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The Computer Game Industry

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Problem Description

The computer game industry has experienced a huge increase in active players and income during the last decade. The emergence of online-multiplayer games such as World of Warcraft and Counter-strike, as well as casual games on facebook etc. has huge impacts on the value chain in the industry.

The student shall:
- study the computer game industry and markets, regarding actors, value chains, ...
- study how different game technologies influence the choice of value chain
- study various revenue models

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Supervisor: Leif Arne Rønningen, ITEM

Abstract

This thesis presents an analysis of 184 of the best selling PC games from 1985 to 2009. Results show that 92% of the analyzed games support singleplayer game mode, and roughly 7% are massive multiplayer online games (MMOGs). The latter game type is represented by 100% role-playing games. The action and strategy genres are each represented as the primary game genre in around 1/3 of the games. Results indicate that the popularity of game genres vary with game platform (PC vs. consoles). Moreover, franchises, games with expansion(s) or in series, dominate the compiled best seller list.

Furthermore, this thesis contributes with case studies explaining the business models of three different games (World of Warcraft, Anarchy Online and FarmVille), created by three distinct game companies (Blizzard, Funcom and Zynga). The three business models are presented using the business model ontology defined by Osterwalder in his PhD dissertation. The product, customer relationship, infrastructure, and the various revenue models available to game publishers, are among the elements explained and studied in detail.

Preface

This thesis is written as a final contribution for my master's degree in Communication Technology, at the Norwegian University of Science and Technology (NTNU). It contains work done from January to June 2010.

First of all I would like to thank my supervisor, Harald Øverby, for ideas and comments during my work.

I would also like to thank my good friend, Petter Christie, for giving me valuable feedback and comments on the final script of this thesis. Furthermore, I would like to thank the boys at the office and my roommates, you know who you are, we had a blast!

To all my fellow master students: "We made it!"

This master thesis is dedicated to my parents, Anna Elisabeth and Øyvind, whose support has helped me through my education. Thank you!

Trondheim, June 7th, 2010

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Acronyms

AO Anarchy Online

B2B Business-to-Business

B2C Business-to-Consumer

CBC Customer Buying Cycle

CRM Customer Relationship Management

CS Counterstrike

DLC Downloadable Content

DRM Digital rights management

EA Electronic Arts

FPS First-person shooter

GOD Gaming On Demand

MMO Massive multiplayer online

MMOG Massive multiplayer online game

MMORPG Massive multiplayer online role playing game

PvE Player vs. Environment

PvP Player vs. Player

RPG Role playing game

RTS Real time strategy

TBS Turn-based strategy

TPS Third-person shooter

WoW World of Warcraft

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Introduction

The game industry has grown to become one of the largest global entertainment industries, generating billions of dollars in revenues every year and providing jobs to communities across the world [5]. Looking at the part of the game industry concerning the PC platform we find estimated game software revenues of over \$13 billion dollars (2009) [3]. This amount includes the various revenue models implemented by the PC game industry. The PC game industry is expected to continue its growth as the number of consumer PCs that are able to play games increase every year [3].

This thesis hopes to find common characteristics of successful games by analyzing some of the best selling retail games of our time. The best seller games will be categorized into game type, genres, revenue models, and whether they have an expansion or are part of a series. The goal is to find interesting results based on the analysis of these categories.

The game industry is like any other entertainment industry, it competes for people's leisure time. Thus, for a game company the movie and music industry are competitors just as any other game company. It is, without doubt, a tough market to enter. Today's game industry is associated with high risks and intense competition, with project budgets reaching the size of Hollywood movies. It is "hit" driven, meaning that a few percent of the games accounts for a significant portion of the total revenues in the business [4]. When successful, a game title can bring in as much as a billion dollars a year. A good example is Blizzard's MMORPG World of Warcraft which currently has over 11.5 million subscribers, and is still growing [8]. Studying the business plans of successful game titles may provide valuable information, thus the business model of WoW will be studied in detail.

Adopting new business models are risky, since new business models make the forecasting of revenues and profitability inherently uncertain and volatile [4]. Thus, game companies usually stick to well-established revenue models. An exception is the sci-fi MMORPG, Anarchy Online, created by the Norwegian developer Funcom. Funcom has introduced several innovative revenue models to their game, making their business model an interesting study in this thesis.

Moreover, this thesis aims on explaining and discussing the business model of one highly successful social game, named FarmVille. Games, integrated into social platforms, have had an immense growth lately as the usage of social platforms have "exploded". The goal is to study how the creators of FarmVille monetize their relatively simple game.

1.1 Contribution

A detailed study and analysis of 184 of the best selling games of our time is performed. The games are categorized into various categories. Results, related to the overall characteristics, are presented and discussed.

Furthermore, a thoroughly description of the business model framework

used in the case studies is presented, with examples related to the game industry. Lastly, this thesis presents a detailed study of the following business models:

World of Warcraft, the #1 subscription-based MMO in the world with over 12 million subscribers, and annual revenue exceeding $1 billion.

Anarchy Online, a sci-fi MMORPG unafraid to explore new innovative revenue models, such as the advertising and micro-transaction model.

FarmVille, a browser based MMOG integrated into social platforms such as Facebook and MySpace. Farmville's revenue is based on the sales of virtual goods.

1.2 Thesis Scope and Limitations

This thesis will mainly focus on games for the PC platform as this is the largest single gaming platform [49]. Additionally, more revenue models are available to PC game publishers/developers. The reader should know that there is a great difference between which games that are popular on the various platforms, and games can be platform dependent. Moreover, games to the various console platforms outsell the PC platform by more than 12 times because of the significant amount of console platforms [5]. However, when including subscription fees and other revenues generated by the PC game industry the facts are different.

Business model elements related to financial aspects, including income and cost structure, are hard to find information about. The game companies will not give out numbers. Any estimated numbers would be pure speculative, I have therefore restrained myself from "guesstimating".

To limit the size of the thesis two of the business models, AO and FarmVille, are presented in lesser detail than the third, World of Warcraft. AO has much in common with WoW, and FarmVille has a less complex business plan.

1.3   Outline

This work is outlined as follows:

Chapter 2 provides the necessary background information about the game industry and the different game genres available on the market.

Chapter 3 explains how the best seller PC game list used for later study was populated. It further explains how information about the games was gathered, and various categorization criteria. The complete list of games is in the Appendix.

Chapter 4 analyze the best seller PC game list introduced in Chapter 3. Various distributions and characteristics are discussed.

Chapter 5 explains the business model ontology created by Alexander Osterwalder used as the fundament in the case studies presented later. Examples related to the game industry are given. Moreover, a selection of elements of special importance to the scope of this thesis have been discussed (e.g. revenue models).

Chapter 6 presents a detailed case study of the business model of the highly successful MMORPG World of Warcraft.

Chapter 7 presents two smaller case studies. The first part explains the main differences between the sci-fi MMORPG Anarchy Online and World of Warcraft, while the second part describes the business model of the browser based social game FarmVille.

Chapter 8 summarizes the most important findings, as well as suggesting future work.

2

Background

This chapter starts off by presenting the history of the gaming industry, from the beginning of the late 1950s up until present day. A handful of successful game titles and game studios are presented to give the reader a better perspective of the game industry, and its evolution. I have included the role of the consoles in the history, even though it is outside the scope of this thesis, because consoles have greatly influenced the forming of the game industry, and is today playing a central role in the game market. Moreover, this chapter describes the different game genres and types. The game industry value chain is explained, beginning with the idea of a game concept, and ending with the release of the complete game. Lastly, the concept of the demand curve is explained.

2.1 History of the Game Industry

The history of the game industry is relatively short. The creation of this new entertainment medium started in the early 1950's when the first video games were developed at different academic institutions in the U.S.

The credit for designing and implementing the first computer game ever is given to William Higinbotham with his Tennis for Two game, showcased at an exhibit in 1958 and 1959 [46]. However, the game failed to show the potential of a future game industry, mainly because it was shown to a limited group of people, and these were not "the right" people [74].

The first computer game to inspire the gaming industry was Spacewar by Steve Russell, a student at the Massachusetts Institute of Technology (MIT). Russell spent roughly 200 hours writing Spacewars in 1961, and the game was further expanded by three other students at MIT in 1962 [74]. Spacewars was a two player game were each player maneuvered a spaceship while trying to shoot torpedoes at the other's ship. Even though the game became popular at MIT and other institutions, and was included in several PDP computers as a diagnostic tool, its developers never earned anything off it (except some job offers) as Spacewars was never commercialized [61].

The creation of Tennis for Two and Spacewar were innovative, but it wasn't before Ralph H. Baer designed the world's first home video game system (gaming console) in 1972 that the masses could enjoy video games. Baer's console was met with limited success due to its high price, and for being clunky and not challenging enough [74] [64]. The commercial break-through came with Atari's electronic arcade game, PONG, the same year. Atari spent $400 to manufacture a PONG machine, while selling it for $1200 to bars, stores, malls and other public spaces/businesses. PONG owners started to see an average income of $200 per week from the machine, $150 more than the weekly income from popular pinball machines at that time [23]. With the success of the PONG machine Atari went further and ported the PONG to the home in 1975 [95]. Initially Atari had problems financing the

console, no stores wanted to buy it. But after negotiations with Sears they got an order of 150,000 units [12]. The sales numbers exploded and Atari sold for more than $40 million during the first Christmas season [64]. Atari continued to produce a string of hit video games for the new market.

Another company, Taito based in Japan, sold a game machine called Space Invaders (1977) which was so popular that it led to a shortage of 100-yen coins in Japan. Atari noticed this immense success and bought the right to sell Space Invaders as a game to Atari's (brown box) home console. Atari revenues sky-rocketed and it became the fastest growing company in American history [12]. The bosses at Warner Communications (now Time Warner) noticed and offered a golden deal ($28 million) for the company which, at that time, was a huge sum. Nolan Bushnell (founder of Atari) accepted the offer, but he was soon to regret his decision as he was forced to leave due to a dispute about Atari's future directions. Not long after, several engineers left Atari because they felt they were not compensated enough for their work. They went on to create Activision, the first third party video game developer and today one of the largest (merged with Vivendi Games in 2008) with a net revenue of $2.9 billion in 2008 [7]. Not long after Activision was established, Bushnell and his earlier colleagues watched as Warner and other developers trashed the market with poor quality games which, together with the introduction of home computers, led to a collapse in the console market from 1982-1984 [12]. Atari's stock dropped 32% in a single day (December 7, 1982) [64]. The Japanese company Nintendo weathered the storm and took over most of the world's home video game market with the Nintendo Entertainment System (released in 1985 in the US) and the GameBoy (released simultanously in Japan and US in 1989).

Nintendo was first to require a license fee (game-license-fee business model) for every game sold to their platforms. Other companies like Sega, Sony (Playstation) and Microsoft (Xbox) later adopted the same model for their consoles. The operating income of Nintendo in 2008 was at roughly $4,9 billion, with their oldest console, the NES, having sold more than 61.9 million units worldwide since its launch (as of March 31, 2008) [69].

Even though the market for consoles exploded during the 1970's, computer games were still played by relatively few during the 1970's as computers were too expensive to buy for most people. However, some games were developed, among them Adventure (1976), a popular text based game. It became the first interactive computer adventure game. A ported, modified and extended version of Adventure was in fact included in the first IBM PC machines. Adventure was sometimes used as a strenuous test for new hardware being developed, as the game would exercise a broad range of programming functions, similar to Spacewars which was included as diagnostic tool in PDP-1 machines [76].

The commercial PC game industry boomed when the Altair 8800, the Apple I and II, and the Commodore 64 were introduced to the masses during the late 1970's and early 1980's [23]. People started buying PCs as they could be used for educational and business purposes, not solely for gaming. Consoles were considered a "kid's toy" by parents, while computers were considered to be a good as they could help their kids do their homework. For this reason many students and teenagers got a new advanced toy to play with and some started writing computer games as a hobby. A few even became rich from their dorm room [12].

The development within digital technology has played an important part in shaping the past and present PC games. New technologies and inventions, such as the CD-rom technology and multicore processors, frequently enter the market creating new possibilities for PC game developers. Almost each year we see an increase in the amount of instructions per second a processor can handle, graphic cards become faster and storage capacity increases. Game developers utilize this new technology to create games which are even more advanced and complex than their predecessors.

Electronic Arts (EA), one of today's largest game developer and publisher, started developing home computer games during the late 1980s. The Bard's Tale, a fantasy role-playing game published in 1985, was one of EA's (and Interplay Production's) first successful titles [74] [6]. Today, EA owns famous development studios all over the world which have developed games like the

massive hit, and all-time best selling series, "The Sims", and several popular sports franchises like Madden NFL Football. EA provided the gaming market with over 167 titles in 2009, ranging from PC and console games to games for wireless devices [4].

During the 1980s the first massive (massive in 1980s terms) multiplayer online games (MMOGs) were developed. The honor of being the first commercial multiplayer online game is often given to Islands of Kesmai. It was launched on CompuServe in 1985. The game itself was freely available for CompuServe costumers, however in order to play you had to pay an hourly rate (starting at $6) to access CompuServe's online service [53]. Other competing MMOGs, like GEnie's GemStone and Quantum Link's Club Caribe, had the same hourly-rate revenue model. Jessica Mulligan, a previous GEnie games product manager, told Raph Koster (a game designer) that "On GEnie during 1991, our average MMOG customer spent $156 per month, the equivalent of 32 hours at $3 per hour to play. However, the hard core players averaged three times that and accounted for nearly 70% of the total revenue. The top 0.5% had truly astronomical bills, well over $1,000 per month" [53].

The first graphical MMORPG was Neverwinter Nights (NWN), created by Stormfront Studios [62]. It launched on America Online (AOL) in 1991, the same year as the World Wide Web was invented. NWN also marked the first appearance of online clans and player versus player (PVP) combat in multiplayer RPGs [92]. Originally AOL adopted the same hourly-rate revenue model as CompuServe, however as the years past and Internet connection cost dropped, AOL decided to include the game into its flat rate subscription fee. By 1997, NWN membership had grown to 115,000 players, but despite its success AOL shut the game down the same year. It is believed that AOL wanted to change the business model back to a pay-to-play model, but three companies owning copyrights to the game wanted otherwise, the dispute ended with the game being taken offline, never to return again [63].

In 1993, the developer of Doom used the Internet to distribute the shareware version of the game [23]. The first missions were free, but in order to unlock the later missions payment was required. We can say that Doom

opened the digital way of game distribution. Today we have several on-line distribution channels, for example Steam, Direct 2 Download and EA's digital shop.

During the mid-1990s several companies were established to provide PC game players with an online PC gaming service and a community, in other words, multiplayer gaming became commercialized. By offering game servers and matchmaking services (an easy way for players to find and play each other) these new ventures became very popular among gamers, with the most successful communities having millions of members [96]. MPlayer and Total Entertainment Network (TEN) were two of the companies providing multiplayer gaming for the most popular games at that time, like Quake and Command & Conquer. These services were initially offered for a monthly or yearly subscription fee. However, after the release of Blizzard Entertainment's free battle.net matchmaking service (first integrated in the action-RPG game Diablo) most online pc gaming services converted their business model to a pure advertising-based model or a combination of advertising- and subscription-based (paying users received extra benefits/services) model [2]. Steam and GameSpy are two providers of third-party multiplayer services today. Blizzard has continued to develop their own multiplayer service, battle.net, and a brand new version supposed to integrate all Blizzard's games is to be launched together with Starcraft 2.

The MMORPG genre became well-established during the late 1990s, and few knew how this genre would explode in the future. Games like Ultima Online (1997) and Everquest (1999) started the "trend" by having hundreds of thousands of subscribers at their peak. Today, the MMORPG World of Warcraft has well over 11.5 million subscribers, all paying some sort of access fee (depending on location) [8]. Second Life (2003), a social MMO, have several hundred thousand players who live their virtual life in an online virtual world, buying clothes and houses in-game, watching billboards with advertisements and rock bands playing live on virtual stages. Real cash is traded for game currency which can be spent on virtual items of all sorts, players can even establish their own virtual businesses and earn in-game cash

which can be exchanged to real cash [54].

Video games became a multibillion dollar business after just a couple of decades. PC game hits like Diablo 2 (2000) and The Sims (2000) sold millions of copies during their first week after release, cashing in hundreds of millions of dollars. Game franchises such as Activision's Call of Duty series have generated billions of dollars in sales revenues [29].

2.2 The PC Gaming Industry

The PC is the largest single platform for games [49]. PG gaming software sales generated a revenue of staggering $13.1 billion during 2009, up 3% from 2008, according to the 2009 PCGA Horizons report [3]. The revenue reported includes results from retail sales, subscription fees, micro-transactional fees, advertising and digital distribution revenue.

During the last ten years, the growth of the gaming industry as a whole (PC and console) has been more than 250 percent in retail sales alone. On top of that, additional sources of revenue including subscriptions and digital distribution must be considered [42]. Despite high growth during later years, the video game software unit sales experienced a decline of 8 percent (in 2009) across the world's three largest game markets; United States, United Kingdom and Japan [43].

2.3 Game Genres

As with movies and music, computer games are traditionally divided into different genres. This is done in order to help players browse the various games out there when they are to buy or rent one. A game typically belongs to one primary genre classified by type of gameplay and mechanics, but it is common that games incorporate elements belonging to other genres as well. A game could for instance be classified as an action game, but also feature

role-playing elements, e.g. by supporting character customization. Diablo is a good example of a game which incorporates elements from the RPG genre (by giving the player the ability to choose among different skill paths), while still being characterized as a hack-and-slash action game.

Since there is no standardized way of categorizing games into genres, and further into sub-genres, the genres presented in this thesis are partly based on genres used by various digital distribution sites and through own experience.

2.3.1 Action

The action genre is the most ambiguous genre, as a variety of games belong in this genre. *First-person shooter (FPS)* is known to be the most popular sub-genre. *Third-person shooters (TPS)* are mostly the same as FPSs, the only difference being the view perspective, i.e. in a FPS game the player see through the eyes of the character, while in a TPS game the player sees the character from an external view. Shooters often have a single player and a multiplayer feature. In single player mode the player goes through a defined story line (campaign), often with storytelling clips between each mission. The player completes missions with a character by killing enemies and passing through other kinds of obstacles, and the amount of resistance encountered can be adjusted with difficulty settings. As the player progresses through the missions new weapons and abilities are unlocked making the character stronger as the missions become more challenging. Multiplayer matches, on the other hand, are often played on defined maps with predefined rule sets. *Platformer* games are also part of the action genre, these games are often characterized by the way the player controls his character by running and jumping in a side-scrolling playing environment. The early Super Mario games have contributed in defining platformers; here Mario's goal is often to save the princess by completing several 2D levels.

Games in the Call of Duty series are typical FPS games where the player controls different characters through a campaign in single player, while killing other players in multiplayer mode. The game is launched with different

multiplayer match types, ranging from "free-for-all" (no teams) to "capture the flag" (team based match, where each team tries to control strategically placed flags). This series is especially popular on consoles, as can be seen by UK retail sales figures for the latest Call of Duty game, Modern Warfare 2, where around 97% of initial sales were for consoles [50].

Another huge FPS franchise is Counterstrike (CS). Counterstrike started out as a third party modification (mod) to a FPS known as Half-Life. The mod became such a success that Valve, the owner of Half-Life, commercialized the mod and later created a stand-alone game based on it. The Counterstrike series is mainly designed for multiplayer play, but it is possibly to play single player by adding scripted bots (AI controlled players). In the moment of writing (March 15th, 2010) over 180,000 plays one of the games in the Counterstrike series through the official servers at Valve [85].

2.3.2   Adventure

An adventure game takes the player through an interactive story. The first games in this genre, Adventure being one of them, presented the story, the game environment and the player's properties through text. In recent years adventure games has gone from presenting the story by switching still pictures to a more animation-based approach. Today, adventure games use a variety of media, for instance animations, music, speech, dialogs, text and sound effects are all present in modern adventure games. The overall goal in an adventure game is to complete a journey. The player usually collect objects found throughout the journey, sometimes using these objects to solve situations preventing him from continuing. Other situations require the player to use his mind, or a skill, to solve a problem. An example would be a puzzle which needs to be solved in order for the player to continue.

2.3.3 Role Playing Games (RPG)

The RPG genre has gathered most of its inspiration from fantasy books and board games such as "Dungeons & Dragons". RPG video games are about controlling one or more characters, evolving and upgrading them as one play. Before the player enters his journey he is often presented with different classes for him to choose from. The classes are specialized in different types of combat and with different kinds of abilities, ranging from melee warriors to spellcasters. As a character gains experience, either by killing enemies or completing quests, new strengths and abilities are made available. New "points" are often given after specified experience caps are reached, and these points are distributed on character stats (basic measurements that determine how effective your character is at combat, defense, and virtual-life in general [13]) and abilities chosen by the player, making the character stronger and customized. The customization factor is an important part of RPGs as players feel they are creating and developing a unique character, becoming attached to it. [This is one reason for the RPG genre being suitable as MMOs, and the most popular genre of MMOs.] In most RPGs one can trade, buy and sell things (weapons, armors, potions) obtained during exploration and combat. MMORPGs can further expand trading by implementing [e.g.] auction houses for player to player trade.

2.3.4 Sport

The sports genre covers all games that simulate the sporting experience [74]. Examples of popular franchises are the FIFA series and the Madden Football NFL series, each series having generated revenues exceeding $2 billion [68, 51].

2.3.5 Strategy

Strategy games include more than war games (Command & Conquer), this thesis classifies for instance building and management games (Sim City), and simulation games (The Sims) as strategy games.

In war-based strategy games the player needs to out-think his opponent. There are two main forms of gameplay: real-time and turn-based. Real time strategy games (RTS) are more action based, the player needs to think and act fast as time matters and all players play simultaneously. While in turn based strategy games players can spend more time thinking and planning, and the pressure is somewhat lighter as players take turns when playing. Most strategy games are concentrated around the concept of gathering resources to construct buildings, perform research and train units. A player is often given the choice of different civilizations before the game starts, each civilization having its own unique buildings and units. Each unit type has different abilities, strengths and weaknesses. The game winner is the player(s) who utilizes these units in a good way when attacking and conquering enemies.

War-based strategy games are very competitive in nature and are therefore suitable for multiplayer games and tournaments where people play with or against each other. Starcraft (1998), developed by Blizzard Entertainment, is a RTS game which is still immensely popular in South-Korea even 10 years after its release. Several TV-channels broadcast Starcraft games 24/7 with the best players being superstars and earning six figures a year [28].

2.4 Massive Multiplayer Online Games (MMOs)

Massive multiplayer online games are not that different from multiplayer games. The word "massive" implies that the game supports many players simultaneously. There is no exact number of players needed to be logged on simultaneously to be defined as a MMO game, but most MMOs are capable

of supporting hundreds or thousands of players simultaneously over the Internet. In order to limit server cost and bandwidth the game host can choose to divide players into different servers, each server hosting its own player population inside one persistent virtual world. "Persistent" means that the game environment continues to exist even when a user exits the world, making user-made changes somewhat permanent. Different instances of the world can further be divided between servers. An important part of why MMOGs are attractive is because of the social elements in online gaming. Players can form groups to cooperate on quests, join clans, and communicate in-game. Further, players are motivated to play as much as possible to become stronger than other players. Most users get real-life personal satisfaction by "showing of" their in-game accomplishments.

World of Warcraft (2004), by Blizzard Entertainment, is today the most widely known and popular MMORPG. Several expansions have been released, all selling millions of copies making World of Warcraft one of the most profitable franchises in history.

MMO browser games such as Evony and Habbo are also big business. Evony is a "free-to-play" MMORTS game with over ten million registered users where revenues are generated by offering items and other benefits in-game for real money [22]. Habbo is a social network game, reaching kids with 90% of their over 160 million registered users being 13-18 years old [82]. Revenues are generated by offering users in-game credits for real money which can be used to buy premium services. Another source of income is in-game advertising.

2.5   Social Games

Social games are characterized as browser games played on social platforms such as Facebook and MySpace, popular games include PopCap's Bejeweled Blitz and Zynga's FarmVille. Social gaming is a more casual form of gaming where social interactions between gamers are emphasized. Since social

games are built on top of social platforms there are various possibilities to interact with others, keeping friends and others updated of your in-game actions through wall posts, messages and other channels. Hardcore gamers planning to play social games all day will probably find out that they lack the depth that most hardcore, more traditional games, provide. However, the possibility to play a game for shorter periods of time together with other people suits many, and thereby attracts casual gamers.

There are various types of social games, and just as with traditional games they can be categorized into genres. Bejeweled Blitz, currently having 10.6 million active users on Facebook, is a puzzle game while FarmVille with its roughly 75 million users is a simulation game (numbers as of May 2010, retrieved from Facebook). The business model of FarmVille will be studied in Chapt. 7.2.

A study done by Information Solutions Group for PopCap shows that social gamers are predominated (55%) by females in US and UK, contrary to prevailing stereotypes [40]. The study goes further on indicating that there are over 100 million social gamers in America and United Kingdom alone. "While still in its infancy compared to the traditional video game industry, the social games sector represents a huge opportunity to reach hundreds of millions of consumers who historically have not played video games. The social games sector is projected by industry analysts and researchers to generate revenues of more than US$1 billion in 2010", states a press release from PopCap [73]. The main source of income comes from sales of virtual goods, but in-game advertising can also generate revenues [89]. In short, there is without doubt a lot of money in social gaming, and this sector will probably continue to grow in the future [75].

2.6 The Traditional Value Chain

The traditional video game value chain is illustrated in figure 2.1. Different parts of the value chain may exhibit characteristics of different configurations.

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For example, development may resemble a value shop, and distribution a value network. Value shops and value networks are further explained in Chapt. 5.

Each component in Figure 2.1 is explained below.
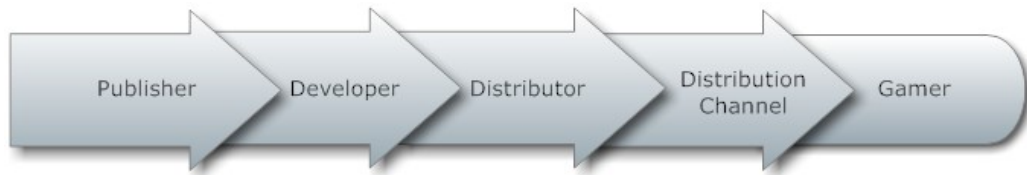
Figure 2.1: The Traditional Video Game Value Chain.

2.6.1 Publisher

In the early days of the game industry development costs were minimal. Games were usually developed by small teams of programmers and artists, and could sell hundreds of thousands of copies each, making them very profitable. The development phase was shorter than nowadays, many games were developed in just a few months, enabling developers to launch several titles each year. Publishers were able to be generous with benefits, such as royalties on the games sold. Many of today's biggest game publishers were established from this economic climate, such as Activision and Electronic Arts (EA) [94].

As time pass, technology improves, and games become more expensive to produce. Today, the biggest game titles have budgets similar to Hollywood movies. The games are complex involving hundreds of people from project startup to release, thus production costs reach millions of dollars and release dates are hard to estimate. Big titles require several years to develop, increasing the strain on budgets. The biggest publishers today often acquire development firms, rather than outsourcing the development to external studios.

Publishers are behind the startup of new game projects, by finding and acquiring licenses the game may utilize. Activision's Spider-Man franchise is a good example of a game which probably required a license to be obtained from the intellectual property owner in order to use the "Spiderman" name and other intellectual properties related to the Hollywood movie. Furthermore, publishers find development teams for each game project, either using internal development studios or outsourcing the development to external development firms. If external development firms are used they often receive payments as periodic advances on royalties. The largest publishers are also taking responsibility for the manufacturing and marketing of their games.

2.6.2 Developer

Developers are responsible for the development of games, working on orders from publishers. A development studio consists of a team of programmers and various artists, such as designers and sound specialists. Today's trend show that developer firms are often acquired and incorporated into large publishers, due to the increasing size of development teams and development costs.

There is still a market for smaller games which feeds indie game developers. They use the Internet rather than traditional retail channels to reach an audience, keeping distribution costs as low as possible, thus increasing the profit margin.

2.6.3 Distributor

Large publishers distribute their games themselves through subsidiaries, while smaller publishers/developers outsource the distribution phase to specialized distributors. Digital distribution is a way to distribute games online, either through the publisher's online network or through third party digital distributors, such as Steam and Direct2Drive.

In countries were foreign companies are restricted from operating, such as in China, the game publisher may sell a license to a local distributor (game operator) which becomes responsible for distributing and, if needed, operating the game within that country.

2.6.4   Distribution Channels

The traditional way of distributing video games has been through retail store sales. However, during the later years game publishers have found new ways of distributing their games, reducing the need for manufacturing plants and cutting costs such as shipping and retail store marketing.

During 2007, $1.922 billion was generated through digital channels, while physical sales accounted for $3.267 billion in sales revenues worldwide [49]. The steady growth of broadband penetration and speed has opened the door for online distribution and game streaming. Today, the difference between digital and physical sales are probably less than what it was in 2007 because of larger broadband coverage, and publishers' focus on digital sales.

Physical Distribution

Physical distribution of games in retail stores and specialized gamer shops is today the common way for game publishers to reach their customers. In fact, before broadband became common property, the only way to distribute games was using the retail channel. Retail games are also sold by online stores such as Amazon, which offer retail games to diversify their portfolio. Retail games often include a manual together with the game itself stored on a CD, DVD or BluRay. Many gamers are willing to spend the time it takes to go and buy the game in store, even taking the day off work on release day, as they value the box art and the hardcopy of the game.

Shelves with games have the advantage of getting noticed by in-store shoppers. A Canadian study documents that in-store shoppers may be lured to

buy games on impulse for many reasons, the game packaging being the most important motivator. Game packaging ought to be creative and descriptive, as it is a more influential form of advertising than commercials, online ads or trailers. In-store demonstrations, and a clerk's or another shopper's recommendations are also factors which may trigger impulse purchases. In fact, the study shows that only 15 per cent of impulse purchases were made online. Further, it reveals that "manufacturers looking to capitalize on impulse purchases should have a strong focus on packaging while retailers should focus on merchandizing" [41].

NPD Group studies confirm that purchases in physical form are still the most usual form of buying PC games [38].

Digital Distribution

Obviously, in order to buy a game in a store one need to go there, and time is money! But not only does it take time to get to and from the store, it cost money in the form of transportation, either for fuel or public transportation. Money can be saved by downloading games online through digital distributors like Steam and Direct2Drive. It is easy; a costumer registers for an account with a digital distributor offering the wanted game, and then pays to download it.

Digital games are never sold out, as can happen with physical games in stores. Furthermore, several distributors provide their consumers with the ability to download games ahead of release dates. Doing so, the games are ready to be activated and played at launch time. Moreover, consumers do not need to worry about losing or scratching their discs, or losing their serial codes, as owned digital copies can be re-downloaded.

Today, we see that the game industry follows the same steps as the music industry towards digital distribution. This is not strange since digital distribution is cheaper compared to physical distribution. The risk a publisher takes to get a game online is nothing compared to physical distribution

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costs such as manufacturing, warehouse upkeep and shipping. This leads to a lower barrier of entry, which is especially important for small development studios. Moreover, online distribution eliminates physical returns, which cost money to process. By digitalizing distribution game publishers get control of the rental market, and piracy prevention is made easier by requiring online verification, both significantly increasing publishers' revenues. Additionally, digital distribution means the death of the second hand market, where publishers see no returns.

On the consumer side it is easier to download compared to buying in store as long as one have high speed broadband access. Digital games should also end up cheaper than physical games as one don't have to buy from a middleman, i.e. retail store, this saves money since there is no need to stock games on shelves or pay wage to shop assistants.

Steam, the number one online distributor today, was developed by Valve using the cash from their hit games. Gabe Newell, the CEO of Valve in Kirkland, Washington, estimated in 2002 that "Valve can realize a gross profit of $30 on a $50 title by releasing a game using Steam, compared with a gross profit of $7.50 by releasing a title through the retail channel with a game publisher" [81]. Also, Steam is able to collect user statistics which are of great value to game developers and other third parties. Sample statistics can be seen in figure 2.2.

We may see that ISPs can ultimately interfere with this type of distribution, wanting a piece of the revenue pie. For instance, ISPs may give their costumers a set amount of GBs that can be downloaded over a period of a month, if this limit is reached and exceeded, they charge extra per GB. This will end up hurting digital distribution, making it less attractive. Additionally, we may see that cable companies want their cut of the pie as well, increasing costumers bandwidth cost.

Steam Hardware Survey: March 2010

Each month, Steam collects data about what kinds of computer hardware our customers are using. The survey is incredibly helpful for us as game developers in that it ensures that we're making good decisions about what kinds of technology investments to make. Making these survey results public also allows people to compare their own current hardware setup to that of the community as a whole.

Video card usage by manufacturer
MORE INFO

NVIDIA: 61.88 %   ATI: 30.92 %

ATI 30.92 %
INTEL 5.04 %
OTHER 2.16 %

NVIDIA 61.88 %

DX10/11 Systems (Vista/Win7 + DX10/11 GPU)
MORE INFO

53.18% are DX10, 3.29% are DX11
FEBRUARY, 2009 - FEBRUARY, 2010

3.29 %
53.18 %
21.55 %
12.64 %
4.24 %
5.1 %

- DX11 GPU on Vista/Win7
- DX10 GPU on Vista/Win7
- DX10/DX11 GPU on XP
- DX9 SM 2b & 3.0
- DX9 SM 2 GPU
- DX8 GPU and below

Processor usage by manufacturer
MORE INFO

Intel: 69.48 %   AMD: 30.51 %

AMD 30.51 %
INTEL 69.48 %

Number of CPUs per PC
MORE INFO

4 CPU adoption trend: +16.56% (18 mos)
SEPTEMBER, 2008 - FEBRUARY, 2010

25.62 %
55.37 %
17.97 %

- 1 CPU
- 2 CPUS
- 4 CPUS

Figure 2.2: Steam Hardware Statistics for March 2010 [85].

Gaming On Demand

Spotify, launched in 2008, was the first software providing music on demand. Gaming on demand (GOD) has yet to enter the market. A relatively new established business called OnLive is in the phase of launching the world's first GOD service [71]. Costumers pay a monthly subscription fee to access games provided by the OnLive service. By using cloud computing, rather than "expensive" local computing, even a low-end PC connected to broadband Internet can stream the latest high-end games. The game industry may be revolutionized if OnLive and followers become successful, as high-end PCs

and consoles may become obsolete for gaming.

Browser Gaming

Browser gaming is a form of gaming on demand. A browser game is played directly in the browser window, using for instance the java or flash technology. The game itself runs on one or more servers which keep logs of every player's action. Users allow a relatively small client software to run locally on their computers. The client connect to the game server, display the game, and record the user's inputs. As any client software can contain malware, such as Trojan horses, one need to trust the source completely before allowing the client to be loaded and launched.

2.6.5   End User

The last component of the video game value chain is the customer which ultimately buys the game.

2.7   Demand Curve

In a competitive market the quantity of a product demanded changes when price changes. Price elasticity tells us how sensitive the quantity variable is to changes in the price variable. The price elasticity of demand in the game industry is not known, but I assume the demand is elastic, as customers have many options (games) to switch to since competition is high. Elastic means that a relatively small change in price gives a relatively large change in quantity demanded. Since I do not know the demand function (f[price] = g[quantity]) of games, I will use the classic demand curve to illustrate concepts in this thesis.

A demand curve illustrates the relationship between price and demand graphically, with price on the vertical axis and quantity on the horizontal

axis. The classic demand curve slopes downward from left to right, reflecting incremental changes of higher quantity demanded at lower prices, satisfying the general rule of demand, referred to as the law of demand: "all else being equal (known as the concept of ceteris paribus), quantity demanded of a good rises as price decreases". Figure 2.3 satisfies these rules, we can see that at price=pQ (<pP) more quantity is demanded (qQ>qP) than at price=pP.
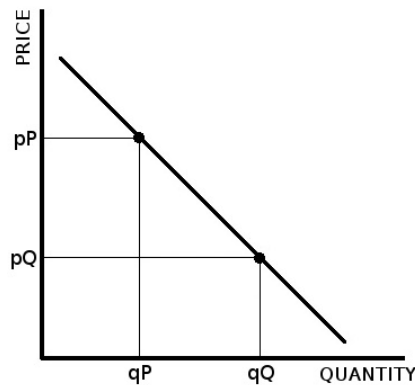
Figure 2.3: The Classic Demand Curve.

The area restricted by the price and corresponding quantity is the total revenue (price multiplied by quantity).

Changes in the market situation, other than changes in the price determinant of demand, cause the demand curve to shift. The demand curve may shift to left, decreasing quantity at a fixed price, or right, increasing the quantity sold at the fixed price. For example, a positive media review may shift the demand of a game to the right, illustrated in Figure 2.4. The game publisher can chose to keep the price constant at pR, leading to an increase (qA-qR) in demand, or increase the price to pB, leaving the quantity demanded unchanged. The revenues will either way increase, as shown by the new areas in the figure. The figure exaggerate the shift intentionally to better clarify the consequences of a shift.

The demand curve will be used in this thesis to illustrate changes to the demand of a game.
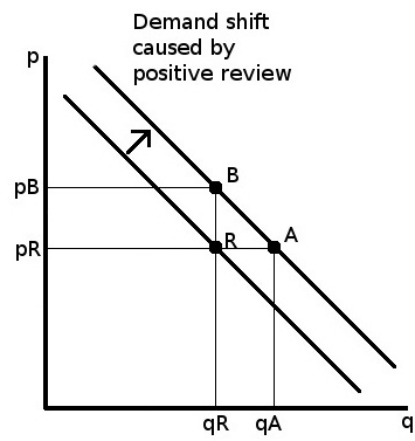
Figure 2.4: Demand Curve Shift.

3

All-time Best Selling PC Games

This chapter describes how the best seller PC game list, used for later analysis, was populated. It further explains the methods used when categorizing the games. Lastly, a summary of the game list is presented. The complete compiled list can be found in the Appendix.

The games listed are among the best selling PC games of all time. The list is objective as games are gathered purely based on their sales numbers.

3.1 Populating the PC Game List

The PC game list has been populated by gathering information from online best seller lists offered by Edge-Online, IGN, Listal, NPD Group, VGChartz, Wikipedia (sources thoroughly validated), and from official press releases

provided by large publishers, such as EA and Activision Blizzard [67, 45, 80, 56, 88, 93].

The list is incomplete because it is impossible to obtain results of sales from all PC games. Sales numbers are often kept confidential by game publishers and developers. I have been in contact with NPD Group, a leading provider of market research information. NPD Group provides frequent reports about retail sales of PC games through point-of-sale and consumer panel market research, however their reports are highly priced, we are talking about prices ranging from $3000-$20000 [44]. This price-range is far over the budget of this thesis. The game list is therefore populated by gathering information from several free sources in order to get the broadest coverage possible. The list has been populated by concatenating various best seller lists from different and sometimes overlapping periods of time, thus some years are more represented than others.

It should be mentioned that digital sales through third-party channels are rarely accounted for when total sales are reported. For this reasons the list of games may fail to mention big sellers which are only available through digital download. Further, the majority of the games listed are bestsellers in the U.S. market because U.S. sources were used. I assume that the U.S. and the European game market have the same characteristics. Despite the list's weaknesses, I believe the games contained in the list provides us with good characteristics of the best selling, and most influential western PC games of our time.

Best seller lists often contain several compilations and expansions. I removed these entries from the list of games to avoid getting results where games with several compilations and expansions are biased. Besides, compilations are often bundles of games which are already represented in the list. The same counts for expansions as they are subordinates of games already represented. Stand-alone expansions are rarely developed, infering that one needs to own the original game to play the expansion.

It should also be noted that a few games from the 1990s were excluded

due to problems finding sufficient information about them.

3.2 Categorizing the Games

Information about each game has been gathered through the reading of articles and reviews, retrieval of information from publishers, developers and official game sites, and from my own experience as a gamer.

Listed release dates may vary depending on location.

3.2.1 Game Types

Three different types of game modes are specified; single-player, multiplayer and massive multiplayer online (MMO). A single-player game expects inputs from only one player throughout the entire gaming session, while multiplayer games require inputs from at least two players. Games may be listed supporting multiplayer even though they do not support network play, in these cases two or more players can play together on the same computer (kind of like console play with several controllers), either by assigning each player to an own area of the keyboard, or by taking turns where each player controls his own character. Massive multiplayer online games, explained in section 2.4, are basically online multiplayer games supporting a large load of players.

A game can support one or a combination of game types. Games supporting several types may have a primary mode for which it is designed for. Several games, among them the Battlefield and the Counter-Strike series, focus mainly on multiplayer capabilities; however by supporting computer controlled opponents (also known as A.I.) single-player matches can take place. Supporting both single-player and multiplayer modes adds more value to a game and is therefore an important sales factor.

3.2.2 Game Genres

The games are classified after their primary genre (indicated by an asterix (*), in the game list, if the game has components from more than one genre) which in some cases is ambiguous, for instance an adventure game can have an action oriented gameplay. To solve these situations I have studied the respective game in greater detail, studying the game's mechanics and purpose, and concluded with a main genre thereafter. Tomb Raider is a good example of a game fitting both the adventure and the action genre (even puzzle). By killing enemies and solving puzzles the game character (Lara Croft) advances on her adventure. Since the main purpose of Tomb Raider is to engage the player in an adventure I characterize it primary as an adventure genre. Action and puzzle elements are present to vary the gameplay, and are therefore sub genres.

The range of the sport and strategy genre is widened to limit the total number of genres. The sport genre for example incorporates racing, driving, hunting and flight simulator games. These are all games which relate to sports in a way, but could have been placed in their own genres in other circumstances.

3.2.3 Revenue Models

Obviously, since this is a retail sale list all games were retail products at the time of release, implying that no game in this list was free on launch date. However, many of the list's older games can now be downloaded for free, some promoting the newer games in the series. An example is Hidden & Dangerous, it is a game which was made freely available before the launch of Hidden & Dangerous 2 to promote the latter game.

Games may have additional forms of generating income before and after retail sale. A game with hardcoded in-game advertisements may receive funds before launch date, lowering the risk of developing and publishing the game. Further, it may receive additional funds after release depending on

success. While games incorporating dynamic in-game advertising, where ad-campaigns can change frequently after launch (requires online fetching of advertisements), generate a flow of income depending on the game's popularity, often measured as exposures of advertisements in-game (requires statistics to be gathered). I have sent out e-mails, requesting information about games containing in-game advertisements, to several leading in-game advertising agencies, among them Massive and IGA, but no answer has been received from any of them. The gathering of information about which games containing in-game advertising has been too time consuming, resulting in an incomplete list of games with advertising. Therefore, the ads column of the list should be taken lightly as games listed may contain in-game advertisements even though it is not stated. Concluding, no statistical comparison can be made related to in-game advertising.

Games implementing a subscription-based revenue model receive periodic income from their active subscribers. Item malls, however, generate income whenever users buy items or other forms of in-game benefits. Content sold in item malls may be confused with small expansions which can be sold as digital downloads. To clarify, downloadable content (DLC) count as an expansion in our list, even though it may provide buying players with more items and content which in multiplayer games may give them an advantages compared to other non-buying players.

3.2.4 Expansion and Series

The expansion column identifies games which offer, or plan to offer, one or more expansions. An expansion rarely provides more than additional content, and minor game engine updates. Thus, expansions are cheaper to develop than their corresponding original game, because the developer can re-use the existing technology and game mechanics. This is somewhat reflected in the consumer price as the price of an expansion is less than what the original game sells for. As mentioned in Sect. 3.2.3, non-free micro-expansions (DLCs) are counted as expansions in the game list.

The game industry has created many popular and profitable game franchises. The game list includes a column identifying games belonging to a series, including the name of the particular series. Games within the same series can be linked together in different ways, for instance by story line or the sharing of similar concepts. A good example is the huge RTS (except C&C Renegade which is an action game based on the C&C universe) series known as Command & Conquer (C&C) which has lots of expansion packs. The various C&C games and their expansions can be hard to distinguish from each other, since they all are similar in gameplay and content.

I have defined a "series" to also include games based on movies, TV-shows and other forms of media. The main reason most of these games sell is because of the other media's success. The games market themselves. "Harry Potter and the Philosopher's Stone" is a good example, the game itself is not nearly as great as other games selling fewer copies, but due to the immense success of the movie franchise games associated with it sell loads.

3.3   A Brief Game List Summary

A summary of the results, after categorizing the games in the best seller list, is given in Table 3.1. The complete game list can be found in Appendix A.

Description	Number of games
Games supporting singleplayer	170
Games supporting multiplayer	101
MMO games	13
Primary genre: Action	58
Primary genre: Adventure	16
Primary genre: Other	9
Primary genre: RPG	27
Primary genre: Sport	17
Primary genre: Strategy	57
Games with sub-genres	20
Games with expansion(s)	88
Games in series	149
Total games	184

Table 3.1: Game list summary.

4

Analyzing the Best Seller PC Games

The following chapter presents results obtained by analyzing the PC game list introduced in the previous chapter. Various results are discussed, and links are established, where appropriate, between results and official reports from research agencies and game publishers.

4.1 Composition of the Best Seller Game List

Figure 4.1 illustrates the yearly distribution of the 184 games contained in the composed game list. Ideally, the game list should have been composed of an equal (high) number of games each year, but this was not possible within the time and budget constraints of this thesis.

Few games are represented before 1993, one of the reasons for this may be
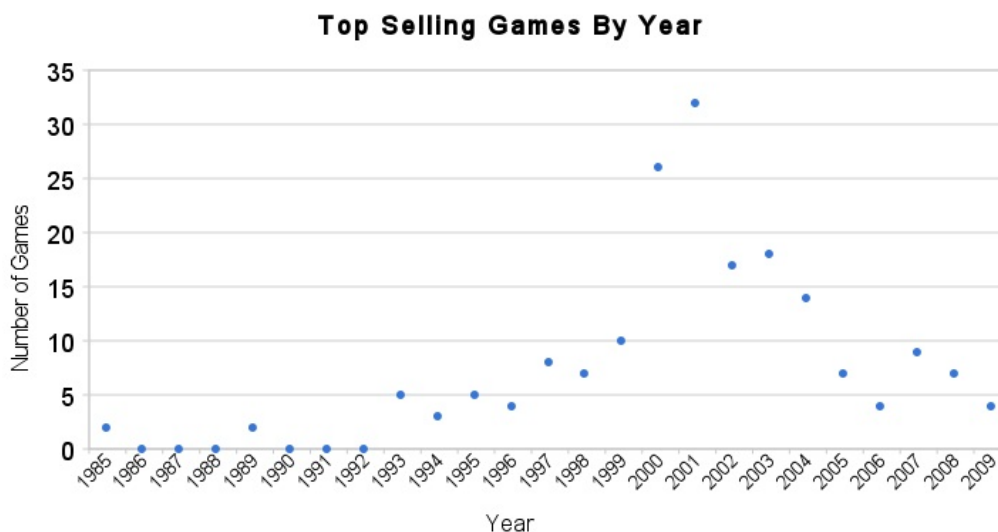
Figure 4.1: Yearly distribution of the games.

because PC gaming were (and some still believe) inferior to console gaming. PCs are more expensive and need to be upgraded more often than consoles to keep up with the gaming development, but they have a wider usage coverage. Internet was not available to the masses during the 80s and early 90s, therefore information about best seller games released before the Internet "exploded" in 1996-1997 are hard to find online. Furthermore, little, if any, research was conducted covering the gaming industry during its early years. This fact, combined with publishers' secrecy about sales numbers, makes it hard to gather sales information from these early years.

The graph peaks at the years of 2000-2002, the reason for this being that one of the sources (Edge-Online) used for gathering games, ranks the 100 bestselling games from 2000 to 2006. The high amount of games ranked led to a noticeable increase in the number of games during most of these years compared to the years before and after. Older games have more years to accumulate sales than newer games; it follows that old games rank higher on best seller lists which are over several years. This is the reason for the higher amount of games during the years of 2000, 2001, 2002, 2003 and 2004.

I assume that a title sells most copies during its first years on the market.

During the later years the sales number decreases as the game is getting older and is substituted by newer games. A sudden increase in sales may follow a review or promotion campaign (demand curve shifts to the right), while the launch of a competing game may lead to a drop in sales.
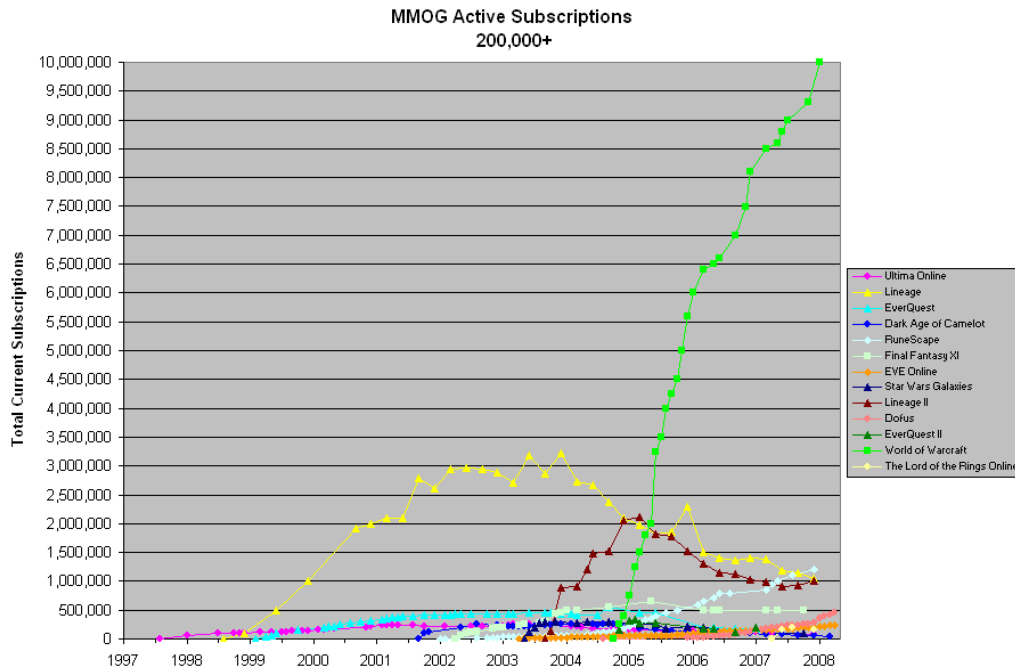
Figure 4.2: Active MMO subscribers, taken from [98].

Figure 4.2 shows that World of Warcraft (WoW) is unique, among the other MMOs, when it comes to continuous growth in population even several years after release. The other MMOs are more volatile. The reason for the stable growth of WoW is not easy to put a finger on, but I believe it is mainly because WoW is a greatly balanced, and the persistent virtual world is constantly expanding, adding new challenges and possibilities. Moreover, gamers build up their character(s), investing great amount of time in the game, and therefore establish a dependence of the character(s) they have customized. This further leads to a dependence of the game itself. Many gamers take pride in in-game achievements, feeling satisfaction in real life because of their status in the virtual world of WoW. Further, great marketing

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was done by Blizzard in establishing the brand name "World of Warcraft" (and its synonym WoW), and frequent content updates in the form of patches and expansion packs are extending the game's life. To set WoW's popularity into a perspective we can look at the sales figures for the second expansion pack, "Wrath of the Lich King", released four years after WoW (the original game). It sold over 2.8 million copies by the end of the first day of release, that is an unbelievable 1,945 copies a minute, making it the fastest selling PC game of all time [14]. Figure 4.3 shows the popularity of WoW, which today has more than 11.5 million subscribers [8].
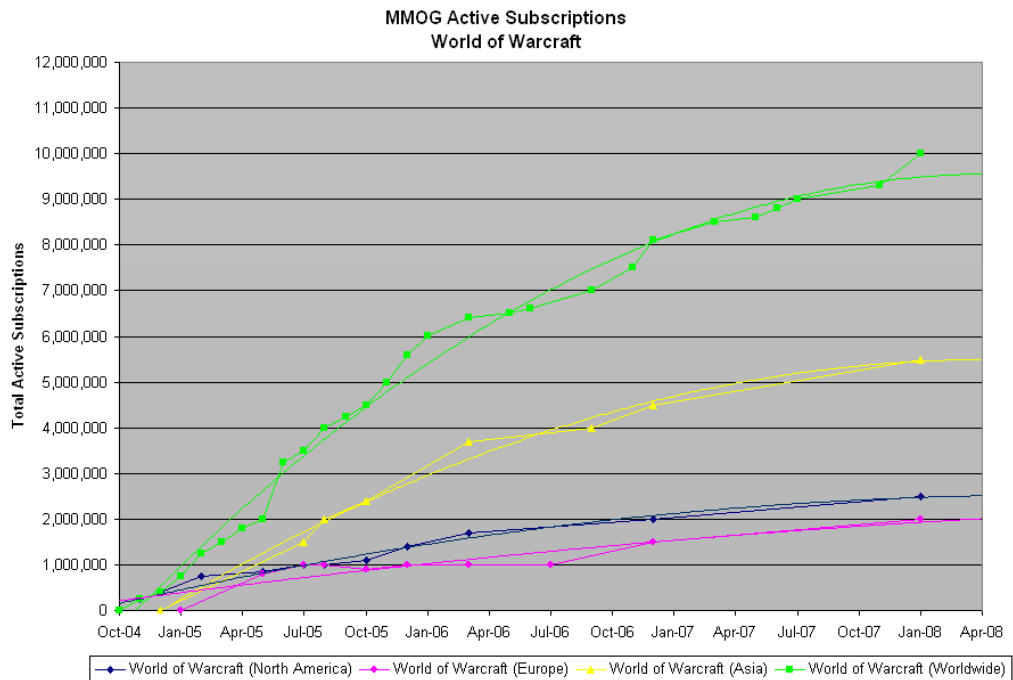
Figure 4.3: Active WoW subscribers, taken from [98].

4.2 Distribution of Game Types

As can be seen in figure 4.4, 92% of the games support singleplayer mode, while 55% support multiplayer mode. Roughly 7% of the games listed are

MMOs, and only one among them stands out by supporting both singleplayer and MMO play.
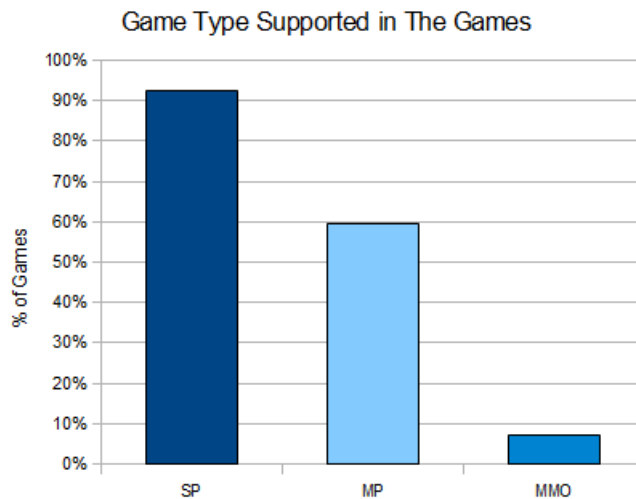
Figure 4.4: Types supported.

Figure 4.5 illustrates the combinations of game types our games support. We see that none of the bestsellers are pure multiplayer games, even though a significant number of the games are created with multiplayer gameplay in mind. The majority (53.3%) of the games support both multiplayer and singleplayer, moreover, 39.7% are pure singleplayer games. Since multiplayer mode also includes games supporting local multiplayer functionality, i.e. without using Internet or local area network, some of the multiplayer games only support offline play.

The game list contains four games released before 1993, and these are all singleplayer games. We can safely assume that before the Internet was commercialized internationally in the early 1990s there were only PC games supporting singleplayer and multiplayer by sharing local resources (e.g. keyboard and screen).

From the graph in Figure 4.6, we see that the first best seller game supporting multiplayer was released in 1993. Doom was also the first game of any consequence to be digitally distributed on the Internet [23]. It introduced fast peer-to-peer networking for online multiplayer gaming as well as

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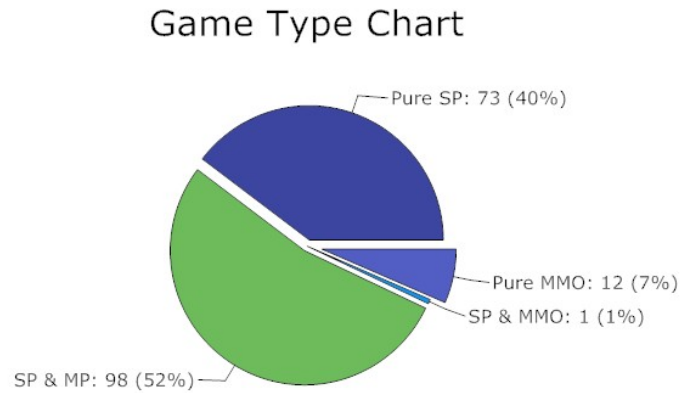
Figure 4.5: The various game types.
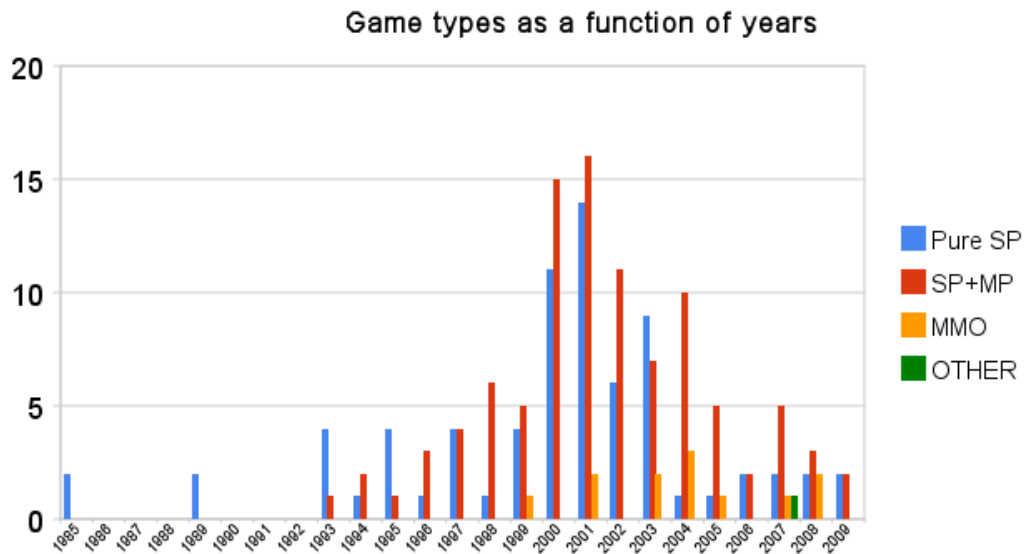
Figure 4.6: Game types as function of years.

a modular design which made it possible for everyone to create, and share, new game content (known as mods, short for modifications) [58]. Assuming that new content increases the value of the game, the mods shift the game's demand curve to the right, thus increasing the demand. "Modding" communities have played important roles in later games as well, just look at Half-Life and CounterStrike, which have both become huge successes. Coun-

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terStrike as mentioned in Sect. 2.3.1, is an early version of a user created mod of Half-Life.

Games supporting both singleplayer and multiplayer modes dominate the best seller list from 1996 to 2009. In the mid to late 1990s it was usual that games supporting online multiplayer utilized peer-to-peer technology without any central "organizer". In other words, the game publishers themselves provided no central game servers for communication and easy matchmaking between players. For this reason several firms were established, providing gamers with a third-party software making chatting and matchmaking significantly easier and better (See Sect. 2.1 for more background information). Many of the games on the best seller list can be used together with such third-party multiplayer services. In fact, publishers today are moving toward sharing infrastructure for game hosting. Third-party multiplayer services, such as Steam, are widely used to reduce the development and maintenance cost required by publishers to offer multiplayer services. However, by outsourcing the multiplayer operation the publisher miss out on potential revenue related to online services and offerings.

All MMOs on the game list, as well as a some additional games, such as the ones developed by Blizzard Entertainment (Diablo, Starcraft, Warcraft and the WoW franchise), implement their own multiplayer service. Blizzard stated in 1997 that by offering the battle.net multiplayer service for free they increase their retail sales by as much as 10% [90]. I believe Blizzard still holds on to that since they have invested huge amounts of money into their new battle.net service. The "new" battle.net service will launch together with Starcraft II (July 2010), and incorporates all of Blizzard's titles. Battle.net brings further value to Blizzard's games by offering around-the-game features including a matchmaking system, achievement system, social networking features, competitive play options and a marketplace [17].

There may be several reasons why no pure multiplayer game is included in our list. Singleplayer is a great way to learn any game, through for example campaigns and missions, before jumping into multiplayer where one meet other human players. Moreover, storytelling is easier in singleplayer, as

you follow one player only, and his actions are the only inputs needing to be processed by the game mechanics. Additionally, games with singleplayer support usually allow gamers to play singleplayer offline (i.e. without a network connection available), while multiplayer games require a network connection and sufficient online gamers. I write "usually" because lately publishers have started aggressive anti-piracy campaigns which, among other things, require gamers to authenticate online every time they run a game and continue to stay online while playing (requiring a stable Internet connection), or the game pauses or shuts down. A newly released game with this kind of Digital rights management (DRM) protection is Ubisoft's Settlers 7. Gamers are used to be able to play singleplayer while "on the move", and in their cabins (without an Internet connection available) but now, due to the ongoing arms race between publishers and pirates, frequent online verification is required by many games.

Publishers may have additional incentives for requiring gamers to be online while playing; detailed gaming statistics can be gathered, and targeted ads can be served dynamically in-game. The gathered statistics can be used in many ways. Behavioral statistics may give noticeable indications that a player starts to lose interest in a game, giving the publisher time to react on a macro level. The publisher can then, backed up by the statistics, know when to offer one or groups of players customized incentives, or when to release new content to keep the players' interest. This is especially advantageous for subscription-based MMOs since they base their revenues on the number of subscribing players. It is different with the utility model, often implemented in eastern markets (and during the mid-nineties in the western markets), because when billing on a per minute/hourly basis the number of total subscribers is equally important as how long you keep your hardcore players in game. More about player behavior analysis can be found in [21].

4.3 Distribution of Genres

The overall distribution of genres is shown in Figure 4.7. The action and strategy genre are close to equally represented, with 31.5% and 31.0% of the games, respectively. 14.7% of the games are RPGs, and 48% (13 out of 27) of the RPGs are MMOs. By comparing the distribution of genres among the
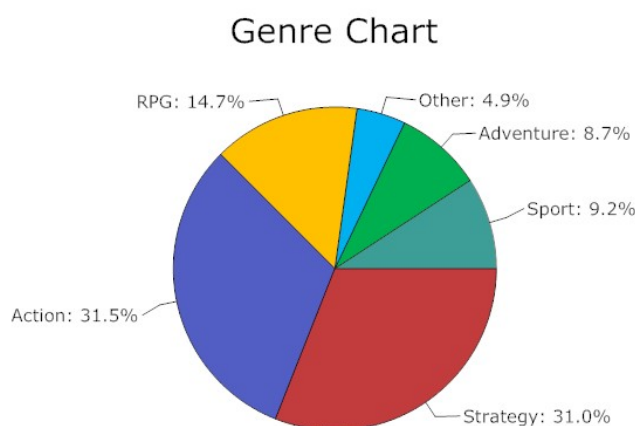
Figure 4.7: Games by Genre.

bestselling PC games in 2007, presented by the NPD Group in "2008 Sales, Demographic and Usage Data", with our results we observe a similarity to some degree. PC strategy games are popular among the bestselling games overall (our results) and are also a majority in the 2007 bestselling games list with around 1/3 of the games being strategy games, according to NPD Group's research results given in Figure 4.8. An interesting finding is that by looking at the same year's (2007) console game sales, figure 4.9, we see that only 4.7% of the games are strategy games. Results show that strategy games are more popular among PC gamers than console gamers. Real time strategy games are probably better to play on PC, rather than console, because of its offered hardware. Keyboard shortcuts and mice give the player an advantage, as one can perform more actions in a short amount of time, compared to a console control with a limited set of buttons, making for instance micro-management cumbersome and time consuming.

Sport games are more popular on consoles than PC. From my own experience sport games are better suited for consoles because of the controls and multiplayer features enabling friendly play by sharing the same screen. A control has the buttons needed to play and nothing more to confuse the user. Additionally, sports games often have multiplayer capabilities, enabling several gamers to maneuver different players on the same field (e.g. football field). Since all players are on the same field gamers can share the same physical screen, requiring only one control for each gamer in order to play multiplayer. Sharing the same screen enhances the social aspects of the game more than playing over the Internet where players can be far apart. For these reasons, consoles are superior to PCs when playing sport games, in the author's opinion.
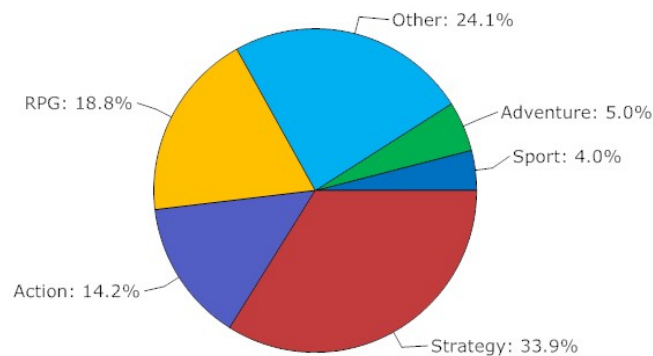
Figure 4.8: Best Selling PC Games by Genre in 2007 [5].

Figure 4.10, illustrating the best seller list's distribution of genres per year, shows that the strategy and action genre are represented each year, except the first, while other genres are less frequently represented. We see that the RPG genre has become more popular lately, while the adventure and sports genre have decreased in popularity.
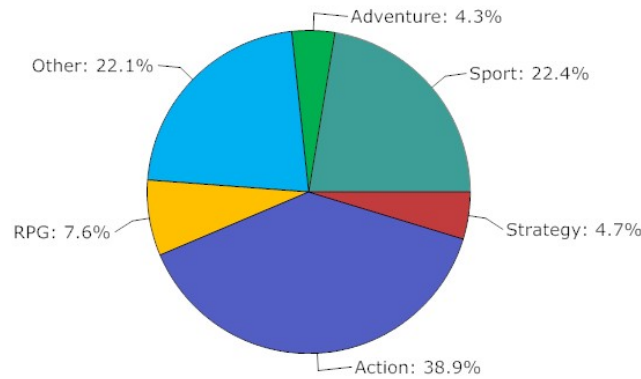
Figure 4.9: Best Selling Console Games by Genre in 2007 [5].

Figure 4.10: Genre distribution per year.

4.3.1 Game List's MMOs Belong in the RPG genre

Every MMO game listed in our game best seller list belong in the RPG genre. Why are all retail MMOs in our best seller list MMORPGs? It is

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possible to publish MMOs which are of another nature than role playing. Exploring the browser game industry we find various MMO genres. Strategy games, for instance, are popular among browser games, with games such as Evony and Travian having thousands of users playing in their persistent virtual worlds. Additionally, freemium MMOs exist, such as Trackmania (racing) and Football Superstars (sport, with RPG elements), belonging to other genres than RPG. All of the mentioned MMOs are successful, which leads me into believing that it is possible to develop retail MMOs based on other genres than RPG. But the game business is risky enough as it is, thus adding to the risk by introducing a game in an unexplored MMO genre is probably too risky for publishers, and their investors.

4.4 Expansion, an Add-On Sale

The release of additional content, in the form of expansions, is present in about half the games in the best seller list, illustrated by Figure 4.11. An
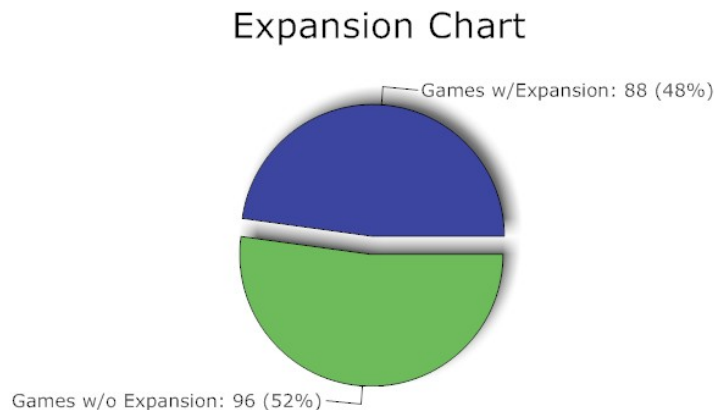
Figure 4.11: Expansion Chart.

expansion is not only a great way for players to get extra content for their favorite game, it is also a great opportunity for game publishers to receive additional income from an already successful title. If you, as a gamer, love a

game and clear all its content you would certainly be interested in paying for additional content. This would extend the game's life. For this reason, game publishers and developers see profit in developing new content. Expansions are never developed for unsuccessful games as there are no profits to be made. Expansions usually cost in the range of $19.99 to $39.99.

An expansion is a complementary good. The original game (the base good) must already be installed (some rare exceptions) in order for an expansion (the complement good) to be installed and played. An expansion is like a huge patch.

In a MMOG there is a certain need to have all expansions installed, as they open new areas and add, often more powerful, items to the game. As a result, one needs to have the latest expansion installed in order to keep up with other players.

Sony Online Entertainment, the company behind Everquest (1999) and Everquest II (2004, both fantasy MMORPGs), has really exploited the potential of generating additional income from expansions by offering Everquest users 16 expansion packs over a nine year period (2000-2009), and by further expanding the Everquest franchise, releasing no less than six expansions (2005-2010) and three "adventure packs" (DLC) to Everquest II.

Smaller expansions, called DLCs, are an emerging trend in the game business model [57]. DLCs are minor content updates which often cost far less than full (retail) expansions. "The Sims" franchise offers its users several different content updates for under $10 each, providing players with even more customization options than what the original game and its (larger) expansion packs offer. It is without doubt a great way to earn additional money from gamers wanting premium content services.

DLCs have received critique lately from gamers believing developers hold content back from the full retail release in order to profit on DLCs at a later time. It is of interest to the game developers to have a solid game at release, but it may be tempting to hold some content back, even though it was originally planned to be included in the full release. By later making it

Figure 4.12: DLC poll on Gamespy.com.

available as pay content the publisher and game developer earn additional money. Even though only pure speculations by a selection of gamers, it raises an interesting problem. Business is business, and the most important goal for companies and their shareholders is to make profits. However, there is a thin line here, gamers need to feel that they are given enough value for their money. MMO players, for instance, expect regular content updates to be included in the subscription fee. Non-subscribing gamers, on the other hand, are more open to pay for additional content. Figure 4.12 shows a DLC related poll, fetched from Gamespy.com (part of the IGN network having over 13 million unique visits a month), illustrating the willingness to pay for DLC [20].

Expansions and DLCs are generally much cheaper to develop than their original games because game developers can utilize existing framework and the underlying game mechanics during the development process, as explained in Sect. 3.2.4.

4.5 Franchises are Big Business

A majority (81%) of the games in the best seller list are part of a series, as can be seen in Figure 4.13.

I define franchises as games with a series and/or one or more expansions. Figure 4.14 proves that franchises are big business, which is not a coincident.

Series Chart

Games in Series: 149 (81%)

Games not in Series: 35 (19%)
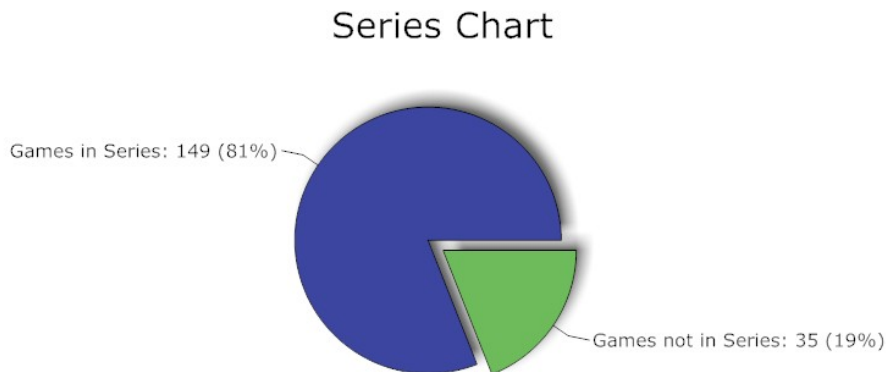
Figure 4.13: Series Chart.

Publishers are, like the rest of us, averse to losing money, they try to reduce the risk by financing titles that are likely to do well. And games which are among the top sellers have done very well, thus publishers mainly invest in already well known game concepts, franchises, or genres which publishers have prior experience from.

The previous paragraph is backed up by a statement from Activision Blizzard's 10K 2010 report: "Activision focuses on development and publishing activities principally for products that are, or have the potential to become, franchises with sustainable mass consumer appeal and recognition. It is our experience that these products can then serve as the basis for sequels, prequels, and related new products that can be released over an extended period of time. We believe that the publishing and distribution of products based on proven franchises enhances predictability of revenues and the probability of high unit volume sales and operating profits [...]" [8]. This strategy is also mentioned in Electronic Art's 10K report: "[...] Another cornerstone of our strategy is to publish products that can be iterated, or sequeled. For example, a new edition for most of our sports products, such as Madden NFL Football, is release each year. Other products, such as The Sims and Godfather, are sequeled on a less-frequent basis. We refer to these successful, iterated product families as franchises" [4].
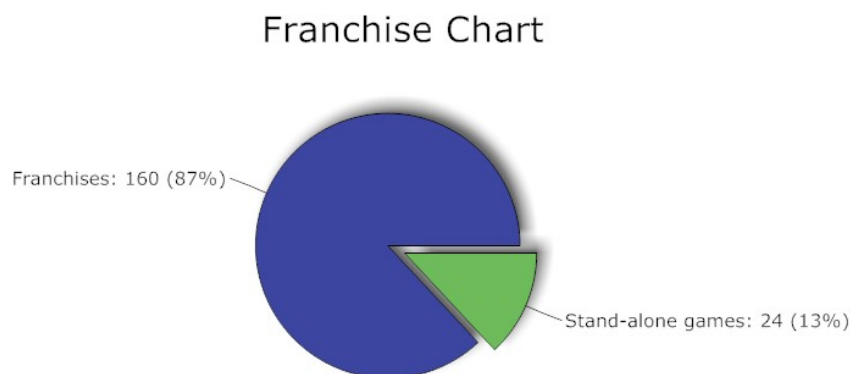
Franchise Chart

Figure 4.14: Franchise Chart.

Rank	Game Title (Publisher)
01.	The Sims 3 (Electronic Arts)
02.	World of Warcraft: Wrath Of The Lich King (Activision Blizzard)
03.	The Sims 2 Double Deluxe (Electronic Arts)
04.	World of Warcraft: Battle Chest (Activision Blizzard)
05.	Call of Duty: Modern Warfare 2 (Activision Blizzard)
06.	World of Warcraft (Activision Blizzard)
07.	The Sims 3: World Adventures (Electronic Arts)
08.	Spore (Electronic Arts)
09.	Dragon Age: Origins (Electronic Arts)
10.	Empire: Total War (Sega)

Table 4.1: NPD Group's top 10 PC bestsellers for 2009, taken from [45].

Table 4.1 shows a list of the top 10 PC bestsellers for 2009. This best-seller list, as well as bestseller lists from previous years, further supports our statement that successful games often turn into big franchises. All games listed in table 4.1 are part of franchises. Two of the games are expansions, while two others are compilations (original game and expansions are included in one package). EA and Activision Blizzard are the biggest PC publishers, accounting for nine of the 10 games.

4.5.1 Genre Trends

	Action	RPG	Sport	Strategy	Adventure
Stand-alone	6 (10%)	3 (11%)	0 (0%)	6 (11%)	5 (31%)
Only expansion	1 (2%)	7 (26%)	0 (0%)	3 (5%)	0 (0%)
Only part of series	25 (43%)	6 (22%)	13 (76%)	14 (25%)	9 (56%)
Series and expansion(s)	26 (45%)	11 (41%)	4 (24%)	34 (60%)	2 (13%)
Total	58	27	17	57	16

Table 4.2: Game genre with, and without, expansion and series.

Table 4.2 presents the genres distributed over series and expansions. Comparing sport and adventure games with the other genres we see that the two genres are weighted towards series, the other genres have a majority of games in series with expansion(s). Every (total of 17) sport game in our list is part of a franchise. This is not odd since most sport franchises, such as EA's Madden NFL Football, NHL Hockey, NBA Live, Fifa Soccer and Tiger Woods, release a game every year, as stated in EA's annual report [4].

By excluding the racing, flight simulation, hunting and compilation games from the sport genre, we see that the rest of the sport games are part of a series. Most sport games do not have expansions simply because successors are released frequently as part of the franchises. Real life competitions are arranged regularly and the outcomes of these competitions must be updated in new game releases. For example, an active transfer market for real life soccer players exist and transfers need to be reflected in new soccer games.

Real life transfers and teams' achievements can be updated with patches, but by releasing a new game the publisher has more freedom to update game mechanics and graphics, as well as player transfers and statistics. Besides, in most cases the gamer needs to start his/her campaign over again anyways for any changes to be reflected in-game. I also think EA use their strong position within the sport genre to earn money by releasing brand new games every year. Resulting in hardcore gamers buying the new version every year, while casual players may play an outdated version for years.

The strategy genre consist mainly (60%) of games in series, with expansions. Strategy games do not have to keep up with real life events, other than technology improvements, therefore one or more expansions are commonly released before a successor. 65% of strategy games have one or more expansions, rarely providing more than new missions, units, buildings and maps, and are therefore relatively cheap in development.

4.6   MMO Revenue Models

All but two MMO games base large parts of their revenues on subscription fees, backing up the fact that game companies are afraid of implementing new revenue models. "Hellgate: London" provides an optional subscription model for gamers wanting updates, while "Guild Wars" is unique in being a 100% subscription-free MMO. Rather than requiring gamers to pay to play, Guild Wars offer gamers additional content through pay-DLC.

When it comes to MMO games, a publisher cannot rely on just regular retail sales. Server infrastructure, maintenance and support are among the running costs needed to be covered. Furthermore, if the developers are to work on content updates, additional income must be generated somehow. Guild Wars offer most content updates as pay-DLC, while in subscription based MMOs frequent content updates are included in the subscription fee. But there are other ways of earning money, for instance through micro-transactions and in-game advertising. MMO revenue models are further discussed in Cpt. 5

and in the case studies.

5

Business Model

We define a business model as *"a conceptual tool that contains a set of elements and their relationships and allows expressing a company's logic of earning money. It is a description of the value a company offers to one or several segments of customers and the architecture of the firm and its network of partners for creating, marketing and delivering this value and relationship capital, in order to generate profitable and sustainable revenue streams."* [72]

There are many ways of creating and maintaining a business model, and dozens of books have been written about the topic. One of the goals of this thesis is to present business models in a simple, yet accurately describing way. Additionally, I wanted to be able to present the business models using a logical approach, preferably by utilizing a well defined framework. The solution is Osterwalder's proposition for a component driven approach of analyzing business models [72]. Osterwalder has studied business model

literature and conducted research on business models. The result of his research is a complete business model ontology based on existing literature and research done.

This chapter aims on describing the business model framework utilized in the later case studies. Examples, within the scope of this thesis, are presented to connect theory with the actual game industry. Furthermore, as the business model ontology is set in a game industry perspective, several parts of the business plan are elaborated to reflect the common features of the game industry.

5.1 Business Model Ontology

Osterwalder's dissertation looks at a business model as "the translation of a company's strategy into a blueprint of the company's logic of earning money". The logic is described using a set of elements and by defining relationships between these elements. The ontology contains nine business model building blocks, which can be further decomposed into a set of defined sub elements. Figure 5.1 illustrates the composition of the business model framework. By allowing decomposition into sub elements we can study business models on different levels of granularity, in more or less detail, according to specific needs [72].

5.2 Product

The first of the four main groups in our business model is the *Product*, which covers all bundles of products and services offered to its customers. Basically, every organization offers one or more products and services to one or more customer segments, it is the essential reason for them to exist. For a product and a service to become successful it needs to satisfy "the needs or the wants" for a customer segment, and somehow differentiate itself from competitors.

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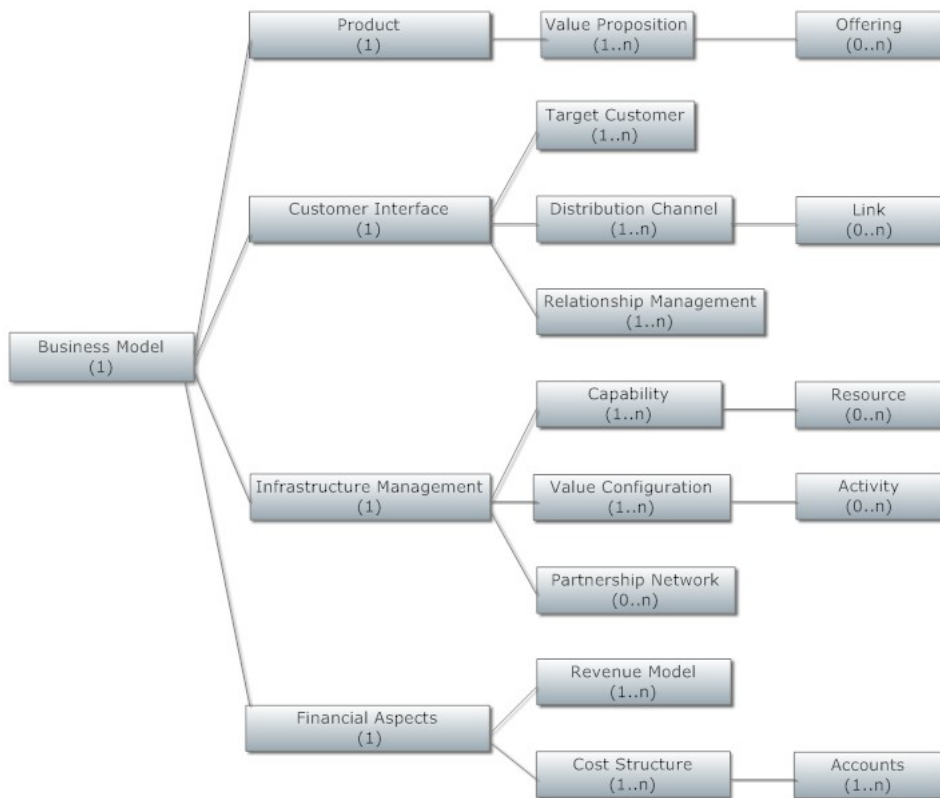
Figure 5.1: The Composition of the Business Model Ontology

One cannot generate income by offering a product which no one needs or wants.

Commodities without qualitative differentiation from other products, and even inferior products, may be profitable if they are offered at lower prices than competing products. Competition in the game industry is first and foremost related to games in the same genre, but high profile titles may have negative impact on other genres' sales numbers. Therefore it is not wise to launch a game at the same time as a big title is released.

The product in this context is mainly the video game itself, but also the additional value-added services built "around" the game. In other words, a product in this context, is *what* the firm offers its customers. As mentioned in Sect. 2.6, several companies may be part of a single video game product, from the forming of an idea, through the development phase, to the distribution of the game.

In short, the "*product* covers all aspects of what a firm offers its customers". In our business ontology the *product* is composed of the element *value proposition*, which can be decomposed into its elementary *offering(s)*.

5.2.1 Value Proposition

The *value proposition* is the first of nine building blocks of the business model ontology. It is described, by Osterwalder, "as the definition of how items of value, such as products and services as well as complementary value-added services, are packed and offered to fulfill customer needs." A business plan may contain several *value propositions*, each giving an overall view of bundle's of products and services that provides value for one or several *target customer(s)*. A *value proposition* may further describe why a consumer should buy products or services from a certain firm rather than from another with similar offerings [83].

In this thesis, each business model is based on a game being the primary *value proposition*. Other *value propositions* may be present in a game-

company's business model, e.g. a game expansion is a *value proposition*, hosted events can be another. Events may be arranged before, during, or after game release to promote the game. These events can be seen as *value propositions* as they give customers extra benefits in the form of entertainment by adding to the overall experience of the game. Moreover, events may attract sponsors and partners which pay the game developer/publisher to be associated with the game.

A *value proposition* is based on one or several *capabilities* and can be further decomposed into its set of elementary *offering(s)*. A *value proposition* inherits attributes from the *offering* element.

Offering

An elementary *offering* describes a specific part of a *value proposition*. A bundle of products and services can be decomposed into distinct products and services, where each distinct component is an offering. By breaking down *value proposition* into offerings a firm can easier compare itself to its competitors. This will further help the firm to [find rooms for improvement].

In-game support, in the form of Game Masters (GM), is a customer service implemented in many MMO games to add value for gamers. Support is an *offering* which can further be enhanced by for example training the GMs so they become more efficient.

An offering element includes several attributes: a *name* and a *description* identifying the specific component, as well as a *reasoning*, *value level*, *price level* and an optional *life cycle* attribute.

Reasoning. The *reasoning* attribute describes why the *value proposition* or the specific *offering* is of value to the costumer. Osterwalder has defined three different types of value creation reasons; through *use*, lowering consumer's *risk* and reducing a consumer's *efforts*. Examples are given in table 5.1.

Reason	Example
{Use}	Game content is of direct value to the customer through use (during play).
{Risk}	Providing (sophisticated) security systems reduce the risk of customer account theft.
{Effort}	Offering digital download of game content is convenient for customers as they do not have to leave their homes to buy the content in-store.

Table 5.1: Examples of Offering Reasons.

Value Level. In the theory of microeconomics one of the optimizing behaviors is the maximization of consumer utility, the other being maximization of profits. Utility in economics is simply an abstract variable indicating a consumer's ranking of preferences. If the consumption of a good or a service increases a person's satisfaction it gives utility. Consumer utility can be measured by using the *value level* of a company's offer, together with the price level. Osterwalder introduces the value level as "a qualitative value scale that relates to the value offered by competitors rather than using a quantitative scale that ranges from low to high." In doing so, the firm can easily compare itself to its competitors. The *value level* can be defined for each *offering*, or at a more aggregate level of a *value proposition*. The four distinct *value levels* are:

- Me-too: the bundle of products and services the firm offers is equal to what other firms already offer.

- Innovative imitation: generate additional value by improving already existing value propositions or offerings by adding innovative elements.

- Excellence: value is pushed to its extreme (e.g. Rolex watch).

- Innovation: firm introduce a brand new product or service, or a revolutionary new bundle of products and services.

Price Level. The *price level* attribute indicates the level of pricing of a *value proposition* or an *offering*. The price level attribute can be set to four distinct values:

- Free: the product or service is offered for free. Income may be generated in other ways (e.g. advertising).

- Economy: price is more attractive than the bulk of the competitors' (e.g. lower price).

- Market: price is decided by the market, which leads to it being around the same as most competitors' (e.g. DVDs).

- High-End: highly priced (e.g. luxury goods, VIP services).

Close to all games included in our bestseller game list follow the market price level. Frogger is an exception, it was sold "incredibly" cheap. This is one of the reasons it was so highly successful. Today, we watch iPhone apps being downloaded in the millions, there is a growing market for cheap (economy price level) small games. Sophisticated military simulators are examples of games on the other side of the latter. They are custom made, high-end games.

Life Cycle. The value for the target customer may be created during different stages of a value proposition's or an offering's life cycle. The life cycle attribute indicates where in the life cycle the value is created. Osterwalder defines five stages:

- Creation: value is created during the creation phase (e.g. customization).

- Purchase: value is created during the purchase phase by enhancing the customer's buying experience (e.g. streamlined online purchase and digital downloading).

- Use: value is derived through use (e.g. playing a game).

- Renewal: enhancing the renewal process gives value (e.g. automatic subscription renewal using VISA, expansions adds value to game by introducing new features and content).

- Transfer: additional value is created by offering the customer the possibility to transfer the value he has acquired to another (e.g. second hand market. Game publishers want to eliminate this market as they do not earn anything from it).

5.3 Customer Interface

The second group of the business model ontology is *customer interface*, also known as *customer relationship*. Having a good relationship with customers is, without doubt, essential for every business. It is important to understand the relationship between customers and the offered value propositions. How do we enter the market? Who are our target customers and how do we interact with them? These are all questions which are to be answered in this part of the business model. The *customer interface* includes three building blocks: *target customer*, *distribution channel* and *relationship management*.

5.3.1 Target Costumer

Target customer is the second building block in our business model. A firm should tailor its marketing and sales efforts to reach specific market segments that want or need the value propositions offered by the firm [86]. By doing so the value propositions are offered to the most promising people, in the sense of having the greatest potential to buy the product or service. The classification of the target customer can range from general (i.e. Business-to-Business (B2B) or Business-to-Consumer (B2C)) to specific (i.e. teenagers between 10-16 years).

An imaginary advertising campaign targeting 70+ year old women will most likely be a waste of money if you are promoting an MMORPG. In order to efficiently allocate investment resources a firm needs to know, and target, the segment of people which are most likely to buy its product(s) and/or service(s).

In the game industry marketing expenditures related to a game are often higher than the cost of developing the game itself. For instance, the development cost of Modern Warfare 2 was $40-$50 million, while marketing and production costs were $200 million [29]. Most industries, with the game industry not being an exception, must spend money (on advertising and marketing) before making money.

Criterion

A target customer can be decomposed into a set of characteristics called *criterion*. A criterion defines a target customer attribute which could be of geographical or socio-demographic nature. Sample criterion attributes:

- Demographics.

- Lifestyle.

- Needs/Desires.

- Hopes/aspirations.

- Product usage behavior.

An example target customer, in a game publisher's business plan, is composed of the following criterion: casual female gamer between the age of 18 and 30, living in the U.S.

After finding the *target customers* a firm needs to find out how to reach the segment with its *value propositions*. The next building block, *distribution channel*, describes how a firm gets in touch with its customers.

5.3.2 Distribution Channel

Distribution channel is the third building block of our business model ontology. *Distribution channels* are "bridges" between a firm's *value proposition(s)*

and its *target customers*. A "bridge" can be maintained by the firm itself or by its partners. Hence, a firm can deliver its *value propositions* either directly, for example through a web site, or indirectly through intermediaries, such as resellers.

The *distribution channel* gives an aggregated view of how a company reaches its customers. It can further be decomposed into *links*.

Link

A channel *link* describes a part of a firm's distribution channel. By decomposing a *distribution channel* into a set of *links* one can better compare the channel strategy to competitors'. A *link* illustrates individual marketing tasks. It may be part of a *value proposition*, and can be connected to other *links*. Since a *link* may also be an *offering* it inherits the elementary *offering's* attributes (Sect. 5.2.1. In addition to the inherited attributes, an attribute named *Customer Buying Cycle (CBC)* is added (CBC values are illustrated in Figure 5.2).

In this thesis only the *customer buying cycle* attribute is identified as it gives sufficient information.

5.3.3 Relationship Management

Relationship management is the fourth building block of the business model ontology. It describes the relationships a firm establishes and maintains with its customers. Profits are dependent on promoting the *value propositions* in such a way that they reach customer segments, and by further having a good relationship with the *target customers*.

Relationships are classified according to their *customer equity* goals, which are:

Acquisition. A vital part of all businesses are the acquisition of customers,
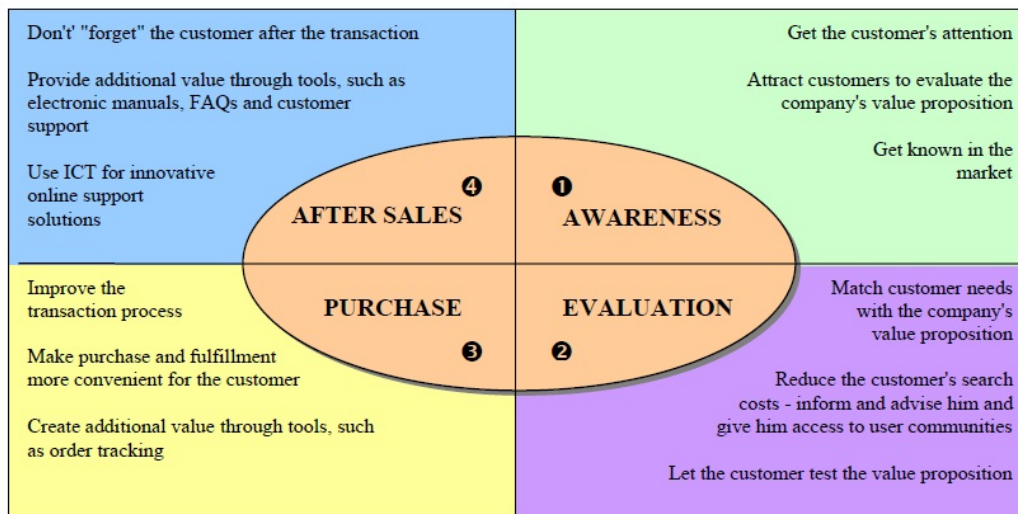
Figure 5.2: Customer Buying Cycle, taken from [72].

without customers there are no one to buy the offered product(s)/service(s). Customers are lost (e.g. change provider, die) from time to time and it is therefore important to continuously acquire new customers. The traditional approach to customer acquisition is to find the right people (targeting) and sell them what they want (advertising). Acquisition of customers is often an expensive task (e.g. affiliates).

Retention. When customers are acquired it is important to hold onto them to leverage customer acquisition investments. A high retention rate (low churn rate) is of course very important for subscription-based MMOs, as more gamers playing means larger periodic income, but also in general. For a firm to keep its customers they need to remain satisfied. Many factors can influence customers to stay, among them loyalty programs and high switching costs (e.g. discount when signing long subscription agreements).

Add-on Selling. By offering existing customers additional products and services extra revenue can be generated (e.g. DLC).

The business model ontology decomposes the *relationship management* building block into elementary *mechanisms*. However, this element is skipped

in this thesis because I believe it is sufficient to describe relationships using *customer equity goals.*

5.4 Infrastructure Management

The *infrastructure management* group is about how a firm makes its *value propositions* possible, seen from an internal business perspective. It identifies the activities needed to create and deliver value and how they relate to each other in its *value configuration.* It further describes how a firm maintains its *customer interface.*

5.4.1 Capability

Capability is the fifth building block in our business model ontology. It describes the ability to execute a repeatable pattern of actions. Numerous *capabilities* are required to be present in a firm for it to be able to provide its *value propositions.* A *capability* can be composed of resources. *Capabilities* and *resources* can either be assets of the firm or acquired by involving outside *actors* (from the firm's *partnership* network).

Resource

A resource is an input into the value-creation process and can be classified into three types:

Tangibles. This category includes office space, equipment, cash reserves and similar material resources.

Intangibles. This category includes patents, copyrights, reputation, brands, trade secrets and similar immaterial resources.

Human. In order to convert tangibles and intangibles into value human resources are needed. Different people-based skills are needed by different

professions (e.g. a game development studio needs programmers and
designers, not doctors).

A *resource* can relate to one or several *activities*.

5.4.2 Value Configuration

The *value configuration* building block describes the firm's main *activities*,
and how they relate to each other. A firm can create value through different
processes. I have used Porter's value chain framework and extensions, value
shop and value network, defined by Stabell and Fjeldstad [79]. A firm can
function as any of the identified configuration types below or a combination
of them.

Value chain is the traditional game industry configuration. It is presented
in greater detail in Sect. 2.6. In short, value chains transform inputs
into products; creating value at each intermediate stage of the process.
The focus is on activities associated with the making, moving and mar-
keting of products. If we isolate a stage in the process this could have
its own type of configuration, such as development stage has in the
traditional game industry value chain. The development stage can be
identified as a *value shop*, while still being a part of a *value chain*.

Value shops are "workshops" which mobilize resources to create individual
solutions to customer "problems". An example is development firms
developing games on order from publishers. Development studios com-
monly work in an iterative and cyclic manner, as Figure 5.3 illustrates.

Value network organizations create value by linking customers together,
or mediating exchanges between them. In other words, the customer
value lies in the network that is created between customers. The cus-
tomer value increases as the number of network members grows. The
digital distribution channel resembles a value network; a digital plat-

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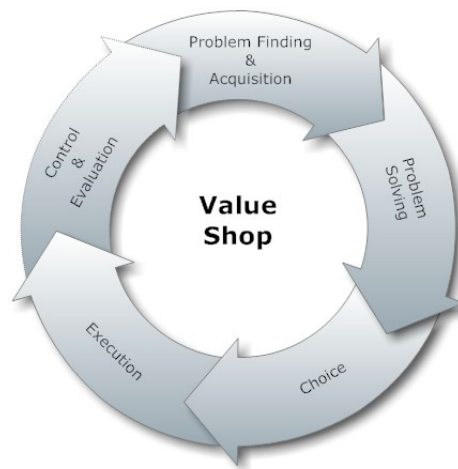
Figure 5.3: The iterative problem-solving process of a value shop.

form mediates exchanges between people and game publishers, creating value.

Games can link players and advertisers through in-game advertisements. From an advertiser's perspective it is of great importance to reach its target audience. If this audience plays, in-game advertisements could be an effective way of promoting the advertiser's product, service or cause. Thus, value benefiting advertisers is created through a value network configuration.

A *value configuration* is represented by *activities*.

Activity

Activities defines all the actions a firm or its *actors* performs to achieve the firm's goals. Porter distinguishes between the firm's primary and support activities:

Primary activity. A primary activity is part of the creation process of a value proposition, or its marketing or delivery process.

Activity Nature	Description
Inbound logistics.	Activities associated with receiving, storing, and disseminating inputs to the product.
Operations.	Activities associated with transforming inputs into the final product form.
Outbound logistics.	Activities associated with collecting, storing, and physically distributing the product to buyers.
Marketing and sales.	Activities associated with providing a means by which buyers can purchase the product and inducing them to do so.
Service.	Activities associated with providing service to enhance or maintain the value of the product.

Table 5.2: Primary activities associated with *value chains*, from [79].

Support activity. Support activities allow the primary activities to take place. For instance by managing the human resources the firm has available. Technology development and infrastructure are also support activities. Support activities will not be further examined, nor described in later business models, to limit the scope of the thesis.

Osterwalder describes the type of a primary activity by decomposing each configuration type into several distinct types of primary activities, linking the primary activity to an *activity nature* group. In other words, the three different configuration types, value chain (Table 5.2), value shop (Table 5.3) and value network (Table 5.4) all have distinct primary activities, which implies the primary activities are of different nature.

Activities can be linked to *resources* and *actors*.

I will not list all possible activities in the later business model analysis, as the analyzed companies can have hundreds of activities. But a selection of core activities will be described.

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Activity Nature	Description
Problem-finding and acquisition.	Activities associated with the recording, reviewing, and formulating of the problem to be solved and choosing the overall approach to solving the problem.
Problem-solving.	Activities associated with generating and evaluating alternative solutions.
Choice.	Activities associated with choosing among alternative problem solutions.
Execution.	Activities associated with communicating, organizing, and implementing the chosen solution.
Control and evaluation.	Activities associated with measuring and evaluating to what extent implementation has solved the initial problem statement.

Table 5.3: Primary activities associated with *value shops*, from [79].

Activity Nature	Description
Network promotion and contract management.	Activities associated with inviting potential customers to join the network, selection of customers that are allowed to join and the initialization, management, and termination of contracts governing service provisioning and charging.
Service provisioning.	Activities associated with establishing, maintaining, and terminating links between customers and billing for value received. The links can be synchronous as in telephone service, or asynchronous as in electronic mail service or banking. Billing requires measuring customers' use of network capacity both in volume and time.
Network infrastructure operation.	Activities associated with maintaining and running a physical and information infrastructure. The activities keep the network in an alert status, ready to service customer requests.

Table 5.4: Primary activities associated with *value networks*, from [79].

5.4.3 Partnership Network

Partnership network is the seventh building block in our business model ontology. By entering into cooperative *agreements* a firm can obtain *capabilities*, *resources* and *activities* provided by other firms. The companies enters a partnership were each company receives something of value from the other(s). A firm can have many different partners, forming a partnership network. Osterwalder further decomposes this building block, but I don't believe a lower level abstraction is needed in this thesis. I feel a description of a selection of partners gives the reader sufficient information.

An example partnership from the game industry is the cooperation between the cosmetic brand "Nivea" and the game "Splinter Cell: Double Agent" [10]. This is a marketing partnership where Nivea's products, and static and dynamic advertisements are integrated into Ubisoft's "Splinter Cell: DA". Out-of-game ads were also used where Nivea's skincare products were shown together with "Splinter Cell: DA", both marketing Nivea's products and "Splinter Cell: DA", as can be seen in Figure 5.4. Nivea's goal for this partnership was "to reach the male 18- to 34-year-old market, an audience that's increasingly moving away from traditional media and into video games" [10]. "It's a chance to present our brand in a younger, hipper way," said Joseph Venezia, marketing director at Beiersdorf (Nivea's owner) [10].

5.5 Financial Aspects

The fourth and last group in our business model ontology is *financial aspects* which is composed of the firm's *revenue model* and its *cost structure*. These elements describe how the firm generates revenue, required expenditures and what risks the firm is exposed to. The financial aspects of a company must be carefully planned, as a company must stay healthy financially to keep the goals of the company from being compromised.

Detailed information about companies income and *cost structure* are hard

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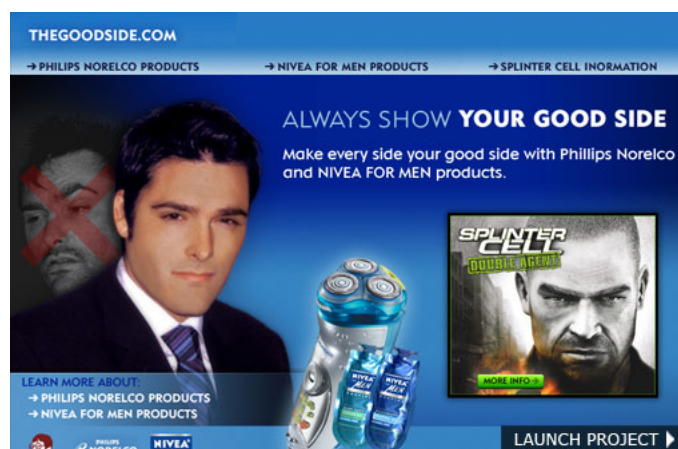
Figure 5.4: Website displaying advertisements of both Nivea's products and Ubisoft's "Splinter Cell: DA".

to find, as companies often keep the *financial aspects* of their business plan secret. For example, MMO publishers rarely comment the size of their subscriber base, because they do not want everyone to be able to figure out their earnings. Seen from an economic view, keeping the number of customers secret is preferable when negotiating deals with partners, or other third parties.

5.5.1 Revenue Model

The *revenue model* describes how the firm translates the value it offers its customers into money and incoming revenue streams. A firm can have several different income sources and pricing models. Businesses try to set optimal prices in order to optimize their income. With the introduction of the Internet, users can compare prices easier. As a consequence it is very important to adopt prices after competitors', maybe abandon fixed pricing all together.

I have identified the following major revenue models currently in use by companies in the game industry.

Retail sales model. This is the traditional revenue model, and it is often combined with other revenue models. The retail sales model includes

digital sales. You buy the game once, and you are eligible to play it according to the terms of usage. Content updates are rarely released for pure retail games since the game publishers do not generate income after retail sales. The price at release date varies from game to game, but most retail games follow the market level at around 50EUR (the retail price is often lower for games requiring subscription fee). The retail price is commonly lowered after the game has been out on the market for some time.

Exclusive editions may be released to earn additional revenues from retail sales. The content of the editions vary; for instance Napoleon: Total War Imperial Edition includes 10 additional elite units for use in both single player and multiplayer game modes, while World of Warcraft Collector's Edition includes a unique in-game pet, physical map, soundtrack CD and an art book, both editions have a retail price around 10EUR higher than the regular retail box [85].

Offering several versions may increase revenue through better utilization of the "potensial revenue" area in Figure 5.5. Since gamers value the game differently, they are willing to pay different amounts for the game. At the far left of the demand curve we have the most hardcore players who "must have the game", hence are willing to pay a lot for it (more than retail price), while at the lower right we have for instance casual gamers who values the game poorly, and are not willing to pay the retail price (R).

A special edition, priced at pE, may generate additional revenue, illustrated as the area "additional revenue" in Figure 5.6. I assume there are unlimited copies of both the retail and special edition. qE gamers value the game at price pE (and higher), thus buy the game for pE. qR-qE gamers buy the regular edition at price pR, since they value the game lower than pE, and equal to or over pR. (This is only an example, it does not mean that the standard retail edition sell the less than special editions in real life.) Theoretically, the more versions released (with different prices), the more of the "potensial revenue" area can be
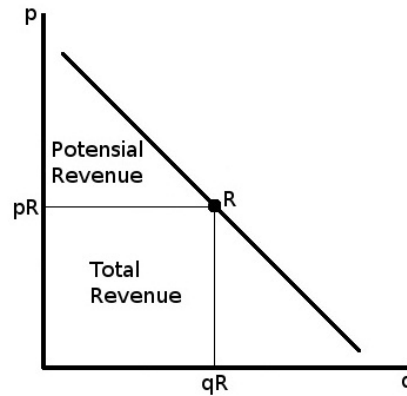
Figure 5.5: Demand curve: potensial revenue.
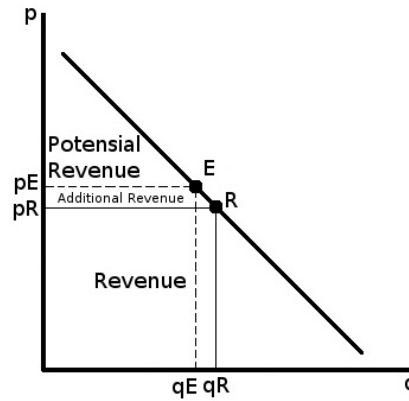
Figure 5.6: Demand for special edition.

utilized.

Retail revenue from sales of packaged PC game products is experiencing a steep decline and is increasingly becoming only a minor portion of overall PC game revenue, according to the 2009 PCGA Horizon report [3].

Subscription-based model. The subscription-based business model is based on contractual agreements between players and the game operator. Subscribers pay periodically to get access to the game, often receiving discounts when signing for long periods of time (e.g. annually). The subscription pricing structure should be designed so that the revenue stream from the recurring subscriptions is greater than the revenue from

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simple one-time purchases (bullet above). Subscription-based games require an active online connection to validate the subscription details and authenticate the user, thus reducing piracy.

The subscription-based model is most commonly used among MMOs. Game operators must provide their customers with valuable propositions, because they are then more likely to subscribe, and later renew their subscription. By not receiving the value required for the money spent, customers will leave the game. This aligns the customer and game operator toward the common goals, as both benefits if the customer receives value from the subscription. Moreover, subscriptions can be bundled together with other services such as communities and special offers, increasing the value of the subscription. Many MMO games today offer gamers a free trial of 10-or-so days, after that time the player may chose to subscribe or the player's access rights are suspended.

From a game operator's perspective a subscription revenue model has many clear advantages. This model can be incorporated into other revenue models, such as the advertisement-based model. Subscription details can be used for targeted advertising, further increasing revenues. Income generated from the game can be more accurately estimated because subscribers pay a constant revenue stream in the period of agreement. Moreover, by analyzing trends in players' behavior the game operator can target customers which are potential churners. Retention actions can be performed to hold on to these customers, subsequently increasing revenues. Subscribers must be content in order to keep them subscribing, this leads to operational costs related to for instance support, payment systems, security measures, and the development of new content.

Players benefit from a subscription model by receiving frequent content updates, including bug fixes and new content. Additionally, the game operator needs to maintain a relationship with the player in order to keep him/her as a subscriber. The pricing mechanism should be fair

to both casual and hardcore players. A fixed subscription fee benefits hardcore players the most, as their relative fee per hour in-game is lower than it is for casual gamers. For casual gamers, playing up to a few hours a week, metered usage (utility model) may be more attractive. No game operator known through my research support user selection of revenue models (periodic subscription fee vs. metered usage fee). Thus, if the target customers include casual gamers any fixed price subscription fee need to be set to a level where casual players are not discouraged to subscribe.

Utility model. This model is based on metering usage, i.e. a pay as you go approach. Unlike the previous model (subscription-based) the utility model is based on actual usage rates and therefore benefits casual gamers more than hardcore gamers. This model is widely used among MMOs in China, but is uncommon in the European and North American market.

Micro-transaction model. This model has been a dominant trend in the eastern MMO markets for a few years now, and is often used in social games and browser games. We can see that this transactional model is starting to emerge in North America and Europe too.

One advantage with the micro-transaction model, seen from a game publisher's perspective, is that there is no upper boundry of how much a player may spend buying items or premium services. A hardcore player may spend several times more on micro-transactions than on subscription fees. However, the revenues generated from micro-transactions may be hard to estimate and vary greatly from player to player. Furthermore, if players receive in-game benefits through micro-transactions the game may become unbalanced in the favor of gamers that are willing, and have the ability, to pay. The difference in real life wealth and willingness to pay for superior items may create a "social gap" in-game.

According to Susan Wu, a Principal with Charles River Ventures, people spend over US\$1.5 billion on virtual items every year [99]. These

Figure 5.7: In-game advertisement in Counterstrike

items are nothing more than premium services, which create a real value for people. Often a gamer can earn the same items through playing, but this requires substantial time investments, therefore it is often easier to just buy the items, and rather spend the saved time working.

DLCs are kind of within this model, as DLCs are provided as payable bonus content.

An example of a firm that uses the micro-transaction model combined with the advertisement revenue model is Habbo Hotel. 90% of Habbo Hotel's income is based on revenues from micro-transactions, i.e. sale of virtual goods [99].

Advertising model. Pure advertising-based business models are popular among smaller social and browser games since people have no incentives for paying to play, for instance, a small flash game. However, any business model can be enhanced by adding in-game advertising, ranging from product placements to rich media banners. Figure 5.7, shows an in-game advertisement in Counterstrike promoting the Hollywood movie, "Iron Man".

Games are an ideal medium for reaching for instance the young male demographic, says Paul Jackson of Forrester Research [1]. "The level of engagement is higher than in passive listening to radio or TV", Jackson explains. "If you're in the middle of playing 'Halo 2,' for instance, there's no way you can get up and walk away as you might if a commercial came on TV. Video games engage you." According to the PCGA Horizons report, $792 million in revenue was generated by PC ad sales worldwide during 2007 [49]. Furthermore, a study conducted by Nielsen Interactive Entertainment found that in-game ads result in a 60 percent increase in awareness for new products [84].

Offline games can have hard-coded advertisements. In this case the advertiser and publisher need to agree to the terms of the ad campaign before the game is released. These terms are hard to negotiate since there is no way to know how many copies the game sells (only estimates) or how many ad exposures gamers will experience in-game. Moreover, there is no easy way to update in-game advertisements once the game is shipped. But when an advertising deal is made, hard-coded in-game ad revenues lower the investment risk taken by the publisher.

Online games have the biggest potential when it comes to the advertising-based revenue model. Online games can provide dynamic in-game ads, which mean that the ads can be changed regularly to meet special needs. Targeted ads can be served by linking the ad engine to players' profile details, or by analyzing player behavior, for instance by serving more of the type of ads the player has spent time looking at in-game. Targeted advertisements are valuable as companies can run campaigns targeting only high potential customers, reducing the cost of the campaigns and increasing the efficiency rate. Moreover, detailed statistics about each ad campaign can be gathered, providing valuable information, for instance number of exposures, click-ratio and details about users looking at a specific ad for more than a set time. Full control of the ad system enables advertisers to chose the amount of ad exposures for each campaign, keeping them within their budget.

Many MMOs give out free trial copies, hoping trial players will convert to paying subscribers after the trial period has ended. By implementing ads into the trial version a game publisher could have generated revenues even from non-paying players. However, in-game ads may have a negative effect on trial players, not converting as many to subscribers as an ad-free trial would have. Trials with ads versus ad-free trials can be explored further in a future work.

"Advergame" is a game which is made in order to promote a product, service or an organization. Advergames are free to play since a company pays all costs associated with it, and they want as many people as possible to become exposed to their ad campaign.

Freemium model. The freemium model is a combination of other revenue models. For instance, a game can be completely free but powered by advertisements in-game. The same game can offer its users a way to remove the advertisements by paying a subscription fee. Income is generated through advertisements, and through subscription fees paid by dedicated players. By letting gamers play for free the entry barriers are lowered. Consequently, more gamers will try the game. If the cost to acquire a paying customer online is high enough, a freemium model starts to make sense [24].

Football Superstars is a good example of a game where revenues are generated using the freemium model. The game is a free-to-play MMO sport game, where the goal is to become a soccer superstar. Part of the game revenue is generated through use of a subscription model (lifetime subscription available). Subscribing players receives in-game benefits. The micro-transaction model is implemented by providing an item mall were premium in-game items are available for purchase for real money. Additionally, advertisements of real products and services are strategically placed in-game. There are for example in-game banners around the soccer field, as we are used to seeing at real life soccer stadiums. Moreover, character clothing and accessories clearly

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have real life brands on them. Advertisers include Rebook, Puma and Nokia.

License model. By selling product licenses to other companies a firm can lower distribution and marketing costs, or enter restricted markets like China. As an example, Blizzard sold a World of Warcraft license to Netease in China. This license grants Netease permission to distribute and operate WoW in China, a market Blizzard could not enter as China prohibits foreign companies from operating online game services.

5.5.2 Cost Structure

The *cost structure* is our last building block, and it measures all the costs the firm incurs in order to create, market and deliver value to its customers. Potential cost savings, which leads to increased profitability, can be found by analyzing this part of the business model. The *cost structure* is composed of *accounts* which each defines a specific type of expenditure. Costs are divided into either direct costs or running costs.

5.6   Actors

This section identifies all actors involved in the business model.

6

Case Study: Blizzard Entertainment's World of Warcraft

This chapter will thoroughly describe the business model of Blizzard's World of Warcraft (WoW) using information found on official statements from Blizzard, interviews, and from my own experience playing WoW. It is impossible to present a complete business plan without access to Blizzard's files, but most of the core elements are believed to be included. WoW was chosen, as a case study, based on the fact that it is currently the #1 subscription game in the world.
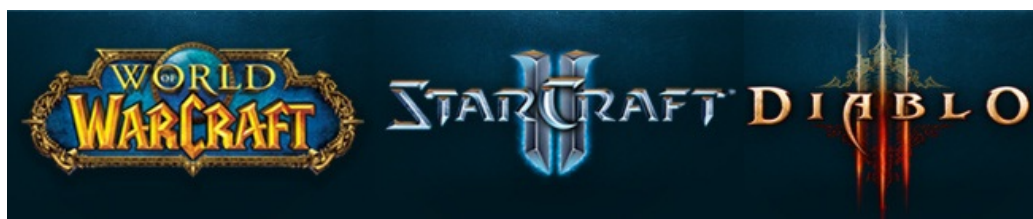
Figure 6.1: Blizzard's most successful franchises.

6.1   Blizzard Entertainment

Blizzard Entertainment is a developer and publisher of entertainment software, and the creator of the massive multiplayer online game World of Warcraft. Blizzard Entertainment is today a part of Activision Blizzard, the following case study, however, will focus entirely on the Blizzard part of Activision Blizzard. The latest games from Blizzard's three most successful franchises are shown in Figure 6.1

The following company information is taken from the Blizzard homepage [15]. "Blizzard Entertainment's track record of back-to-back #1-selling games spans more than a decade, and with blockbuster hits such as World of Warcraft®, Warcraft® III: Reign of Chaos®, Diablo® II, and StarCraft®, the company has earned several consecutive Game of the Year awards. In addition, Blizzard Entertainment's online-game service, Battle.net®, is one of the largest in the world, with millions of active users.

The high-quality products based on Blizzard Entertainment's games have also proven popular and garnered critical acclaim. These products include action figures, novels, manga, board games, pen-and-paper role-playing games, apparel, and the World of Warcraft Trading Card Game, which is a bestseller in its category. Extending the reach of its game universes even further, Blizzard Entertainment is currently at work with Legendary Pictures, the studio behind the feature films Watchmen, The Dark Knight, Batman Begins, Superman Returns, and 300, on a live-action Warcraft movie".

6.2 World of Warcraft

World of Warcraft is, as already mentioned in previous chapters, a massive multiplayer online role playing game. WoW was built around Blizzard's previous successes with creating action-packed, item-rich RPGs (Diablo) and balanced online games (Starcraft, Warcraft). WoW enjoyed a head start, compared to other games, because it is based on an already well-known intellectual property of Blizzard's, namely Warcraft. The Warcraft franchise has over the years received many game awards, building up a huge fan base, and helped Blizzard building up a strong reputation for making top-quality games [52].

With a current user base of more than 11.5 million players WoW has become the world's leading subscription-based game [9]. WoW took $200 Million to create, and is costly to operate, but with annual revenues exceeding $1 billion it is, with no doubt, a very profitable franchise [55, 59]. Revenues associated with the World of Warcraft franchises accounted for 98%, 97%, and 97% of Blizzard's consolidated net revenues for the years ended December 31, 2009, 2008, and 2007, respectively [8].

The game story of WoW plays out in the virtual world of Azeroth, which is set in the Warcraft universe known from Blizzard's Warcraft franchise. Players from across the globe play together, assuming the roles of Warcraft heroes as they explore, adventure, and quest across a persistent virtual world. WoW, with its current expansions, includes ten playable races and classes, multiple professions and thousands of quests [18]. Players can solve quests together by playing against the environment (PvE), or fight against each other in player vs. player (PvP) areas. Special PvP areas, called arenas, are designed to enhance the PvP experience by offering different competitive environments (e.g. capture-the-flag, kill enemies' king). Special PvP quests and items are unlocked as the player gains PvP experience. Other ways of obtaining items are through the looting of killed enemies (AIs) or by creating items using specific professions (e.g. blacksmith).

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Figure 6.2: Screenshot from WoW.

6.3 Product

The product offered in Blizzard's *World of Warcraft business plan* is the RPG game itself and other bundles of products and services around-the-game. Figure 6.2 shows an in-game screenshot.

Value Proposition 1: The Game

Offer an entertaining massive multiplayer online RPG game where thousands of players can play together and battle against the world and each other. "Players from across the globe can leave the real world behind and undertake grand quests and heroic exploits in a land of fantastic adventure" [19].

This *value proposition* can be decomposed into a set of seven *offerings*:

The game itself. WoW is active entertainment where you, as a player, adventure a virtual world. It is both competitive and challenging as player can fight each other (PvP) in designated areas, or cooperate to beat the environment (PVE). The game is frequently updated with bug fixes

and minor to large content updates to maintain current subscribers and attract new subscribers. A more thorough description can be found in Sect. 6.2.

Digital downloads. The game can be digitally bought and downloaded over the Internet through Blizzard's online shop. Retail box copies can be bought online or in stores. Updates (patches) are also downloaded over the Internet.

Offering 1 and 2 are summarized in Table 6.1.

Attribute	The Game	Digital Downloads
Description	See Sect. 6.3	
Reasoning	{use}	{effort, risk} By downloading WoW online the customer does not have to move physically to obtain the game, reducing his efforts. There is no risk of the game being sold out. Patches are downloaded and applied automatically.
Value Level	{innovative imitation} WoW has revolutionized the MMOG industry with its ability to attract players and serve a high quality gaming experience. It is similar to other MMORPGs but crush all competition when it comes to popularity	{me-too}
Price Level	{market} Price is similar to other MMO titles.	{free}
Value Life Cycle	{use}	{purchase, renewal} Simple online purchases, (re-)downloads and updates.

Table 6.1: Offering 1 and 2 of Value Proposition 1. Explanation is given where needed.

Account management. Blizzard provides customers with an online account management panel. From here users can edit their account information and add payment methods. Further, users can access paid services, free services, promotions (friend recruitment, arena tourna-

ments, etc.) and additional services (WoW TV-shows and WoW magazine) from this panel.

Paid services. Paid services include character specific services. For a fee gamers can move their character to another server, change their characters' appearance, name, faction or race.

Offering 3 and 4 are summarized in Table 6.2.

	Account Management	Paid Services
Description	See Sect. 6.3	
Reasoning	{effort} Easy to access and edit account details.	{effort} Characters can be changed after creation, by offering these services a player doesn't have to start over with a new character to get the customization wanted.
Value Level	{innovative imitation} Online account management systems are common among MMOs, but Blizzard integrates all their games into this system.	{innovative imitation}
Price Level	{free}	{high-end} Blizzard charge high prices for these services. (These services were not supported initially.)
Value Life Cycle	{purchase, use, renewal}	{use}

Table 6.2: Offering 3 and 4 of Value Proposition 1. Explanation is given where needed.

Free services. Parental control is one of the services offered for free. Parental control is a tool for parents to oversee their children's playtimes, by setting up a play schedule determining when the specific account may or may not log on to the game. Other free services include character move to lower population servers and access to Public Test Realms (beta servers) [16].

Support. Blizzard provides customers with all kinds of support. The Account and Billing department provides assistance with any and all account and billing issues related to a customer's World of Warcraft ac-

count. For technical problems customers can contact the Technical Support department, or check the Technical Support Forum for help with a particular problem. In-game support is provided by Game Masters who provide assistance with any in-game issues [19].

Security. Account security is one of Blizzard's top priorities, because they want Battle.net accounts to be a worry-free and convenient way to access all Blizzard Entertainment games. Keeping accounts safe and secure is an important goal for Blizzard. To help and guide customers Blizzard provides knowledge and tools (different authenticators) to identify and report threats to a customer's accounts safety. Blizzard also have an Account Security Support department which provides customers with support in relation to the status of their gameplay accounts [16].

Offering 5, 6 and 7 are summarized in Table 6.3.

	Free Services	Support	Security
Description		See Sect. 6.3	
Reasoning	{use, effort, risk} Use to access beta versions of WoW. Parents reduce their efforts keeping tabs on their children's playtime. Reduce the risk of server congestion by moving character to lower population server.	{use, effort, risk} By contacting the support system you can obtain help, which again reduces you effort to solve problems yourself and the risk of doing something wrong.	{risk} Security measures lowers risk of account theft and other security related concerns.
Value Level	{me-too} Same services are offered by other MMOs.	{me-too} Same services are offered by other MMOs.	{innovation} Tools are offered to reduce security threats.
Price Level	{free}	{free}	{free}
Value Life Cycle	{use}	{purchase, use, renewal}	{use}

Table 6.3: Offering 5, 6 and 7 of Value Proposition 1. Explanation is given where needed.

Value Proposition 2: Expansions

Expansion packs offering new content are released every other year to extend the life of the game, as well as to improve it. From the Activision Blizzard's Annual Report (10-k) we find information that supports this statement: "Blizzard plans to maintain and build upon our leadership position in the MMORPG genre by regularly providing new content and game features to further solidify the loyalty of our subscriber base, as well as to expand the global game footprint to new markets" [8]. Currently, two expansions have been released: "Burning Crusade" (2007) and "The Wrath of the Lich King" (2008), while the third one is to be released in 2010 named "Cataclysm". This *value proposition* does not need to be further decomposed into *offerings*, its *attributes* are presented in Figure 6.4.

Attribute	Value
Reasoning	{use}
Value Level	{innovative imitation}
Price Level	{Market}
Life Cycle	{use}

Table 6.4: Attributes of Value Proposition 2.

There are both positive and negative sides related to the release of new expansion packs. All WoW expansions add new classes, raise the level cap, introduce new dungeons and quests, and further expand the game in many ways. Expansions are without doubt very important to keep MMO games alive. Hardcore players often demand new content to continue playing, and more casual gamers may also grow tired of the game if not anything new is added. But expansions also have their drawbacks, especially for semi-hardcore gamers who have spent countless hours in-game to obtain superior equipment, and in other ways obtained high status, as an expansion may lead to in-game achievements becoming out-of-date. Once highly sought after, high-level quality items, are no longer powerful, and players can easily obtain

better equipment by finishing new adventures and quests. The switching cost is temporarily lowered, as players may be discouraged to continue playing and leave for other games or leisure activities.

I interviewed a friend of mine, who is a previous WoW player, asking him why he chose to quit playing. After two years, and over 100 days in-game, his priest character was one of the server's best equipped priests. There were few items which could make his character any stronger. However, this all changed when WoW's first expansion pack "Burning Crusade" came out. Suddenly, items spent months obtaining, raiding (cooperating) with 40 people three times a week for up to four hours, were inferior to items easily obtained from new relatively easy quests which could be done alone, without the support of others. "Burning Crusade" triggered the ending of my friend's "WoW career", mainly because his character's achievements were nothing special anymore, discouraging him from further play. In-game status, achievements and reputation close to reset when an expansion is released.

Value Proposition 3: Community

There are a many social aspects in MMOGs, and World of Warcraft is not an exception. Communities often flourish as players gather to discuss game related topics, and people are establishing friendships through the game and communities. Knowing the importance of such communities, Blizzard has created several localized websites promoting and supporting the creation of communities based around the WoW franchise.

The user base has an impact on the value of the overall game experience, and is not to be underestimated. Network externalities play an important positive role in any MMO, as one player benefits from having other players around. More players imply that groups can be formed to a greater extent, increasing the number of social interactions and shared game experiences. Moreover, since WoW is a competitive, as well as a cooperative game, players take pride in showing what they have accomplished in the virtual world, either by flashing items obtained from slain high level bosses or by running

around with a respectable PvP rank.

This *value proposition* can be decomposed into the following *offerings*:

Forums. "Blizzard provides the World of Warcraft forums for its customers to chat, exchange ideas and strategies, and submit feedback" [19].

Contests. , Throughout the year, Blizzard run various contests, both in-game and through the community section online, in which players can participate and win cool prizes [19].

Various media. Blizzard strongly supports the efforts done by its World of Warcraft community members who produce media related to the World of Warcraft franchise. Examples are the creation of fan art, comics, magazines and Machinimas (movies based on scenes produced in-game) [19, 36].

Events. Blizzards host frequent in-game events/contests such as the "2010 European World of Warcraft Arena Pass" where you can win prizes like unique mounts, titles or pets. (Event mentioned requires a registration fee to be paid in order to participate.) Local stores host promotion events, and Blizzard also hosts real-world events such as BlizzCon to promote their games.

Fan Sites. Blizzard provides a Fan Site Kit which consists of materials designed to assist in the creation of World of Warcraft Fan Sites [19]. Numerous sites have popped up on the Internet following WoW's success. These sites range from fan sites to sites offering WoW add-ons. Blizzard frequently promotes a lucky selection of third-party sites in their newsletters and on the WoW sites, by doing so these fan sites attract more visitors. On the same time the fan sites are important for Blizzard as they promote their game for free.

Value Proposition 4: Physical and Digital Items

Blizzard has a digital shop where people can buy physical books, collectibles, trading cards and more related to the WoW game, as well as their other franchises: Warcraft, Diablo and Starcraft. Over 400 products with Blizzard properties have been released [37]. Digital in-game pets and mounts can also be bought in Blizzard's online shop.

This *value proposition* is attractive for customers interested in WoW products and special in-game items.

6.4 Customer Interface

This section describes all customer-related issues: who the target customers are, how Blizzard reaches them, and how relationships with current customers are maintained.

Target Customer

Through my research I have found that World of Warcraft's value propositions target four distinct groups of customers.

Target customer 1: Casual and hardcore gamers. WoW has sold more than Blizzard ever could have dreamed of. One of the reasons for World of Warcraft's massive success is its appeal to both casual and more experienced gamers. Even with its cartoon-like visual style it attracts people from all age groups, from children to seniors [60]. Casual gamers are the bulk of the market, hardcore gamers have a central but minor role. Therefore Blizzard matches the game's system requirements to casual gamers' specifications [52]. Expansions such as the soon-to-be released WoW Cataclysm implements improvements which benefit both current subscribers and new subscribers alike [9]. This customer segment can be broken down into two *criterions*: *casual* and *hardcore*

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gamers. Casual gamers are defined as the group of people which play infrequently and for shorter periods of time. Hardcore gamers play frequently and are logged in for a longer period of time than casual gamers. A few percent of the hardcore gamers play enough to experience the high-end content, clearing everything before a new expansion comes out.

Target customer 2: Retail shops. Stores are vital intermediaries, they distribute World of Warcraft to target customer 1.

When including all of the games released by Activision Blizzard the "largest wholesale customers, GameStop and Wal-Mart, each accounted for approximately 10% and 11% of consolidated revenues for the years ended December 31, 2009 and 2008, respectively" [8].

Distribution Channel

This section explains how Blizzard offers and markets its value propositions. Central channels are identified and explained.

Distribution channel 1: www.battle.net/www.blizzard.com. Blizzard's web shop is a channel for distributing World of Warcraft, as well as other Blizzard games. Before Blizzard opened its online shop, customers were able to purchase and download WoW through localized sites, such as www.worldofwarcraft.com (US) and wow-europe.com (EU). Battle.net offers additional value added downloadable contents and services.

Distribution channel 2: online WoW sites. Several localized WoW sites, such as wow-europe.com, are established and maintained by Blizzard. These sites may sell WoW merchandize directly, or refer to online shops powered by Blizzard or one of its partners.

Distribution channel 3: retail shops. Blizzard sell WoW to retail shops using third party distributors or their own European distribution subsidiaries: Centresoft in the U.K.; and NBG in Germany. These sub-

sidiaries act as wholesalers in the distribution of products [8]. The retail stores sell WoW directly to its customers which are the end-users (target customer 1).

Distribution channel 4: license arrangements. WoW is sold through licensing arrangements in some countries (e.g. NetEase in China).

Distribution channel 5: media. Different media channels (*links*) are used in the marketing of WoW, among them, Internet, print media and television. Figure 6.3 shows a screenshot of a WoW commercial broadcasted on national TV in the U.S. In September 2009, Blizzard's television advertising campaign had seen over 10,000,000 views since it began [37].

Figure 6.3: Screenshot of a WoW TV commercial featuring Ozzy Osbourne.

Distribution channel 6: events. Events such as BlizzCon promote and increase the hype around Blizzard's titles. BlizzCon is a two-day event hosting, among other things, social events for players and developers to meet one another, hands-on gameplay in casual and competitive tournaments [15]. BlizzCon had 100,000 participants in 2009, although it loses money as a standalone event, it is important for marketing reasons [37].

Distribution channel 7: newsletters. Blizzard regularly sends out game related information as newsletters to subscribers wanting the latest WoW news.

Table 6.5 and 6.6 show the CBC of the various distribution channels.

Channel	Awareness	Evaluation	Purchase	After Sales
battle.net	One account manager for all Blizzard's games. The customer becomes aware of Blizzard's other games.	-	Easy digital purchase and download.	Additional value-adding services can be purchased.
WoW sites	An active community, and regularly news updates, provide great marketing.	Provide information about WoW.	-	Host online shops which sell Blizzard merchandise.
Retail shops	Product exposure in store. Banners and other promotion material can be used to attract shoppers' attention.	Store clerks can inform and advice customers to buy WoW.	Customers may buy the game in store.	-

Table 6.5: World of Warcraft distribution channels, with their corresponding customer buying cycle (part 1/2).

Relationship Management

For simplicity I have divided the relationship management block into the three distinct stages: acquisition, retention and add on selling.

Acquisition. Marketing is a vital part in acquiring new customers. Promotional campaigns, ranging from advertisement banners shown on websites to events such as BlizzCon, increase the awareness and attract new customers. There are many actors involved in the marketing of WoW, and it is important to establish a good B2B relationship with

Channel	Awareness	Evaluation	Purchase	After Sales
Licensees	The licensee can market the game in its local market	The licensee can arrange events which inform and advice the public about WoW.	The licensee can be responsible for the local distribution of the game.	The licensee can sell value-adding services related to the game.
Media	Use media to market WoW.	-	-	-
Events	Hype WoW (and other Blizzard products).	Provide demonstrations or other forms of presentations of the game.	-	-
Newsletters	Subscribers stay updated with the latest WoW news.	Media, such as videos, may be used to promote new content.	-	May trigger expansion, item and service purchases.

Table 6.6: World of Warcraft distribution channels, with their corresponding customer buying cycle (part 2/2).

these actors. The actors need to understand how to promote the game in a clear way to convince the target market that WoW is better than other competing games.

Blizzard should give intermediaries (resellers) incentives to have them focus on promoting WoW instead of other games to increase sales. It is proved that in-store demonstrations and clerk recommendations account for most customer impulse purchases, thus having a good relationship with resellers is valuable [41]. Resellers are in direct contact with Blizzard's customers, it is therefore important that they promote WoW in a satisfying way. Blizzard has European distribution subsidiaries which offer sales support to resellers in Europe.

WoW has a recruitment program where active subscribers can recruit real life friends to receive additional game time, or unique items in game. Moreover, WoW is free to play during a trial period (7-10 days).

Retention. WoW is a business which is dependent on having a healthy user base since revenues are largely based on the number of subscribers.

Also, due to network externalities it is important to hold on to subscribers as a community of active players is of value both when acquiring and holding on to customers. From the previous statements it follows that Blizzard's goal is to keep the churn rate as low as possible. Churn rate, in this thesis, refers to the proportion of subscribers who unsubscribe during a given time period. One minus the churn rate is the retention rate. The churn rate can be lowered by creating barriers which discourage customers to leave, or through retention activities such as loyalty programs.

WoW has the nice property that players become more and more attached to their in-game character(s) as they play. By investing time in-game the game character acquire new abilities, more powerful equipment, and unique areas are unlocked. As a player completes one goal, there is always a new one to take its place. The content is, for most players (except the most hardcore players), endless. Blizzard frequently push out new content containing new areas to be explored, and new challenges to complete. Moreover, WoW supports the establishment of friendships between players in-game by offering functions such as a friend lists and a complete guild (clan) system. The features and offerings mentioned are all barriers (lock-in and high switching costs) discouraging players from leaving the game for another. Furthermore, several support departments (localized, can be contacted in-game, by email or telephone) are available for customers if they experience any kind of problems related to the game.

Subscribers receive discounts for accepting longer subscription agreements.

Add on selling. Through blizzard.com visitors can read about Blizzard's partners and visit their online stores. Blizzard partners pay license fees to be able to sell official Blizzard branded interactive entertainment products. They develop and market these products through Blizzard's "affiliate label" programs in North America, Europe, and the Asia Pacific region [8].

Blizzard also have their own online shop where customers can buy unique in-game pets and mounts (for fast travelling in-game), and other game related collectibles such as trading cards and figures.

Additional services can be bought conveniently from the account manager panel at battle.net. WoW can also be upgraded by purchasing expansions through battle.net.

6.5 Infrastructure

The infrastructure describes what Blizzard has to dispose of to offer its value propositions and maintain its customer interface.

Capability

Two of the most important capabilities are described in detail.

Capability 1: Develop an attractive game. In order to develop WoW Blizzard need to have the following resources available:

Resource 1: Blizzard has accumulated enough cash, through their previous titles and investments, to buy the necessary office space and equipment to develop World of Warcraft. Blizzard's headquarters are located in Irvine, California. {Tangibles}

Resource 2: Blizzard holds valuable patents and copyrights on their brand name Warcraft. The game revolves around the Warcraft universe. Further, Blizzard employees have acquired valuable experience from their other developed games. {Intangibles}

Resource 3: Staff. "Product development is handled internally by a strong core group of designers, producers, programmers, artists, and sound engineers" [8]. {Human resources}

Capability 2: Offer a great gaming experience, and support a thriving game community. This capability is decomposed into the following resources:

Resource 1: Attract subscribers. Having regional offices around the world allow Blizzard to tailor marketing initiatives to specific regions [8].

Resource 2: Support. "Blizzard maintains offices in or around Austin, Texas; Paris, France; Cork, Ireland; Seoul, South Korea; Shanghai, China; and Taipei, Taiwan, to provide 24/7 game support to World of Warcraft players in their native language, and enhance online community management" [8].

Resource 3: Network infrastructure and equipment. One of Blizzard's greatest challenges is to keep the WoW server farm, capable of supporting thousands of players, online 24/7. The servers have to avoid loss of data integrity (error-free), as character data needs to be accurately stored in stable databases. Players would certainly not like their game progress or equipment to be lost.

According to Mike Morhaime, CEO of Blizzard Entertainment, their servers' hardware were prepared, before the release of WoW, to handle traffic equal to their fastest selling game ever, at that time, Warcraft III. As it turned out, WoW outsold Warcraft III, and at one point Blizzard stopped distributing more copies of the game to save their servers. Blizzard learned from this experience. When they two years later launched Burning Crusade, which sold 2.4 million copies in a single day, they had no major problems with their network infrastructure [52].

Value Configuration

Blizzard functions as the traditional game industry value chain, described in Sect. 2.6. The development stage functions as a value shop. The primary activities of value chains (Table 5.2) are used to explain the process of creating, marketing and selling World of Warcraft.

Blizzard is a huge company with many departments, it is impossible to list them all, so the presented departments and activities are just a small share of the total organization.

Inbound logistics. Blizzard owns patents and copyrights related to the Warcraft universe, which WoW is based on. The WoW project could be set into development as soon as the game concept was clear. This activity is linked to resource 2, in capability 1.

Operations. Blizzard used internal developers and artists during the creation of WoW, and in the development of patches and expansions. Operation activities are performed by the programming-, art-, production-, design-, cinematic-, sound-, and platform department. The development team creates value by mobilizing developers and artists, thus functioning as a *value shop*. The team contributes a major part to the total value chain. This activity is linked to resource 3, in capability 1, *staff*. In September 2009, five years after the release of WoW, the game contained 5.5 million lines of code and 1.5 million art assets [37].

Outbound logistics. WoW is distributed using the channels described in Sect. 6.4. The distribution channels function as *value networks* mediating exchanges between buyers (gamers) and sellers (publishers).

Marketing and sales. Activision Blizzard's "marketing efforts include online activities (such as the creation of World Wide Web pages to promote specific titles and build user communities around our franchises), public relations, print and broadcast advertising, coordinated in-store and industry promotions (including merchandising and point of purchase displays), participation in cooperative advertising programs, direct response vehicles, and product sampling through demonstration software distributed through the Internet or on compact discs." From time to time, Activision Blizzard "also receive marketing support from hardware manufacturers and retailers in connection with their own promotional efforts" [8]. Figure 6.4 show a WoW advertisement as seen on the world wide web.

Figure 6.4: World of Warcraft advertisement banner.

Services. Blizzard provides customers with localized support, both in-game
and by email and telephone. The customer support staff is a group with
2,056 game masters, 340 billing managers, and a host of other back-
ground staffers (September 2009). They work from locations around
the world, ensuring that any local variations in culture (or the game)
are respected [37]. Additionally, value-added services are available to
enhance the value of WoW. Further, servers are upgraded as player pop-
ulation increases to minimize server lag. The Blizzard Online Network
services group monitors over 13,250 server blades, with over 75,000 cpu
cores installed, to ensure that every customer (player) can connect to
servers and play [37].

Partnership Network

Blizzard are dependent on having strong partners in order to acquire and
keep its customers, and having more than 11.5 million subscribers makes it
an ideal partner for many organizations. No in-game advertising, or adver-
tising on official WoW sites promote other firms than Blizzard. This is in
ordinance with Blizzard's policy that they evaluate all revenue models for
every game they develop, and Blizzard believe real-life advertisements do
not fit in WoW's fantasy settings [91].

Listed below are the most important partnerships.

Partnership 1: Infrastructure. WoW needs a stable infrastructure of servers and high speed connections to the Internet. "World of Warcraft utilizes 20,000 computer systems, 1.3 petabytes of storage, and more than 4600 people" [37]. Consequently, Blizzard enters a number of partnerships with companies which provide and maintain the hardware of the infrastructure.

Partnership 2: Retail and digital stores. WoW is sold in physical and digital stores, thus Blizzard has partnered with these shops, giving them for instance sales support.

Partnership 3: Various partners. Blizzard "distribute a select number of interactive entertainment products that are developed and marketed by other third-party publishers through our affiliate label programs in North America, Europe, and the Asia Pacific region. Services we provide under our affiliate label programs include order solicitation, in-store marketing, logistics and order fulfillment, and sales channel management, as well as other accounting and general administrative functions. Our current affiliate label partners include LucasArts, as well as several affiliate label partners in our "value" business, which offers budget-priced software to the public" [8]. A selection of Blizzard's partners can be found at Blizzard's website [15].

Partners include:

Bundle partners. Firms sell Blizzard's World of Warcraft bundled with their product(s), for instance a sample of gaming keyboards include World of Warcraft.

Product partners. Third-party digital shops and physical stores sell physical items related to the "World of Warcraft" brand. Companies interested in selling WoW items must obtain a merchandise license.

Affiliation. Blizzard's other titles benefit from WoW's massive success by being associated with it. For instance, hyperlinks can be found on official WoW sites referring to Blizzard's other titles.

Partnership 4: Licensees. Blizzard sells licenses (enabling other firms to operate World of Warcraft) to third-party firms in countries where local regulations somehow restrict Blizzard from hosting the game. For instance, the Chinese government forbids foreign companies from operating online games domestically through joint venture or sole investment. A major challenge, especially when Chinese players make up over half the customer base of WoW [59]. The Chinese "virtual world" market is the largest in the world, its population is around the same as the North American, South Korean and European markets combined [66]. In short, if WoW is to be offered to the Chinese market, Blizzard must provide license to a local Chinese operator (NetEase at the moment), rather than hosting the game themselves. Other known countries with similar restrictions are Russia and Taiwan [8].

6.6 Financial Aspects

This section explains how Blizzard generates revenues from WoW and the distribution of expenditures.

Revenue Model

Blizzard initially hoped to release WoW as a free-to-play game, powered by advertisements [91]. But they reconsidered, and went for a subscription-based model, one reason being that the fantasy setting was not suitable for in-game advertisement.

Activision Blizzard's 2010 Annual Report states that "Blizzard distributes its products and generates revenues worldwide through various means, including: subscriptions (which consist of fees from individuals playing World

Figure 6.5: WoW Collector's Edition.

of Warcraft, including from sales of prepaid-cards and other value added services); retail sales of physical "boxed" products; electronic download sales of PC products; and licensing of software to third-party companies that distribute World of Warcraft in Russia, China and Taiwan" [8].

WoW revenues are based on five sources of income: retail sales (both physical and digital), subscription fees, value-added services, item mall and license fees.

Retail sale. WoW can be purchased at a retail store or online through Blizzard's digital shop at a price consistent with that of other competing MMOGs. WoW is sold for $19.99, Burning Crusade $29.99, and Wrath of the Lich King $39.99, in Blizzard's online shop. A compilation including WoW and Burning Crusade is offered for $39.99. A "Collector's Edition" (special edition) was also available at release, and was quickly sold out. Hardcore gamers paid around $15 more for the special edition which included several physical items, as seen in Figure 6.5. Blizzard was able to generate additional revenue from some of its most hardcore fans by offering the special edition of the game, refer to Sect. 5.5.1 for illustrations.

Subscription fees. At the time of writing the monthly fee for European customers is 12.99EUR, there is a small discount if three (35.97EUR) or

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six months (65.94EUR) are paid in advance. Blizzard support payment using various credit cards.

Value-added Services. WoW offers its customers innovative in-game value added services described in Sect. 6.3. For European customers a character re-customization costs 15EUR, paid character transfer 20EUR, character name change 8EUR, character faction change 25EUR and a race change costs 20EUR. Blizzard also earns money from hosting online tournaments were players compete for cash prizes and glory.

Item mall. The item mall is really just a "pet" store. The offered items give no in-game benefits other than bragging rights from owning unique pets and mounts.

License fees. WoW enters restrictive countries through local game operators. These game operators pay Blizzard for a game license. For example Netease pays Blizzard a license fee to operate in China. Netease uses the utility model, instead of the subscription model, which means that players pay by the hour.

Cost Structure

No credible information about the costs associated with WoW have been found, but I believe the following accounts stands for most of the expenditures:

Account 1: infrastructure acquisition and server maintenance.

Account 2: various fixed costs (e.g. wages, upkeep of office and development sites).

Account 3: advertising and promotional campaigns (marketing).

6.7 Actors

A number of *actors* are involved in this business model. These are:

Actor 1: Blizzard.

Actor 2: partners (e.g. retail stores).

Actor 3: licensees (e.g. NetEase in China).

Actor 4: various credit card companies are supported as payment option: VISA, Mastercard, American Express, Visa Electron and JCB.

Actor 5: gamers.

7

Case Studies

This chapter presents the business models of Anarchy Online and FarmVille.

Anarchy Online is compared to WoW as they are similar in their business plans. The only major difference being AO's innovative revenue models. Farmville, however, is very different from WoW and AO. It is a browser based game integrated in various social platforms, such as Facebook and MySpace. Both business models are described in lesser detail than WoW, containing only the most essential elements.

7.1 Funcom's Anarchy Online

Funcom is an independent publisher and developer of PC games, among their published titles are "Anarchy Online" (AO) and "Age of Conan" (AoC).

Figure 7.1: Screenshot from Anarchy Online.

The former is a science fiction themed MMORPG, released in 2001 after six years in development. Since its launch, AO has served more than 1.3 million gamers with a total of more than 200 million hours of entertainment [35]. A screenshot from AO is shown in Figure 7.1.

AO was chosen as a game for further analysis because it was the first of the major western MMO's to go for a free-to-play business model in 2004. Over the years, AO has introduced numerous progressive models. "Ranging from being the first game with dynamic in-game advertisement to being a pioneer in introducing digital downloads, free-to-play models, free trials, paid virtual items and more, Funcom keeps on exploring new approaches to running a MMO" [33]. A tiered subscription system was introduced in 2008 to give Funcom customers more choices in how they want to access the game [33].

AO is not close to WoW in popularity, therefore WoW's budget far outweighs AO's. However, when comparing WoW with AO's business plan we see that most elements are very similar, the interested difference being the various implemented revenue models in AO, and additions related to these models. The revenue models implemented in AO, and their effects, are emphasized in the following business model analysis. To limit the scope of the

thesis other unique characteristics of AO have been excluded.

7.1.1 Product

The main *value proposition* in AO's business plan is the entertainment received by playing AO. Similar to WoW, AO offers; expansions, paid and free services, support, communities, in-game events and an item store. Three years after its release AO introduced in-game advertising. In-game advertising created a *value proposition* for advertisers willing to pay for in-game advertising space. The in-game advertising *value proposition* was further enhanced in 2006 when interactive billboards were implemented in-game.

Funcom has developed a proprietary MMO engine called "Dreamworld" which is used in their MMO games, including AO. AO introduced *instances*, which today is common among MMORPGs. Instances are independent copies of in-game zones/areas, each copy having an own state. By dividing zones into instances developers can set limitations of number of players in each instance, conserving bandwidth usage, thus reducing costs. Moreover, the server load can be reduced by efficiently distribute instances across multiple servers.

7.1.2 Customer Interface

AO's first *target customer* is the gamer segment. AO was originally developed for the hardcore gamer segment, i.e. gamers that spend several hours on gaming every week, as the game had a relatively steep learning curve, was time consuming, and required a high-end computer [100]. The *target customer* has changed since release. Today AO is suited to both casual and hardcore gamers, the learning curve is still steep, but gamers can play in their own pace and all modern computers can run the game [25, 26]. Gamers who fancy sci-fi, fast-paced action and role-playing gameplay are most likely to stay with the game [25]. The *target customer* have connectivity to Internet, preferably a high speed connection.

In addition, AO targets advertisers through an agreement with Massive Incorporated, a video game advertising network. Through dynamic in-game advertising billboards, placed in central areas of the game, advertisers may expose their products and services to AO gamers, reaching (among others) the coveted young men and women demographic [97].

AO uses the same types of *distribution channels* as WoW. AO offers its value propositions, nine years after initial release, digitally through the official AO site. The game (and its expansions) is also available for purchase in a physical format through (retail) stores, such as Amazon.com. Moreover, Funcom sends out regular newsletters to customers' email addresses to keep them informed about game related news, and events are frequently arranged in-game.

One of the reasons for AO's success is its close *relationship* with its active gamers. Funcom receives feedback from the AO community, and improve the gameplay based on players' feedback and own ideas [78].

AO still *acquire* new players, even 9 years after release, due to its unique science fiction setting, depth and the option to play for free (introduced with the in-game advertising model) [26]. Moreover, the AO community has been widely known for welcoming new players with open arms, enhancing the value of the game [25].

A significant amount of effort is done by Funcom to keep the game interesting for both hardcore and casual players. New content is added frequently (around every eight weeks), "Funcom focuses on bringing more content more rapidly", this especially benefits higher-level players who have seen much of what the game has to offer [78]. Furthermore, new features and graphical improvements are added regularly [33]. Jorgen Tharaldsen, Product Director at Funcom, confidently sais that "we know people will stay for a long time if they discover the depth and immense possibilities we can offer. I mean, if you like sci-fi, MMOs and RPGs, AO is the premier choice". Different business models (tier subscription system, item mall) have been introduced so players have several options to choose from. For example, casual gamers may not

want pay-content (expansions) and can thus play for free, while more active players can pay for more content and features. Paying customers receive monthly points which can be spent in the item store, longer pricing plans like 6 and 12 months gives even more points.

Furthermore, players can purchase various in-game things from item stores, using real money (*add-on sales*), for instance in-game transportation vehicles or luxury apartments. Funcom furthermore releases big content updates (expansions), every 18 months or so, which require a monthly subscription fee to be paid in order to play. Other special expansions (DLC) require a one-time purchase [34].

7.1.3 Infrastructure

Although Funcom is of smaller size than Blizzard, the WoW business plan's presented *capabilities*, *resources* and *value configuration* are, in a smaller degree, represented in AO's business plan.

Funcom functions as a combination of a value chain and value shop (refer to WoW's business plan for explanation), but AO introduces a new part to the value configuration (compared to WoW) since it acts as a mediator between advertisers and gamers, creating value by linking them together in-game. Funcom thereby owns a value network entity which needs to be managed, implying that Funcom needs to integrate the *value network* configuration into its business plan or outsource the value network activities.

Funcom outsource the activities associated with value networks (see Table 5.4) to one of its partners, Massive Incorporated. Funcom distance itself from the activities associated with value networks by integrating Massive's client software into AO during development. This enables the game to receive advertising from the Massive Ad Server, and report exposure statistics back to Massive Inc. Figure 7.2 illustrates Massive's ad technology integration process [47].

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Figure 7.2: Massive's Dynamic Ad Integration Process, taken from [47].

7.1.4 Financial Aspects

The main difference between the WoW and AO business models is their different revenue models (cost structure is believed to be similar). AO has evolved from being a traditional subscription-based MMORPG, like WoW, to also support a free-to-play model, based on in-game advertising. Furthermore, an item shop and a tiered subscription model have been implemented.

AO's current sources of income originate from the following *revenue models*.

Retail Sales. Customers may download the AO client and its expansions digitally for free, or pay in store for the physical format.

Freemium/Subscription. In the beginning of 2008 Funcom introduced a new tiered subscription system in AO, ranging from free-to-play to 5 to 14.95 USD/EUR a month. Free customers will see in-game advertisements, and will not be able to explore any of the areas introduced by expansion packs, nor use items, features or obtain new levels added by the expansions. This is a great way to acquire new players as they can "try before they buy". Funcom hopes with the 5 USD/EUR subscription level was that more free players will convert to "low-level" subscribers in order to expand their game experience, as this subscription grants players access to explore new areas and use all features introduced by AO's first big expansion pack, "Shadowlands" [33]. The premium subscription, rated at 14.95 USD/EUR a month, gives the player access to all content which AO has to offer. Paying subscribers

will not see any in-game advertisements. Moreover, paying subscribers will receive monthly points (which can be spent in the item shop or buying services) included in the subscription price.

Advertising. Advertisements were added to the game in 2004 as an alternative for player to paying a monthly fee. According to Morten Byom, a Game Director at Funcom (2005), the feedback from the AO community has been very positive [25]. By having advertisements in-game, such as billboards and sponsored events, players are able to play AO for free. This is a great way to be able to offer free tryouts and still earn money on people that "try" the game, and to earn money on casual players which would not normally play if they were required to pay a subscription fee. This system generates funds that make further development viable [26]. In 2006, AO was the first game to utilize interactive advertisements, enabling the free players to interact with dynamic billboards in-game [30]. Craig Morrison, Game Director at Funcom, said in an interview that the advertising system has "been a vital part of the success of the game" [87].

Micro transactions/Item mall. The item mall was introduced in 2007. It enabled players to buy virtual items inside the game, such as an in-game apartment, hover-bikes, hover-boards, social clothing and pets. These virtual items do not enhance progress or affect gameplay balance in anyway, as this would discourage players which are not able to buy items. But because of the strong social aspects of AO, the items are popular as collectibles in the game. This additional revenue stream allows Funcom to develop both more free and paid content. [26, 32, 31]

Value-added services. Points can be bought for real money to be spent on paid services, including character name change, additional character slots, character transfers or transfer of all characters to a new server (similar to WoW) [34].

7.1.5   Actors

Similar to WoW, a number of *actors* are involved in this business model. These are:

Actor 1: Funcom.

Actor 2: partners (e.g. retail stores).

Actor 3: Massive Incorporated (owned by Microsoft).

Actor 4: payment services: ClickandBuy (online wallet). Additionally, various credit card companies are supported: VISA, Mastercard, American Express and JCB.

Actor 5: gamers.

7.2 Zynga's FarmVille

Zynga is a provider of various social games, their most successful title being FarmVille [103]. With over 230 million monthly active users playing their games, Zynga is one of the world's leading social games developer/publisher [104, 103]. Zynga develops free-to-play games for various platforms, including Facebook, MySpace, MSN Games and iPhone. According to the FarmVille application page on Facebook, it has roughly 75 million monthly users [101].

7.2.1 Product

In FarmVille the players are virtual farmers, and the goal of the game is to expand and improve one's own farm. It is a strategic MMOG running in the browser using the flash technology, thus requiring no installation (a browser flash player is required). Furthermore, it is incorporated into various social platforms, such as Facebook. The framework provided by the social platforms are utilized to enhance the players' social experience, and as an additional market channel. An in-game screenshot is shown in Figure 7.3.

7.2.2 Customer Interface

Zynga primary focuses on providing casual gamers with social games. FarmVille's *target customer* is the members of the various social networks.

FarmVille is tightly integrated with the social platforms hosting it. Zinga markets the game on the social platforms, through the use of banner advertisements, to acquire new customers.

A daily gift is given to players, encouraging them to play the game daily (retention).

FarmVille utilizes the available platform functions to, for instance, publish in-game player updates on the player's profile wall. Moreover, players are

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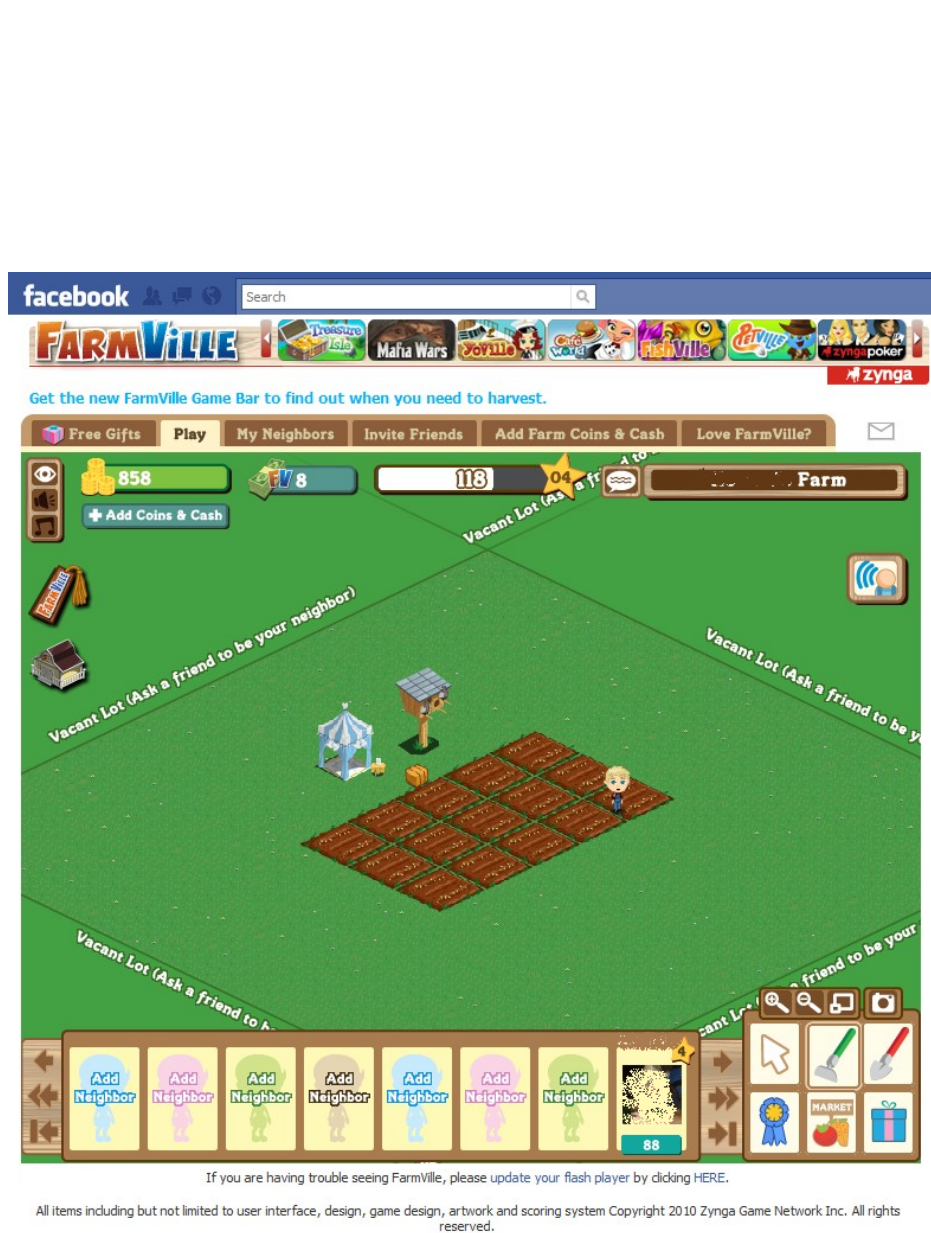
Figure 7.3: Modified screenshot of FarmVille integrated with the Facebook platform.

given incentives to invite friends to the game by receiving in-game gifts and other benefits for every referral *(acquisition)*. A player further benefits from having friends in-game as they can perform various tasks in-game. Having friends is for instance advantageous when absent, because friends can help each other out by doing required tasks, meaning that a player's farm growth does not need to stagnate during a period of absence, rather it continues to grow with the help of friends. The integration with Facebook enhances the social interactions around the game by prompting frequently to publish posts on the player's own or friends' walls to update others with, for example, the player's latest achievements. There is no significant in-game social communication other than a simple note system.

In short, FarmVille exploits the social platforms by giving incentives to players to invite others. There is a certain network externality here, since more gamers playing lead to the recruitment of more gamers. Furthermore, the value of the game increases as more players join due to more social interactions between them.

7.2.3 Infrastructure

Zynga has over 600 employees working with everything ranging from game development to marketing and support [103]. In February 2010, Zynga opened an office in India which operation focus on game and large-scale infrastructure development, and hopefully expose India's 81 million Internet users to Zinga's games through the presence of a local office. According to a press release by Zynga, Zynga is looking for additional human resources at the office in India: "Zinga India is looking to recruit computer scientists and engineers who are experienced in building scalable infrastructure" [102].

Zinga games are hosted on a cloud infrastructure running on Amazon EC2, and deployed and managed by tools like RightScale and NorthScale [65]. The server infrastructure will not be further covered, more information about technical specifications can be found at [77, 48, 70].

The developers at Zinga work in an iterative manner, thus Zinga functions as a *value shop*. After a game concept has been established the developers start working on the first, very limited, version of the game. The limited version is deployed so that the game concept can be tested by gamers. Browser games are less risky compared to software games, the main reason being that all game code is on the server side. There is no need for the game to be 100% finished before deployment, as new features may easily be added later. Therefore, browser game publishers/developers may deploy an incomplete game to figure out if the game has potential to become successful in the market. If the game is accepted as successful the developers continue to add new features by updating server code "on the fly". If the first version of the game is unsuccessful the project can be shut down before too much money has been invested in it.

Since all game code is on the server side there is no distribution delay, new versions of the game can be deployed in an instance. The iterations can be easier estimated because workloads can be divided into smaller bouts, and each workload can be deployed as soon as it is finished. Furthermore, by having short iterations teams of developers can easily move between projects depending on their popularity (where they are needed).

Browser games are in general less complex than traditional retail games, both in gameplay and graphics, therefore requiring less investments, further reducing the risk of developing them. Because of their simple gameplay, browser games primarily target the casual gamer audience.

The *partnership* between Facebook and Zynga was just renegotiated to a new five year deal [11, 39, 104]. Other partners include: MySpace, Yahoo!, MSN Games and Apple (iPhone).

7.2.4   Financial Aspects

FarmVille is free-to-play, removing the barriers to play completely. A free-to-play model is common among casual games (games targeting the casual

Figure 7.4: 1) The FarmVille market where players can buy virtual items. 2) The payment screen where players can buy virtual cash.

gamer segment of the market), because casual gamers lack the commitment to buy a game upfront, they want to "try before they buy". Furthermore, casual games are typically played online in the browser, like FarmVille is, thus eliminating the need of an local installation.

Free-to-play games still need to generate income for the developer, the most common revenue models being advertising and/or micro-transaction based. In FarmVille, revenues are generated through virtual goods sales (micro-transactions).

Micro-transactions revenue model. FarmVille provides an item shop (called market in-game) to its players. The item shop facilitates the buying of virtual items. Virtual items can be bought using virtual cash gathered through playing, or acquired through real cash payments, as illustrated in Figure 7.4. Since the item shop is the only revenue source for Zinga they build their game in such a way that players are encouraged to spend real money buying virtual items. A lot of time "farming" (doing repetitive tasks

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to earn in-game cash) is necessary to be able to buy virtual items for cash earned in-game, but a player's game effort can be reduced by spending real money on virtual items. The farm expands and improves by every coin the player spend, thus spending real money is a shortcut to quick "success" in-game. There is no limit on the amount of money a player may spend, thus the farm growth potential is infinite, forcing players to spend real money if they are to be among the "best" players. An example of extreme spending was reported by the Guardian (UK); a hardcore 12-year old gamer spent his savings, and his mother's credit card, to buy virtual FarmVille items for $1400 in one month [27].

7.2.5 Actors

A number of *actors* are involved in this business model. These are:

Actor 1: Zynga.

Actor 2: various platforms: Facebook, Myspace, MyYahoo, MSN Games and iPhone.

Actor 3: payment services: Paypal, Paymo (pay by mobile), and more. Additionally, various credit card companies are supported: VISA, Mastercard, Amex and Discover.

Actor 4: casual gamers.

8

Conclusion and Future Work

8.1 Conclusion

One motivation behind this thesis was to find common characteristics among the best selling games of our time. This was done by studying and analyzing 184 successful games listed as best sellers on various online sites.

The results from the analysis of the best selling games show that all the non-MMO games support singleplayer, proving that gamers value traditional singleplayer gameplay. Over half of the games supporting singleplayer enhance their value by offering multiplayer capabilities as well. We see that genre popularity differs between the PC- and console platform by comparing the various genres. Furthermore, we notice that every MMO in the compiled game list is a MMORPG, indicating that the RPG genre is well-established in the retail market. Retail publishers have yet to explore other MMO genres,

as browser MMO publishers have done and have been successful with.

A great majority of the 184 games studied are part of franchises. Big titles often become franchises, since products in proven franchises have higher probability of high unit volume sales and operating profits. Releasing expansions or DLCs are an additional way of generating extra revenues from a proven hit. They are relatively cheap to develop, increase the hype of the game, and have a high profit margin.

Another motivation behind this thesis was to take a closer look at the business models of a selection of highly successful games, identifying the structure and machinery behind these titles. Through my own research I have described and discussed the business models of three leading MMOs; World of Warcraft, Anarchy Online and FarmVille. MMOs were chosen as they have a high revenue potential, and the potensial to generate revenues through various revenue models.

The business model of Blizzard's WoW is described in great detail following Osterwalder's business model ontology closely. The business model is complex, as the apparatus around the game is huge with several actors partaking. Blizzard, as a whole, is organized as a value chain, but the development studio, isolated, functions as a value shop. Most of the revenues are received from subscription fees.

AO has many similarities to WoW, so the interesting question is how it differs from WoW. The major differences between AO and WoW are described in the AO business model. AO is a unique MMO game, one reason being that its business model is very innovative. It went from being a subscription-based game, to also support free-to-play through an advertising model. Today, the revenues are based on a three tier subscription model and a micro-transaction based item shop. The creators of AO have really explored the domain of revenue models. Since the subscription based revenue model is dominating the western MMO market, it was great to study a game which has found new ways of earning money.

The last business model presented is very different from the other two.

Farmville is a free-to-play browser based social game generating its income from virtual item sales. Zinga, the creator of Farmville, functions as a value shop, there is no chain since the developers create and deploy the game themselves.

8.2 Future Work

High costs are associated with today's mainstream games. This thesis has not explored the cost side (developing, distributing, marketing and maintaining games) of the game industry. Such information may be obtained by interviewing game company employees or attending shareholders' meetings.

Innovative revenue models discriminating the different types of gamers may potensially lead to increased revenues. This thesis has explored several well-established models, future work can suggest new revenue models which, for instance, can exploit the upper part of the demand curve better (refer to Figure 5.5). I do believe one can generate more revenues by exploiting hardcore players' willingness to pay for premium services, such as extra features and items. Pre-launch access to the game priced at a higher level than at (mainstream) release date may lead to extra revenues.

The game market in the western world is rather different than in the eastern world. Future research can explore why there is a difference in the two markets. Maybe the game industry can increase its revenues by adopting successful business models across the western and eastern game industry.

How long is a game popular after release? How are the sales numbers distributed over the years after game launch? Can a general demand function be purposed? Which elements add to the quality of experience: graphics, game availability, game functionality and features, rating (everyone, teen, mature, adults only), relation to real life, etc.? How important are each of these elements compared to each other? These are some of the questions which may be answered through further research.

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A

Best Seller PC Game List

This appendix contains the best seller PC game list used in Chapt. 3 and Chapt. 4. The game list is given as four parts, Figures A.1, A.2, A.3 and A.4.

GAME NAME	TYPE			GENRE						YEAR	REVENUE MODEL				EXPANSION(S)	SERIES
	SP	MP	MMO	ACTION	RPG	SPORT	STRATEGY	ADVENTURE	OTHER		RETAIL SALE	SUB.	ADS	ITEM MALL		
Age of Conan: Hyborian Adventures			x		x					2008	x	x			x	
Age of Empires	x	x					RTS			1997	x				x	AoE
Age of Empires II: The Age of Kings	x	x					RTS			1999	x				x	AoE
Age of Empires III	x	x					RTS			2005	x				x	AoE
Age of Mythology	x	x					RTS			2002	x				x	
American McGee's Alice	x			Platform						2000	x					
Anno 1503	x						RTS			2003	x				x	Anno
Anno 1602	x	x					RTS			1998	x				x	Anno
Atari Arcade Hits	x								Arcade	1999	x					
Backyard Basketball, Football, Hockey	x	x				x				2001	x				many versions	Backyard
Baldur's Gate	x	x			x					1998	x				x	Baldur's Gate
Baldur's Gate II: Shadows of Amn	x	x			x					2000	x				x	Baldur's Gate
Barbie Pet Rescue	x			x						2001	x		x			
Battlefield 1942	x	x		FPS						2002	x				x	Battlefield
Battlefield 2	x	x		FPS						2005	x		x		x	Battlefield
Battlefield 2142	x	x		FPS						2006	x		Dynam in-game adverti (IGA)		Pay boosterpack, new game content	Battlefield
Battlefield Vietnam	x	x		FPS						2004	x					Battlefield
BioShock	x			FPS*	x					2007	x					Bioshock
Black & White	x						RTS			2001	x				x	Black & White
Blade Runner	x							x		1997	x					
Bob the Builder: Can We Fix It?	x			x						2001	x					Bob the Builder
Call of Duty	x			FPS						2003	x				x	Call of Duty
Call of Duty 4: Modern Warfare	x	x		FPS						2007	x				Free Map Pack on PC, pay on consoles	Call of Duty: Modern Warfare
Call of Duty: Modern Warfare 2	x	x		FPS						2009	x				Map Pack	Call of Duty: Modern Warfare
Call of Duty: World at War	x	x		FPS						2008	x				Buy Map Pack	Call of Duty
Championship Manager 00/01	x	x				Soccer*	Management		Simulation	2000	x					CM
Championship Manager 01/02	x	x				Soccer*	Management		Simulation	2001	x					CM
Championship Manager 03/04	x	x				Soccer*	Management		Simulation	2003	x					CM
Championship Manager 4	x	x				Soccer*	Management		Simulation	2003	x					CM
City of Heroes (and City of Villains)			x		x					2004	x	x				City of Heroes/City of Villains
Civilization III	x	x					TBS			2001	x				x	Civ
Civilization IV	x	x					TBS			2005	x				x	Civ
Clue: Murder at Boddy Mansion	x	x					x			1998	x					
Command & Conquer: Red Alert	x	x					RTS			1996	x	1			x	C&C
Command & Conquer: Red Alert 2	x	x					RTS			2000	x				x	C&C
Command & Conquer: Renegade	x	x		FPS						2002	x					C&C
Command & Conquer: Tiberian Sun	x	x					RTS			1999	x				x	C&C
Command & Conquer 3: Tiberium Wars	x	x					RTS			2007	x				x	C&C
Cossacks II: Napoleonic Wars	x	x					RTS			2005	x				x	Cossacks
Cossacks: European Wars	x	x					RTS			2001	x				x	Cossacks
Counter-Strike	x	x		FPS						2000	x		IGA		x	CS
Counter-Strike: Source	x	x		FPS						2004	x					CS
Crysis	x	x		FPS						2007	x				x	Crysis
CSI: Crime Scene Investigation	x							x		2003	x					CSI series
Dark Age of Camelot			x		x					2001	x	x			x	
Deer Hunter	x					Hunting				1997	x				x	Deer Hunter
Deer Hunter 4	x					Hunting				2001	x					Deer Hunter
Delta Force: Land Warrior	x	x		FPS						2000	x					Delta Force
Diablo	x	x		x*	x					1997	x	1			x	Diablo
Diablo II	x	x		x*	x					2000	x				x	Diablo
Doom	x	x		FPS						1993	x					Doom
Doom 3	x	x		FPS						2004	x				x	Doom
Doom II: Hell on Earth	x	x		FPS						1994	x				x	Doom
Dragon Age: Origins	x				x					2009	x				planned, micro-expansions (DLC) available	Dragon Age (rumors)
Driver	x						Driving			2000	x					Driver
Drop!	x								Puzzle	2003	x					Drop!

Figure A.1: Best Seller Game List (part 1/4).

GAME NAME	SP	MP	MMO	ACTION	RPG	SPORT	STRATEGY	ADVENTURE	OTHER	YEAR	RETAIL SALE	SUB.	ADS	ITEM MALL	EXPANSION(S)	SERIES
Duke Nukem 3D	x	x		FPS						1996	x	1			x	Duke Nukem
Dungeon Lords	x	x			x					2005	x					
Dungeon Siege	x	x			x					2002	x				x	
Elder Scrolls III: Morrowind	x				x					2002	x				x	Elder Scolls
Empire Earth	x	x					RTS			2001	x				x	Empire Earth
Empire: Total War	x	x					TBS			2009					x	Total War
EverQuest			x		x					1999	x	x		x	x	Everquest
Fallout 3	x			FPS*	x					2008	x				DLC from Microsoft Live	Fallout
Far Cry	x	x		FPS						2004	x					Far Cry
Final Fantasy XI			x		x					2003	x	x		Codes in merchandise	x	Final Fantasy
Finding Nemo: Nemo's Underwater World of Fun	x			Platform*					Minigames	2003	x					Finding Nemo
Frogger	x	x		Platform						2000	x					
Game of Life	x	x							Puzzle	2001	x					
Glory of the Roman Empire	x						Management			2006	x					
Grand Theft Auto III	x			TPS						2002	x					GTA
Guild Wars			x		x					2005	x				x	Guild Wars
Half-Life	x	x		FPS						1998	x				x	Half-Life
Half-Life 2	x	x		FPS						2004	x				x	Half-Life
Halo: Combat Evolved	x	x		FPS						2003	x					Halo
Hard Trucks 2	x					Driving				2000	x					Hard Trucks
Harry Potter and the Philosopher's Stone	x			x				x*		2001	x					Harry Potter
Hellgate: London	x		x	x	x*					2007	x	Optional for additional content or one-time fee for lifetime sub.	In-game ads		x	Hellgate
Hidden & Dangerous	x	x		x						1999	x				x	Hidden & Dangerous
Hotel Giant	x	x					x			2002	x					Hotel Giant
Hoyle Casino 2001	x	x							Gambling	2000	x					Hoyle Gambling
Icewind Dale	x	x			x					2000	x				x	Icewind Dale
Imperivm III: Great Battles of Rome	x				x					2005	x					Imperivm
James Bond 007: Nightfire	x	x		FPS						2002	x					
Jeopardy!	x								Trivia	2000	x					Jeopardy
Jetfighter IV: Fortress America	x								Combat Simulation	2000	x					Jetfighter
Jurassic Park III: Danger Zone!	x	x		x						2001	x					Jurassic Park III
Left 4 Dead	x	x		FPS						2008	x					Left 4 Dead
Lineage II: The Chaotic Chronicle			x		x					2004	x	x				Lineage
Links 2001	x	x				Golf				2000	x				x	Links
Lord of the Rings: Battle for Middle Earth	x	x					RTS			2004	x					LOTR:BfME
Lord of the Rings: Fellowship of the Ring	x			TPS						2002	x					
Lord of the Rings: Return of the King	x	x		x						2003	x					
Lord of the Rings Online: Shadows of Angmar			x	x						2007	x	Sub. or one-time lifetime payment			x	
Madden 2002	x	x				Football				2001	x					Madden NFL 1999-xxxx
Mafia: The City of Lost Heaven	x			TPS						2002	x					Mafia
Mall Tycoon	x						Management			2002	x					Mall Tycoon
Max Payne	x			FPS						2001	x					Max Payne
Mechwarrior 4: Vengeance	x	x		x						2000	x				x	Mechwarrior
Medal of Honor: Allied Assault	x	x		FPS						2002	x				x	MoH

Figure A.2: Best Seller Game List (part 2/4).

GAME NAME	SP	MP	MMO	ACTION	RPG	SPORT	STRATEGY	ADVENTURE	OTHER	YEAR	RETAIL SALE	SUB.	ADS	ITEM MALL	EXPANSION(S)	SERIES
Microsoft Flight Simulator 2004: Century of Flight	x	x				Fly-Sim				2003	x				x	Flight Sim
Microsoft Flight Simulator X	x	x				Fly-Sim				2006	x					Flight Sim
Monopoly	x						TBS			1995	x					
Monopoly Tycoon	x	x					Simulation			2001	x					
Myst	x							x*	Puzzle	1993	x					Myst
Myst III: Exile	x							x		2001	x					Myst
Nancy Drew: Message in a Haunted Mansion	x							x		2000	x					Nancy Drew
NASCAR Racing 4	x	x				Racing				2001	x					Nascar
Need for Speed: Porsche Unleashed	x	x				Racing				2000	x					Need for Speed
Neverwinter Nights	x	x			x					2002	x				x	Neverwinter Nights
Operation Flashpoint: Cold War Crisis	x	x		FPS						2001	x				x	x
Patrician III: L'Impero Dei Mari	x	x					Management			2000	x					Patrician
Phantasmagoria	x							x		1995	x					
Police Quest: SWAT	x						x			1995	x					SWAT
Populous	x						x			1989	x				x	Populous
Prince of Persia	x			Platform						1989	x					Prince of Persia
Quake	x	x		FPS						1996	x		1		x	Quake
Quake II	x	x		FPS						1997	x				x	Quake
Ragnarok Online			x		x					2001	x	x		x	free	
Railroad Tycoon II	x						x			1998	x				x	Railroad Tycoon
Return to Castle Wolfenstein	x	x		FPS						2001	x					Wolfenstein
Return to Zork	x							x		1993	x					Zork
Rise of Nations	x	x					RTS			2003	x				x	
Riven: The Sequel to Myst	x							x*	Puzzle	1997	x					Myst
Roller Coaster Factory	x						Management			2000	x					Roller Coaster Factory
RollerCoaster Tycoon	x						Management			1999	x				x	Rollercoaster Tycoon
RollerCoaster Tycoon 2	x						Management			2002	x				x	Rollercoaster Tycoon
Rome: Total War	x	x					x			2004	x				x	Total War
Runaway: A Road Adventure	x							x		2001	x					
S.T.A.L.K.E.R.: Shadow of Chernobyl	x	x		FPS						2007	x					S.T.A.L.K.E.R.
Sacred	x	x		x*	x					2004	x				x	Sacred
SeaWorld Adventure Parks Tycoon	x						Management			2003	x					S. A. P. T. 2
Scooby Doo: Phantom of the Knight	x							x		2000	x					Scooby Doo!
Scrabble	x						x			2000	x					Scrabble
SimCity 2000	x						Management			1993	x					Sim City
SimCity 3000	x						Management			1999	x					Sim City
SimCity 4	x						Management			2003	x					Sim City
Sins Of A Solar Empire	x	x					RTS			2008	x				DLC micro-expansion and expansion	
SpongeBob SquarePants: Operation Krabby Patty	x							x		2001	x			x		SpongeBob SquarePants
Spore	x			x	x		RTS*			2008	x			Buy merchandise ingame	x	Spore
Star Wars Galaxies: An Empire Divided			x		x					2003	x	x			x	
Star Wars: Battlefront	x	x		FPS						2004	x					Battlefront series
Star Wars: Dark Forces	x			FPS						1995	x					Star Wars: Jedi Knight
Star Wars: Galactic Battlegrounds	x	x					RTS			2001	x				x	Star Wars: Galactic Battlegrounds
Star Wars: Jedi Knight II: Jedi Outcast	x	x		FPS						2002	x					Star Wars: Jedi Knight
Star Wars: Knights of the Old Republic	x			x	x*					2003	x					Star Wars: Knights of the Old Republic
StarCraft	x	x					RTS			1998	x				x	Starcraft
Stronghold	x	x					RTS			2001	x				x	Stronghold
Supreme Commander	x	x					x			2007	x				x	Supreme Commander
Survivor: The Interactive Game	x							x		2001	x					
The 7th Guest	x							x*	Puzzle	1993	x					
The Bard's Tale: Tales of the Unknown	x				x					1985	x					The Bard's Tale
The Elder Scrolls IV: Oblivion	x				x					2006	x				x	Elder Scrolls

Figure A.3: Best Seller Game List (part 3/4).

GAME NAME	TYPE			GENRE						YEAR	REVENUE MODEL				EXPANSION(S)	SERIES
	SP	MP	MMO	ACTION	RPG	SPORT	STRATEGY	ADVENTURE	OTHER		RETAIL SALE	SUB.	ADS	ITEM MALL		
The Legend of Sword and Fairy 3	x				x					2003	x					The Legend of Sword and Fairy 3
The Sims	x						Simulation			2000	x				x	The Sims
The Sims 2	x						Simulation			2004	x		x		x	The Sims
The Sims 3	x						Simulation			2009	x		IGA		x	The Sims
The Witcher	x				x					2007	x					
Theme Hospital	x	x					Management			1997	x					
Theme Park	x						Management			1994	x		x			Theme Park
Theme Park Inc (aka SimCoaster)	x						Management			2001	x					Theme Park
Tiger Woods PGA Tour 2001	x	x				Golf				2000	x					Tiger Woods PGA Tour Golf
Tom Clancy's Ghost Recon	x	x		FPS						2001	x				x	Tom Clancy's Ghost Recon
Tom Clancy's Rainbow Six: Rogue Spear	x	x		FPS						1999	x					Tom Clancy's Rainbow Six
Tomb Raider	x			TPS				x*	Puzzle	1996	x				x	Tomb Raider
Tomb Raider II	x			TPS				x*	Puzzle	1997	x				x	Tomb Raider
Tony Hawk's Pro Skater 2	x	x				Skateboard				2000	x					Tony Hawk's Pro Skater
Train Simulator	x						Simulation			2001	x					
Tribes 2	x	x		FPS						2001	x					Tribes
Tropico	x						Management			2001	x				x	Tropico
Unreal	x	x		FPS						1998	x				x	Unreal
Unreal Tournament	x	x		FPS						1999	x					Unreal
Unreal Tournament 2003	x	x		FPS						2002	x					Unreal
Vietcong	x	x		FPS						2003	x				x	
Warcraft II: Tides of Darkness	x	x					RTS			1995	x				x	Warcraft
Warcraft III: Reign of Chaos	x	x					RTS			2002	x				x	Warcraft
Warcraft: Orcs & Humans	x	x					RTS			1994	x					Warcraft
Warhammer 40,000: Dawn of War	x	x					x			2004	x				x	Dawn of War
Warhammer Online: Age of Reckoning			x		x					2008	x	x				
Wheel of Fortune	x								Puzzle	2000	x					
Where in the World Is Carmen Sandiego?	x						x		Educational*	1985	x					
Who Wants To Be a Millionaire	x								Quiz	1999	x					Who Wants To Be a Millionaire
World of Warcraft			x		x					2004	x	x			x	
Zoo Tycoon	x						Management			2001	x				x	Zoo Tycoon

Figure A.4: Best Seller Game List (part 4/4).