BS ritgerð
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PC Games, Financial Gains and Consumers: An Issue of Control

Birita í Dali

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Executive Summary

This paper addresses the problems faced by a struggling PC game industry and discusses how the level of control affects the ability of users to add value to the industry. In addition, the paper views reasons for why control is required, how it is currently being executed and where it fares poorly.

The research question is: “Can firms increase profits by reducing control?” and is split into sub-questions which are answered throughout the paper.

Chapter 1 explains the current state of the computer game industry, highlights the economic reasons for why companies desire control and details the problem of distinguishing between pirates and legitimate customers.

Chapter 2 presents the video game value chain, and discusses each level of the chain in sequence, covering the capital & investment, design & creativity, distribution and hardware & complementary software levels. Each level adds financial value to video games, and each level presents control issues where the level of control that is currently maintained has possible negative effects on financial gains.

Chapter 3 discusses business models where control is reduced in some way to the benefit of companies that use the models. These models are all in use by successful companies, and are therefore tried and tested models with proven benefits.

In chapter 4, the conclusions are presented, showing that certain levels of the value chain can benefit greatly from reduced control, mainly due to the increased input of users and company-community interaction resulting from that reduction in control. The limitations of the study and recommendations for further research are also presented in this chapter.

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1. Introduction

The Computer Game Industry is in a state of transition. Previously PC games were easy to control and costly to distribute. Today they can be distributed at low cost, while maintaining control over all the parts of the value chain is time consuming, costly and practically impossible.

Computer Game Publishers are essentially competing with free versions of their own products. Although great costs and hard work are associated with the creation of the games, the games themselves have limited financial value since they can be copied at no cost. This paper takes it as given that Piracy exists as a direct competitor to the Computer Game Publishing Industry, and discusses how the Industry can adjust their strategies and attitudes to fit this (to some) new reality.

1.1 The Need

The need for this dissertation is solidified in the gap that exists between developers and users in the PC game industry today. While PC Computer Game Developers and Publishers attempt to maintain control over their games through legislation, copy-protection software and moral campaigns, some consumers turn toward the pursuit of copyright infringement and the line between pirates and consumers becomes ever more unclear.

The “war on piracy” that has now raged for decades is not yielding the results it was meant too. As it becomes more and more difficult to distinguish between pirates and honest customers, businesses in the Computer Game Industry have turned increasingly to restricting and attempting to control all their customers via Digital Rights Management (DRM) and End User Licence Agreements (EULA's). Another common response is for computer game developers to shift their focus to creating video games, with computer games taking a back seat (Ghazi, 2010).

Most research in control, customer empowerment and open practices within the Entertainment Industries is based on music, movies and literature. The video and computer game industry has seen significant growth in the past couple of years. According to Ars Technica, the video game industry saw 28,4% growth in 2007 while

the movie industry saw a growth of 1,8% and the music industry had a 10% decline in sales (Bangeman, 2008). The Entertainment Software Association's (ESA) fact sheets tell us that the video and computer game industry continued to grow in 2008 (ESA, 2009). However, while the game industry as a whole is thriving, computer game sales are suffering. In illustration 1, we see how video game and computer game unit sales compared in 2007 and 2008. From this illustration, we gather that while video game unit sales grew by 36,3 million units, computer game sales dropped by 5,8 million units.

The drastic difference in unit sales are thrown into even starker contrast by the fact that video games generally cost more than their PC equivalents and are rated similarly by critics, which means that neither prices nor quality are reasons for the difference. (Ghazi, 2010)

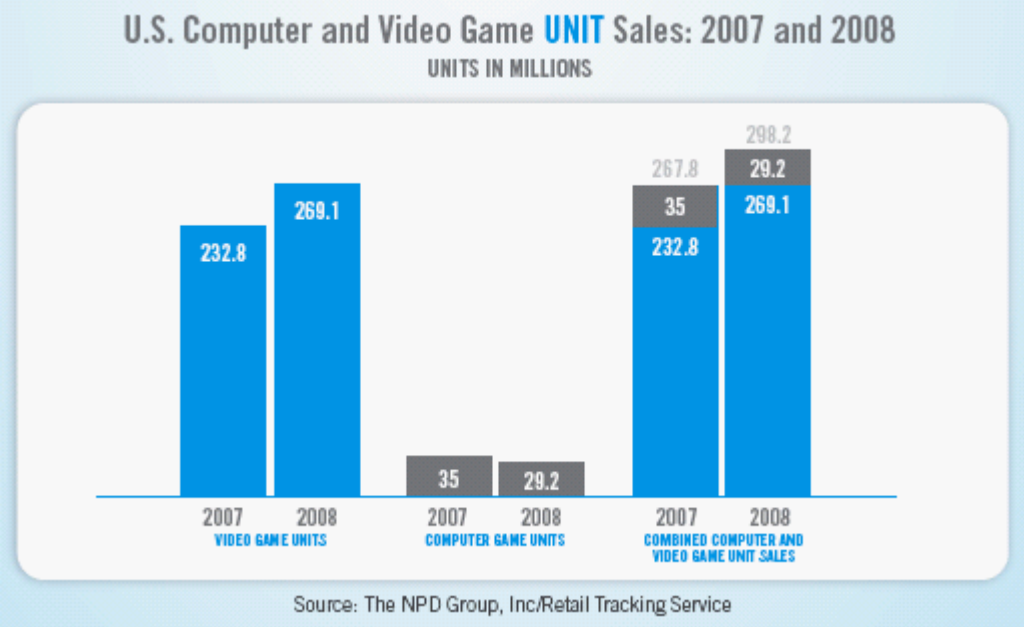

Figure 1: US Computer and Video game unit sales: 2007 and 2008. Retreived from: 2009 Sales, Demographic and Usage Data: Essential Facts about the Computer and Video Games Industry

The dwindling sale rates, the trend among computer game developers to switch to console game development and the growing divide between developers and consumers all indicate that research into the area is both desirable and a prerequisite for development.

Video games, also know as console games, are designed to be played on specific

consoles. There are currently three types of consoles competing for attention, but for the purpose of this paper, they are classified as one. While computers are intended for both work and play, consoles are designed specifically for gaming. In addition, consoles of the same brand are all practically identical in system specifications, which means that any game that is released for a specific type of console is guaranteed to work at optimal settings for all consoles of that type. Computers are customizable, and it can therefore occur that games will only work on the most powerful computers or that the games will need to be run on lower than optimal settings in order to work with the user's computer.

1.1.1 Research questions

The primary research question is:

- Can firms increase profits by reducing control?

The core research question is subsequently split into three sub-questions:

1. Can firms increase profits by reducing control over the design and development of games?
2. Can firms increase profits by reducing control of distribution channels and game exposure?
3. What business models are appropriate for reduced control to give sufficient rewards?

While the first two sub-questions deal with some major issues in the computer game industry, the third ties them together by showing concrete examples of successful companies that have reduced control and seen the benefits, as well as detailing how these examples can be applied to other companies and what situations they each suit best.

1.1.2 Research Methods

This paper is based on previous research and lectures by leading figures in the fields of business, computer game development, social networking and community based innovation, tied together by the focus on Control vs. Profit.

1.1.3 Definitions

Control is the amount of force exerted by a key player on an issue or process in order to guide it to a desired outcome.

Profit is designated as income minus costs, and is expressed as monetary value.

1.2 Why companies want control

Basic economic principles state that a good is classified as a public good if it is non-excludable and non-rival. Public goods cannot support businesses, since they cannot directly be attributed any monetary value.

PC games in their basic digital form can be copied with software that is easily obtainable by an average user of the Internet. Because this form of distribution is worldwide, instantaneous and openly available to anyone, computer games are non-excludable, as no one can be excluded from using them.

Since making a digital copy does not generally deteriorate the quality of the original, unlimited amounts of copies can be made without any other copies loosing value. If one user uses a copy it does not diminish another users ability to use their copy, and so computer games in their raw form are also non-rival.

Using this criteria; PC games can be described as having the characteristics of a public good.

Public goods, by definition, cannot support commercial or market based businesses. This is why public goods are generally supplied by governments, or by governmentally funded organizations. We can assume that the computer gaming industry would not benefit from being governmentally controlled, based on the principle that a governmentally controlled creative industry would become stagnant from lack of competition, would have higher entry levels and would not be equally capable of differently sized developers. In addition, relying on government support makes companies more vulnerable to fund cutting and policy changes.

If being governmentally supported is not an option, game developers must create artificial scarcity for their products in order to survive. Currently this is being achieved through various means. The most commonly applied measure is legal control.

Legally, computer games are both excludable and rival. They are excludable because gamers are obligated to buy a copy in order to play, which means that unless the user buys a copy they are excluded from using the game. They are rival because one person buying or using a copy prevents someone else from buying or using that same copy, meaning that one person's use diminishes another person's ability to use the game.
The debate on whether or not legally induced scarcity is justifiable is quite active, mostly between people who are either for or against copyright legislation, though sometimes also handled by people who attempt to reconcile the two “factions”.

Another tactic employed by the digital media industries to impose artificial scarcity is to appeal to the morals of the consumers through videos and advertising campaigns. In such campaigns, copyright infringement is often stated as being theft, and piracy is emphasised as being wrong. Most people that live in a European country will have seen these adds by now, the “You wouldn't steal a handbag” and “Piracy funds Terrorism” video campaigns being common examples.
Morally speaking, computer games are excludable and rival because you should buy your own copy in order to play, and you shouldn't share it with others, which means that since one consumer bought the copy, other consumers should refrain from playing that same copy because it's morally wrong.

Based on the above statements we gain two conclusions. One: Companies need to have control in order to impose artificial scarcity over their products and Two: This need for control has misfired into a perceived need for control over other issues unrelated to the subject of scarcity.

1.3 Friend or Foe: Distiguishing customers from pirates

Although it is not the only problem faced by computer game developers, Piracy is a hazard that PC game developers experience in greater degree than console game developers. Since this study focuses on PC games, it is important that we identify the pirates. However, identifying pirates can be difficult.

The International Data Corporation (IDC), conducts regular data collections on software piracy for the Business Software Alliance (BSA). The latest study showed that of all the software that is installed on computers worldwide, 41% is pirated. (BSA-IDC, 2009)

This data does not only include PC games but also other software. However, the data is still relevant because it is reasonable to assume that the propensity to pirate any software in general reflects the frequency and extent of computer game pirating.

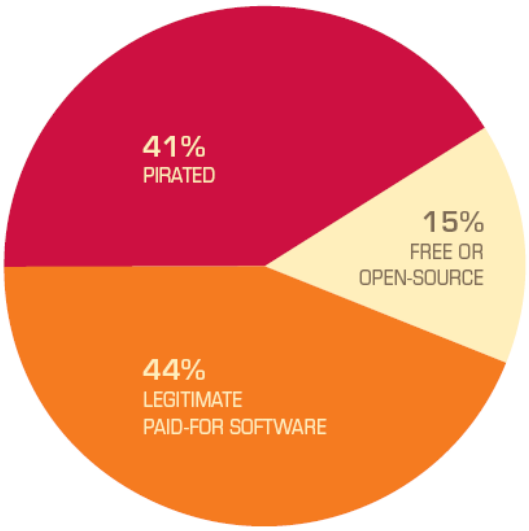

Figure 2: Proportional piracy of installed software: Retrieved from Sixth Annual BSA-IDC Global Software Piracy Study, (2009)

While most studies do not differentiate between propensity to pirate and the amount pirated, a recent German study found that men and women are equally likely to pirate, but men are more likely to pirate large quantities. (Mandel and Süssmuth, 2009)

Research into why people pirate is nowhere near as extensive as one might expect. The most relevant article is by the independent PC game developer of Positech Games, Cliff Harris. Harris posted an open question on his blog asking pirates to tell him why they pirated his games. (Harris, 2008) The post was then reposted on several highly frequented forums and networking sites.

Due to the informal nature of this article, no formal data analysis was carried out. Harris states that he received "hundreds of replies" both through e-mails and on the forums where his question was posted. According to the responses Harris received, the key motives behind piracy are prices, game quality, DRM and digital distribution. A few of the responses stated that the respondents thought copyright as a whole was unacceptable or that they pirate because they can get away with it.

Those that responded that money was the key concern stated that prices for computer games are too high. Game quality turned out to be a major issue for the respondents, very few had problems with story-lines or graphics, bur rather expressed concern

about the way the games run on their computers and technical problems.

Based on the responses, Harris was able to identify DRM as the biggest concern for people who did not mention any other reasons for pirating and saw this as the reason that was easiest to remedy. Harris now releases all his games DRM free and uses this as a sales point.

Distribution was listed as another important issue, where many pirates did not feel like visiting brick and mortar locations in order to buy games, but voiced desires to be able to purchase all the games online.

The issue of distinguishing between pirates and consumers draws parallel to the same issue in other entertainment industries. For example, one study suggested that the amount of CDs purchased increased with the amount of songs downloaded via Peer to Peer. (Andersen and Frenz, 2007) They showed a significant positive relationship between the two, and found that individuals who are more prone to Peer to Peer piracy are likely to purchase more CDs than individuals who do not use Peer to Peer.

Another study found that Dutch game sharers are more likely to purchase games than non-game sharers. Sharers here refers to people who download and upload files over Peer to Peer or similar networks. (Huveneers, Huygen, Limonard and Rutten, 2009)

These studies further emphasise the problematic nature of distinguishing customers from pirates, as they suggest that the two groups overlap heavily.

2 The Video Game Value Chain

A value chain is a chain of activities within an industry which add value to an offering. Flew and Humphreys (2005), devised a Video Game Value Chain, which has here been edited and updated to suit the models and principles suggested in this study. The main difference between the two models is that rather than considering users as the final layer in the value chain, they are here considered as potential contributors to all layers.

The model shows the different activities which add value to video games. Developers and publishers are situated on one side of the chain while the end user community is

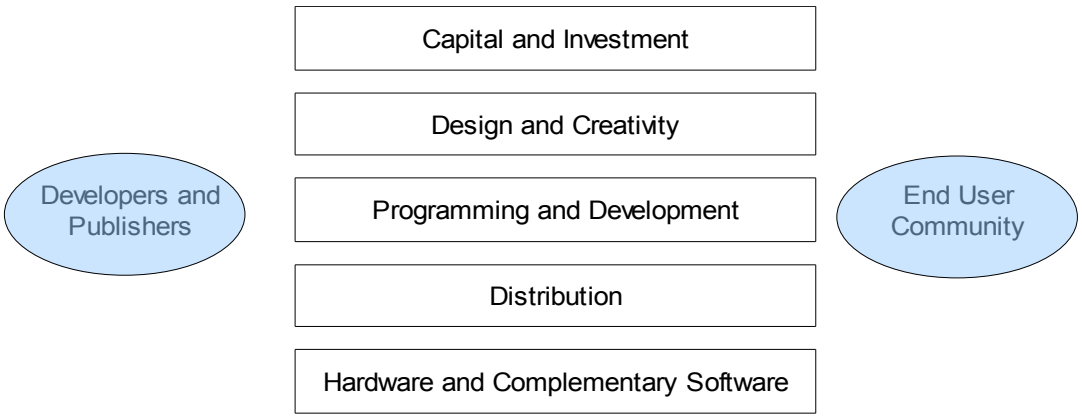

Figure 3: The Revised Computer Game Value Chain

situated on the other. This value chain does not follow the popular visualization presented by Porter, but is based on the same principles.

The amount of control exerted by developers and publishers directly affects the end user community's ability to add value to the chain. On one hand, not all activities undertaken by the end user community will add value, which is why some level of control must still be maintained.; on the other hand, it is proposed here that the level of control that is currently being maintained is suboptimal and that revising and updating control tactics is vital for the continued development of the industry.

We will mostly be focusing on the design & creative, programming & development and distribution layers, but the capital & investment and the hardware & complementary software layers will also be discussed in brief.

2.1 Capital and Investment

Basic financial principles teach us that businesses exist to create financial value for their owners. Most commonly, businesses are owned by shareholders. Further, it is often noted that the best way to create shareholder value is through creating stakeholder value. Stakeholders are all the people who are in some way affected by the company: Shareholders and debtors; employees and managers; customers and society as a whole.

The capital and investment layer deals both with the investment and funding activities and with getting a return on those investments. Most commonly, the main contributors to this layer are publishers. PC game publishers invest in game developing firms or in specific projects undertaken by developers. This allows developers to allocate the investment and use it to pay wages and other development related fees. Once the game is complete, the publisher handles distribution, pricing and licence terms. Because the publisher carries most of the financial risk, they must also receive the largest part of the financial gain.

The risk associated with funding games is very high. According to Zatkin, only 20% of games that enter production are finished, while only 20% of the games that enter the market turn a significant profit. This means that only 4% of games that enter production can be expected to return a significant profit. (Laramee, 2005)

In most cases, financial control is kept tight, since it can be very difficult to survive without a well-managed financial department. It is possible that by reducing control over subsequent layers, the strain on this layer will be reduced. To illustrate this point, parts of the investments made in game development go into programming, creative processes or adding a compelling narrative to a game. If some of these costs can be outsourced to the community as is explored in chapter 3, that represents a cost saving control reduction that has a positive effect on the capital layer of the value chain.

Pricing strategies are probably the most versatile part of this layer. The most common strategies are blends or extremes of the following: One time sales; sale of in-game updates or items; subscription fees and advertising.

Alternative pricing strategies involve the “Pay what you want” strategy, which allows customers to pay a fee they find acceptable for a predetermined product or service.

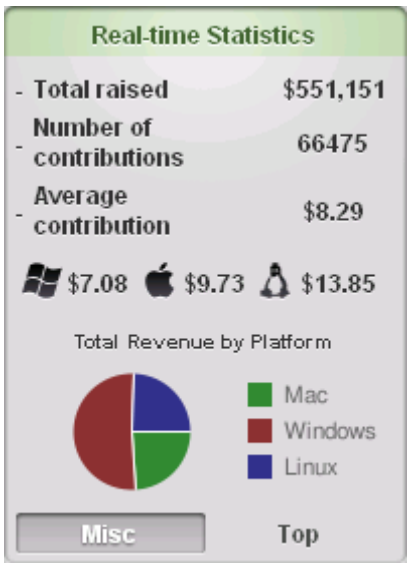

Figure 4: Sales of the "Humble Indie Bundle" by May 8, 2010

On May 4th, 2010, five independent developers, that is, developers that operate without publishers, began a week long offer to customers called the "Humble Indie Bundle". The bundle contained five games with a combined value of $59.99 USD. In addition to being allowed to set their own price, a part of the payment would go to game related charities. Customers were able to decide what proportion of their payment should go to developers and charities respectively. (Wolfire, 2010)

The "pay what you want" pricing strategy is a good example of how financial control can be reduced, although more research is required in order to establish the actual financial benefit to the developers of employing such strategies.

2.2 Design & Creativity and Programming & development

This section deals with the design and creativity layer as well as the programming and development layer. The basic premises of social production and networked innovation are presented and a concrete example from the computer game industry is reviewed. Quality control is lightly touched upon in this section as well.

The aim of this chapter is to establish whether companies can gain financially by reducing their control over the creative and developmental processes of games.

2.2.1 Social production, creativity and innovation

Studies on social production have proven that networks of individuals spending a small amount of time each on a collaborative project can achieve results that equal or even rival those of organized professional groups. (Benkler, 2005) The idea of social production is that there is a common goal that the network of individuals all strive to achieve, motivated by intrinsic values unique to each individual. Examples of successful products of social production are Wikipedia and Linux. (Benkler, 2005)

2.2.1.1 Creative Consumption and the Read/Write culture

Lessig (2008) describes something he calls the Read/Write culture, a culture that is

becoming more and more prevalent among consumers today. The culture is attached to an attitude that products are not simply meant to be consumed, or read, but also to be re-written, discussed and shared. This culture is growing rapidly due to the ease of communication afforded by the Internet.

Consumers today are not content with simply absorbing. The Internet has given them a voice, and they wish to use it. (Bilton, 2007) This does not mean that every consumer wishes to be a contributor, but if we imagine that 10.000 people play a computer game and only 1% want to contribute, that means that 100 potential contributors are out there. That is, a hundred amateur game developers.

2.2.2 Modification

The act of creating modifications (mods) to original work is commonly referred to as modding. Computer game mods are created by the gamer community, and are divided into partial conversions, which add new content to the underlying game, and full conversions, which create entirely new games. Some mods are created to fix bugs and these are called unofficial patches. Modding is somewhat of a controversy, and in some countries is considered copyright infringement which is punishable by law, although such action is generally not taken against software modding, but is rather applied to hardware modding, which means that the hardware on which the games run has been altered in a way that breeches the agreement between the developer and the user.

Some mods are dedicated to the creation of art, as opposed to the creation of a game. These mods include the recording of in-game footage for use in movies or episodes such as the Halo based “Red vs. Blue” webisodes; or using the tools to create still images for comics like the web-comic “Concerned” by Christopher C. Livingston.

Modding is, first and foremost, a hobby. It is generally a natural extension of the gaming hobby, meaning that modders are also gamers. Mods are distributed over the internet, so that anyone who wishes has access to them. They are generally not created for financial return. Instead, motivation lies in intrinsic values such as recognition.

2.2.2.1 Modder communities

Modder communities are the combination of social networks and creative consumption. Game developers supply game tools and applications, and the modders

supply workforce, talent and time. Not every game player is a modder, and not every mod becomes an original, stand alone game, but enough exist of both to make this an important movement.

Figure 5: The most popular add-ons for WoW on April 23. 2010 (Curse, 2010)

Modding communities have created mods, add-ons and even sequels for many of the popular games of today. Add ons are minor mods which enhance gameplay or add a feature that the users might find important. For example, World of Warcraft has a myriad of add-ons with the most popular being downloaded 4711 times per day on average. Some of these add-ons, or functions similar to those that they provide, have later been added into the game itself as updates. (World of Warcraft Official Patchnotes)

Most of these modders see their reward in intrinsic values. Recognition, acknowledgement and fun are the key drivers, while financial rewards are rare and unexpected. (Arakji and Lang, 2007)

2.2.3 Valve, Half-Life and the mods

Computer games are generally created to run on a platform known as a virtual engine. The engine governs in-game physics, movement, trajectories and other core elements. Much like an engine in a car, the computer game engine is not visible, and the same engine can run several different types of games.

In 1998, the game developer Valve produced “Half Life”, a very successful game that to date has won over 50 “game of the year” awards. “Half Life” is a single-player game, which means that players play the game on their own, playing through a story which leads from a start to a finish. Valve opened the source code of the game in order to allow the user community to create mods. Valve only opened the code to the game itself and not the code to the engine. The community could create any type of mod they desired, but they all rely on Valve's engine. (Steam) This means that a copy of

“Half Life” is required in order to play the mods.
This spurred a large amount of creativity among users, and although most mods were minor alterations to the game that would only be shared among a small group of users, some mods rose to become as popular as the original game itself.
One of these mods was “Counter Strike” (CS), a multiplayer game, that is, a game played by several players at once. CS is thematically, functionally and experientially different from “Half Life” and , according to Arakji and Lang (2007), generated more sales as well. Valve re-appropriated CS and published it as a stand-alone game a year and a half after the mod was created, and hired the developers of the CS mod to continue as developers of the official “Counter Strike” game.
Another couple of “Half Life” mods, “Team Fortress” and “Day of Defeat”, were also appropriated, and all three have later been updated with sequels and mods of their own.

2.2.3.1 Black Mesa

Black mesa is a community driven initiative which works on recreating the original *Half-Life* game using the *Source* engine. The source engine is the latest engine developed by Valve. All new Valve releases run on the valve engine; it is a direct upgrade from the engine that was used for the original Half Life game. It is entirely driven by the modding community, with the goal of recreating the original game with all new textures, models and voice-acting. The Black Mesa team currently consists of 38 members, with another 49 listed as past team members. (Black Mesa Source)
They are using the original story and setting, but updating the looks, voice acting and game experience to suit the modern capabilities of computers.
The dedication shown by these modders is of particular interest since the recreation of an old game is otherwise not something that companies are likely to undertake. Half Life is a cult classic that is likely to continue intriguing and entertaining players for many years, even more so once it has been updated to modern graphic standards.

2.2.4 Benefits and risks

Valve's decision to allow users access to their source code generated three games that they could later appropriate and develop. Even more importantly, these games had already proven popular among the community, which means that there was very little

risk associated with their creation. They were a guaranteed success for which the research and development as well a marketing research had already been supplied by the community.
Another important factor is that these games were complimentary products to Half-Life. Rather than existing in competition with their parent, they supplemented it and boosted it's sales. The fact that they ran on Valve's engine meant that no competitors could easily appropriate the games, and that Valve was the natural gateway for those mods to become actual games. (Arakji and Lang, 2007)

On the other hand, by giving up part of it's source code, Valve also gives up part of their control. They no longer control who does or does not see the source code, nor can they prevent other companies from viewing and possibly using parts of the code, although the agreement states that no commercial use of the code is allowed. (Steam)
In addition, it can be difficult for the developer to control and monitor which mods are created. It can therefore be difficult to prevent harmful or undesirable mods from being created. Once they are created and published, they can be banned, but their creation cannot be stopped.

2.2.5. Quality control

Users, while not necessarily being experts can collectively control the quality of peer production by voting for, using and recommending their preferred innovations. (Lessig, 2008) For example, a computer game modification that is fun, unique and interesting is more likely to receive better feedback than one which is dull, unoriginal or poorly executed.
User communities and networks serve as a type of marketing research. Although there is no professional developer present to tell them which mods are beneficial or what mods are great fun, the community is well equipped to make these observations and decisions on their own. If a mod is fun, more people will wish to play it, and so it will gather more attention and rise to the top. This is similar to how people vote for comments they find useful on forums, or for users giving stars to videos on youtube.
The mods that give people most gratification rise to the top, and this is where computer developers can pick the ones which show most potential and develop them further. They have, essentially, split the quality control in two at the same time as they

split the development process in two, achieving full Community-Developer cooperation.

2.2.6. Appropriation of successful modifications

If Valve and Half Life are any indication of trends, the availability of mods support sales of the original game. Arakji and Lang (2007) support this view, and attribute the correlation to the fact that the mods require the user to own a copy of the original game in order to function and to the assumption that the mods which are allowed to persist thus exist as complementary products to the original game in question.

While the mods in their own right boost sales of the original game, it is the appropriation of successful mods which grants the most financial reward for the developer. (Arakji and Lang, 2007) By appropriating the game, the developer secures an additional source of revenue, which they did not have access to before.

Another important step that must be taken in order to see financial gain from the reduced control, is that successful modders should be financially rewarded, as the intrinsic rewards might not be enough to motivate them to complete the development process for the mods. Developing a mod is time-consuming and requires many hours of work for those involved. This is why modders should perceive the potential for a career and compensation for their work. In essence, it is important to supplement the intrinsic rewards with extrinsic rewards (Arakji and Lang, 2007).

Conclusion

It is possible for companies to open new sources for financial gain by partially opening the design and decision making processes related to computer game creation as long as the community creations remain complementary with the original game.

2.3 Distribution and ownership

Distribution can take place via physical or digital means. Physical distribution relies on hard copies of the games to be shipped to brick and mortar locations or directly to customers, while digital distribution relies on the Internet and digital locations to facilitate the downloading of games directly to the computers of end users.

While hard copies of games require significant investments in material costs and transportation costs, digital distribution requires only minor investments in servers and digital sales channels. In addition, it requires more effort and time for a customer to purchase a game at a brick and mortar location than it does for them to purchase from an efficient online distributor.

Because companies wish to ensure that they receive a return on their investment, they impose scarcity in the form of a monopoly. In order to maintain a monopoly over the sale and distribution of a game, developers, or their publishers, must select a distribution channel which satisfies their needs and an accompanying security system which prevents illegal competition to arise from the distribution of unauthorized copies. Most companies choose to include third party software, which makes it more difficult to copy the games, as security.

When choosing a distribution model, it is also necessary to choose a licensing model. Licensing models are discussed later in this chapter. The reason why the distribution and licensing models are connected is because while the official distribution channels can be chosen and utilized by the game publisher, license agreements legally prohibit customers from making their own copies and establishing their own distribution channels for the same product.

In order to maintain control over the distribution channels, piracy must be kept at bay; however, it remains to be seen whether controlled distribution channels necessarily constitute the best option.

2.3.1 Copyright

The right to own and control artistic creations such as PC games is protected by copyright laws. Copyright laws are intended to work as incentive for creativity to take place. They are based on the principle that people will not be creative if they cannot be sure that they will own their creations, and be certain that they will receive attribution

and recognition for their work.

This means that when a developer creates a game, they have full control. They own the rights to copy, distribute, display and create derivative works of the game and all elements contained within. These rights are often shared with a publisher who provided the initial investment required for the development of the game and who therefore owns part of the rights to the game. However, enforcing these legal rights can often be difficult, as is evident by the existence of piracy.

This is why digital rights management (DRM) is such a big issue in computer game circles today.

2.3.2 Digital Rights Management

Digital Rights Management are digital measures taken by developers in order to prevent the illegal use of their intellectual property. Sometimes it is as simple as requiring the CD to be in the drive in order for the game to start, and sometimes as complicated as rootkit programs that are installed along with the game and prevent certain types of software from working.

Here, we will not discuss the right or wrong of using DRM, but rather of the costs and benefits of different types, associated with the level of control that is facilitated.

As an example of strict, commonly labelled draconian, DRM, we can examine Spore, a highly successful computer game released in 2008. Each purchased copy of the game could only be installed a limited amount of times, only one online account could be made per game, and a rootkit program was installed along with the game without the user's knowledge. The limited amount of installs made users feel as if they were renting the game as opposed to buying it, and the first lawsuit over SecuROM, the rootkit program, was filed within a month of Spore's release. (Gamepolitics, 2008)

The lawsuit was settled with the result that EA games, the publisher of Spore, is now required to disclose prominently on game boxes and online websites if a product contains SecuROM. In addition, EA games was made to pay legal costs and compensation fees for the plaintiffs. (Stipulation of Settlement, 2009)

The benefits of functioning DRM are that each copy of the game is made to be excludable and rival, and ordinary users are unable to commit minor infringements

such as lending the game to a friend or installing the game on the computers of every child in the family. DRM thus represents a barrier which prevents casual piracy. In essence, it provides a means of controlling personal use of computer games.
Additionally, it can be argued that DRM can delay the point where pirated versions of games become easily obtainable. What DRM does not do, is to prevent large scale piracy or limit personal use for people who have no qualms about circumventing it.
While the idea of DRM makes sense, in practice, it does not always work to the benefit of the company. Because it limits minor infringements, the average consumer can be expected to object to the presence of DRM in products that they have bought and paid for. These minor infringements are often considered normal use by convention. When consumers buy something, they expect to be allowed to share it with their friends and family. For example, if a consumer bought a lawn mower and lent it to their neighbour, no one would think twice about it. Until about 20 years ago, most personal use of digital media was deemed both acceptable and lawful as long as it was non commercial. (Litman, 2006)
Software cracking is the modification of software with the intent of removing or disabling features that the cracker finds undesirable. Generally the DRM of a game is cracked and removed very quickly, and programs and instructions for other people to crack the game become available online as soon as this has occurred. Although the aim of DRM is to delay the time until games are cracked, this does not always hold true. For example, cracked versions of Spore were in circulation before the game was even launched. (Pigna, 2008)
This means that the DRM did not prevent illegal copies from being distributed, but it still caused frustration and trouble for a large amount of legal, paying customers.

Valve, another PC game developer uses a different approach to DRM. Valve runs the online platform Steam, through which computer games can be purchased and downloaded. The games are registered to the user's Steam account, and in order to install and update the games, the user must log in. This means that in exchange for giving up control over how often the games are installed or on what computers, valve gains assurance that in order for the games to remain updated and fully supported, a legitimate user's account must be used. In addition, only one person can be logged in

to an account at any time, which means that the copies of the game have once again become a rival good.

2.3.3 Licences and the question of property

The normal way that trade takes place is that the property of one party is traded for the property of another. In the case of buying a game, this means trading money for a copy of the game. The definition of a lease is where one part of the trade is not a permanent transfer of ownership, but rather a temporary transfer of the right to use the property which relies on time and certain conditions to establish when the deal is terminated.

In an attempt to control the secondary market of computer games, most PC game publishers operate by using a type of lease agreement rather than a trade agreement, as is evident by most End User Licence Agreements packaged with games. Essentially, EULAs are known to stipulate conditions which the end user is required to adhere to in order to be allowed to use the game. In addition, EULAs often state that the user does not own the hard copy of the game that they have purchased, but rather own a conditional licence to use it. (Rothchild, 2004)

Based on this, the user does not own the game itself and is therefore not authorized to lend or sell it to a third party, nor to make security copies of it.

Politically concerned gamers have voiced apprehension at the present state of EULAs . The primary concerns are that the laws concerning EULAs are not as clear as they were before, and that EULAs are not standardized. In addition, apprehension is voiced over the side-stepping of the First Sale Doctrine (Halpin, 2009).

Normally, items that are traded are subject to exhaustion principles such as the ”First Sale Doctrine” which stipulate that an owner is allowed to resell their own copy of the property without permission. For example, if you buy a book you are allowed to sell it after you are done reading it, allowing for the existence of second-hand book stores.

By licensing games to users rather than selling the games themselves, the PC game industry is effectively side-stepping the First Sale Doctrine.

Since users generally perceive the First Sale Doctrine as their right, the obvious attempt at side-stepping the law by claiming that the user is not a purchasee but only a licensee has met opposition from gamer associations such as the ECA (Halpin, 2009)

as well as from individual users. According to Carver (2010), the use of licensing as opposed to sales agreements is legally unsustainable and should be replaced by a clearer, more easily understandable lease model where no part of the transaction is a sale. In addition, he states that exhaustion principles such as the First Sale Doctrine have benefited society in a number of ways ranging from the preservation and dissemination of culture to the regulation of prices through supplying a secondary market that competes with the primary market.

This is a case of misguided control. In an attempt to secure the artificial scarcity, computer game publishers have essentially turned from selling a product to selling a glorified lease of the product. In essence, they have reached a pinnacle of control. The publishers own every hard copy that is made of their games, and that ownership is never legally terminated.

2.3.4 Legal Peer-to-Peer distribution

Peer-to-Peer (P2P) networks function through a system where there is usually no central storage of data. Instead, all computers that make use of the network upload to and download content from all other users of the network at the same time. Storage space and streaming speed requirements are at a minimum.

This means that in stead of a hundred users attempting to download the same packets of data from a single distributor, those hundred of users will download different packets, and then swap packets among each other until they all have the full file. This distribution model is highly efficient.

Litman suggested in 2003 that music publishers could use P2P distribution to their advantage. Her argument is that not only would it provide instant gratification to users through fast dissemination of the media, but also provide a greater variety of media than stores and outlets ever could. However, while P2P is more efficient at distributing content to users than official, controllable outlets, it is also less successful in offering compensation to the creators of the work that is being distributed. She suggests that the P2P distribution system should be tweaked so that creators are compensated, and that P2P should then be legalized.

The suggestions presented by Litman can be applied to computer games. Because P2P distribution offers significant cuts in costs, it is an attractive option for developers

looking for ways of improving their income. Naturally, in order to utilize this network to a developer's financial advantage, they key money-making aspects of the game must be kept separate from the game proper. Business models that support this type of distribution are models which require the user to register with online servers; models which supply a large amount of incentive for users to pay a licence fee; or models which incorporate advertising into the game itself.

Conclusions

The conclusions we can gather from this section are that 1: Developers can create profit by cutting expenditures on distribution and DRM technology, and 2: In order to reap profits through a P2P distribution model, the core profit generating activities must lie in other aspects than the copies of the games themselves.

2.4 Hardware and complementary software

PC games are developed for computers. PC stands for “Personal Computer” and has nothing to do with the operating system that the computer uses, but is has become conventional to use the term to describe a computer that uses a Microsoft Windows operating system. The misconception of the term was fuelled by a Macintosh ad campaign where the alleged difference between PCs and Macs was emphasised by representing each as a different type of person. (Apple, 2006)

Computers are customizable workstations, both in hardware and software. Hardware are the physical components of a computer. Individual pieces of hardware that do different things, like for example control the video quality, can be exchanged for better versions of the same hardware should the owner desire it. This means that computers are very different in what types of games and programs they can handle. The best looking, newest games commonly target gamers with recently upgraded, top of the line computers. This means that targeting certain hardware requirements during the creation of a game will help determine the size of the immediate target market (Electronic Arts, 2007)

Software which can be considered complementary is first and foremost the operating

system for which the game is designed. An operating system is like a road, upon which most other software runs. Windows has a huge market share. They can be said to dominate the market, especially when it comes to computer games. In fact, a game labelled a “PC game”, with no further labels, will run on windows and not on other operating systems. While Windows dominates the market, approximately 6% of all computers use a Macintosh (Mac) operating system, and about 1% run on a Linux system. According to Wolfire, one of the independent developers mentioned in the section about the “Humble Indie Bundle”, Mac users are just as likely or possibly even more likely to play games, and once games have been made to run on Macs, it is only a small step to expand them to run on Linux as well. (Rosen, 2010) This means that there is a potentially bigger market for computer games than is being pursued by most companies today.

By creating games that can run on all three operating systems, game developers can thus increase their sales. On the other hand, because the operating systems have different supportive software available, developing games for several platforms at once requires more programming work.

This level is different than the the other levels in the value chain, because game developers have very little control over it. The control lies in the hands of hardware and software developers and manufacturers. However, by seizing more control, developers can here choose to consider the options available, such as developing for several systems, developing new games which will run smoothly on older or less advanced computers and thus give users more options to choose from.

3. Business model suggestions

This chapter summarizes the material of the previous chapters and ties them together into functional, realistic business plans, some of which are in use by companies already.

3.1 Competing with Piracy

This paper is based on the assumption that piracy exists and will continue to exist regardless of legislative changes or changes in business models. Also, it is assumed that the legislation is unlikely to change any time soon, which leaves the only option available to businesses to take piracy into account in their planning.

The “War on Piracy” can be likened to a “War on disease”. Although the motivations for waging the war are both understandable and justifiable, the effort that is expended will eventually outweighs the benefits, - we cannot eradicate disease entirely, only individual strains, much like how we cannot eradicate piracy, only individuals who pirate - and any investment of time, money and effort is bound to see diminishing returns. In stead, alternative routes to reduce the problem should be sought. Here, we assume that the most effective way to reduce the problem that piracy presents to businesses is to compete more efficiently with it.

The key to competing with something that is free is to stop focusing on the product itself. While some consumers will undoubtedly continue to buy all computer games that they play, piracy is an industry hazard, and businesses need to supply ample incentive for consumers to choose to buy the legal version of the games. Because any illegal copy will be identical to a legal copy, these incentives must be located in services or other added benefits surrounding the game which can be constrained to the legal copies and be unreproducible.

Through the discussion in this study and others like it, it can be established that diminishing control can prove an effective way of competing with piracy. In the case of design and decision making, giving some control to the community can be a major sales point, and in the case of DRM, supplying non-DRM'ed products means that the product itself is once again as attractive as the illegal counterpart which supplies

another crucial sales point.

In some cases, selling copies of media without DRM is an actual sales point. Amazon recently decided to begin selling music with no DRM, identifying this as a major sales point. (Woodson, 2007)

Many independent developers have also employed DRM free approaches as a sales point, generally announced through the DRM free tag being displayed prominently on the company websites. For example, Cliff Harris, the independent developer mentioned in chapter 1, released all his games without DRM after discovering that DRM was one of the main reasons people listed for pirating his games. (Harris, 2008)

3.2 Business Plan suggestions

Consider again the value chain displayed in illustration three. The layers of the value chain each represent an area where reduced control and increased consumer power can potentially have positive impacts on financial gains.

3.2.1 Platforms

Game platforms are a combination of websites and downloadable programs which offer a service along with an extent of control. Business models that rely on platforms are examples of models that accept reduced control of personal use in exchange for higher returns. Platforms utilise digital distribution, but control the availability of games as well as the access users have to games purchased through the platforms.

The prime example of a functioning game platform is Steam, run by Valve. According to Valve, Steam services over 25 million gamers from all over the world. The platform grants users access to an online store with over 1100 titles, automatic updates to- and unlimited downloads of- all games purchased through the platform, and a networking service which allows users to chat while playing Steam games, see each other's status and updates and join clans and groups.

The DRM part of the platform is smooth and non-intrusive. Since the games are registered to a Steam account and not a computer, Steam allows users to download and install their games as often as they wish, and grants them unlimited access to the games. A user must be logged in to receive automatic updates to the games, which encourages users to log in regularly, particularly while playing. The networking

service provides another incentive for users to be logged in to Steam as it allows them to easily join games with their friends and invite friends who are online but inactive to come and join them. Finally, the platform provides servers for multiplayer games, meaning that being logged in grants access to online servers where users can play with each other quickly and easily.

There is some debate as per whether Steam is the right option for small developers. Randy Pitchford, the co-founder of Gearbox Software, stated in an interview with Maximum PC (Remo, 2009) that he felt that Steam should be it's own company, so that Valve's interests do not conflict with the interests of other developers that sell games through Steam. He went on to declare that Steam was exploiting several small developers, though he did not mention specific examples. (Remo, 2009) In response to this article, John Gibson, president of Tripwire Interactive, posted his thoughts and offered the point of view of a small developer, stating that he does not feel exploited, but in fact attributes a large amount of his success to Steam. According to Gibson, the deals offered by Steam to Indie developers are much more fair and accommodating than deals offered by Brick and Mortar Stores. (Gibson, 2009)

The debate on whether Steam is the correct platform to use does not diminish the fact that platforms remain a good way to maintain a sustainable amount of control.

Because games today often include online content or multiplayer options, official servers are a good way to encourage customers to purchase legal copies of the games. However, illegal servers are widespread, and to some users, the utility of registering does not warrant the expense of purchasing the game.

In addition, some gamers continue to feel that even the amount of control exerted through Steam is too much, and revolt at the idea that they require a steam account in order to play their games.

Another competing platform is Impulse, developed and run by Stardock Entertainment. In addition to supplying similar services to Steam, Impulse offers gamers additional freedoms in that in guarantees that games will function without an internet connection, and offers gamers the option of reselling their digital copies of games through a service called Game Object Obfuscation (Goo). Goo allows users to de-license their version of the game and sell it back to the Impulse platform, which in

turn contains a used-license section where other gamers can see and purchase these used licences. (Sliwinski, 2009)

3.2.2 Controlling updates and patches

Sins of a Solar Empire (Sins), developed by Ironclad and published by Stardock was released in 2008 with minimal DRM. The game requires online verification of a licence via the Impulse platform in order for the user to receive patches and customer service, but aside from this, the user is free to use the game in any way they desire. The game can even be installed on multiple computers without problems, although in order to patch the installed games, verification is again required.

This means that Sins itself has no DRM, but patches and updates to the game do.

Sins can be purchased in digital or physical form, although patches and updates are only available digitally. This means that the online service offered serves as an incentive for users to register.

By allowing unlimited installations from a single hard copy of Sins, the publisher relinquishes control over who has access to the basic version of the game, i.e. the publisher has reduced control over the distribution of their game. Personal use and local sharing are thus entirely open. On the other hand, playing on official servers requires a fully updated copy, which in turn requires a licensed version of the game, which returns some control into the hands of the publisher.

3.2.3 Subscriptions

What seems to be becoming increasingly popular is for games to be developed as MMOs, or Massively Multiplayer Online games. This type of game means that players must be connected to online servers in order to play, and that the game revolves around players interacting with one another and the game environment.

This model is used by World of Warcraft (WoW), one of the most successful games in recent times. The most recent expansion to WoW, *Wrath of the Lich King*, set world sales records by selling 2.8 million copies within 24 hours of release. This broke the record which was notably held by the earlier WoW expansion *Burning Crusade*. (Quillen, 2008)

In order to play WoW, players must purchase a copy of the game and register their account. They must then make regular subscription payments in order to continue

playing . This means that it is impossible for players to connect to the official servers with illegal copies of the game. However, there are illegal servers that allow players to connect without legitimate copies, which means that the model is not entirely fool proof (Foley, n.d.).

Another point which is often made is that it is unattractive for players that they must pay a subscription fee to play a game that they have bought and paid for. Parents are also known to express concern that their children's game account has regular billing, similar to electrical or phone bills that must be paid on a monthly or bimonthly basis.

While this type of model renders conventional DRM practically pointless, the amount of control is still very high. There is no offline mode for the game and no single player options are available.

While control over distribution and access lies firmly in the hands of the developer in this case, the control over mods is slightly less pronounced. Modders are encouraged and accommodated to create Add ons for the game, though these revolve entirely around the user interface and game utility rather than adding components or changing game aspects.

While Wow requires players to purchase a copy of the game, many MMOs grant free access to the game, with the only payments being the subscription fee. This model is attractive to consumers as the entry cost is low, though the long term costs can be high, depending on how long the player continues to pay the fees. Eve Online is an example of such an arrangement. Eve Online, developed by CCP, is available for free download online, including a 10 day free trial. This means that it is easy for users to sample the game, and gives very little reason to distribute illegal copies. Eve is designed as a world where the primary focus is on Player versus Player Interaction. This, combined with the fact that a single server services all players at once, gives very little incentive for illegal servers to attempt to compete. The Eve universe is so large, that without a large amount of other users, it would be quite uninteresting to play. (Crowd Control Productions, n.d.).

Guild Wars chose the opposite sales model to the Eve one. With Guild Wars, players buy the game and any expansions, but play indefinitely for free.(Guild Wars, 2005)

3.2.4 Free online games

Some game developers decide to reduce their financial control directly, by offering their games for free online. These games generally require users to remain connected in order to play, and often rely on inter-user relationships to maintain customer retention. These games vary greatly in scope and quality, but can roughly be divided into browser games and massively multiplayer online (MMO) games that require installations.

Browser games are games which run in a normal browser and only require common software, such as flash players, to be installed in order to run. These games generally occupy players for a period of time from a few minutes up to a couple of hours each, require no installation to play and are usually free to access. The most common source of revenue for the developers of these games are advertisements which are shown in banners on the sites which host the games, although sales of related merchandise for the games can supply an additional source of income. For example, the browser game "Robot Unicorn Attack" plays an un-skippable advertisement before loading, and a themed t-shirt is available for dedicated fans (Adult Swim, 2010).

Development costs for these games is generally quite low compared to other PC game developers. This means that the entry cost to the market are low, and the copy rate for generic games is quite high.

Free MMO games follow several different types of business models. The options available are completely free, advertisement-funded, micro-payment and optional subscriptions. The wikipedia entry on free online games contains a list of over a hundred games which use any combination of the aforementioned payment methods. Since this paper is not focused on financial control in particular, the reasons for and benefits of free games is not discussed in depth, so suffice to say that the model is popular and viable enough to warrant multi-billion dollar publishers such as Microsoft and Sony Online Entertainment to use it for some of their games. It should however be noted that most of the games that are entirely free are more than 5 years old, and not all of them were free from the start. (Multiplayer Online Game Directory, 2007)

3.2.5 Community supported games

As discussed in chapter 3, community-company cooperation can be a key asset to companies that are willing to reduce the control they have over the creative and developmental aspects of their games. Apart from the previous example of Valve and Half Life, several other developers have opened their code to welcome modders. For example, Sins of a Solar Empire have also announced that they welcome modders. (Sins of a Solar Empire FAQ, n.d)

In some cases, mods even outlive both the game they are based on and the developer of that game. Looking Glass Productions, the creators of, among others, the game called “Thief: The Metal Ages” went out of business in the year 2000. However, individuals within the game community worked together to create an expansion to the game, with new characters, missions, items and all the things which are usually contained in similar expansions released by official developers. The expansion was released in 2005, with patches and updates continuing until 2007. Since the expansion requires a copy of the original “Thief: The Metal Ages” in order to play, it conforms to the rule of complementarity, and can therefore be assumed to have boosted sales of the original title.

4. Conclusions

This paper has shown that firms can increase profits by reducing control over the design and development of games through the financial rewards indirectly generated by modifications. However, the propositions to this conclusion are that the mods are assumed to be complementary and that the mods are not appropriated by competitors.
In addition, the reduced control over the developmental process is rewarded by potentially greater customer retention by means of the creative consumer trend.

A reduction of control over distribution channels and ownership can lead to increased profits based on the proposition that the key money making features of the game are maintained outside of the product itself and that these features are irreproducible.
This opens possibilities for the use of Peer-to-Peer network distribution for games, potentially saving money on conventional distribution methods and copy protection software.

Currently used business models that display control reductions offer viable alternatives to traditional models while still earning significant profits. While platform sales distribution offers control over licenses in circulation in exchange for reduced control over private use, subscription based payment systems offer greater control over personal use and ownership in exchange for a reduced control in distribution.
It should be noted that not all business models were examined in this study, and that viable business models likely exist which are not currently in use.

4.1 Limitations

Because there was no original research conducted to support this dissertation, the data was not ideal for the purposes it was made to serve, and more often than not, the sources found were not entirely as reliable as they should ideally have been.
Research into the subjects of control and of the difficulties of PC computer game development are few and far between. A large amount of what is assumed to be fact is in fact hearsay and unfounded speculation. While the lack of reliable resources posed

a limitation for this study, it offers great potential for further research and exploration.

The experience of the researcher must also be taken into account. As the first academic paper from this author, the approach, scale and focus were less than ideal to begin with, and, with greater experience, formulating and expressing arguments in a more convincing and unbiased manner would be easier.

Finally, the aim of the paper was to portray an unbiased representation of the research question, but the author discovered along the way that their view was not entirely as unbiased as they believed.

4.2 Recommendations for further Study

It has become clear that further study in the field of financial gains and their relationship to control are justifiable. This study barely scratches the surface in a field that is rife with contradictions, presumptions and conflicts. Considering how important a good knowledge base is for decision making, it is surprising how little material is available on the subject of control, consumer input and financial gain, not only in the context of computer games, but also in the wider context of the creative industries.

Through the research conducted for this study it became apparent that the focus of officially available resources on the topic of piracy are much more concerned with who pirates, how much or speculations about costs than they are with why, and what can be done to compete with it. It would be interesting to study the reasons for why people pirate, particularly in the context of computer games and to present theories and statistical evidence with which strategic decisions can be made.

It became apparent that financial control over computer games is something that bears further study. For example, the relationship between publishers and developers could be explored as well as the potential reduction in financial input requirements resulting from lower costs of distribution, legal fees, third party protective software and developmental fees.

It would be beneficial to study and quantify the reduction in market risk that comes from allowing and encouraging the existence of mods. Because popular mods are examples of community-desired changes and additions to existing games, they can also lay the groundwork for future product development. Because there is a higher

certainty that a game based on suggestions from past mods will be successful, less risk is associated with the creation of that game, and thus investment in such a game could likely yield higher returns. A study in the specific marketing related gains of an active modder community could present crucial knowledge to firms in the computer game industry.

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