authors like Konzack and Aerseth, who are figuring out tools, methods and mechanisms to study and analyse video games, researchers interested in a scholar approach to video games have a clear path to follow. Traditionally, video games as media have been "studied" in non-academic publications, usually reviewed by journalists and players to give their opinion on how good or bad a game is, and offer purchase advice, just like film critiques in magazines and newspapers. That is why Konzack (2002) and Aerspeth (2003) noted the lack of methodologies of critical analysis, and tried to address this situation. Konzack proposes a typology for computer game analysis, presented as seven "layers" of a game that must be analysed, although he does not address them all. These layers include hardware, programme code, functionality, gameplay, meaning, referentiality and socio-culture. While his attempt to create a method for game analysis is remarkable, some layers group many elements and little is offered in the way of suggestions for how to analyse these particular elements. Aerspeth (2003) argues that there are three main ways of gaining knowledge about a game: "we can study the design, rules and mechanics of the

game ... we can observe others play, or read their reports and reviews ... we can play the game ourselves". He understands and defends how important a serious methodology is, however, he doesn't offer a method or template to analyse video games, and leaves that to the researcher arguing that it depends on who we are and why we are studying them.

This is why Consalvo and Dutton (2013) offer their particular way of analysing video games, and propose a template that serves as a basis for future studies. As they acknowledge, this template is useful for many different game genres, and grants some flexibility, but they believe that their methodology will evolve and it serves merely as a starting point for researchers. The truth is that to this day, there is no consensus on a proved method on critical analysis of video games, due to the fact that this medium is complex and is constantly evolving, but researchers are willing to adapt and embrace the fact that video games need better analysis in order to elevate gaming culture to a higher status. Taking into account that this investigation aims to study the influence of independent video games, the methodology used should not focus on the object only, but also on its economic impact and industrial status. To develop a proper method of analysis, it may be useful to look at how other cultural industries have been approached by researchers, trying to extrapolate common aspects. In this sense, the film industry is probably the one that shares more elements with the video game industry.

2.2.3 Parallelism between film and video games' independence

An interesting parallelism on how independence has affected two industries that have many things in common can be made. The film industry is the closest cultural industry to video games, and when studied, it is clear that both industries share many facets, and that both have experienced independent movements throughout their history. The film industry has had its fair share of independent movements, even more prominently than the video games industry. The pursue of independence goes way back to the first decades of the 1900s, when, in 1919, some of the most prominent stars in Hollywood formed an independent label, as

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Thomson (2008) narrates: "The leaders in the movement were Pickford, Fairbanks, the cowboy star William S. Hart, Griffith and Chaplin. They were the cream, and they would call themselves United Artists." They were fed up with the big studios, and sought a better way of running their business, as Thomson relates: "In fact, the idea was common sense, and that is why it has never gone away. It ought to be possible for a collective of film-makers to share a marketing operation and keep a bigger share of the profits. It ought to work well enough to enable them to tell their stories without undue external interference." Back in the day, the film industry was already battling for independence, and this fact has repeatedly manifested all over the 20th century.

These independent movements were done by powerful members seeking control over their work, and had less to do with small low-budget productions, due to the fact that camera equipment was extremely expensive at the time. However, cameras suddenly became both portable and affordable after World War II, enabling any person to effectively produce their own films. *Little Fugitive* (Ruth Orkin, Ray Ashley, Morris Engel, 1953) may very well be the first example of an indie movie that was created thanks to the democratization of technology, as Smithey (2014) suggests: "Made in 1953 by three confident filmmakers, *Little Fugitive* is as much an invaluable filmic document of postwar New York as it is an enchanting incipient work of independent cinema." Even Truffaut, leader of the New Wave cinema, considered this indie film pivotal for film independent movements, as Mary Engel, daughter of one *Little Fugitive's* creators, states: "Truffaut credited *Little Fugitive* with helping to start the French New Wave. Truffaut said, "Our New Wave would never have come into being if it hadn't been for the young American filmmaker Morris Engel who showed us the way to independent production, with his fine movie *Little Fugitive.*" Outside of the United States, independence has also been an important objective of film makers around the world. Some of the most important advancements in cinema have been achieved by independent film makers like Buñuel, Rossellini or Truffaut in their attempts to experiment with new cinematographic languages (Benet, 2006).

Following years saw an independent boom, the B movies, known for being made outside of the major film studios, creating a genre that is always being recovered by directors like Rodriguez and Tarantino, just like indie video game

developers recover 8 and 16 bit era video games. If we fast forward and look at the current situation of the last fifteen years in the film industry, we can also establish the importance of independent films. As Sklar (1997) stated back in 1997: "This year's novelty is that four of the five movies nominated for the best-picture Oscar, were neither financed nor distributed by a major Hollywood studio. Independent films similarly dominated nearly all the other principal award categories, including those for best actor and actress, direction, and original and adapted screenplays." This trend has remained to be true up until today, where critics value high quality films over soul less big budget productions. However, as happened many times before in the film industry, the term independent is quite ambiguous, and its meaning may differ, as Sklar states: "In 1996, in a much more striking fashion than in previous years, nearly all the quality movies were made outside Hollywood. But it may be too early to declare the triumph of the independents. We've learned recently that the term "independent film maker" applies to your neighbour's son or daughter who rents a camera, gathers friends, runs up credit-card bills, and makes a movie that (in hope and fantasy) wows the crowds at the Sundance Film Festival. Kevin Smith's *Clerks* (1994) and Edward Burns's *The Brothers McMullen* (1995) are two recent hits that fulfilled that "indie" dream. However, the independents who are coordinating their black-tie outfits for the award ceremony are from a different world entirely." This strikes a great resemblance with the video game industry, were small independent developers would be the Kevin Smith's or Edward Burns', teams that create little gems, outside of the mainstream productions, and the big budget independent movies could very well be big indie video game studios like Valve or iD software, known for their great games and hundreds of employees, but whom have remained true to themselves and always remained independent.

2.2.4 History

In order to acquire a deep and broad perspective on today's independent games, it is necessary to look back at the video gaming history. This is in part because, like other cultural media such as film and music, video games started thanks to a few bright individuals, most of them hobbyists or garage developers, trying

and inventing new concepts. As Parker (2013) states, it is true that what we know today as "indie" games started as a phenomenon about ten years ago, with the exponential growth in popularity and economic success, and with the rise of digital distribution of these kind of games. Most big studios or even publishers started as small, independent studios with a handful of passionate developers. Those were the early days, were everyone was independent due to the absence of an established industry or economic framework, and the term independent was true for everyone. As years passed, the gaming industry settled, and in the late 1990s and early 2000s, a new breed of developers wanted to break free of this routine, try out new experiences and even look back into the first video games. This is why it is considered important to study the beginnings of the gaming industry as a whole, and not just the birth of what we know today as the independent games phenomenon.

Donovan (2010) does a great job thoroughly researching video games' history in his book *Replay. The history of video games.* His research on the early years is very well documented and his chronological study is very valuable. His investigation is focused on the first two decades of video games, leaving the evolution in recent years less documented. A positive factor in Donovan's research is that not just the United States and Japan's video game industries are covered, but he also documents the history of video games in other countries such as the United Kingdom, France or Germany.

Many gaming breakthroughs occurred in Japan, an industry that led gaming in many fronts, mainly technologically and artistically. Picard (2013) examines the early years of the Japanese gaming industry in depth, analysing technological, cultural, creative and economic breakthroughs that affected its industry. Picard describes the socioeconomic situation in Japan and how the phenomenon of *geemu* was born. Japan imported the video game culture from the West, but in a short amount of time, the country was able to improve the model. Picard looks into how this *geemu* phenomenon influenced three sectors in the gaming industry in Japan, and, by extension, in the rest of the world: the arcade, the home console and the personal computer. *Geemu* is particularly interesting to the history of independent games because it started opposite to how the game industry started in the West. Japanese amusement companies saw the success of the first video

games in the West and rapidly imported and copied them. It can be said that the industry was already there, just that it evolved from amusement parks to bringing entertainment to players' homes. Video game history proves to be a key point in researching independent video games, giving a much needed background to understand the different movements and main events that led to the burst of the indie phenomenon that occurred in the early 2000s.

2.2.5 Indie game boom and development

After studying its definition, importance in the academic community and history, the next question that rises is: What triggered the indie phenomenon as we know it today? In a worldwide trend like "indie" game development, there is not a main answer or reason that explains its birth and development. Instead, we have to look at different factors that combined can offer a better understanding of the phenomenon. Economy, labour, culture and artistic expression have impacted the development of independent games. Bowen and Deuze (2009) divide the reasons for the indie boom in six categories: market, occupational careers, industry structure, organizational structure, laws and regulations and, finally, technology. From technological democratization to easy digital distribution of contents, they offer a thorough reasoning to backup all six categories.

Lipkin believes that digital distribution is the main reason for the indie boom: "The emphasis of indie developers on digital distribution plays more into a matter of need than want, thus making it a central feature of the movement. The tools of the mainstream, while expensive, fall far short of the costs of retail distribution used for mainstream productions." Associated with this new digital distribution comes the liberty to publish a game independenlty without partnering with big companies like Microsoft, Apple or Sony: "It is impossible to provide a single motivation for the indie scene's dependence on alternative production and distribution structures. On the one hand, it may be the explicit rejection of hegemony, an outlet of radical anti-authoritarianism". Whitson (2013) shares digital distribution as a trigger to the indie boom, but this is not enough: "While there may be an indie resurgence driven by digital distribution, this resurgence does not automatically equate to economic stability for indie developers". Whitson also

believes that independent developers have risen due to a decline in mainstream games:

"The console industry is collapsing under its own weight, partly because of inter-dependencies between manufacturers (e.g. Sony, Nintendo, and Microsoft), publishers (e.g. EA, Ubisoft, Activision, THQ), and developers. Console developers only make money once their games reach retail markets. They depend on publishers' financial support to fund multi-year production schedules, buy hardware and software necessary to produce next generation games. Development costs, timelines, and the size of development teams increase with each console generation." We can say that the indie movement and its evolution into what we know today developed due to a combination of different factors, seemingly disconnected, that occurred at a specific time frame that triggered the movement, and helped developers accomplish feats previously impossible for such small studios. This exponential evolution has resulted in a sub-industry that takes away market share from big publishers, a case that is important to study.

2.2.6 Industry affected by indie games?

The indie movement has affected the video game industry and has produced a new indie culture or scene that benefits the gaming media as a whole. New local and online communities of developers and fans have been created, and even worldwide game creation competitions have emerged, competitions that have impacted the scene and the industry positively. Independent games have claimed their place in the industry, like Bowen & Deuze (2009) state: "Independent game development is an intricate part of the changing landscape, that is, the greater games industry". The authors pen a whole article dedicated to the industry of digital games. Svedal (2011) presents an analysis of the business model of the game *Minecraft* (2011)using the ontology and framework defined in Osterwalders' (2004) dissertation. He proposes four bases — product, customer interface, infrastructure management and financial aspects — and explains them in addition to various common revenue models used by game developers and publishers.

It is also interesting to look at crowdfunding, a relatively new way of funding that has impacted independent developers. Gerber & Hui (2013) describe

how crowdfunding works and why it is used: "Crowdfunding makes it possible for those with limited access to traditional sources of financial backing, such as banks or venture capitalists, to acquire financial resources necessary to pursue their projects". They even acknowledge how useful the study of developers is to understand the trend: "By studying independent creators and supporters who use crowdfunding platforms, we hope to gain a broader understanding of the community". Communities are another great addition to the video game industry, communities that have experienced the same increase and success than indie games, and that have mutually reinforced each other. Guevara-Villalobos (2011) suggests that independent developers can't cope by themselves with the amount of work needed to develop a game, and that communities help in the process: "their [indie developers] relatively isolated endeavour entails a series of obstacles implied in the knowledge and design intensive nature of game work, from the basic means to develop a game to the motivational aspects of working individually or in very small teams. The strategies to face social and technical challenges have led to the intensification of community networks and in some cases, the creation of spaces of development within them". Guevara-Villalobos believes that the study of independent development should be studied as a communitarian practice. The author then continues his study on how these indie games are developed following this belief in community in the indie scene.

Another important trend in the indie scene is the creation of game development competitions. It is now common for developers, both indie and mainstream, to participate in local or worldwide competitions that have the objective of creating a game in just 48 hours. There are also independent video game festivals that take place annually and help independent developers enormously. Sampugnaro et al. (2014) share the same idea of community and relate it to these competitions: "All developers of this generation know and well understand the value of grouping, networking, sharing information as much as successes and failures with their peer groups. For this reason there are more and more events and festivals rewarding independent developers and giving visibility to "indie" game authors, meaning those developers who are not funded by publishers: Independent Game Festival and Indie Cade are among the most famous events as such". Sampug-

naro's paper continues by analysing the different aspects of the Global Game Jam, the most important gaming competition in the world.

2.2.7 Indie games' market penetration

In order to establish the market penetration of independent games, researching sales data is vital. The problem is that the video game industry is very secretive in this regard, proving quite difficult to find numbers. As Terrence Lee (2013), co-creator of the indie game hit *Dustforce* (Hitbox Team, 2012) states: "Finding game sales data is notoriously hard. Video games have traditionally been a ?hits driven' industry — the majority of revenue for a publisher comes from a handful of big commercial successes. With so many non-hits being made, publishers try to keep sales numbers a trade secret, as the more disappointing figures can be worrisome to investors. This trend has made discussing sales figures an uncomfortable topic, akin to talking about your salary".

There is no entity that records and shares independent video games sales, so it is necessary to look for individual statements from developers that are willing to share their numbers. The good thing is that many independent developers are nice enough to share this information, and we can make good estimates on how good as a whole indie video games are doing. Harrel (2013) compiles just some sales numbers from a few indie developers to prove that indie games are hitting hard the mainstream market:

"SiuYiu's *Pocket Minions* relaunched successfully as a freemium game, acquiring 137,000 DAUs in 48 hours. *Dustforce*, another indie made $668,490 just on steam alone. Azada: $250,000 sales in just the first month. The original *Cut the Rope* had been downloaded more than 100 million times. *Amnesia: The Dark Descent* — price per copy was $20 a unit and launched on PC/Steam/GOG, Mac sold 1.4 million copies", and that's just to name a few.

Kickstarter even dedicated a special blog entry to share statistics on their gaming proyects, that will also give us an approximate idea of how eager to support independent productions are people: "In 2012, games has gone from the eighth most-funded category in Kickstarter history to the second most-funded. Here's how much money has been pledged to games each year: 2009 — $48,190,

2010 — \$519,885, 2011 — \$3,615,841, 2012 — \$50,330,275". These numbers, albeit being scarce and hard to find, clearly state that independent games are selling really good and are increasing their income year after year exponentially. Although indie titles don't sell millions of copies, they are in fact extremely successful due to the fact that their investment is much smaller than those of a big commercial title, enabling many small indie developers to recover their investment and secure funds for future indie titles.

2.3 Hypothesis and objectives

2.3.1 Hypothesis

The rise of independent video games results in a new model for the video game industry.

2.3.2 Objectives

In order to demonstrate the proposed hypothesis, some partial objectives must be defined and accomplished. These partial objectives will tackle the key points that are believed to be pivotal in the validation of the hypothesis.

Setting the definition of independent in relation to video games, or "indie" as they are often referred to in the industry is an important task, because it will establish the base of the whole research. The definition and validation of this term has encouraged many discussions through the years, and nowadays it is an ongoing debate that, although it will not be settled by the developer community in a near future due to many discrepancies, it is important to establish a definition that will be carried through the whole research.

It will also be required to research both mainstream and independent video games' history, and study the evolution of the video game industry. This is necessary because independent developers have always existed since the creation of video games, and although they became more prominent in the last decade, the first steps of video games consisted on independent developers trying new things out, experimenting new ideas and concepts, innovations and advancements that

pushed forward the medium, just like it is happening nowadays in the video game industry. The independent phenomenon back in the early days was not regarded as such, mainly because there was not a well established industry from which to stay independent as occurs nowadays, but they share many similarities with today's indies, and reviewing developers, video games and movement in the industry from the past 30 years is essential for our research.

The analysis of the independent phenomenon in other cultural media like music and film will also be undertaken, studying how mainstream industries from these media have been impacted by indies. Comparisons with video games will be made, and connections and differences will be drawn. How the independent video games phenomenon as we know it today was created and expanded in the last years and its reasons will also be studied, being them artistic, social, cultural or technological.

An important partial objective will be a qualitative and quantitative analysis of the impact of independent games in the video game industry and society. The research will look into the presence of independent video games in stores, platforms, websites, social networks and specialized media in the last twenty years. This study will give a better understanding of how well established independent video games and its creators are, and have been, regarded in the industry but also in society. This research will also try to find out the economic impact of indies year after year. This specific quantitative objective will remarkably help our research to provide definite proof to sustain the initial hypothesis.

A case study of one or various independent developers and its games will take place, in order to offer a deep first-hand approach and learn what its like to be an independent video game developer, and find out their views on the industry and their role in it. In addition, comparisons with big developers will be drawn, in order to better understand the importance of independent developers and their motivations.

And last, but not least, this research will look into how video games are studied, mainly by the academic community. We will look into how different experts have approached the study of video games as a cultural medium, and the proposed methodologies to analyse them. Although the main focus of the research will be in studying proposed methods from researchers, we will also learn how

traditional media review video games, as they are a very important factor in this particular industry.

2.4 Research methodology

2.4.1 Research strategies

To fully achieve all the partial objectives stated before, one research strategy will take place, combined with different data generation methods. A Case study strategy will be used, as it is a form of qualitative descriptive research that is used to look at individuals, a small group of participants, or a group as a whole. Yin (2003) defines case studies as "an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident".

Case studies provide in depth information and insight of the phenomenon at study. This case is particularly beneficial in instances where there is not much literature about the subject, so a real life instance is investigated. Case studies can be exploratory, descriptive or explanatory, each of them useful in its own way. These studies can also have a timely approach, with historical studies, contemporary studies or longitudinal studies, which involve the researcher investigating the case over time. Different focused case studies will take place of individual developers as well, in order to offer insight of their position. A number of data generation methods will be used to obtain information for our study, such as interviews, surveys and document research.

2.4.2 Data generation methods

The data needed for our research will be both qualitative and quantitative, so different types of methods will be used. Due to the nature of this research, qualitative analysis will be the main focus, however, quantitative research will also take place in order to provide numerical data to proof and backup the conclusions drawn from the qualitative approach.

This research relies on heavy document research, so qualitative data analysis will be the main method in this investigation. This is the type of data that

case studies most commonly generate. We should analyse and study all the documents available, to then abstract the themes and patterns that are important to the research. Qualitative data has many advantages, such as providing rich and detailed information, and offers alternative explanations, a possibility that quantitative data doesn't provide so often. However, it also has disadvantages, like a free interpretation of the data that leads to more tentative conclusions compared to quantitative data. Different types of documents will be analysed, mainly textual based, such as papers, books, websites, magazines and newspapers. Video, audio and video games will also be analysed. Each type of document will be evaluated in a particular way using established methods.

Interviews will be conducted to developers, journalists, industry analysts, researchers and gamers. These interviews will try to obtain the most valuable information from each type of interviewee. Interviews offer deep insight and detail, and are a flexible way of obtaining data. As for quantitative analysis, we will try to find out as much information as possible on different types of real data from the video game industry, in order to produce evidence based on real numbers. We will look at number of developers, of video games, their income, market share, metacritic scores, etc. and produce statistics that will help drawing numerically proofed conclusions.

2.5   Scheduling

The scheduling for this work will be heavily impacted by the amount of documents gathered for their analysis. However, taking into account a 3 year plan, this is the estimated timetable for our research:
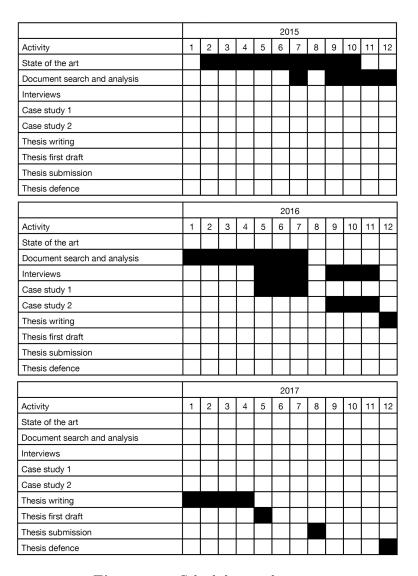
	2015											
Activity	1	2	3	4	5	6	7	8	9	10	11	12
State of the art		■	■	■	■	■		■	■	■		
Document search and analysis							■		■	■	■	
Interviews												
Case study 1												
Case study 2												
Thesis writing												
Thesis first draft												
Thesis submission												
Thesis defence												

	2016											
Activity	1	2	3	4	5	6	7	8	9	10	11	12
State of the art												
Document search and analysis	■	■	■	■	■	■	■					
Interviews					■	■	■		■	■		
Case study 1					■	■	■					
Case study 2									■	■		
Thesis writing												■
Thesis first draft												
Thesis submission												
Thesis defence												

	2017											
Activity	1	2	3	4	5	6	7	8	9	10	11	12
State of the art												
Document search and analysis												
Interviews												
Case study 1												
Case study 2												
Thesis writing	■	■	■	■								
Thesis first draft					■							
Thesis submission								■				
Thesis defence												■

Figure 2.1: Schedule year by year.

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Thesis Director

3.1 Director Proposal

For this research I believe Enric Guaus is a good match as my thesis director, due to his extensive experience in Computer Science and his years of collaboration with students in master and thesis programs. Assistant professor at Universitat Pompeu Fabra (UPF) and consultant professor at Universitat Oberta de Catalunya (UOC), Guaus is also a lecturer in mathematics, electronics and computer science at the Escola Superior de Msica de Catalunya (ESMUC). He also invests time in research, more precisely in human interfaces for musical instruments.

3.2 Relation to UOC

The Universitat Oberta de Catalunya (UOC) is a great institution to harbour this research due to its innovative spirit and trajectory, always supporting students and betting on new and interesting works. The UOC offers great resources, both online and offline, and is home to a great and talented network of teachers, researchers and academics.

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