HOW PLAYER RETENTION WORKS IN FREE-TO-PLAY MOBILE GAMES

A Study of Player Retention Methods

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Bachelor's thesis
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Degree Programme in Media

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ABSTRACT

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The purpose of this thesis was to research how player retention works in free-to-play mobile games, what methods can be used to retain players and how these methods are utilized in the three top grossing titles in Google Play Store. The aim was to gather together a categorized set of methods which could be used to improve player retention in free-to-play mobile games. However, critiquing the ethical aspects of the different methods, or assessing if they are essential to make good games, was not a part of this thesis – instead, the aim was to offer an objective research into the topic.

To set the background for the thesis, the evolution of mobile devices into one of the biggest gaming platforms on the market is introduced, general design guidelines differentiating mobile games from others are explained and mobile gamers are divided into four player archetypes to be later used in the evaluation part of the thesis. Also, the concepts and terms associated with the free-to-play business model are introduced, in order to lay down the basis for a more careful examination of the different player retention methods in the research and evaluation part of the thesis.

Literature review is used as the research method in order to find and define a set of different player retention methods by combining reliable and professional sources. The defined methods were further divided into three categories - core retention methods, advanced retention methods and additional retention methods. They were then used as design specifications while evaluation their use in the chosen three top grossing games in order to see how the games utilized the methods in practice, if at all.

The findings indicate that player retention methods are based on basic psychological concepts, and game mechanics which create anticipation and feed motivation translate into retention. The results also suggest that more important than the amount of player retention methods used in a game, is which of the three categories they represent, how well they are integrated together and which player archetypes they cater to. In summary, the findings indicate that creating a game with solid core gameplay while offering competitive and social endgame on top of it leads to successful player retention.

The evaluation process also revealed that each of the evaluated games, despite being different in nature, used most of the defined player retention methods by crafting them to suit their own theme and needs. This indicates that the theoretical methods can be applied to games in multiple different ways in practice.

Key words: player retention, free-to-play, mobile games, game development

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1 INTRODUCTION

Mobile gaming has become increasingly popular, and simultaneously free-to-play games – or games which are free to play but offer optional purchases – have proven to be both profitable and often preferred by players and developers alike. There are many success stories about free-to-play mobile games breaking to the top grossing charts only a few weeks after their release, and some of them have dominated the charts for weeks, or even months, at a time. While seemingly simple in gameplay, these games are able to engage their players and keep them coming back to the game day after day, successfully retaining them while converting some of them into paying customers.

Inspired by the success of others, and because the mobile market is relatively is easy to access and has a low entry cost for the developers, numerous new startups and bigger studios alike are trying to replicate the success of the popular titles. However, not all succeed in their attempt, and one possible reason is ignoring the importance of player retention. While player monetization has already become a trending topic in the game developer gatherings, it feels like player retention is still often overlooked as a crucial part of the design process of free-to-play mobile games. In reality, it is an important aspect of the free-to-play business model, and strong player retention is often required for sustainable success. Since retaining players is heavily dependent on the structure and design of the game, different player retention methods and other ways to engage players are essential elements to consider when designing free-to-play mobile games.

In order to gather together a categorized set of methods which could be used to improve player retention in free-to-play mobile games, this thesis aims to research how player retention works in free-to-play mobile games, what player retention methods there are and how they are used in the top grossing games. Ultimately this thesis can work as a guide for any developer who is interested in how player retention works in free-to-play mobile games. However, critiquing the ethical aspects of the different player retention methods, or assessing if they are essential to make good games, is not a part of this thesis – instead, the aim is to offer an objective research into the topic.

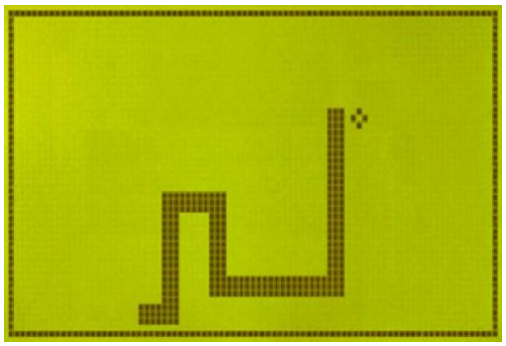
Apart from the professional interest, I am also intrigued on a personal level to find out how such seemingly simple games, as the top grossing titles, are able to engage and retain their players, while turning in huge profits – what is their secret?

2 MOBILE GAMES AND GAMERS

For the purpose of this thesis, instead of researching and analysing player retention methods used in all games in general, the scope was narrowed down to include only free-to-play mobile games. To set the background for the thesis and to elaborate the reasons behind this choice, this chapter explores the importance and evolution of mobile devices as a gaming platform, explains how mobile games often differentiate from the more traditional video games and introduces the different player types who play them.

2.1 Evolution of the platform

As the video game industry in general, mobile games are still a quite fresh and new as a phenomenon. Snake was one of the first official mobile games, and it became available for mobile phones back in 1997 when Nokia decided to bundle it up with one of its early mobile phone models, Nokia 6110 (Entertainment Software Association 2012). Still one of the most famous mobile games to date, it was a simple black and white game with only a few pixels moving on the screen, not something you would expect to see on any mobile marketplace today, only two decades later. When comparing Snake (1997) and Ravensword (2012) in the pictures below, it is easy to see the leap which has occurred in technology during as short period as fifteen years.



PICTURE 1. Snake (Kwalee)

PICTURE 2. Ravensword (Crescent Moon)

After its release, the popularity of Snake intrigued other developers and as a result various experiments emerged to the market. Even though the technology was limited, simple monochromic games utilizing the numeric keypads were developed, including basic card games, shooters and even racing games (Langshaw 2011). On the hardware side, after the Wireless Application Protocol (WAP) was developed and the first handsets

with proper support hit the market in the late 90s, numerous new features became available for the consumers (Phone Arena 2011). Purchasing and downloading applications through the internet became possible and the first generation of asynchronous online multiplayer games were released for mobile devices.

According to Langshaw, after WAP allowed better means of distribution for games and the first colour screens hit the markets, major developers started to take interest in mobile game development too, pushing new titles onto the platform. More popular games such as Tetris and Pac-man were released for mobile devices in the beginning of the millennium. (Langshaw 2011). Colour screens came to stay and investors as well as big publishers started to pay more attention to what was happening on the mobile market. Rather than creating new concepts and games, however, the big publishers tended to licence or port their already existing titles into the mobile devices instead – this resulted in fewer original games and more licensed and ported products for the consumers (Entertainment Software Association 2012). Nevertheless, this made mobile devices appear as a more formidable gaming platform since they featured the same games as home consoles. First major console ports made for mobile devices were Sega's Super Monkey Ball and Gameloft's scaled down version of Ubisoft's Splinter Cell (Langshaw 2011). These were the first steps to indicate that the big titles had come to stay on mobile.

Apple's first iPhone was released back in 2007, offering more detailed graphics, more power and the possibility to develop even more complex and ambitious games. Features such as WiFi and touchscreen became the norm rather than an exception, allowing faster download rates and hence bigger game clients as well as new ways to control the games. Instead of the iPhone itself, however, it was the release of the App Store in 2008 that acted as the breakthrough for the mobile gaming industry. It was the first portal and marketplace connecting the developers and consumers, completely bypassing operators and publishers from the supply chain (Phone Arena 2011).

Having the possibility to publish games on mobile devices by anyone opened up the market for third party titles, lowering the entry cost for developers and offering more variety for consumers (Phone Arena 2011). It was an important event in the history of the mobile gaming and more than 50 billion applications and games have been downloaded through the App Store ever since its release back in 2008 (Entertainment Software Association 2012). Currently in addition to App Store, other devices and oper-

ating system such as Android and Windows Phone also have their own marketplaces and consumer groups, creating diversity and competition between the different companies while offering multiple different solutions for the consumers.

There are a lot of estimates of how big of an audience the mobile devices actually reach nowadays. This information is especially important for game and application developers since in order for their games and products to be successful, it is beneficial to reach as wide an audience as possible. Figure 1 displays data from a BI Intelligence research, which estimate that 6% of the global population own will own tablets, 20% will own PCs and 22% will own smartphones by the end of this year, demonstrating the popularity of mobile devices over computers (Heggestuen 2013).

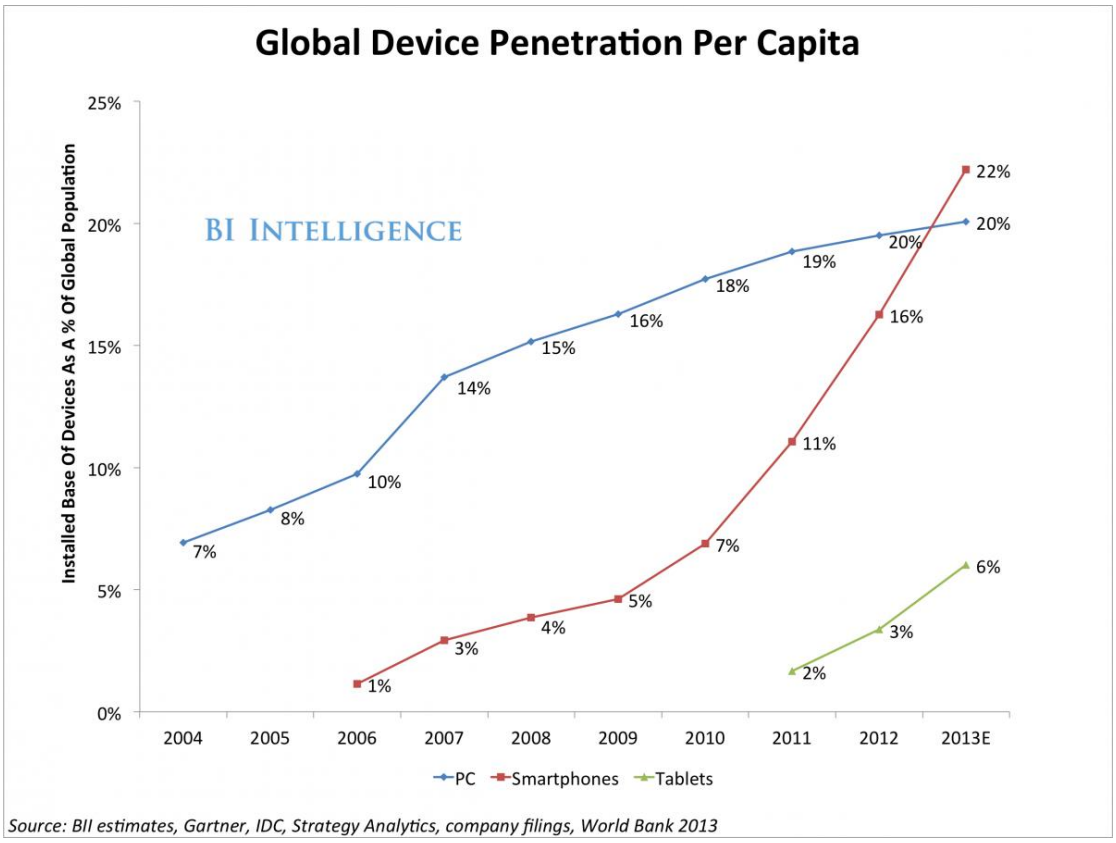


FIGURE 1. Global device penetration per capita (Heggestuen 2013)

A research published by eMarketer also estimates that the mobile phone penetration will rise from 61.1% to 69.4% of the global population during the year 2014, and forecasts that the amount of smartphone users will total in 1.75 billion (eMarketer 2014). Based on the estimates, roughly one quarter of the whole population on Earth would possess a smartphone and have an access to all the available games on it, boasting a bigger audience than any other gaming platform before. Figure 2, published by Asymco, provides a

rough comparison between the shipped iOS devices and Apple's Came Centre accounts compared to the sales of dedicated gaming consoles. While the device sales are a way ahead already, even the amount Game Center accounts surpasses most consoles.

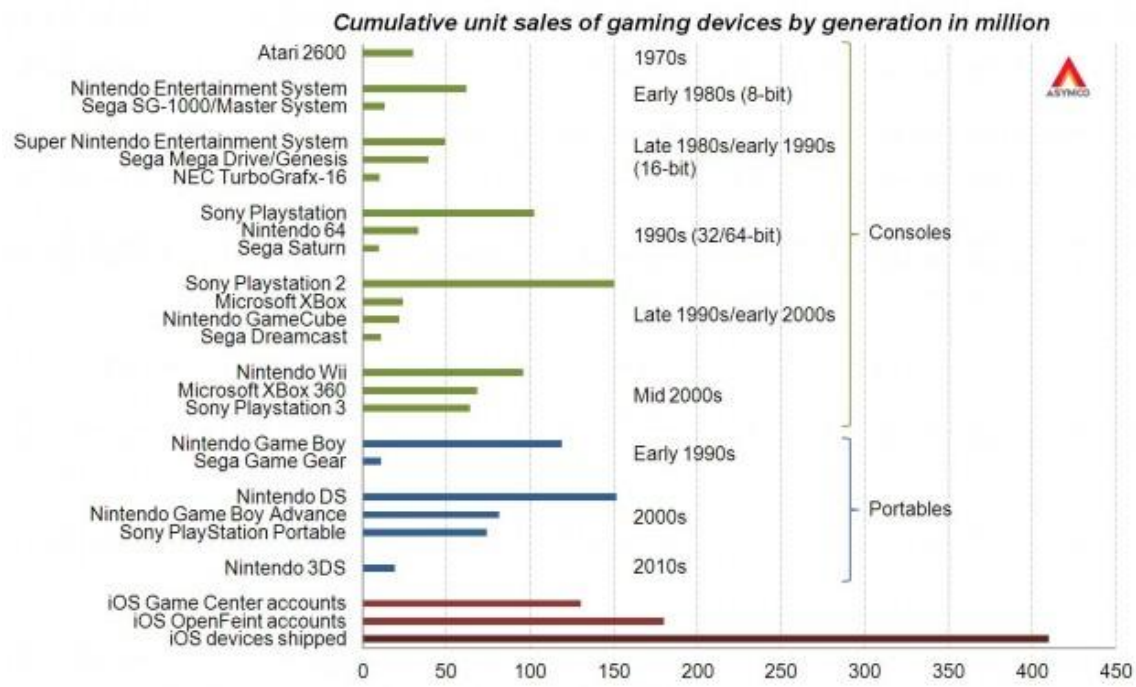


FIGURE 2. Cumulative unit sales of gaming devices in million (Schmidt 2012)

Figure 3, on the other hand, demonstrates how the revenue generated by mobile games is also estimated to increase every year. On top of that, in-app purchases, often made within free-to-play games, increase per year in relation to the paid downloads.

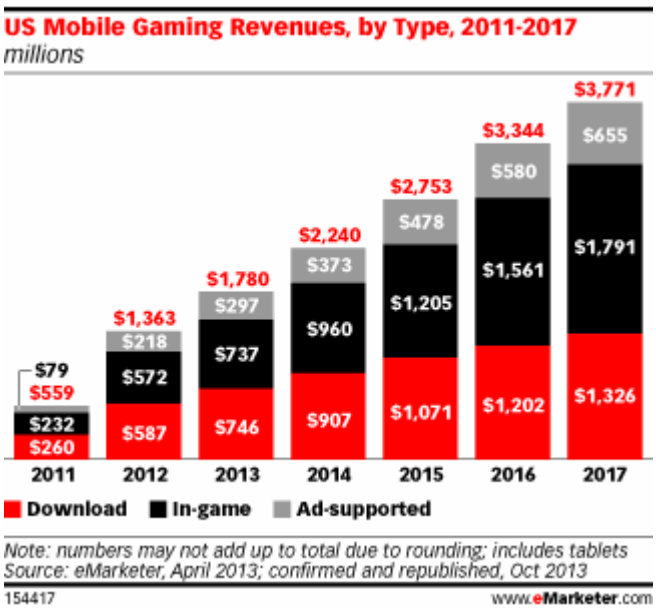


FIGURE 3. Mobile gaming revenue in US, by type (eMarketer 2013)

As the above research results indicate, the mobile platform offers a huge and ever growing audience for developers and a yearly increasing revenue estimates for both mobile games in general but further for free-to-play mobile games over paid downloads. These factors together are also the main reasons behind the choice to focus this thesis around how player retention works in mobile games over other platforms. The increasing profit margin of free-to-play games added with their trending popularity – and the fact that player retention is a crucial part of their design – were also important reasons behind the choice to research player retention in free-to-play mobile games specifically.

Before a more detailed look into the free-to-play games and the business model, however, it is important to understand what design challenges and limitations there are when designing games for mobile devices. Understanding the platform helps to design a smoother user experience and to better cater for the growing audience of the platform.

2.2 General design guidelines

There is a reason why games designed specifically for the mobile devices rule the top grossing charts over the console ports on the mobile platform, and an important factor in this success is mobile specific design. As Joseph Kim, a mobile game philosopher and designer, wrote on a Gamasutra article, games utilizing simplicity over complexity while taking into account the limitations of the platform seem to rule over the games which do not utilize mobile specific design (Kim 2013). This chapter goes briefly over the design challenges associated with mobile devices and how to take them into account when designing games for the platform. In order to achieve this, different design guidelines and principles which are associated with mobile specific design are presented while exploring how mobile games differentiate from those on other platforms.

Figure 4 by Kim (2013) demonstrates the suggested level of complexity for different gaming platforms when thinking about different features such as user interface design, user flows, controls, gameplay, resources and mechanics.

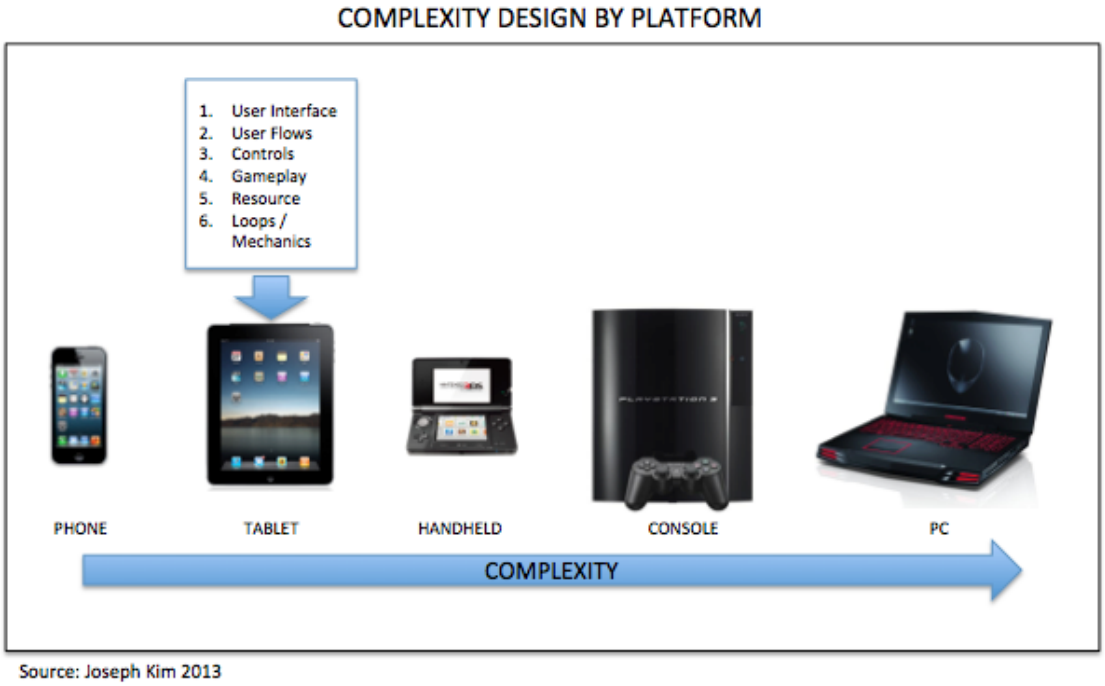


FIGURE 4. Complexity of design by platform (Kim 2013)

When comparing the experience delivered by a small screen, and a lack of physical controls on a mobile device, against a dedicated gaming console or a computer, it becomes obvious that it is important to understand these limitations, and to take them into account when designing games for mobile devices. And not only the technical aspects, but also where, how and when people will use their devices, and possibly have the time and interest to play the games available for them.

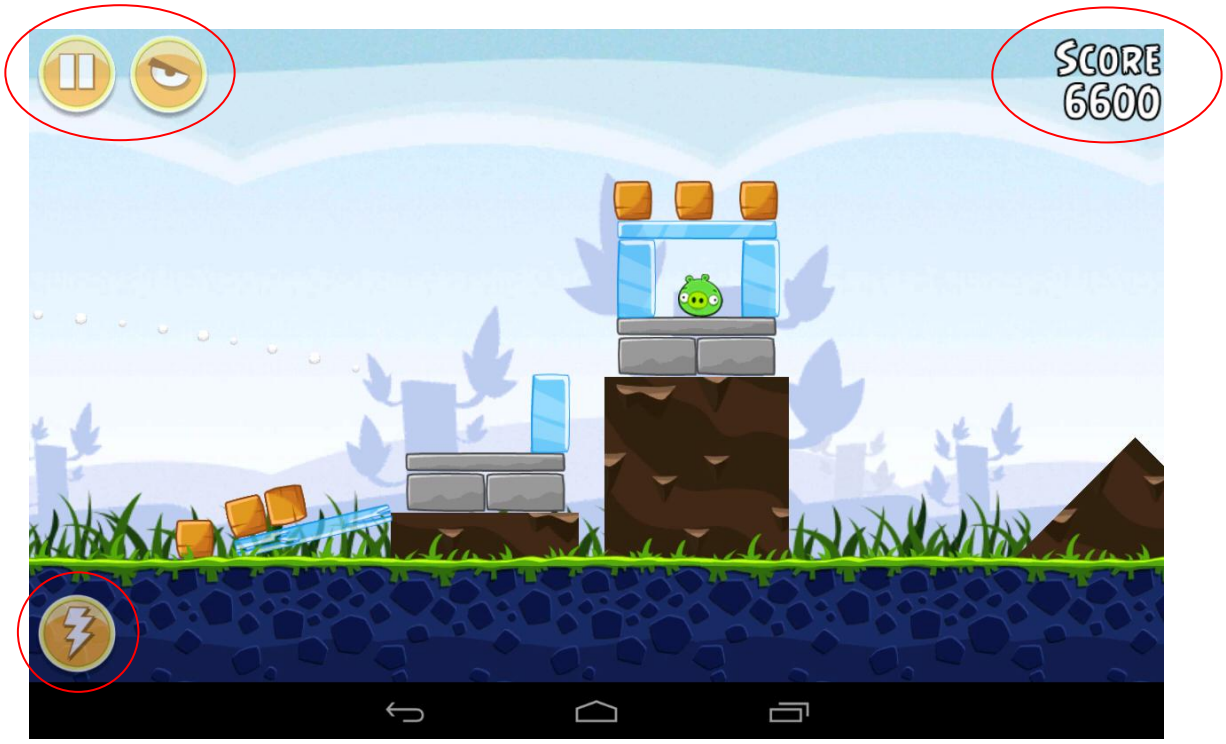
There are several design guidelines which may be considered when designing mobile games, however they are not meant as strict rules, but give a good idea of how mobile games often differ from the games on more traditional and stationary gaming platforms. Because of the physical limitations of the mobile device, such as the smaller screens and the common lack of physical buttons to control the games, redefining user experience is important. Also since people tend to carry mobile devices with them, the players are more than likely to play the games on the go and in unstable environments, such as trains and buses. On top of this, outdoor lighting may cause a bad visibility of the screen while playing. This emphasizes the importance of precise controls and clear interfaces to avoid frustration when playing mobile games.

According to Simple Usability – a behavioral research consultancy – when considering the control layout of mobile games, the touch screens and lack of buttons can become a

hindrance, and the game designers need to innovate. Because of the absence of physical buttons, and hence the lack of tactile feedback, it is important to give other forms of feedback to the player when they interact with the game. (Simple Usability 2012). Since there are no physical buttons to press on the touchscreen, the game should create an illusion for the player, tricking them to think that they are interacting with something more than just a flat screen. This can be achieved for example by providing graphical highlights or audio cues to ensure a better user experience, and to give immediate feedback for the player. It is also recommended to keep the controls as simple and easy to use as possible when designing mobile games – especially on the touchscreen devices, innovative and easy to use controls are crucial (Kim 2013). Even if the game is complex and challenging, it does not necessarily have to require complex controls.

As with controls, simplicity should also be embraced when it comes to the interface design of mobile games – it is recommended to consider the space required for the interface, and to utilize simple and easy to understand icons instead of text to save space (Simple Usability 2012). This is important on all mobile devices, but even more so on mobile phones, since the screens tend to be quite small and the games are often played in poor lighting conditions or on the move. Additionally, Kim (2013) explains on his article how some of the highly popular games such as Clash of Clans utilize a simplified and toned down version of the user interface when compared to other games of the same genre, in order to better fit the limitations of the platform. A useful technique may be to think of what features and statistics the player really has, or even wants to, see during the game, in order to be both engaged and able to enjoy a smooth user experience.

Picture 3 shows the interface of the game called Angry Birds on Android – the important interface elements, circled with red, are neatly gathered and placed on the edges of the screen. Gameplay elements are shown to the player in the middle of the screen, providing good visibility of the play area for the player, and a clear idea of what to do. Additionally, as discussed above, the controls of the game follow the guideline of keeping them clear and simple, only including swipes and taps, which are however utilized for multiple different purposes throughout the game.



PICTURE 3. Interface of Angry Birds (Rovio 2014)

In addition to user experience and interface design, one of the most important aspects of the mobile game design is the actual content of the game itself. As Fahey and Lovell explain in their book "Design Rules for Free-to-Play Games", a good general guideline is to make sure that the games and their content quick and easy to access. The goal is that the player should be able to do something meaningful in the game even with a small amount of time available to play (Fahey & Lovell 2012, 19-21). It is also encouraged to allow the player to get into the gameplay itself as fast as possible instead of making them to shuffle through various menus and settings (Simple Usability 2012). Since the player is most likely to play mobile games on the go, being able to play a round even if in a hurry is highly beneficial, and as a result the player is likely to pick the games with good accessibility over others when their time is limited.

Following the same ideology, lengthy tutorials should be forgotten, and instead mobile games should embrace progressive and intuitive learning processes in order to teach new game mechanics to the player (Simple Usability 2012). Reading a long wall of text can discourage the player, and they might choose to play something else rather than focus their attention on the instructions when in a hectic environment. This is especially important for free-to-play mobile games. According to Fahey and Lovell, since free-to-play games do not cost anything – and consequently the player has not invested any of

their money in them – if the player does not like the initial experience, then they are likely to uninstall the game and download another one. Because of this, instead of wasting the first ten minutes of the game on an external tutorial, the initial experience and the player's first moments with the game should be utilized to demonstrate how fun the game can be right from the beginning (Fahey & Lovell 2012, 80-82).

However, even though simple and progressive tutorials are recommended and the possibility for short yet meaningful play sessions is encouraged, this does not mean that there should not be layers of challenge and complexity for the player to discover. It is equally important that the player is able to engage with the game for longer than just a minute if they wish so (Fahey & Lovell 2012, 33-35). Keeping the content easily accessible and offering the possibility to play a round even within a short period of time offers the possibility to play in a hectic environment, whereas a layer of complexity encourages longer session when there is more time available. Having both choices can naturally encourage the player to pick up the same game in either situation in order to progress further within the same game rather than play something else.

On top of the above guidelines, an important thing to consider when designing games for mobile devices is to think of effective ways to pause the game when distractions arise or for example a phone call comes in (Simple Usability 2012). It can be frustrating for the player if the game makes them fail or lose progress while they are talking on the phone or have to jump off the bus, possibly indicating bad design, and in the worst case, even losing the frustrated player as a result.

The above design guidelines give a brief outlook on the most important ways of how mobile games differentiate in nature from the games on other platforms, and what mobile specific game design entails. Whereas simplicity is embraced, a layer of complexity is required in order to keep the player interested, especially when it comes to free-to-play mobile games as further discussed in Chapter 3.1.

2.3 Different player archetypes

As described in the previous section, user oriented design is an important aspect when it comes to mobile game design. However, while keeping mobile specific design guide-

lines in mind, it is also important to understand who play mobile games, and why. As Will Luton, a game designer and a former consultant specializing in free-to-play mobile games describes in his book, titled "Free-to-Play: Making Money From Games You Give Away", it is important to understand different types of players, their motivations and what they are set out to do in the game world. And of course, more importantly, have an understanding of how to satisfy these needs (Luton 2013, 73). In other words, the designer needs to understand the different types of motivations the players have and how to feed them in order to build engagement.

Richard Bartle, a professor and a widely acknowledged game researcher, has defined four different player archetypes or "Bartle Types" in his paper "Hearts, Clubs, Diamonds and Spades: Players Who Suit MUDs." They have been further expanded in his book titled "Designing Virtual Worlds", and both the original and the new types are introduced in this chapter. However for the purpose and scale of this thesis, the focus is on the four original and commonly referenced Bartle Types, which are assumed to also cover the additional four subtypes when used for evaluation in Chapter 5.

According to Luton, the player archetypes represent a set of different kinds of motivations for playing the games, and reasons for growing engaged to them. However, whereas a single player rarely represents only one Bartle Type, most of them can be defined as a combination of two or more types. (Luton 2013, 69-73). It is important to keep in mind that a single player can also switch between different types during their experience with the game. Each of the original four Bartle Types, or henceforth player archetypes, are presented and described below.

Killers: For these players, the motivation to play comes from killing other players or otherwise causing havoc (Bartle 1996). They are competitive, ruthless and are in it for the triumph, enjoying both competitive player versus player and player versus environment setups. In mobile games this may include features like direct competition, leaderboards, rankings, tournaments and other means of competition.

Achievers: For these players, gathering points, rising in level and collecting different achievements is the ultimate goal and motivation to play (Bartle 1996). In mobile games this often translates into completing achievements, leveling up in the game, increasing

rankings and score, collecting rare and valuable items, as well as achieving other virtual merits within the game world. Progression is the key motivation.

Socializers: For these players, the main motivation to play the game is to get to know other people, interact with them and forge relationships within the game, while the game itself is just a place where things happen to players (Bartle 1996). In mobile games this manifests as playing with existing friends, making new ones within the game, exchanging information, trading items for common benefit and forming guilds.

Explorers: For these players, discovering new things, exploring the game world and attaining knowledge of it is the main motivation for play (Bartle 1996). Basically this means that they want to find out everything there is to the game. In mobile games this may include exploring and making theories of the game systems and mechanics while discovering all features – possibly even bugs and exploits – within the game.

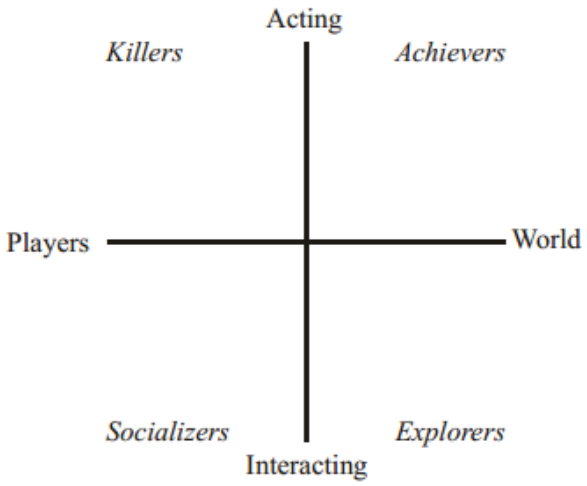


FIGURE 5. Four Bartle Types (Bartle 2005)

Figure 5 explains the relationship of the different player archetypes visually – Killers like to act on other players, Achievers like to act on the world, Socializers like to interact with other players and Explorers like to interact with the world (Bartle 2005).

As discussed in the beginning of this chapter, these four archetypes can be further extended into eight, more detailed types. Although the four original types are widely referenced, Bartle (2005) admits that there exist certain flaws on the model, including that each type seems to have subtypes which the model does not predict. These subtypes

divide each original Bartle Type into two different types, one being implicit, meaning that the player acts without further planning, and one being explicit, indicating thinking before doing. (Bartle 2005). Figure 6 presents the new enhanced model for reference.

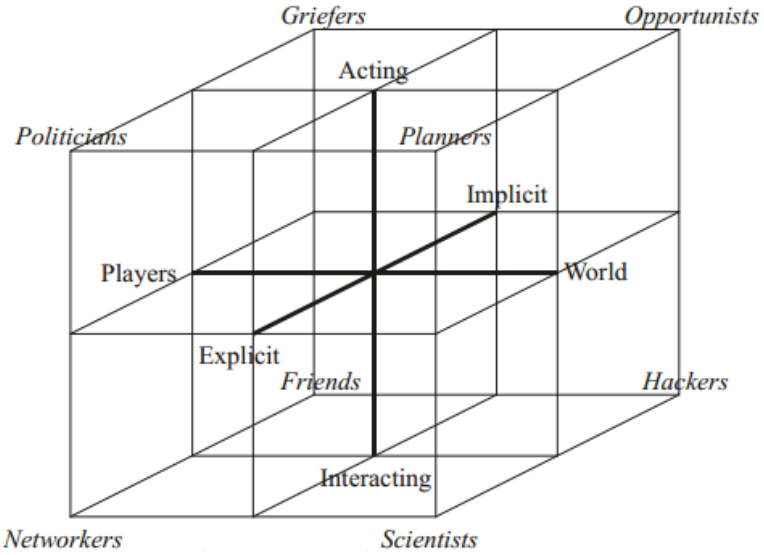


FIGURE 6. Eight Bartle Types (Bartle 2005)

As shown above, the two-dimensional model has been developed into a more detailed, three-dimensional model, dividing Achievers into Planners (explicit) and Opportunists (implicit), Explorers into Scientists (explicit) and Hackers (implicit), Socializers into Networkers (explicit) and Friends (implicit), and Killers into Politicians (explicit) and Griefers (implicit). However, because of the scale of this thesis, the focus is only on the four main player archetypes which are assumed to include these subtypes, too, when referring to player motivation in Chapter 5 while evaluation player retention methods.

Understanding the motivations of the different player archetypes helps to build the game to cater for as many different people and play styles as possible, increasing player engagement and retention in the progress. While this is not only important for the design of mobile games and free-to-play games but all games alike, it is especially important for the design of free-to-play mobile games, since the money comes to the developers only after the players are engaged and enjoying the game.

3 FREE-TO-PLAY BUSINESS MODEL

Instead of researching player retention methods used in all mobile games in general, this thesis is focused on free-to-play mobile games. As described in Chapter 2.1 the reasons behind the choice to focus on mobile games over other platforms were related to their wide reaching audience, accessibility and an ever increasing flow of revenue. However, the decision behind the choice to focus on free-to-play mobile games specifically is explained more extensively in this chapter. Following sections will also explain what free-to-play games are, introduce the basic principles and terms of the free-to-play business model and explore the commonly referenced structure of free-to-play mobile games.

3.1 Defining free-to-play games

Free-to-play games are a trending phenomenon when it comes to mobile games and games on other platforms as well. As defined by Xicota (2013) on Gamedonia, free-to-play games can be downloaded and played for free without having to pay for the actual game client itself, but in order to make profit the games often contain optional in-app purchases including virtual items, currencies and resources.

Since free-to-play games need players to spend money on optional purchases in order to be financially successful, engaging players is highly important in order to make profit. As Pascal Luban, a game design consultant, describes in his article on Gamasutra, this presents game designers with new challenges. Since the players have spent no money on the game and are not bind to it in any way, it is easy for them to switch over to another free-to-play game if they are not satisfied with the one they just downloaded. Hence it is crucial to provide immediate satisfaction to the player in order to hook them up and keep them playing. Additionally, free-to-play games are rarely launched with their full content, and statistics and metrics are important tools used to further develop the games after launch. (Luban 2014).

This is why designing free-to-play games differs greatly from the more traditional game design. According to Luban, since with the old pay-to-play model the players had already paid for the game when they got to play it, the sole role of the designer was to provide entertainment after the initial pay up. With free-to-play games, however, the

designers have to consider different types player retention methods and techniques in order to entice the player to come back instead of playing something else. (Lucan 2014). Also, because the only profit comes from the optional purchases made in the game, the design of free-to-play games often encourages players to spend money on these purchases to progress faster, differentiate themselves from other players or, in some cases, even gain gameplay advantages over others – and ultimately net profit for the developer.

When considering that free-to-play games may be designed in a way that requires the player to spend money in order to advance faster, or be competitive, it sounds like a compromise for the players. However, even though big ported titles with reasonably low and fixed prices such as Grand Theft Auto: San Andreas and Final Fantasy VI enjoy a high popularity on the mobile marketplaces, more casual and free-to-play mobile games such as Clash of Clans and Hay Day rule over the top grossing charts.

Google Play Store, Finland, Top Overall, Grossing, Q1 2014

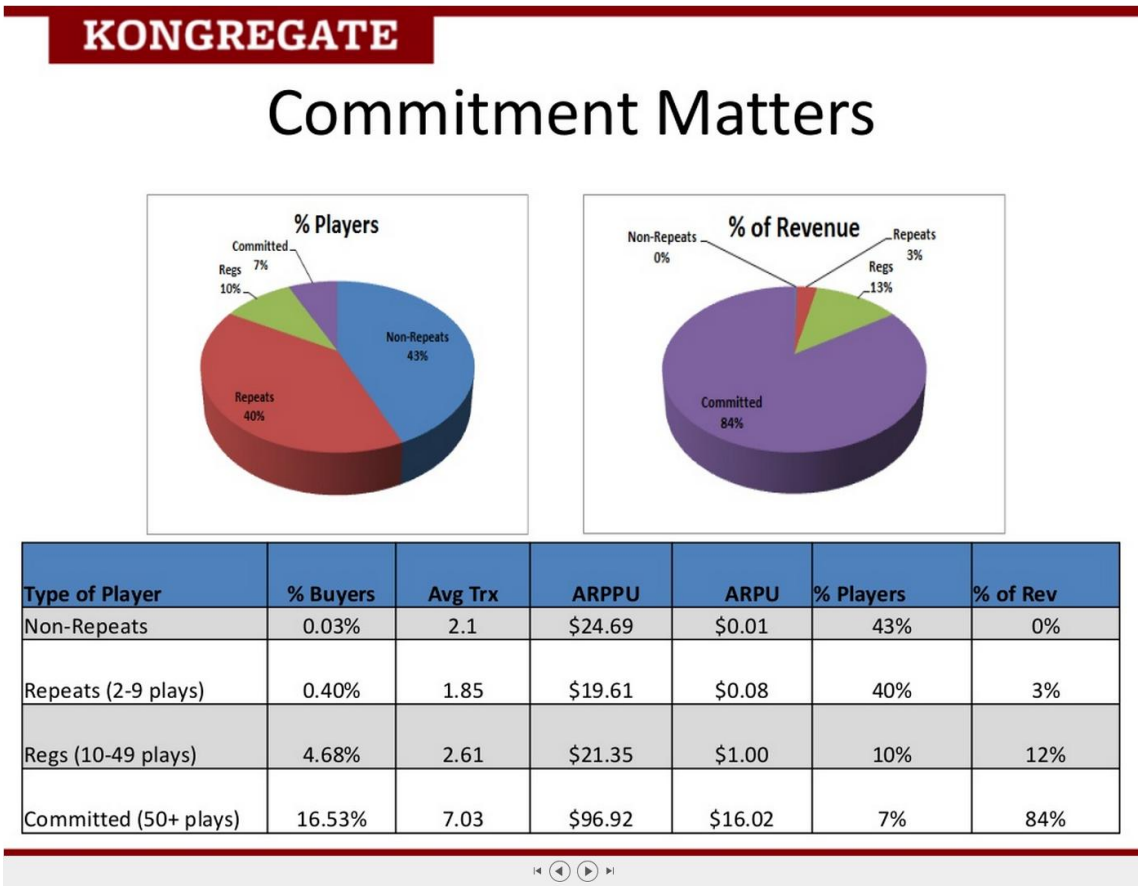
Rank		App	Price	In-App
1 -		Clash of Clans Supercell	free	
2 ▲ 10		Hay Day Supercell	free	
3 ▼ 1		Candy Crush Saga King.com	free	
4 ▼ 1		Knights & Dragons GREE, INC	free	
5 ▲ 9		Growtopia Robinson Technologies Corporation	free	
6 ★		Farm Heroes Saga King.com	free	
7 ▼ 3		The Simpsons™: Tapped Out EA Mobile	free	
8 ▼ 2		The Hobbit: Kingdoms Kabam	free	
9 ▼ 4		Castle Clash IGG.COM	free	
10 ▲ 5		Minecraft - Pocket Edition Mojang	$7.41 - $7.65	

FIGURE 7. Top Google Play Store during Q1 2014 in Finland. (Distimo 2014)

Figure 7 shows the top grossing games in Google Play Store during Q1 2014 in Finland. It is densely populated with free-to-play games and only one of the top ten games is

using the traditional pay-to-play model. By being free, and hence affordable by anyone, the free-to-play games have been able to gain popularity. This indicates that, despite the possibility of the games including advantages for the paying customers, they are still preferred by the players. And because of their popularity, as well as the engaging design accompanied with clever monetization, they are also currently the most profitable business model on mobile. This also explains why the development of free-to-play mobile games is a trending phenomenon – since they are developed for one of the widest reaching platforms available and downloading them is free, they are able to reach a massive audience, and as a result they have the chance of turning in big profits, too.

However, in order for these games to be profitable, they have to retain or engage their players, so that they stay around and spend more of their time and money in the games. Figure 8 shows statistics from Kongregate – an online games hosting website – revealed during a presentation by David Chiu in MIGS 2013.



Type of Player	% Buyers	Avg Trx	ARPPU	ARPU	% Players	% of Rev
Non-Repeats	0.03%	2.1	$24.69	$0.01	43%	0%
Repeats (2-9 plays)	0.40%	1.85	$19.61	$0.08	40%	3%
Regs (10-49 plays)	4.68%	2.61	$21.35	$1.00	10%	12%
Committed (50+ plays)	16.53%	7.03	$96.92	$16.02	7%	84%

FIGURE 8. Commitment leads to revenue (Chiu 2013)

As seen from the figures, the more committed the players are, or the more they play the game, the more revenue they also bring in. This is why player retention is so crucial for

free-to-play games, and also the reason why this thesis is focused on researching how player retention works in free-to-play mobile games, and what methods there are to improve it. Since player retention is the key to the success, it is a valuable research topic, as well as an important part of the design process of all free-to-play mobile games. Chapter 3.2.2 further explains the concept of player retention, whereas Chapter 5 defines and evaluates different player retention methods in a greater detail.

3.2 Concepts and terminology

This section goes through the different terminology and main concepts associated with the free-to-play business model which are demonstrated on the figure below.

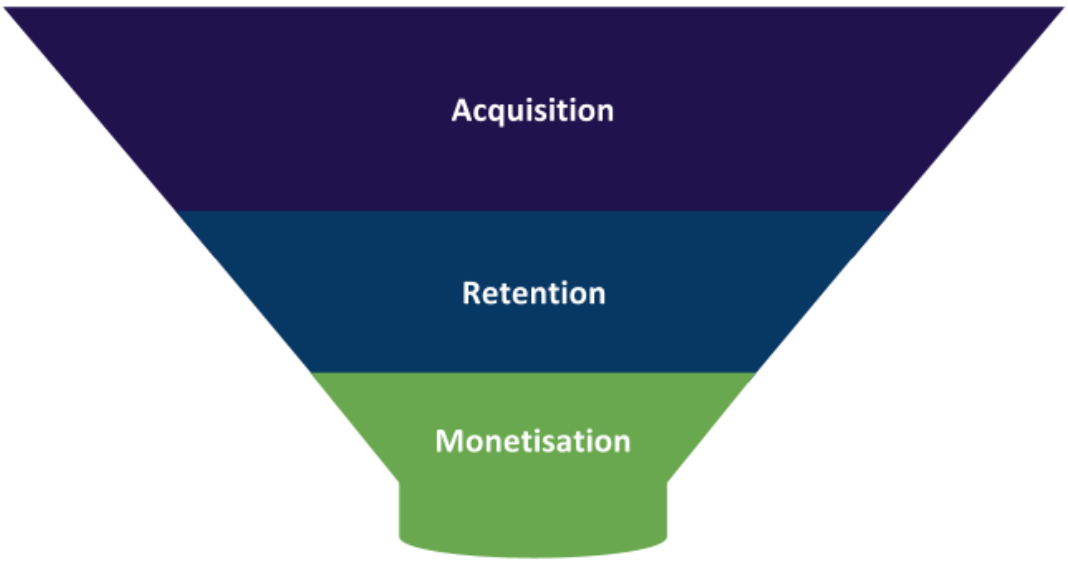


FIGURE 9. Adaptation of The Funnel

Figure 9 illustrates The Funnel, originally designed by Nicholas Lovell (2013), who is known as the founder of GAMESbrief, author of "Design Rules for Free-to-Play Games" and a consultant providing financial advice to video game companies. The Funnel provides a good summary and demonstration of the basic steps of the free-to-play business model. Acquisition, retention and monetization are the main concepts, and shaped like a funnel, the figure illustrates how the amount of players decreases through each phase – not all acquired players are retained, and not all retained players are converted into paying customers. However, each step is necessary in order to develop a financially successful free-to-play mobile game, and they are further introduced below.

3.2.1 Acquisition

Player acquisition, or simply put acquiring or obtaining players to play the game, is the first step required in order to make a game with a successful free-to-play business model. Player acquisition is all about promoting and marketing the game, and getting users to download it and to try it out for the first time. Hence player acquisition is actually more about marketing rather than game design – where and how the game is promoted is majorly important in order to get the players interested and to try it out. According to a Gamasutra article by Simon Carless, Chartboost's Clay Kellogg had discussed the advantages of cross-promoting games in GDC China 2012. Kellogg had described how, alongside of external advertising and cross-promotion, cross-promotion within your own portfolio of games is "fundamental" to strategy. (Carless 2012).

As described in Chapter 3.1, metrics and statistics are important when utilizing the free-to-play business model. These are called key performance indicators, or KPIs for short, and help the developers to trace and develop the revenue strategies of their games (Xicota 2013). When it comes to player acquisition, the major thing to consider is how much it costs to recruit new players to play the game, compared to how much the average revenue of each player is respectively – this is one of the key principles when defining if a game with a free-to-play business model is successful or not.

According to Lovell, **CPA** (Cost Per Customer) refers to the amount of money spent to gain a customer, and it is easy to calculate if the company is using an affiliate or **CPI** (Cost Per Install) scheme where the company pays for example one euro for each user who installs the game. However, it does not tell how much is really spent on marketing and ignores virality, word of mouth, promotions and other means of marketing. Because of this **eCPA** (effective Cost Per Acquisition) is often used to gain a bigger perspective – it includes both the cost to acquire a customer and all the friends they bring, hence being a lower value than CPA and demonstrates the power of virality. Calculating eCPA includes calculating the total value the company has spent in marketing, advertising and other promotions, and then dividing this by the amount of new players or customers during the same month (Lovell 2011b). These metrics give a rough idea how much it costs to acquire new users, and can be further used to calculate how profitable the game actually is – more about this in Chapter 3.2.3 which briefly explains player monetization and how developers make money with free-to-play mobile games.

Figure 10 shows the cost per application install directly attributed to advertising, comparing the costs between Android and iOS (Fiksu 2014).

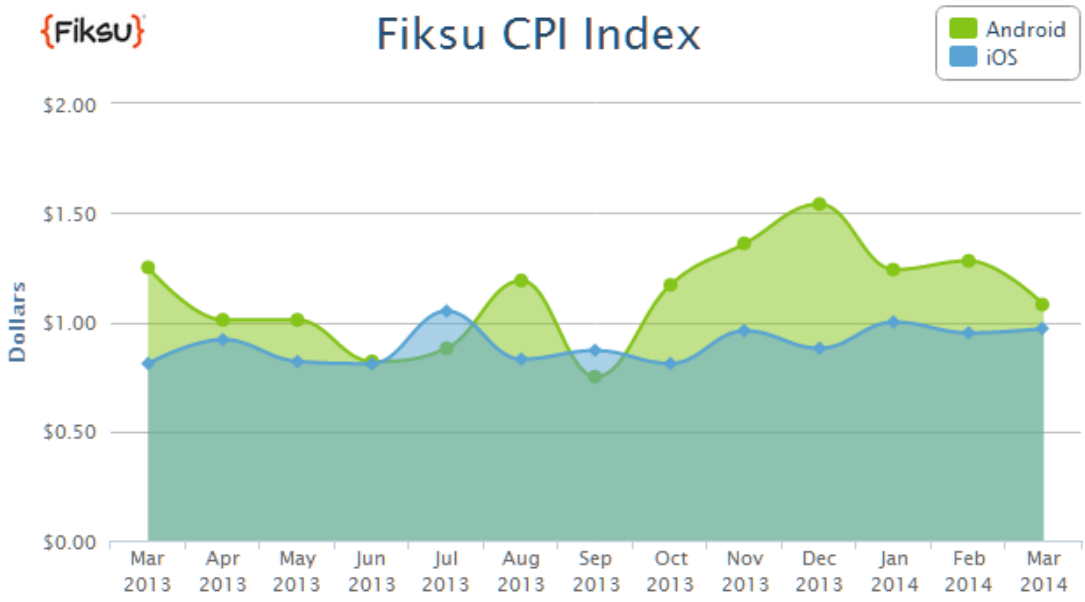


FIGURE 10. Fiksu CPI Index for March 2014 (Fiksu 2014)

As the graph indicates, these numbers seem relatively high, and as Takahashi writes in his article on VentureBeat, the cost to acquire a player often exceeds the amount of revenue that those users generate (Takahashi 2014). This further emphasises the importance of player retention – since it costs so much to acquire the users, it is important to engage them, so that the investment made to get them does not go waste.

Since player acquisition is not deeply related to player retention, or the topic of this thesis, but is more about different marketing techniques, this chapter will not go over player acquisition in greater detail. However, it is an important step in the process – without players, there is no one to retain and no one to monetise, hence being the first part of the funnel theory conceptualized by Lovell (2013).

3.2.2 Retention

Player retention, or player engagement, is simply a measure of how many players return back to the game after their initial play session. Since companies are spending a lot of

money in order to acquire the players, it is important to be able to engage them, and hence user retention can be considered the single most important KPI for any game release, according to Evans (2014) on App Developer Magazine. Additionally, Lovell states on a GAMESbrief article, that he has always viewed retention as the most important of the three steps, acquisition, retention and monetization (Lovell 2011d).

Figure 9 emphasized the fact that player retention is the second step in the commonly referenced funnel formula to make successful games with the free-to-play business mode. After the players are acquired, the next objective is to retain them. Player retention is a sum of many factors, but one obvious yet sometimes overlooked thing is that the players should have a good reason to come back. Hence player retention is about psychology and game design, aiming to feed the motivation of the players in order to keep them engaged and get them to return. As discussed in Chapter 2.3, the different player archetypes all have their own motivations which keep them playing, and to keep them engaged the game has to offer them something to keep them interested. Different player retention methods and strategies, as well as how they keep players engaged, are further explored and discussed in Chapter 5, but this section briefly goes through the basic principles of player retention and how it can be measured with the KPIs.

In order to observe the success rate of retaining players, player retention can be measured by considering player retention rate, churn rate and duration, which all measure how many players keep coming back to the game, or in other words, are retained (Lovell 2011d). These concepts are further explained below.

Retention rate is a measure of the percentage of players who installed the game in month one and come back to it in month two – so for example, if 100 people played the game in month one and 70 came back to play it on month two, the retention rate for the game would be 70% (Lovell 2011d). In addition to the commonly used one month retention rate, the retention rate can be used to calculate the player retention for any given time period by using the same logic. This percentage gives important and useful information about how many players keep returning and are retained by the current design.

Figure 11 presents research results from Swrve (2014a), consisting of data gathered by observing millions of free-to-play players across dozens of titles, demonstrating the player retention rate for day one, day seven and a month later for new players.

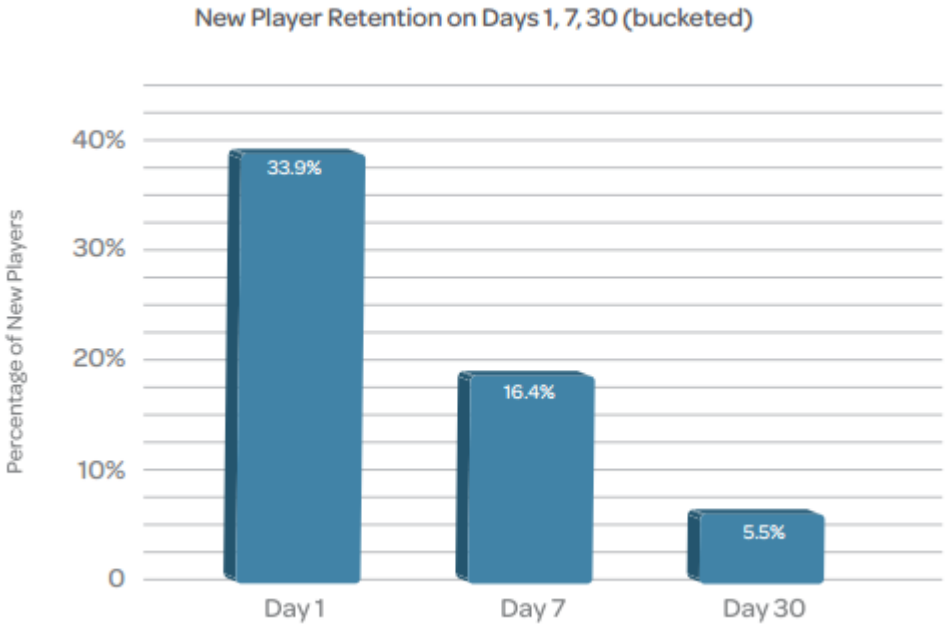


FIGURE 11. Player retention rates (Swrve 2014a)

The above chart clearly illustrates how difficult it can be to keep the users returning to the game over a longer period of time, since already after a day over 65% of the players have abandoned the game. Additionally the research states that since companies often spend a lot of money on user acquisition, they should be careful to investigate how well the players acquired from different sources are retained, and then adjust their spending on those sources accordingly in order to be sure not to waste money (Swrve 2014a). This further emphasizes the importance of player retention, too.

Churn rate is another way to look at player retention, and it is the number of players who did not return to the game after the measured period. Calculating churn rate is easy: one minus the retention rate as a percentage, so for example if 70% of the users returned after month one, the churn rate is 30% – the reason to calculate it this way is to ignore the distorting effect of new players (Lovell 2011d). Even though just the opposite metric to player retention rate, it is a valuable measure for example when considering the effects of recent changes in the game and offers a different perspective.

Duration, on the other hand, is the average amount of months the players continue to play the game, and is calculated by dividing one with the churn rate – in the above case, the duration would be 3,3 months (Lovell 2011d). This is also a useful metric, and while

it shows how long the players stay with the game on average, also indicates how different changes in the game may affect the average duration in the long run.

These metrics are the common KPIs used to measure player retention and should be closely observed after the initial release of a free-to-play mobile game. They provide valuable information about how different changes made to a game affect its players, and how even small changes to, for example, the tutorial or the initial experience, can make a big difference. This is crucial as discussed in Chapters 2.2 and 3.1 about how big of an impact the initial experience has on the player.

However, what is more important than being able to measure player retention, is how to create an engaging game in the first place. As Lovell (2010a) states, “the key skill of designing a good game is about leaving players wanting more." This purely consists of game design and game mechanics created to engage the player and to entice them to come back – more about different player retention methods in Chapter 5.

3.2.3 Monetization

In free-to-play games, player monetization refers to the act of selling optional services and virtual goods to the players inside the game – in other words offering microtransactions or in-app purchases. Usually these includes things like digital items, cosmetic changes, extra resources or virtual currencies which the player can buy with real money, and then use them in the game to advance faster, or to differentiate themselves from the other players. Because of the free nature of the games, only a small percentage of players ever end up spending any money on the games.

Figure 9 illustrated the position of monetization in the free-to-play business model by appropriately showing it on the bottom end of the funnel, indicating that the players need to be first acquired, and then retained, before they start making the purchases. Figure 8 also effectively demonstrated how important it is to engage and retain the players, since the most committed players contributed as much as 84% of all the revenue in the research. Monetization is the defining step for the success of free-to-play business model, hence both user acquisition and player retention aim to get players through the funnel to this final step. Even though this thesis is about player retention, player mone-

tization is what player retention eventually aims for: keeping players in the game in order to convert as many of them into paying customers as possible.

Conversion rate refers to the amount of players converted into paying customers – without conversion, there is no business (Lovell 2011a). Usually this rate is measured as a percentage and only a small amount of the overall players are converted. These players can be further divided into three different groups based on their spending – Minnows, Whales and Dolphins. These names indicate the amount of money that the players spend, Minnows often associated with $1 minimum purchase per month, Whales spending around $20 a month and Dolphins swimming somewhere in the middle (Lovell 2011e). Freeloaders is an additional term and may refer to players who have not spent any money on the game, but still act as an important part of the player base by building the community, while possibly providing free viral marketing in the process.

Various research results indicate that despite the average spending expectation for Whales being around $20 a month, they can spend considerable amounts of money on the games, and also account for a big portion of the total sales. According to a report by Swrve, 0.15% of the players account for 50% of the monthly revenue, while those 0.15% players are 10% of the players that made purchases altogether. This means that only 15% of the surveyed players had even made a purchase within that month in the research. (Swrve 2014b). These numbers indicate how only a small portion of the total players make a purchase in the first place, and a tiny part of the players account for most of the revenue generated by the game. This demonstrates the efficiency of Whales and their importance to the free-to-play economy.

Figure 12 illustrates the conversion rates for different free-to-play games on various different platforms, showing that despite the game and platform, the rates are quite low altogether – emphasizing the small amount of players that are ever converted.

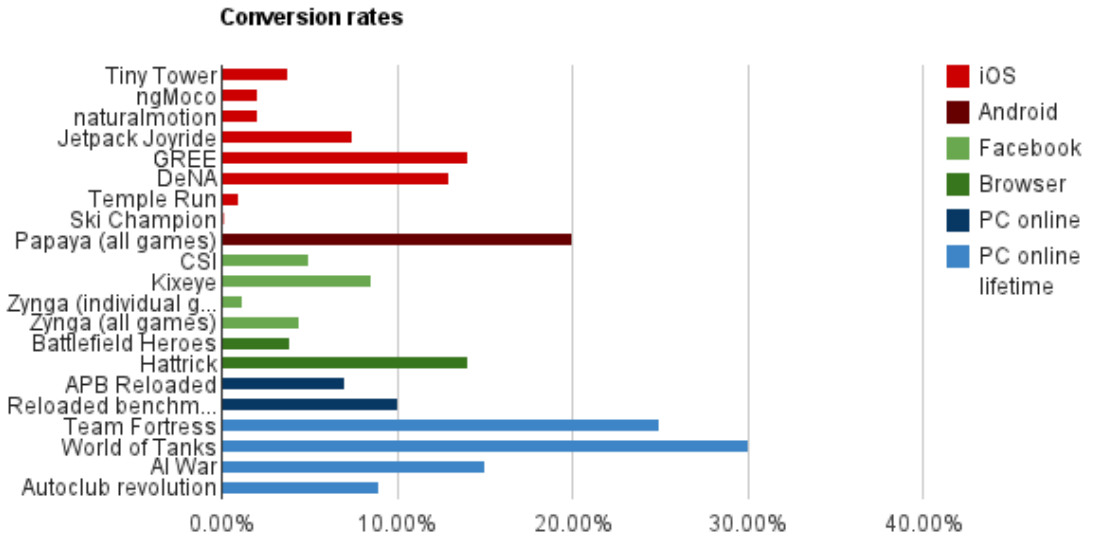


FIGURE 12. Conversion rates for different games (Lovell 2011a)

However, with a lot of players, even a small percentage of converted players can bring big amounts of revenue. Because of this, conversion rates as low as 2%-10% are considered reasonable when there are a large amount of total players in the game in the first place (Lovell 2011a). When it comes to calculating the actual profit generated by the game however, a few more metrics are needed.

As discussed earlier in Chapter 3.2.1, eCPA covers the cost of attaining players to play the game. There are other KPIs too, however, which are briefly introduced below for they are the key principles of the business model.

According to Luton, **DAU** refers to daily active users, **ARPDAU** refers to average revenue per daily active user and **MAU** refers to monthly active users while **ARPMAU** is the average revenue per monthly active user respectively. Hence DAU x ARPDAU is the daily revenue and MAU x ARPMAU is the monthly revenue, but this does not tell the important thing, which is profit. **Lifetime Overheads** refer to all the costs of running the service, including servers, development and so forth, which are important to consider when creating a profitable business. Hence the actual profit can be calculated by (ARPMAU / monthly churn rate) - (eCPA + Lifetime Overheads) = **LTV** or lifetime value of the game, meaning the average net profit of a player. (Luton 2013, 35-37). Considering the above, technically Players x LTV is the profit gained from each player, and can be used to calculate how much profit the game in question earns.

Even though this thesis is focusing on player retention rather than monetization, it is important to understand how player monetization works, and the above formula is the core of the business metrics behind free-to-play games. Ultimately player aims to keep the players in the game, in the hope of possibly converting some of them into paying customers. Hence player retention is both just a step on the way, but also an important part of the design process when attempting to create successful free-to-play games.

3.3 Core structure of the games

Because the success of free-to-play games relays on player monetization, and player monetization relays player retention, different game mechanics which are designed to engage and motivate players are crucial to consider during the design process. This section goes through the basic core structure of free-to-play mobile games, and the most often referenced design terms and concepts as a base for Chapter 5, which will explore specific player retention methods more extensively.

Figure 13, an adaptation of The Pyramid of free-to-play, originally designed by Lovell (2013), represents the very basic structure of free-to-play mobile games.

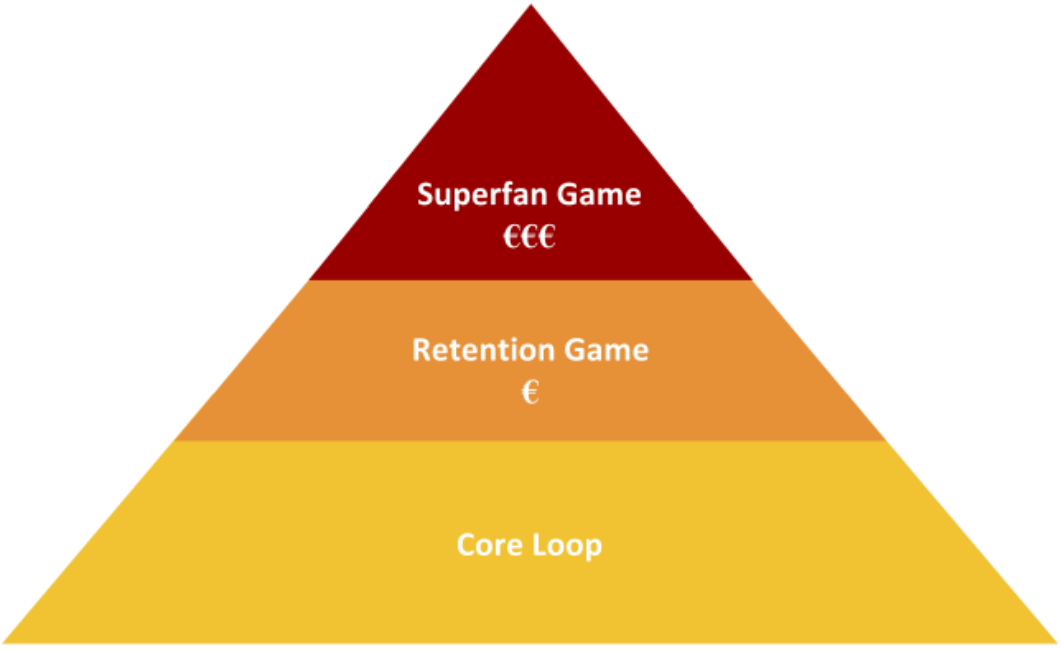


FIGURE 13. Adaptation of The Pyramid

According to Lovell, the core loop is the base of the game, and refers to the basic set of actions which the player does over and over again while playing. It is what many people would think of if they are asked what the "gameplay" of the game is like. (Lovell 2013). An example of a single core loop is an action-to-reward cycle where the player commits and action, and is then rewarded for it, such as the planting and harvesting cycle in Farmville, or simply playing a single game of Bejeweled Blitz.

Core loops are especially important in free-to-play games because the player engagement is built on top of them. At the same time they should offer something compelling for the player to do, but also offer an exit point and a reason to return (Luton 2013, 49-54). Since the rest of the game is built around these core loops, solid core loop is an important part of the game and should be carefully designed. In the end, they are the definition of what keeps the players playing the game, and as such are also sometimes referenced as "compulsion loops" (Luton 2013, 53).

According to Luton, in order to keep the core loops interesting, they often involve upgrades to add depth to the gameplay (Luton 2013, 52-55). This helps to motivate the player by offering them something to achieve – for example, in a car game the player might go for a race (action), gain cash (reward), and then buy new components for the car (upgrade), such as in Hill Climb Racing. Figure 14 illustrates this basic structure of the core loops, which is often utilized in free-to-play games.

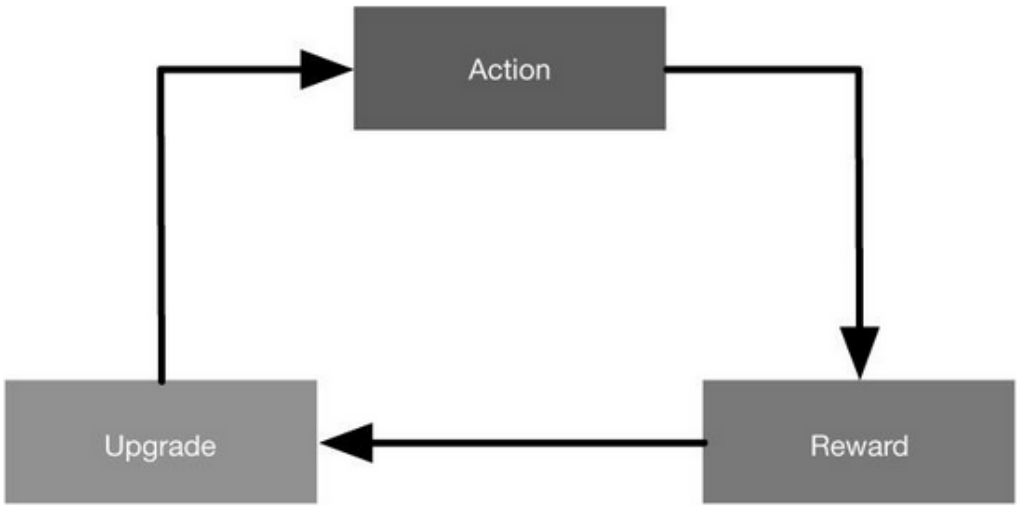


FIGURE 14. Basic core loop (Luton 2013, 53)

Since the core loops are commonly accepted to be one of the most often used base structures for free-to-play games, they can naturally be seen in games of multiple different types and genres. Even if not accurately following the model, many of the successful free-to-play mobile games often utilize it at least in some form.

One common mechanic used together with the basic core loop are wait points in the loop, which create sessioning for the game, forcing the player to leave at some point of the session instead of playing forever – unless they make in-app purchases, of course (Luton 2013, 52-55). For example in Farmville the player needs to wait for their crops to grow, after which they may return to harvest them. Additionally, Luton describes how some core loops may also include grinding instead, like the core loop of Bejeweled Blitz, which might take several action-to-reward cycles until the player can afford to buy upgrades or boosters. This offers a more continuous experience than games which make the player to wait in-between the play sessions. (Luton 2013, 55-60). However, the wait core loop is the most commonly used archetype of the core loops. Figure 15 illustrates how the wait point is integrated within the core loop, making the player wait before they can collect their reward, while giving a reason for the player to return, too.

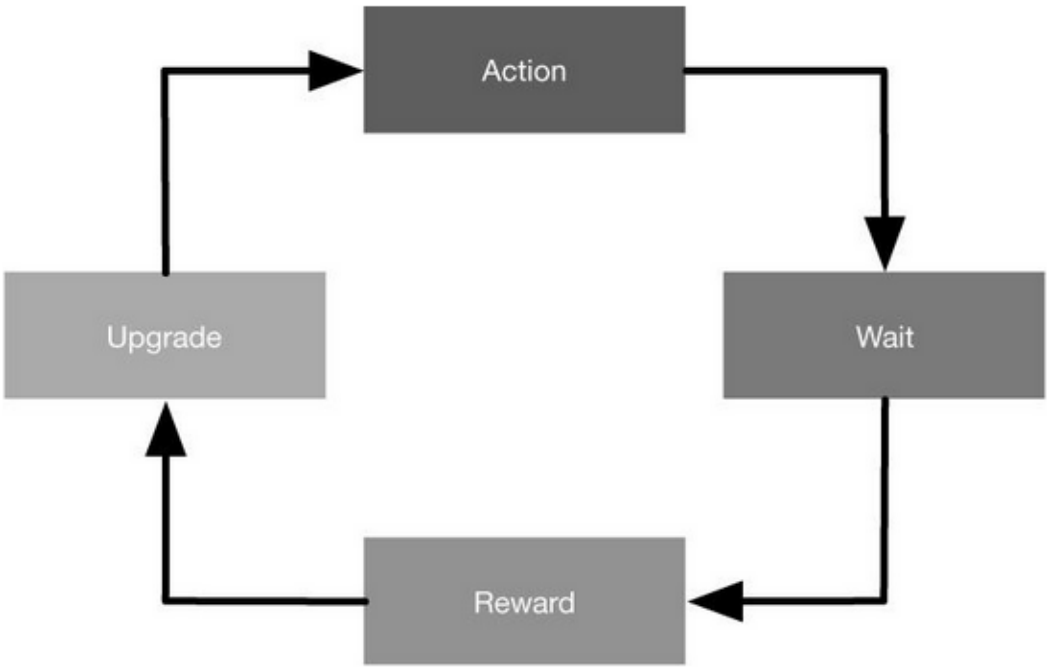


FIGURE 15. Wait core loop (Luton 2013, 54)

When a game has a solid core loop, retention game can be built on top of that by utilizing different game mechanics. However, the core loop can and should already act as means to the retention in and of itself. According to Lovell (2013), retention game is what keeps the players coming back for more in the long run. By including wait times or sessioning within the core loop, the first means for retention and a reason to return are already in place for the player. Figure 15 illustrated how the wait point in the core loop forces the player to leave and then come back in order to collect their reward. Figure 16 takes it further by presenting sessioning.

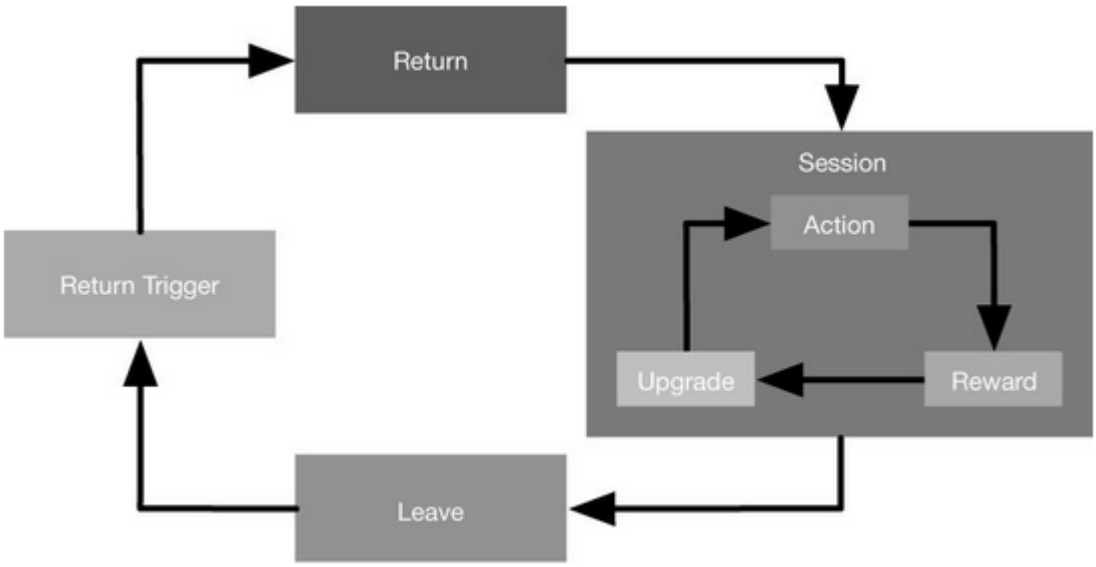


FIGURE 16. Sessioning and return loop (Luton 2013, 64)

In order to leave the player wanting more, artificial sessioning is often used and tied together with the wait phase of the core loop. Luton explains that sessioning simply means showing the player an exit during their play session. While it might seem counter intuitive, sessioning is used in many successful free-to-play titles, and the idea of it is to leave the player wanting more by limiting the amount of core loops they can complete during one session. Usually this happens in the form of limited resources or other wait times which are integrated in the gameplay and theme of the game. (Luton 2013 59-61). Some examples of these are the well-known energy mechanics in various free-to-play games, or other wait times required to progress and complete upgrades. As shown in the figure, after the play session ends and the player is forced to leave, a good return trigger, or a good enough reason, for the player to return is required. This encourages the player to come back to the game and play a new session, repeating the loop.

Return triggers, according to Luton, work by offering an explicit gameplay advantage or other compulsion to play, contained within an event occurring at some time in the future. These events act as return triggers and are the most important part in retaining the player – by giving them a well defined reason to return. (Luton 2013 61-65). Chapter 5 goes deeper into player retention as a concept and introduces specific and defined player retention methods and strategies, or return triggers, while evaluating how the three top grossing games utilize them in practice.

Figure 13 also illustrated superfan game on top of the core loops and retention game, which offers the endgame possibilities to the most dedicated players. It usually consists of competitive or multiplayer elements and is designed to keep players interested and investing in the game while offering chances for monetization and social interaction as well (Lovell 2013). These are advanced ways to keep the players engaged, and some retention strategies in Chapter 5 can be considered as a part of the superfan game, too.

There is a fine line between core loops, player retention and the superfan game, and this is how it should be, too. While the core loop is what may hook the player at first, the retention game and elements of the superfan game will keep them coming back in the long run. However, different player retention categories and more specific player retention methods are introduced in Chapter 5.

4 METHODS OF RESEARCH AND EVALUATION

After setting the background for the thesis by introducing the evolution of the mobile devices into a formidable gaming platform, explaining what mobile specific design entails and by dividing players into four different player archetypes, the free-to-play business model was further explored. Free-to-play games were defined, the basic terms and concepts of the business model were explained and the core structure of free-to-play mobile games was introduced.

While these chapters also explored the reasons behind the topic choice of this thesis, they also provided the theoretical knowledge needed for the research and evaluation part of this thesis. This chapter further explains the methods of research and which are used in Chapter 5 to gather as good data as possible.

4.1 Methods of research

First, in order to define a set of player retention methods and strategies, existing professional sources are utilized. This requires extensive research into the professional literature and articles written about free-to-play mobile games. The main research method used for this is literature review, aiming to identify and define different player retention methods and strategies by combining various professional sources. Choosing trusted and valued authors ensures that the researched information is valid and held in a high regard throughout the mobile gaming industry.

For the purpose of this thesis, in order to better organize the defined player retention methods and strategies, they are categorized into three different groups,

1. *Core retention methods*
2. *Advanced retention methods*
3. *Additional retention methods*

Core retention methods are defined for the purpose of this thesis as player retention methods which affect the immediate engagement of the player, featuring the core loop of the game as well as game mechanics and gameplay elements which are closely tied

within the core loop and progression of the game. This is the first layer of player retention and aims to bring the players back to the game after their first play sessions by providing enough initial goals and rewards.

Advanced retention methods are defined for the purpose of this thesis as player retention methods and strategies which aim to engage the player as an extension to the core retention methods, offering more advanced and not necessarily gameplay tied techniques used to further retain the player. This is the second layer of player retention and is built on top of the core gameplay by utilizing its mechanics, providing the endgame elements and long time retention for the player.

Additional retention methods are defined for the purpose of this thesis as player retention techniques which do not necessarily relate to the gameplay itself but offer additional methods to retain the player and keep them engaged. These methods can be applied loosely to any game and do not necessarily require a strong tie to the core loop.

In order to control the scale of this thesis, each of the three categories will list three of the most powerful and evident player retention methods to control the focus and scope. However, each subcategory may include more than one type of the method in question, and these will be listed in the end of each subchapter respectively.

4.2 Methods of evaluation

After literature research and professional sources are used to define a set of different player retention methods, they will be used as design specifications and the top three grossing games will be evaluated against them. This evaluation process aims to analyse and research which theoretically approved and recommended player retention techniques, if any, these three top grossing free-to-play mobile games actually utilize in practice and how they are implement. Additionally, using the player archetypes defined in Chapter 2.3, the goal is to observe how the games and different player retention methods used in them cater to different types of players, or in other words, which of the defined player retention techniques retain each of the different player archetypes.

This evaluation process will combine theoretical research with empirical evaluation in the means similar to heuristic evaluation – however, instead of a set of user experience heuristics, the games are evaluated against the defined player retention methods and strategies which will act similarly to a set of heuristics. This offers valuable information for anyone looking to understand how player retention works by offering both theoretical hypotheses from professionals about the different techniques, but also a first-hand evaluation of how they are utilized and can be implemented in practice.

In order to evaluate the games to my best abilities, I will first play them and see what seems to engages me if anything, providing the perspective of a player. After this I will analyse the games more thoroughly using the player retention techniques as design specifications in order to evaluate how well each game utilizes them. Analysing how the different techniques in the chosen three games cater to different player archetypes should provide further information of how player retention works in practice. These methods combined should ensure that my own experience as a player and evaluator as well as the industry knowledge are all considered while making the evaluation.

There is, however, a weakness in this method, since I am the only one evaluating the chosen games, leaving room for biased personal opinion, since only the perspective of one person is considered. Evaluating the games by a group of people might provide more accurate results, but would also go beyond the scope of this thesis and expand it beyond the original intentions. However, it should be noted that there is always room for improvement and a larger scale analysis.

Despite the possible weakness of the evaluation method, the research and evaluation results together should offer extensive information about how player retention works in free-to-play mobile games, both in theory and practice. These research results can be utilized to learn more about player retention as well as used as a guide when developing free-to-play mobile games and aiming to build strong player retention and engaging gameplay. Chapter 5.4 will gather together the research results for a deeper analysis and present the findings provided by the research and evaluation process.

4.3 Evaluated games

For the purpose of the evaluation, it was decided to choose three top grossing, or most profitable, games in the Google Play Store during Q1 2014 in Finland.

Google Play Store, Finland, Top Overall, Grossing, Q1 2014

Rank		App	Price	In-App
1 .		Clash of Clans Supercell	free	
2 ▲ 10		Hay Day Supercell	free	
3 ▼ 1		Candy Crush Saga King.com	free	

FIGURE 17. Chosen games (Distimo 2014)

By utilizing Distimo, a website which offers analytics and statistics for mobile games across all platforms, the games were chosen based on their numerical position on the top grossing list. To provide variety, a total of three games were chosen.

Choosing top grossing games ensured that the use of player retention techniques would be evaluated in the most financially successful free-to-play mobile games – since the top grossing games are generating the most profit, they can also be considered as some of the most successful examples of the use of the free-to-play business model. Additionally, instead of looking at the monthly or daily top grossing charts, considering a whole quarter gives more proof of their success, since they have been able to retain their position throughout a period of three months.

Choosing the Google Play Store over App Store was a choice made primarily due to the devices available during the time of writing this thesis. Also the decision to look at the Finnish top grossing charts was made mainly due to the origin of this thesis being Finland – but the chosen games were also on the top ten grossing lists for United States and United Kingdom, so they can be safely considered successful worldwide.

The following sections will briefly introduce the chosen three games and provide additional reasons for choosing them as well as give a quick outlook of their success, genre and basic gameplay mechanics.

4.3.1 Clash of Clans by Supercell

Clash of Clans, developed and published by Supercell in 2013 for Android, is a free-to-play strategy game for iOS and Android. The core idea of the game is to build and develop the village of the player, train troops, collect gold and elixir and to battle against other players and computer controlled enemies alike in order to level up, progress and grow stronger within the game world.

PICTURE 4. Clash of Clans (Supercell 2013a)

After its release, Clash of Clans has been seen as the top grossing game in both App Store and Google Play Store multiple times. As of May, Think Gaming (2014b), an analytics site estimating statistics for mobile games, estimates that Clash of Clans has 3.85 million daily active users and makes 1.14 million dollars in total daily revenue. Additionally, an article on Re/code by Eric Johnson (2014) states that a Syrian hacker had gained access to the private data of the game, claiming that it had reached as high numbers as 29.4 million daily active users and 5.15 million dollars in daily revenue.

This game is an interesting candidate for the evaluation because of its long lasting popularity and ability to engage players effectively. It was the number one top grossing game in Google Play Store in Finland during Q1 2014 according to Distimo (2014).

4.3.2 Hay Day by Supercell

Hay Day, also developed and published by Supercell in 2013 for Android, is a free-to-play farming simulator for iOS and Android. Similar to Farmville in many ways, the core idea of the game is to build and maintain a virtual farm, and the gameplay includes growing crops, taking care of animals, selling produces and manufacturing goods.

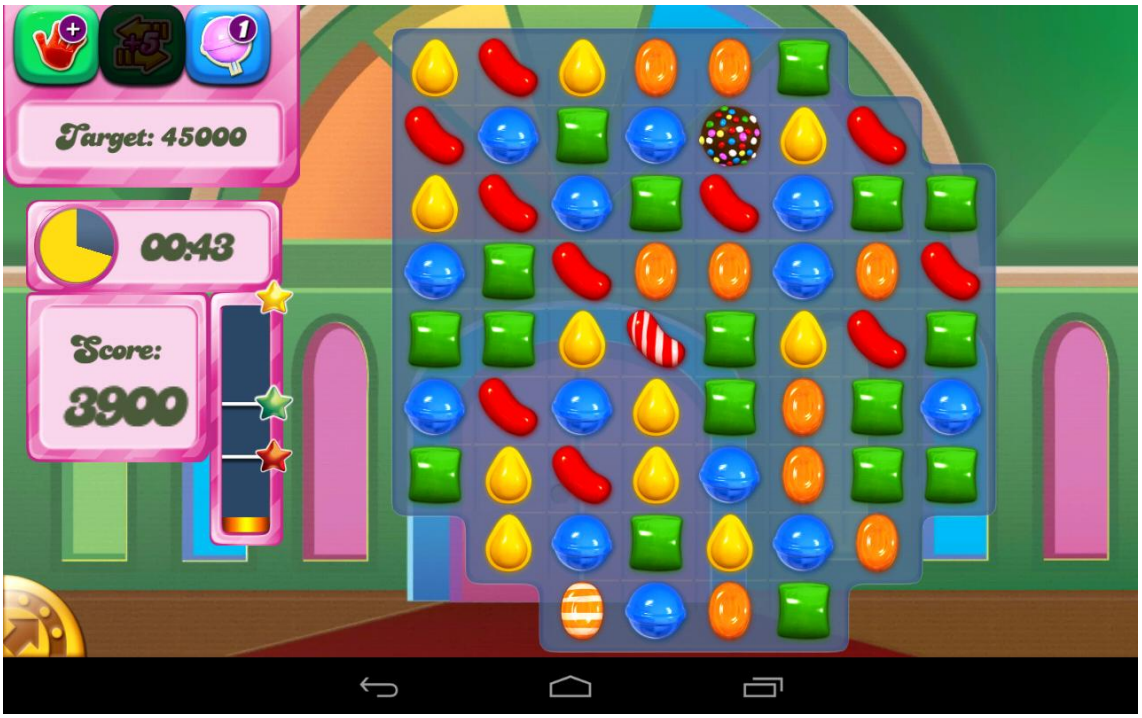
PICTURE 5. Hay Day (Supercell 2013b)

Hay Day has also been seen among the top grossing games on both App Store and Google Play Store multiple times. As of May, Think Gaming (2014c) estimates that Hay Day has 1.31 million daily active users and makes 218,000 dollars in total daily revenue. However, together with Clash of Clans, Hay Day has been reported to gather significant revenues for Supercell, pulling in as much as 892 million dollars during 2013 according to VentureBeat (2014).

Even though Hay Day and Clash of Clans are made by the same company, it was decided include both in this thesis in order to stay loyal to the decision to pick the three top grossing games. Also, since the games differ in nature, it will be interesting to see how differently they use player retention methods. Hay Day was the second top grossing game in Google Play Store in Finland during Q1 2014 according to Distimo (2014).

4.3.3 Candy Crush Saga by King

Candy Crush Saga, developed and published by King in 2012 for Android, is a cross-platform puzzle game for Facebook, iOS and Android. The game closely resembles the well-known Bejeweled in the terms of gameplay, as the idea of the game is to match three or more candies together while forming power-ups and going for the high score.



PICTURE 6. Candy Crush Saga (King 2012)

Candy Crush Saga has also been among the top grossing games of both App Store and Google Store several times. As of May, Think Gaming (2014a) estimates that Candy Crush Saga has 6.91 million daily active users and makes 902,191 dollars in total daily revenue. It was also reported to feature as many as 93 million daily active users, 500 million installs and 568 million dollars in revenue during 2013 (Grubb 2014).

What makes this game a good subject of evaluation is its simplicity combined with the popularity, high amount of daily active users and its cross-platform features. While different from Clash of Clans and Hay Day in both style and gameplay, it will be interesting to see how similar retention methods it uses. It was the third top grossing game in Google Play Store in Finland during Q1 2014 according to Distimo (2014).

5 EVALUATING PLAYER RETENTION METHODS

This chapter showcases the results of the literature review research combined together with the results of evaluating the three top grossing free-to-play mobile games. They are divided into three different categories depending on the nature of the player retention method in question, be it either core retention methods, advanced retention method or additional retention method, and each section follows the same structure.

After defining each of the player retention methods by referencing professional sources, follows an evaluation of how well the method was, if at all, is used in the three top grossing games, while also offering personal observations and experiences. Analysis about which player archetype the retention method in question is likely to cater for are also included, though they often intertwine and may be hard to differentiate.

At the end of each section there is a summary which lists the different techniques used in the chosen three games, compares how well each game uses the different methods and also summarises which player archetypes each method is likely to motivate. These results are all gathered together in the last section of this chapter to be analyzed more closely in order to draw final conclusions for the research and evaluation results.

5.1 Core retention methods

These player retention methods affect the immediate engagement of the player, featuring the core loop of the game as well as game mechanics and gameplay elements which are closely tied within the core loop and progression of the game. This is the first layer of player retention and aims to bring the players back to the game after their first play sessions by providing enough initial goals and rewards.

5.1.1 Core gameplay loops

As Lovell (2013) describes in a Gamasutra article, the core loop is the beating heart of the game – a basic thing which the players do all over and over again while playing. Additionally Luton (2013, 49-52) states in his book that the core loop defines the very

nature of the game and the chances of its success. As concluded in Chapter 3.3, the core loops consist of a basic set of actions repeated by the player, hence defining the main mechanics and gameplay of the game. Because of this, they greatly influence the engagement factor of the game, too. Core loops can be considered as the basis for all the other retention methods, since everything else in the game is built on top of them. That is why the core loops are treated as the base for all other retention techniques in this thesis – in order to be able to understand why certain retention methods are relevant for the game in question, it is important to first understand the core motivation that drives the player forwards within the game.

As discussed in Chapter 3.1, the first major task of free-to-play mobile games is to hook the player; hence the initial experience, or the core loop, should grab their attention and is the first step on the way to retain them. Additionally, a tutorial often acts as the first experience of the game for the player, but as discussed in Chapter 2.3, it is recommended that the tutorial is an integrated part of the game itself rather than its own entity. Because of this, the tutorial is not considered as a separate entity but relates to the introduction of the core loop. The evaluation below offers insight into the core gameplay loops present in the chosen games as well as the initial experience that the games provide. Further techniques tied onto the core loop, such as the waits in the core loop, sessioning and return triggers as well as the overall progression and upgrade possibilities of the games, are discussed in more detail in the following sections of this chapter.

As introduced in Chapter 4.3.1, Clash of Clans is a strategy game where the idea is to develop and advance a virtual village. Training troops, attacking other players and non-player villages for loot, while defending against the attacks initiated by other players, are the core mechanics of the game. Attacking other players consists of searching an opponent through matchmaking, observing their village, choosing which troops to send out and where, and then watching the battle to unfold while a timer sets off to initiate the time left for the attack. All troops that are sent out will be consumed, no matter if they die or survive, forcing the player to think strategically how many to send out and where to place them. For a successful raid the player is rewarded with resources, experience and an increased ranking. Defending is automatic and is based on the structure of the player's village and the different defending units such as walls, cannons and the troops which the player has left to defend the village. After a battle has been fought, more troops need to be trained by using resources which automatically generate within

the village and can also be won from successful raids. Building upgrades and being able to train different types of units also becomes possible while progressing in the game.

Despite the seemingly complex gameplay, the core loop itself is fairly simple and follows Luton's diagram quite accurately – player commits an action by attacking villages and choosing which troops train after the battle, waits for the troops to be trained and resources to generate, comes back to collect the resources which they may use to upgrade the village and then repeats the above. Resources present in the game include gold and elixir, which are generated over time by specific buildings, and they have to be moved to storage after the generators reach their limit in order to be able to generate more. Gold is mainly needed to build buildings and defences as well as to upgrade them, whereas elixir is mainly needed to train troops and to upgrade a few specific buildings. Figure 16 illustrates the basic core gameplay loop in Clash of Clans compared against Luton's model, while describing the very basic elements of it.

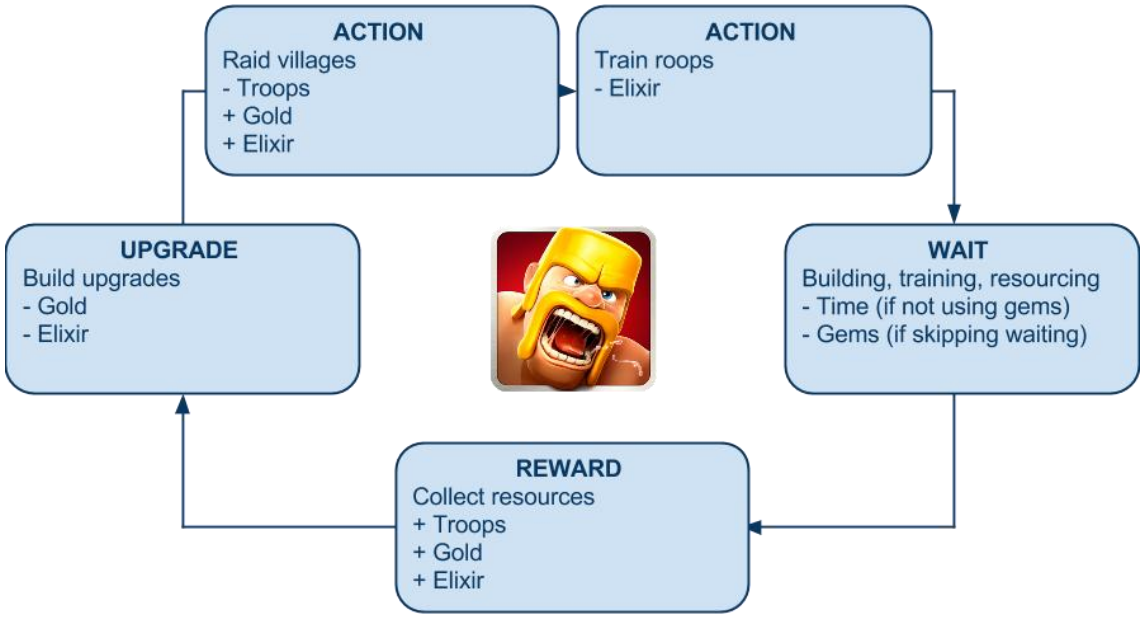
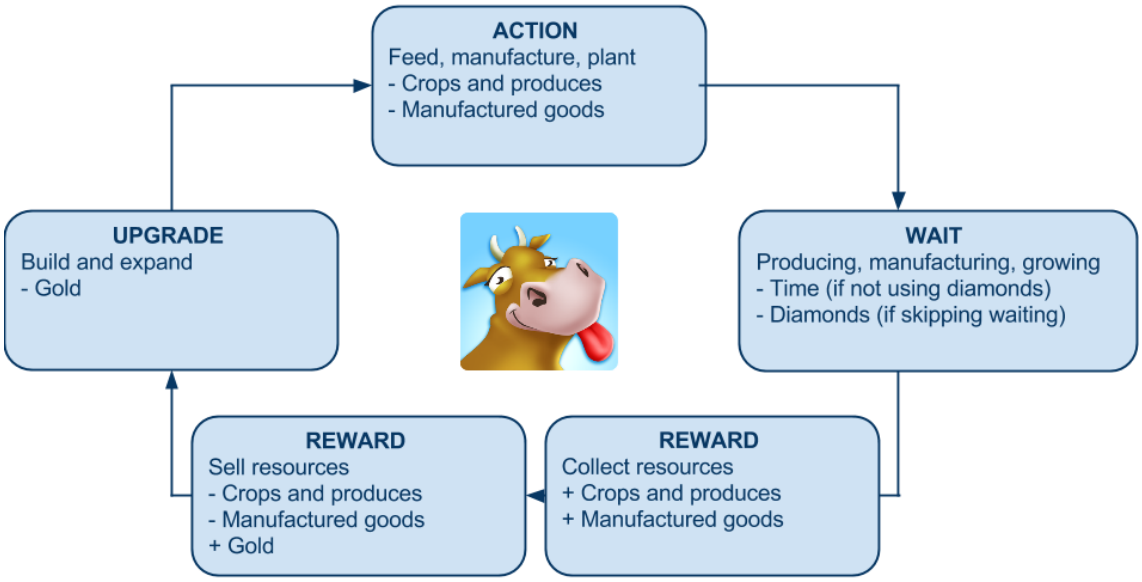


FIGURE 18. Core loop in Clash of Clans

When I was playing Clash of Clans, I found that the core loop is simple and easy to understand. This is partly because the tutorial, which in itself is an integral part of the game, set me off to a good start while explaining the basics thoroughly. The tutorial also introduces the premium currency of the game, gems, to speed up the core loop and to skip the wait phase in order to explain all the basics within a short period of time. This also demonstrates the power of the premiums currency to the player - which is mainly

used to speed up the game by skipping the wait points or to buy premium upgrades and items such as shields which protect from the attacks of other players. By the end of the tutorial, I had the necessary buildings required for generating resources, and troops which are required for attacking and defending. The battle mechanics were gently introduced by simulating an attack on a computer controlled village. This introduction to all the main mechanics provided me with the information I needed to understand the basics of the game, while clearly indicating there is a lot to be built upon, eventually leaving me onto the wait point of the core loop to leave me wanting more.

As introduced in Chapter 4.3.2, Hay Day is a farming simulator, and the goal of the game is to make the player's farm thrive – hence, while made by the same developer as Clash of Clans, the game is rather different in nature. Also the gameplay in Hay Day is a bit simpler and more straightforward than in Clash of Clans. There is no village raiding mechanics but the game solely focuses on gathering different resources and selling them for gold in order to expand the farm and get more crops and different types of resources to gather, then repeating the above. This cycle follows Luton's model quite accurately. Player commits an action by planting crops, feeding their animals and manufacturing goods, waits for them to grow and generate, then comes back to harvest and sell them and possibly upgrades their buildings or buys something new, repeating the above. While seemingly simple, the game is complicated by resource management, limited storage space and specific orders of goods to be fulfilled to make money. Figure 18 illustrates the basic core gameplay loop of Hay Day compared against Luton's model.



FIFURE 18. Core loop in Hay Day

Similarly to Clash of Clans, the tutorial in Hay Day is already a part of the actual game and core loop itself rather than its own entity. Hay Day also uses the premium currency, diamonds, in the tutorial in order to speed up the core loop for the sake of the tutorial and to show to the player what the currency can be used for. In Hay Day, it also acts mostly to skip the wait points in the core loop and to improve the efficiency of the farm, with special upgrades and exclusive decorative items. After the tutorial, I was left with the essential knowledge needed to play the game, and felt enticed to come back to collect my resources and to unlock more crops and animals. Clearly these two games, Clash of Clans and Hay Day, utilized similarly constructed tutorials in order to introduce the core loop to the player, and left them wanting for more with the use of sessioning and by eventually leaving the player on the wait point of the core loop.

Candy Crush Saga, however, offers a bit different type of core loop compared to the other two games. As introduced in Chapter 4.3.3, Candy Crush Saga is a match three game in the fashion of Bejeweled. There is a board of different types of candies, and the player has to match three or more together in order to make them disappear and collect points. It is, however, preferred to match four or more candies together in order to create specific power-ups, which greatly improve the score and make the levels considerably easier to complete. This game has the simplest core gameplay loop out of all the three analysed games – player commits and action by playing through a level, is rewarded with a personal score and star rating and unlocks a new level and possibly new types of boosters as an upgrade. Using the unlockable boosters is optional, but they make the levels considerably easier to complete. Each booster type can be used a couple of times for free after unlocking them, but after these first introduction-like uses, have to be bought. However, the trick of the game is that the player has a limited number of turns or moves per level to meet the set requirements to complete the level, which may include for example a set score which the player has to top. Running out of moves before meeting the requirements will cost a life, and after all five lives run out, the player has to either buy more or wait for them to regenerate before they can continue playing.

The core loop of Candy Crush Saga can be repeated as many times as desired and follows Luton's basic core loop model, until all five lives are lost and the player needs to wait for them to regenerate, transforming the basic core loop model into a wait core loop model. Figure 19 illustrates the basic core gameplay loop of Candy Crush Saga

compared against Luton's model – the shaded out section represent the wait core loop which only occurs if the player runs out of lives.

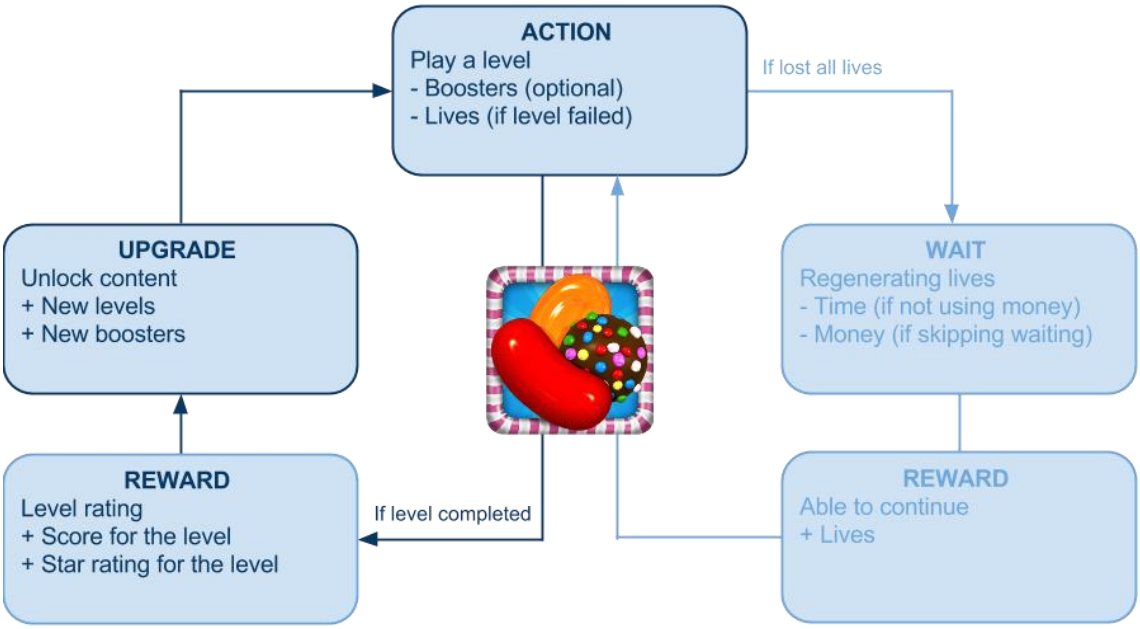


FIGURE 19. Core loop in Candy Crush Saga

While playing Candy Crush Saga, I noticed that the tutorial was also an integral part of the core loop, and introduced all the relevant game mechanics in a smooth fashion, similarly to Clash of Clans and Hay Day. Advancing through the first levels was made easy and quick – however, the difficulty curve picks up fast, and it is more than likely that the player will start to lose lives rather quickly. Despite aiming for a high score like in traditional Bejeweled, there are also other aims too depending on the level, such as making all the jelly candies disappear by matching candies on top of them or clearing candies out of the way of ingredients to help them to the bottom of the board. This creates variety between the levels and keeps things fresh, but does not change the core loop itself, only the content of the levels to create variety.

Even though all these three games are different by nature, Clash of Clans and Hay Day have a clear resemblance to Luton's model, whereas Candy Crush Saga has a slightly different structure. However, each of these games included the tutorial as a part of the core gameplay rather than as a separate entity, and gave a clear image of how much content there actually is. They also left the player wanting more by teasing the unlockable features right from the beginning, and by leaving the players into the wait point of the core loop after the first session, at least in the cases of Clash of Clans and Hay Day.

In Candy Crush Saga this either happened, or did not happen, depending on how long the players played, and if they lost all their lives.

This section does not include a summary of the player retention methods used in the games, since the illustrations of the core loops serve the same purpose. When it comes to player motivation, the core loops alone are not assessed since they are only a base for everything else, and will be expanded upon in the following sections.

5.1.2 Appointment triggers

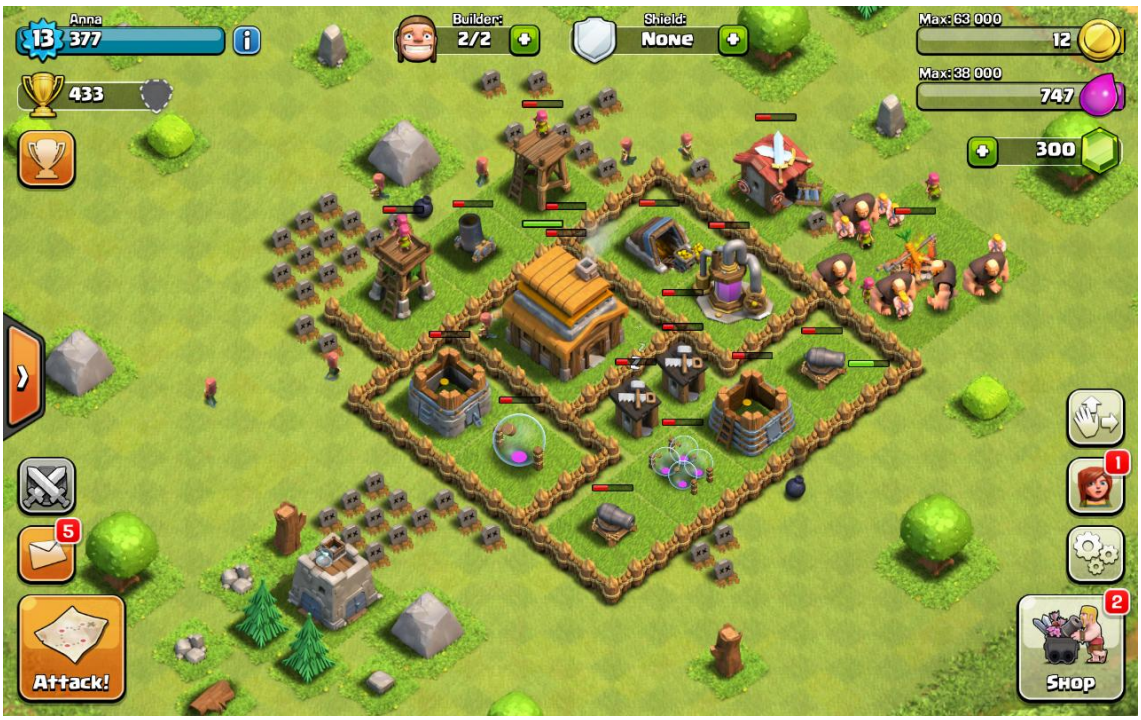
According to Luton, appointment triggers are often tied within the core wait loop, and are one of the most commonly used player retention techniques in free-to-play mobile games. They simply mean rewarding the player at a set time in the future, giving the players a reason to return to the game. They are known as appointments, because the players often have the chance to choose the most suitable time for them, from a varying range. (Luton 2013, 64-65). While the wait points in the core gameplay loops enforce player sessioning by showing the player an exit point during their play sessions, appointment triggers are used to invite the players back to the game and reward them for doing so. According to Lovell (2013), appointment triggers and other mechanics utilizing the passage of real time can create elements of anticipation and enjoyment for players and are mainly used as a retention methods even though often monetised, too.

Being able to create appointment times of the player's own choosing throughout the day encourages the player to unconsciously create a daily routine out of playing the game. The analysis below evaluates how sessioning and appointment triggers are present in the chosen top grossing games and how they are implemented in practice.

As discussed in the previous section, the core gameplay loop of Clash of Clans consists of gathering resources, and then spending these to build upgrades and to train troops in order to attack enemy villages and defend their own. This is followed by waiting for more resources to be generated, troops to be trained and buildings to be upgraded, then coming back to collect the resources, repeating the loop. This core loop on its own creates seemingly natural sessioning and appointment triggers to the game. For example, the player can choose which troops they want to train or which buildings they want to

upgrade, and depending on the choice, the action will take a certain amount of time. Hence if the player wants to have their next session fast, they can train more of the units that take less time, or choose upgrades that are completed faster. There are only two builders in the game unless more are bought with gems, so in order to upgrade the different buildings as efficiently as possible, it is beneficial to check back in after the previous process is complete in order to start a new one as soon as possible to be efficient. Additionally, even though the mines or buildings generating gold and elixir produce continuously over time, they are both capped, meaning that they can only generate a certain amount of gold and elixir before they are full, and consequently stop generating more until the resources are gathered by the player, thus freeing up space for them to generate more. This encourages the player to come back from time to time purely just to collect the resources, and either store them or use them so that the buildings can start generating more. Hence each time the player comes back they are rewarded with resources and are able to keep their production efficient, creating motivation to return.

Picture 7 shows how an enemy raid into the player's village has consumed the defending troops and decreased the hit points of the buildings – also, all the resources have been stolen by the attacking player.



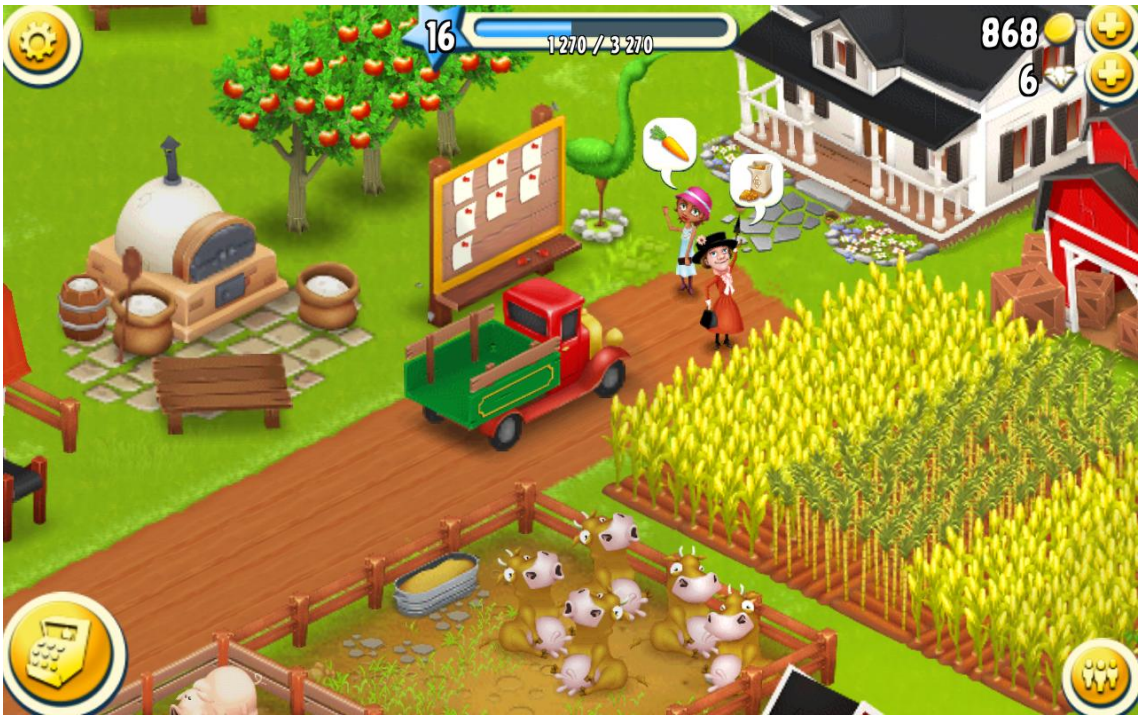
PICTURE 7. Raided village (Supercell 2013a)

This is another clever appointment mechanic used in Clash of Clans - players can steal resources from each other by raiding the storage units and resource generators, so it is beneficial to check back in often in order to use the gathered resources so that no one can steal them. This offers even more motivation to come back, so that the player is better able to protect their assets, and make sure that they are not wasted.

While playing Clash of Clans, I found it natural to check back into the game a couple of times a day, collect and store my resources, do a raid or two, assign the builders to upgrade something and then after being stuck in the wait loop exit the play session, returning later to repeat the above. Even though I realized that the sessioning is a forced game mechanic, it was tied together with familiar concept, hence was easier to accept – it seemed natural enough that building a wall or a tower takes time or mining resources requires effort. Whenever I did not have a protecting shield activated to prevent others raiding my village, I also found myself checking in more regularly, so my resources would not end up into the hands of other players. Together with the core loop these appointment triggers – coming back to collect resources, assign builders and train more troops while protecting assets from other players – cater to each one of the player archetypes in their own way, since the resources given as a reward can be utilized by each type to pursue their own motivations.

Hay Day is quite similar to Clash of Clans when it comes to the exit points in the play sessions and appointment triggers – additionally, these mechanics are also based on a well-known practice, farming. There are a few different types of appointment triggers in Hay Day, the most important and well-known being the growing and harvesting of crops – the player can decide what they plant, and then it takes a certain amount of time for the crops to grow, inviting the player back after they are finished in order to reward them with harvested goods and experience points. This works quite similarly to the resource mechanic used in Clash of Clans, though there is a lot more variety in what crops the player can harvest, how long they take to grow and what they can be used for. Also generating resources in Clash of Clans does not require any action from the player, apart from upgrading the mines and collecting resources to make more space for them to generate more. However, in Hay Day, the player can decide what to plant, so if they have a lot of time during the day, they might plant something which only takes a little while to grow and then come back in a few minutes to collect it, effectively grinding the loop within short periods of time. Different animals can also be bought and need to be fed in

order to have them produce goods, which can then together with the crops be used to manufacture different foods and products – another process the player needs to wait for to be completed before being able to trade or sell them. On top of this, building different types of upgrades is required to progress further in the game, and even though they have set constructions times, the player has to wait for them to be built, too – unless they want to spend real money. Picture 8 shows the harvestable goods waiting for a player who is just logging back in to the game to collect them.



PICTURE 8. Ready for harvesting (Supercell 2013b)

While the player can decide the time taken by the appointment mechanics when it comes to crops and certain produces, for example animals and upgrades will always take a set time to generate. There are many different action-to-wait-to-reward loops, however, and the collectable resources are used as rewards to form appointment mechanics. They entice the player to come back to collect the crops, produces and goods so that their previous actions will not go to waste. However, unlike in Clash of Clans, there is no punishment for not collecting the resources fast enough – no one will steal them and they will not rot like in Farmville, either. Nevertheless, in order to generate more goods and progress as efficiently as possible, the player has to visit the farm and collect the resources as well as take the actions required to generate more.

While I was playing Hay Day, the game created sessioning and rewards in the form of resources – similarly to Clash of Clans – which were waiting for me to collect them each time I checked back in. Because the sessioning and appointment triggers were related to farming, a well-known and familiar practice, waiting for crops to grow or animals to produce goods did not greatly bother me, and they did not feel too much like artificial timers designed to stop me from having fun – even though that is just what they are. If I only had a little time in my hands, I could plant something which took longer to grow, and if I was watching a movie while playing I could plant a lot of crops which only took a little while to grow, hence being able to adjust the game around the time I could spare. Like in Clash of Clans, the appointment mechanics in Hay Day cater to most of the player archetypes, since the rewarded resources help each player archetype to pursue their own personal motivations.

As discussed in the previous section, the wait loop of Candy Crush Saga slightly differs from Clash of Clans and Hay Day. Whereas in Clash of Clans the wait points in the core loop are disguised as time for troops to be trained and in Hay Day it is designed to feel natural that crops take time to grow, in Candy Crush Saga it seems more artificial that the player has to wait for imaginative lives to regenerate after failing too many times. There was no a familiar reasoning behind this, and it felt slightly forced – however, in theory if the player never fails, they can play as many times as they want. Because of this, the mechanic gives failing a greater purpose, while also making level completion feel more rewarding and meaningful. Nevertheless, no matter how good the player is, the game is designed so that they are likely to lose all lives at some point if they keep playing the game, and this creates an exit point to the play session. Regenerated lives offer a return trigger and work as an appointment mechanic for the player, allowing them a new chance on the level they were trying to complete. However, the player is not able to affect the time it takes for lives to regenerate; they always take a pre-set time.

Additionally, the levels in Candy Crush Saga are divided into episodes, and after each episode the player has to unlock the next one before being able to play. This means either asking friends for help by connecting to Facebook, paying real money, or completing Mystery Quests. There are three Mystery Quests to complete in order to unlock the next episode. In reality, they are just randomly selected levels which the player has previously completed, but between completing each one, the player has to now wait 24 hours. Picture 9 demonstrates the situation after completing the first Mystery Quest.

PICTURE 9. Mystery Quests (King 2012)

This setup also feels artificial and does not provide any familiar reasoning for the player, especially since instead of rewarding the player with a new set of levels after completing the previous ones; they need to work in order to unlock them. However, it might create further motivation to come back and finish the Mystery Quests as a challenge in order to continue onto the next episode and get rewarded with the new levels, so the previous work done to unlock the challenge will not go waste.

When I was playing Candy Crush Saga, the sessioning felt more forced than in Clash of Clans or Hay Day, but the fact that failing too many times prevented me from continuing my play session also gave more meaning to completing the levels and for being successful. Also despite the sessioning, one session of Candy Crush Saga was often a lot longer than sessions of Clash of Clans and Hay Day combined. It is also easy to see how forcing the player to exit the game after they lose all their lives makes it more enticing to come back, than if they could play as long as they wanted – now the wait loop acts as a cliff-hanger and leaves them wanting a new chance to complete the challenging level. Coming back for more lives, or to complete Mystery Quests in order to continue to the next episode, are also appointment triggers designed for each player archetype since they reward the player by giving them a new chance at the game, and granting the

access back to the content as a reward. Also, by punishing the player for losing, the act of completing a level may feel more rewarding, driving motivation to succeed.

While Clash of Clans and Hay Day clearly use several appointment mechanics tied together with the core gameplay loop, and have a resource management system which is well integrated to the theme of the game, the life system and Mystery Quests in Candy Crush Saga felt a bit more forced and artificial. Table 1 summarises the use of appointment triggers in each of the evaluated games.

Appointment mechanics	**Clash of Clans**	**Hay Day**	**Candy Crush Saga**
Forced player sessioning (-)	x	x	x
Player can affect the waits (-)	x	x	-
Player is rewarded for return (-)	x	x	x

TABLE 1. Use of appointment mechanics in the evaluated games

When summarising the different player retention methods in the end of each section, the letter in the end of each mechanic symbolises the player archetype which the mechanic in question motivates the most. A means Achievers, E means Explorers, S means Socializers and K means Killers whereas (-) symbol means that it serves them all equally. When it comes to appointment triggers, Clash of Clans forces the player to exit the game while waiting to generate resources, troops, and upgrades, but the player can affect the wait times with their own decisions and are rewarded with the above upon their return. Hay Day works almost the same in this regard, only the resources are more varying and the game also offers multiple possible appointment times. However, the only variable times in Clash of Clans are which troops to train or upgrades to build, whereas resources continuously generate over time. In Candy Crush Saga, on the other hand, the seemingly avoidable exit point, or the event of running out of lives, is more than likely to happen sooner or later. However, the player cannot affect the wait time, for each life takes 20 minutes to generate, and then reward the player with another go in the game. Same applies for the Mystery Quests with 24h fixed wait times.

In the end, each of these games utilize sessioning by leaving the player onto the wait point of the core loop, and offer rewards on returning, leaving the players wanting more and encourage them to check back into the game by enticing them with rewards. They

serve as a motivation for each of the player archetypes, or in other words, do not specifically cater for any type since they offer rewards needed to progress and are necessary in order to advance in the game – unless paid to skip of course.

5.1.3 Progression and goals

According to Virtual Economists (2013), the sense of progression as well as goals and rewards are a very important part of the modern free-to-play mobile games, and encourage the player to keep playing in order to achieve their goals, while making them feel rewarded for completing them. However, since goal systems are quite complex, they are often reused multiple times in different games after they have once been established and proven good (Luton 2013, 82-83). These goal systems include any types of goals and objectives which require an action to be completed and reward the player for completing them. Some examples of goal systems in free-to-play mobile games include collecting achievements or titles, completing missions and quests, attaining levels by collecting experience points and unlocking new features and upgrades.

These goals are often related or tied to the upgrade part of the core loop, and it is important for the player to have a sense of progression and accomplishment beyond the basic core gameplay loop. The players need something to aim for in the long term while playing, too. Different rewards offered for completing the goals may include for example exclusive items, experience, unlocks and in some cases even the premium currency of the game, whereas completing harder goals and objectives should reward the players with better rewards respectively. Measuring progression and unlocking new features are often great motivations for both Achievers and Explorers. Below analysis evaluates what long-term goals and progression the chosen games offer to the players, and how they reward them for achieving these goals respectively.

In Clash of Clans, instead of the player level, the different unlocks such as buildings, defences and special troops are tied onto the upgrade level of the Town Hall, which is the core building of the game. By upgrading the Town Hall with an increasing amount of gold and elixir, the player is able to upgrade other buildings as well, such as the resource collectors to gain more resources, the storages to store more resources, and the barracks and the army camp in order to train more and different types troops, and have a

bigger army ready for battle. Whereas the Town Hall progresses the first few levels rather quickly, it takes a considerable amount of time to upgrade it to the highest level in the game without using real money. The player is able to see the different types of upgrades and new buildings right from the beginning of the game, as well as the requirements needed to unlock them, giving a clear set of goals and offering the unlocks as visible rewards. Altogether, there are a lot of things to unlock and upgrade, but achieving them all also requires a lot of time (or money), creating long term goals and a good sense of progression for the player.

Since Clash of Clans relays on the battle or village raid mechanics when considering progression and goals, they are heavily related to competition between the players, and because of this, are further discussed in Chapter 5.2.2. However, if the player does not want to jump straight into player versus player content but prefers to practice first, there are 150 single player missions or computer controlled villages, introduced during the tutorial. These missions can be completed instead of raiding other players to practice the battle mechanics. Picture 10 shows how the missions are clearly presented in the form of a map, and the player is able to advance on the path while following their progress – star rating is also awarded for each completed mission as a reward.

PICTURE 10. Single player missions (Supercell 2013a)

Similarly to player versus player raiding, the single player missions provide resources to the player if they able to win the battle and steal all of them, but winning these missions does not count towards the ranking. They can, however, also be completed while having an active shield which prevents other players from attacking the player yet also prevent the player from attacking other players (unless they want to destroy the shield). These missions are also used to teach the battle mechanics during the tutorial and work as a part of the background narrative, where the goblins first attack the player's village and the player is then set out for a revenge quest against the goblins through the missions. Narrative in itself works as a measure of progression for the player, too, but in Clash of Clans it is more of a background story than a progressive adventure.

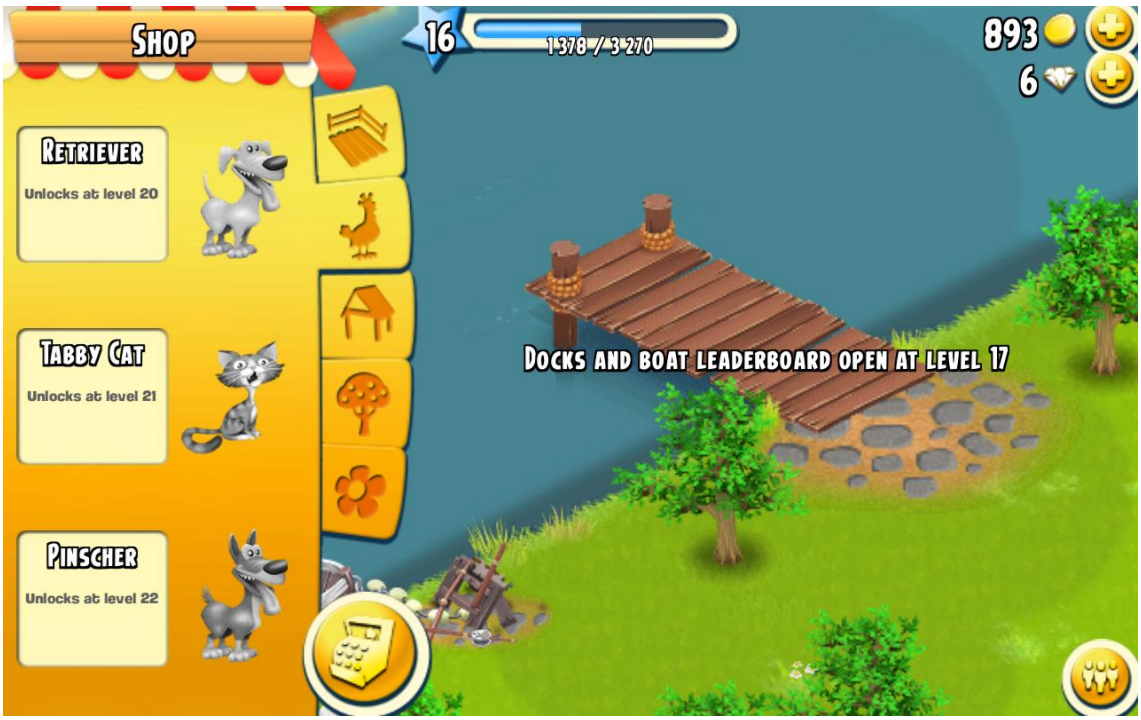
As soon as the tutorial unfolds in Clash of Clans, it is also possible to start unlocking achievement by filling in the requirements, such as upgrading certain buildings to a set level, or defending the village against the attacks of other players a set amount of times. These achievements provide goals and guidance for the player, demanding increasingly difficult requirements and reward the players with experience and gems, the premium currency of the game. Gaining gems without having to buy them is a massive motivator for the players since they can be measured in real money, too, and provide upgrades which cannot be bought with gold or elixir, as well the possibility to skip the sessioning and wait loops of the game. Players also gains experience points from completing the achievements, upgrading buildings, raiding other players or donating troops. These experience points build towards the player level, which is shown as a badge next to the player name in the profile. Even though the player level has a very little meaning or effect in the gameplay itself, since the Town Hall upgrades affect the different unlocks instead, it still offers a nice sense of progression and also grants a social status of sort.

Together all these goals and ways to progress in the game offer motivation for each of the different player archetypes and give a nice sense of progression throughout the game. Seeing myself levelling up was rewarding even though it did not offer any gameplay advantages, and completing achievements was also one of my main goals because of the valuable rewards they provided. Unlocking new troops and defensive constructs were useful and helpful in terms of gameplay, even though the process of unlocking them was greatly slowed down after the initial unlocks. The background story was nice to have, but was quickly forgotten since it did not advance much further from the initial setting. Completing single player missions was nice because of the progression, but

raiding real players provided more of a thrill. Because of the focus of the game is heavily pointed towards the player versus player content, the rankings and leaderboards are no doubt one of the biggest long sustained motivators for most players.

Even though Clash of Clans offers a good sense of progression with the single player missions, player levels and the Town Hall upgrades, Hay Day has a more clear and straightforward approach. It mainly relays on experience points which are used to grant the player higher levels – most of the in-game actions, such as harvesting crops, gathering animal produces and selling goods, award the player with experience points, which in turn contribute towards to the next level. Levelling up unlocks more buildings, crops, upgrades and even bigger features such as the roadside market, neighbourhood option and a fishing area. After levelling up and unlocking new features, the cycle begins all over again for the next level, gently introducing the player to new features while teasing them before they are unlocked. Similarly to Clash of Clans, the player is able to see all the unlockable features from the menus, and on top of that all the major upgrade elements are dotted about on the farm, waiting for the player to level up in order to unlock them. These give the player a glimpse of what there is waiting for them when they progress, setting clear goals and concrete rewards.

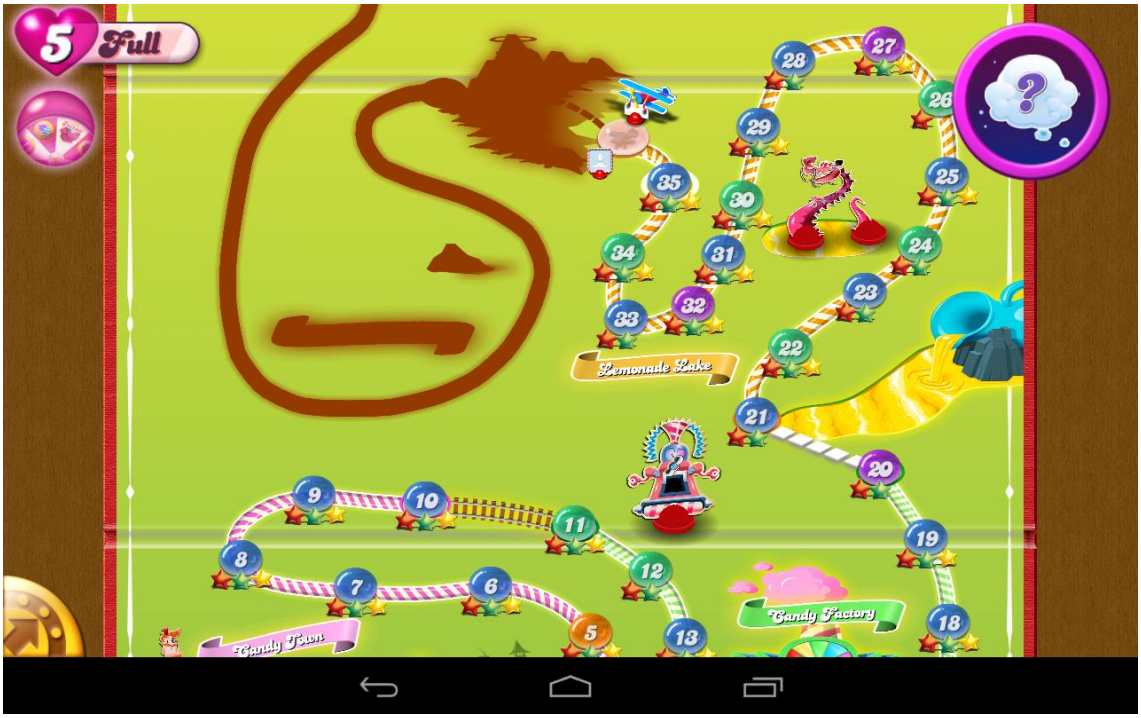
Hay Day also features achievements which have specific requirements to complete them, and reward the player with diamonds and experience. There is also a Mastery system for each manufacturing machine, and the levels act as essential production boosters, which increase when the player crafts more items. The Mastery level of a manufacturing machine is indicated by a three star rating, providing a nice goal and a sense of progression for the player. Additionally, just like in Clash of Clans, there is a small background story introduced in the tutorial in order to introduce the setting for the player. In the end, the main difference in the progression between these two games, apart from the absence of player versus player and village raiding mechanics in Hay Day, is that whereas Clash of Clans relies on the Town Hall upgrades in order to unlock more buildings and features and the player level is more of a status thing, Hay Day relies straight on the experience points and player levelling system, offering a more clear sense of progression. Picture 11 shows how all the unlockables are tied straight to the player level, giving clear goals and concrete rewards to the player.



PICTURE 11. Teasing features (Supercell 2013b)

While playing Hay Day, I noticed that I naturally aimed to unlock all the things I liked. Because I like animals, I was most excited to unlock different species, and because I like trading, I was excited to unlock the different trading options. Other unlocks came merely as a bonus, and were nice to have, but getting the things I really wanted was the best reward. This is a good example of how the game caters to different player archetypes with this system. Everyone will want to progress in order to get access to the features which are important to them, quite similarly to Clash of Clans.

When comparing Candy Crush Saga with Clash of Clans and Hay Day, the progression and goal options are a lot simpler but also very clearly laid out for the player. There are over 500 levels in Candy Crush Saga, and they are all divided into worlds, which in turn each contain six themes or episodes, and each episode contains around 90 different levels. All of these are laid down as a clear map for the player, and after completing each level, it is easy to see the player's avatar advancing onto the next level on the map. After each level completion, the player is also awarded a personal score for the level, and a star rating depending on their success. This encourages replayability for achievers who will want to get three stars from each level. All episodes also contain a themed story and a narrative goal for the player to complete, which they can do by completing each level within the episode. Picture 12 shows the map layout in Candy Crush Saga, which shares some similarities with the singe player mission map layout in Clash of Clans.



PICTURE 12. Map in Candy Crush Saga (King 2012)

The levels which the player has already played though provide a clear path on the map, whereas the levels in the locked Episode are yet to be revealed to the player. Additionally boosters, which provide gameplay advantages, are also unlocked at certain levels, granting the player a few free uses of them to introduce what they can do. While they have to be bought separately after this, they still grant a nice little reward for the player for progressing through the levels and finding new features.

Even though simple, the level map with star ratings and infrequent booster unlocks, added together with the light narrative, provide a clear sense of progression for the player, indicating how far the player is in the game and how well they are doing. While playing Candy Crush Saga, I thought advancing from level to another was a smooth experience, and seeing the next levels laid down on the map ahead provided clear and tangible goals. Even without the social elements of the game, trying to get a three star rating from each level was also a good motivation, too. Additionally, when connecting to Facebook the game becomes a social experience catering to Socializers and Killers, but more about these features in Chapters 5.2.1 and 5.2.2.

Progression and goals	Clash of Clans	Hay Day	Candy Crush Saga
Progressive narrative (E)	-	-	x
Player level system (A)	x	x	x
Scoring and ratings (A)	x	x	x
Upgrades, unlocks (A, E)	x	x	x
Progression path (A)	x	-	x
Teasing features (A, E)	x	x	x
Achievements (A)	x	x	-

TABLE 2. Progression and goals used in the chosen three games

Table 2 summarizes the different progression and goal oriented retention techniques utilized in the three games. Clash of Clans features a player level system, scoring for the single player missions, upgrades and unlockables, progression path in the form of single player missions, teases the unlockable features before unlocking them and also includes an achievement system with valuable rewards. Hay Day is very similar to Clash of Clans in the terms of progression, only lacking the progression path, but instead presents a very clear levelling system. Candy Crush Saga, on the other hand, includes player levelling system which is comparable to the current game level the player is on, but lacks achievements entirely. However, it has the most progressive story out of the three games, yet still very light in nature. Additionally, Candy Crush Saga has player scoring and rating system for each level, and features upgrades in the form accessing new worlds and unlocking boosters.

Since achieving most of these goals is required to play the game and advance in it, when thinking which player archetype they motivate as player retention methods, they will be considered as isolated entities rather than just as stepping stones for new content. While the different story options mainly provide motivation for Explorers, the player levelling system and the sense of progression as well as scores and ratings provided by single player missions are important for Achievers. Being able to upgrade and unlock new things is equally motivating for both Achievers and Explorers, and so is the teasing of new features in order to get the players excited about them, rather than hiding them and randomly granting after reaching the appropriate level in the game.

5.2 Advanced retention methods

Whereas core retention methods is about the player retention methods which are integral parts of the core loop, advanced retention methods aim to engage the player as an extension to the core loop and mechanics, offering more advanced and not necessarily gameplay tied methods in order to further retain the player. This is the second layer of player retention and is built on top of the core gameplay by utilizing its mechanics, providing endgame elements and long term retention strategies.

5.2.1 Social interaction

Anil Dharni and Ken Chiu (2012) state in an article on Inside Social Games that there is a no doubt that mobile games with robust social elements will be the leaders of entertainment, while engaging and ultimately retaining loyal users. On top of that, according to Luton, one of the rarest but possibly also one of the strongest player retention techniques utilized is social obligation, meaning the obligation the players feel when their response or actions are required for the progress of other players. These situations include returning the favour to a player that has helped them to progress, responding to a plea of help, or answering a requested challenge. They are effective engagement methods because they utilize the subconscious obligation to respond to another human being who has invested their time for the benefit of the player. (Luton 2013, 67-68). These kind of game mechanics are often asynchronous, meaning that the player can respond to the requests when they have the time rather than needing to be logged in simultaneously. This provides a smoother and more flexible experience for the players.

Since social interaction is considered important for long the time retention by Dharni and Chiu, and social obligation is believed to an effective method for player retention by Luton, it will be interesting to see how the chosen games utilize these retention techniques and other means of social interaction to motivate players – however, the methods in this category will mainly motivate Socializers.

Whereas Clash of Clans is heavily focused on the player versus player content while catering to the Killer archetype, the motivation of Socializers is fed with the concept of players forming guilds – or more appropriately, clans. This becomes possible after the

player repairs the Clan Castle, which is located somewhere around their village as a teaser before the player can afford to unlock it. After it is repaired, joining a clan is possible through the global chat or friends, or the player can make their own. Once in a clan, the players are able to chat, battle together against other clans and donate troops to each other. Donating troops is considered one of the biggest benefits of joining a clan, allowing the players to help each other out while building social commitment towards each other. Picture 13 shows how the amount of donated troops is even shown in the player profile, making it a goal and a social status thing to increase the number.

PICTURE 13. Profile statistics (Supercell 2013a)

Additionally, with one of the recent updates, Clash of Clans took the clans even further, adding Clan Wars, which enable the clans to battle against each other in dedicated battlefields, while offering extensive rewards. This requires discussing tactics and forming battle plans between the clan members, and rewards the players for working together, further enhancing socializing within the game and creating social commitments to participate in the Clan Wars, in order to not fail the expectations of the clan mates.

Just like Clash of Clans, Hay Day offers ways to interact with other players, and one of the main mechanics is trading between the players. Additionally, one of the latest updates came with the neighbourhood feature, making it possible for the players to gather their friends together to form a neighbourhood, which comes with a real-time chat and makes it possible for the neighbourhood to compete for the position of the best contributing neighbourhood during global events. However, the real value of having friends in Hay Day is associated with trading and helping others. There are a couple of ways to trade, such as visiting the farms of friends and buying things from their roadside markets. Additionally, it is possible to advertise the products for free in the newspaper every few minutes to promote the products. If the player is unable to sell their products on the roadside shop, it costs one diamond to delete them – with some luck, one of the computer controlled players may also come over and buy a random item from the shop.

However, this makes the decision of what to sell and for what price more crucial, as well as the help of friends to get rid of the items which are not bought by other players as intended. If the player discovers a good partner to trade with, they can also friend them up or follow them. Picture 14 shows the roadside shop view in the game – each player has their own, and it is possible to sell any of the resources in the shop, though the maximum prices are all capped to protect economy.

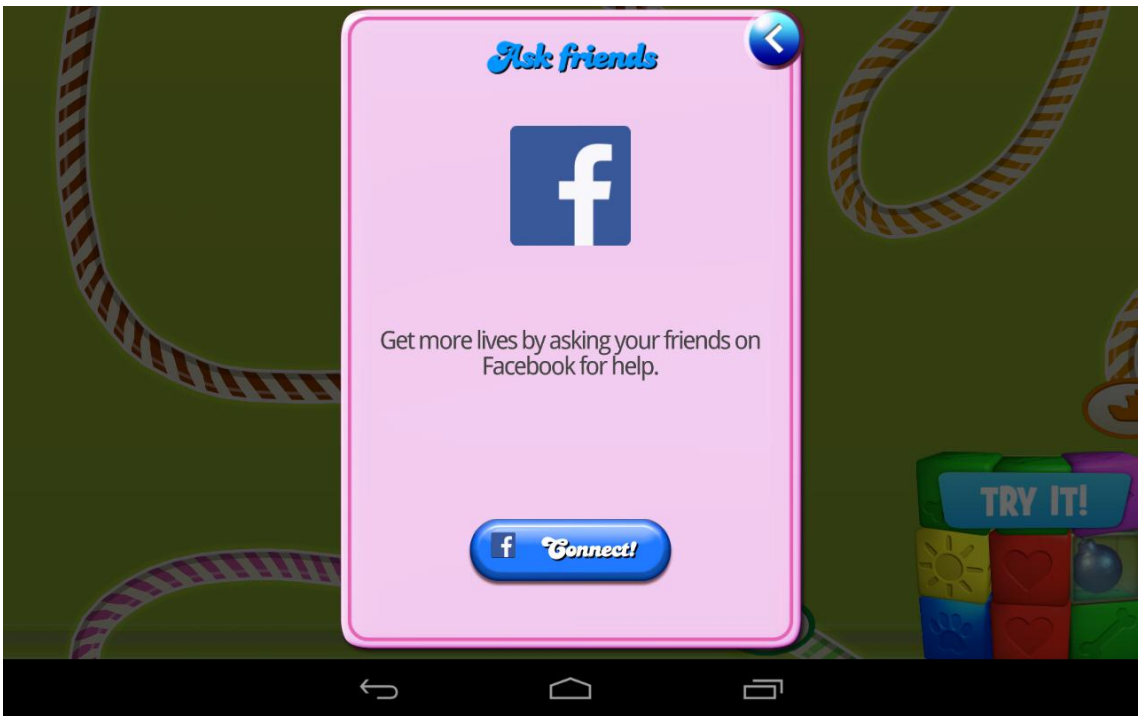
PICTURE 14. Roadside shop (Supercell 2013b)

Unlocking the trading boat becomes possible on the higher levels, and it requires a lot of different produces to be loaded before shipping – at this point the help of other players becomes critical. The boat only stays on the dock for 16 hours and the player needs to fill in the crates requiring different resources in order to receive the payment, giving extra experience if the player manages to fill all the crates. It is possible to flag missing ingredients, so other players can help to fill the order. Other ways to help fellow players are for example to revive their fruit trees, which otherwise require cutting down or paid for to continue generating fruits, and trade building materials in order to be able to upgrade the storage for crops and other goods for free. Most of these interactions between the players can be also measured in real money, since they can be completed by spending diamonds, too, hence giving a real value for the help of others. Reading through the Hay Day forum reveals that the players are forming their own etiquette in Hay Day, and

it is encouraged and expected to return the favours of other players, creating social obligation to come back to the game in order to do so (Supercell Forum 2013).

While I was playing Hay Day, I found myself heavily addicted on the trading aspect of the game, buying goods for a low price from others, and then selling them for a higher price, generating profit in order to further advance in the game. Since the slots on the roadside shop are limited, I checked back into the game often to see if I had sold anything, and added more products for sale.

Even though the opportunities to interact with other players in Candy Crush Saga are a lot simpler than in Clash of Clans or Hay Day, they also drive the motivation of Socializers by creating a strong sense of obligation. However, utilizing these features requires the player to connect the game with their Facebook account. As discussed in Chapter 5.1.2, Candy Crush Saga limits the play sessions by limiting the lives of the player to a total of five, and also requires extra effort to get to the next episode by either paying or playing Mystery Quests. However, if the player connects their account to Facebook, the possibility to play Mystery Quests is replaced by having to ask help from friends or utilizing gold bars, the premium currency of the Facebook version.



PICTURE 15. Out of lives (King 2012)

Picture 15 demonstrates a situation where, despite running out of lives, it is possible to continue by asking more for free from Facebook friends – a good way to save money. If the player receives lives from their friends, they are likely to feel obligated to return the favour, since the lives are required to progress in the game, and their value can be also measured in real money since buying them costs a certain amount. However, whereas the lives will eventually regenerate over time, in order to advance to the next episode with the Facebook connection the help from friends is required, creating a strong obligation to help any friend who is in need of help. Players can also send each other certain boosters to help each other to get better scores for the levels.

Social interaction	**Clash of Clans**	**Hay Day**	**Candy Crush Saga**
Help required to progress (S)	-	-	**x**
Help needed to succeed (S)	**x**	**x**	**x**
Trading between players (S)	-	x	-
Asking help from others (S)	x	x	x
Sending help to others (S)	x	x	x
Guilds, communities (S)	x	x	-
Real-time chat (S)	x	x	-

TABLE 3. Social interaction used in the chosen three games

Table 3 demonstrates the social interaction possibilities in each of the chosen games. Clash of Clans gathers players together in the form of clans, enables real-time chatting giving a chance to make and maintain friends and also has a possibility to ask for help or help others in the form of donating troops. Clan Wars also require the help from teammates in order to win and succeed. However, there is no trading or help required from others to play the game. Hay Day heavily relies on the trading aspect while also making it possible to help friends in the sense of reviving trees or helping with boat shipments, while asking friends to return the favour, too. Neighbourhoods in Hay Day also provide a sense of community and a real-time chat, while completing some heavy shipments might require the help of friends to succeed. The least social of the three, Candy Crush Saga only features sending and receiving help, but also requires this in order to advance in the game if connected to Facebook – the fact that the players need help from other players in the form of extra lives or in order to advance to the next set

of levels may create heavy social obligations to help those who helped the player. Sending boosters to friends also gives a better chance to succeed and score higher in levels.

When looking at the above features, even though beneficial for each player archetype, when considering them as sole entities, Socializers will mostly enjoy the form of communication and a sense of community the features provide. Even if socializing is not majorly appealing to Achievers, Explorers and Killers, they will most likely experience it in order to better be able to feed their own motivations, hence possibly even beginning to be affected by social commitments, too. Especially the Clan War system in Clash of Clans is a clever mechanic, and similar to guilds in games like World of Warcraft, engaging players through the sense of social commitment to their teammates.

5.2.2 Social competition

Emily Green and Anthony Pecorella describe in their presentation at Game Developers Conference 2012 how all high revenue games on Kongregate feature a strongly social and competitive endgame (Green & Pecorella 2012). Additionally, Luton (2013, 65-67) states that competition is in the human nature, and competitive mechanics in free-to-play include everything that has to do with competing against other human players, friends or random players alike. Because of the above, competitive elements can also be considered a strong player retention technique since they also create unlimited and never-ending challenges for the players competing against each other.

Competitive gameplay in free-to-play mobile games may include a lot of differently implemented features such as leaderboards, guild battles and any activity that puts the skill of the players against other players. According to Luton, what drives the players to return to these events is not only seeing their name on the leaderboards or beating another guild, but also losing. When a player loses a battle or gets a lower score than their friend, the loss motivates them to return later, in order to try again, aiming to eventually win and succeed. (Luton 2013, 65-67). Hence competitive elements can be a strong motivator, and a lot of free-to-play mobile games utilize them. As described in Chapter 2.3, a whole archetype, Killers, are driven by the motivation of competing against others, and these features serve to feed that motivation. The analysis below reveals what social competition and player versus player elements the top grossing games feature.

In Clash of Clans, one of the main mechanics in the game is the possibility to raid the villages of other players in order to steal their resources, and increase the player's ranking, which is displayed in the leaderboards, and also offers access to better and higher valued competitive leagues. Hence, this game has a lot to offer for those players who enjoy player versus player competition, and serves the motivations of the Killer archetypes well. They can carefully plan and execute attacks on the villages of the other players, hence improving their ranking, while having to build the defences of their own village in order to prevent others from attacking them. With the recent addition of Clan Wars, the mechanics also start to resemble a simplified form of raiding with guilds in World of Warcraft, requiring tactics, time and dedication while offering exclusive rewards. Picture 16 shows the league setup in Clash of Clans, demonstrating that they reset every two weeks to make sure the challenge remains fresh.

PICTURE 16. Clan Tournament (Supercell 2013a)

While I was playing Clash of Clans, I noticed that though easy to use, the village raiding mechanics also required strategy and tactics, and the internet is full of different strategy guides crafted by the players. Positioning the troops correctly, using the right troops in right situations and building your own defences in a strategic manner is the key to success. When a raid is over, a three star rating is given to the player to indicate the success of the raid as well as all the resources they managed to steal. The player is also rewarded with an increased ranking and possibly a better position on the leader-

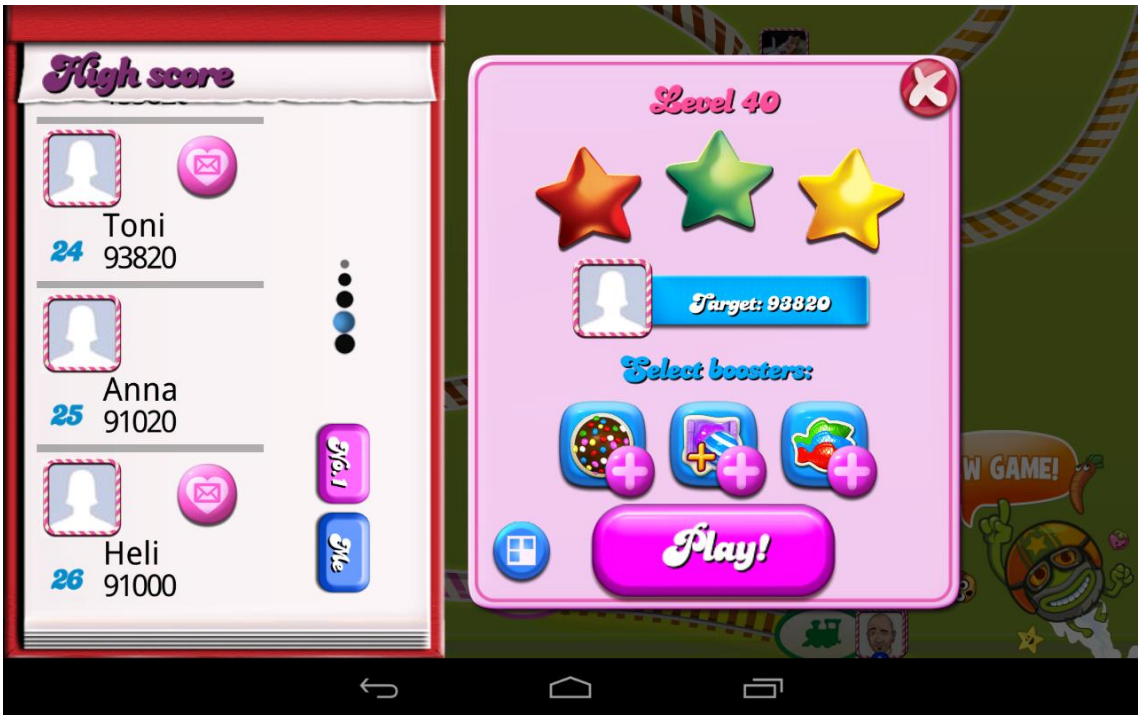
boards. If other players attack the player's own village, they can replay the attack in order to observe where their defences failed and improve them based on the information – or go and avenge, by attacking the attacker in order to steal some of their resources back. All in all, the competitive element and player versus player gameplay holds an important role in the game, and it is designed to strongly engage the players for a long period of time, forming the whole endgame around social competition. As stated in the beginning of this chapter, these competitive elements feed the motivation of Killers, but in this case also Achievers, for gaining the rankings in order to climb higher on the leaderboards and unlocking competition related achievements offers tangible goals.

Unlike Clash of Clans, Hay Day is more heavily focused on social interaction rather than competition. However, since the players can visit the farms of their friends and compare who has unlocked more features, and who holds the highest level, natural element of competition can emerge between the players if they want to be of a higher status than their friends. Also, with the addition of global events, the different neighbourhoods are able to compete against each other over who has contributed the most to the event, positioning them on the leaderboards accordingly and striving competition between the different neighbourhoods and other players alike. Picture 17 shows a previous global event and the leaderboard-like arrangement of the top contributors.

PICTURE 17. Contributors (Supercell 2013b)

From the picture above, it is also possible to see how high levels the top contributors of the global event have within the game, indicating how massive amount progression it is possible to make. While I was playing Hay Day, I noticed straight away that the level of my friends was shown as a badge on the friend list, immediately giving a sense of status to those of a higher level, provoking competition. The strengths of this game however lie in other social features, such as trading and helping friends to advance.

In Candy Crush Saga, social competition is not as outright as in Clash of Clans, but is more about social status and ranking. If the player links their game with their Facebook account, the personal score the player gets after completing each level is compared against the scores of all of their Facebook friends who have completed the same level. Using this score, a ranking is given to the player, and they are able to see how well they position in comparison to their friends. Picture 18 demonstrates the view shown to the player if they want to replay a level.



PICTURE 18. Replay rankings (King 2012)

As shown in the image, the player is able to see their ranking according to their friends, and is given the score required to beat the friend right above them, also offering boosters to buy in order to be more assured of success. After finishing the level, being able to see their position in the overall leaderboards in comparison to their friends can serve as great motivator and also provides endless replay value to the game. The leaderboards

are, however, the only competitive feature of the Android version, but the Facebook version offers more features, such as the interactive real-time score meter in-game, which gives real-time feedback to the player while they are playing a level, showing how well they are doing in comparison to their friends. Being able to see in real-time how their actions affect their position on the score meter compared to their friends may provoke the player and motivate them harder than the more static leaderboard. Additionally, it is possible to see as a whole how far each one of the player's friends has progressed in the game in terms of levels, and compare their own progression against them. Even though traditional, the leaderboards are a good way to boost motivation and competitiveness, especially since the people the player is ranked against are their own friends. All these features, though most lacking from the Android version, serve as great motivators for Killers in terms of competition, but also Achievers if they want to aim for higher scorings and achieve a higher progress in comparison to their friends.

While playing Candy Crush Saga, I noticed the game got much more exciting after connecting it to Facebook and being able to compete against my friends. The features given in the Facebook version were even more motivating, mainly the real-time score meter showing me how I positioned compared to my friends mid-game, and it is a shame that this feature is not present in the Android version. However, also in the Android version, I had the chance to brag on Facebook if I managed to beat the score of a specific friend or just scored well overall, making it possible to challenge friends.

Social competition	**Clash of Clans**	**Hay Day**	**Candy Crush Saga**
Direct competition (K, E)	**x**	**-**	**-**
Competing as a community (K, S)	x	x	-
Rankings and leaderboards (K, A)	x	x	x

TABLE 4. Social competition in the chosen three games

Table 4 gives an overview of the different social competition techniques used in the chosen three games – direct competition refers to affecting the opponent directly, such as stealing their resources in Clash of Clans, and by utilizing this feature Clash of Clans is able to offer a complex player versus player environment with rankings, leaderboards and different leagues, providing a never-ending player versus player endgame. While Hay Day does not have outright elements of competition aside of the level badges, the

progress of the farm in comparison to friends and the contribution of each neighbourhood towards the global events provide additional competitive elements. Candy Crush Saga also utilizes the element of social competition, but instead of being able directly interact on the opponent, it utilizes more traditional methods such as leaderboards.

Direct competition caters mostly to Killers but also to Explorers who can map out the game mechanics and explore the different battle strategies within the game. Competing as a community caters to Socializers in addition to Killers and rankings with leaderboards also provide a good set of goals for Achievers.

5.2.3 New game content

As described by Dab Laughlin (2012) on a Flurry article, to maximise player retention for free-to-play mobile games, the developers must continuously release new content after the launch, so the players will not run out of content and churn because of this. Additionally, Simon Moller (2013) states on a GAMESbrief article, that updating existing free-to-play mobile games with new content is a better way to ensure a high rate of retention and monetization than making sequels to successful titles, emphasizing that they should not sell content itself but emotion instead. Because of this free-to-play mobile games can be thought to be more like services than products, since the constant development should cater and respond to player needs, constantly shaping and developing the game further. Also depending on the nature of content, it can serve as a motivation for any of the player archetypes, which makes it easy to offer an increasing amount of motivations for different types of players if the game is lacking on some.

In practise the new content may include anything from new levels, items and areas to explore to things to unlock. These content updates will keep even the veteran players coming back to the game to continue their progression and try out the new content, whereas they might otherwise remain churned. Knowing that the game is never-ending will also encourage the players to spend money in the game, since they feel like their investment will also hold value in the future. The analysis below of the top three grossing games takes a look at what content updates or improvements these games have received in the past, and what they have promised for the players in the future.

Clash of Clans recently had one of its biggest content updates as of yet, titled "Clan Wars". The patch notes include clan versus clan battles with bonus loot, two new achievements, clan castle renovations, gem overgrowth as well as interface and support improvements (Appel 2014). These features offer something new for the veteran players and most likely they aim to both re-engage already churned players as well as to offer fresh experiences and new goals and rewards to those still playing. When looking back at the user updated version history of Clash of Clans, there are major updates every few months featuring new abilities, troops, spells, buildings, balance fixes and other content for the players to enjoy, feeding the motivation of each player archetype and offering new challenges, goals and rewards to fight for (Clash of Clans Wikia 2014). Picture 19 shows one of the new units which was added after the launch, Witch.

PICTURE 19. The Witch (Clash of Clans Tactics 2013)

In the fashion of the game, most content is free to access, apart from the possible gem requirements for speeding up processes, rare vanity items and rare premium upgrades. Short update intervals keep the content fresh and players anticipated for new content.

Similarly to Clash of Clans, Hay Day is known for continuous content updates, offering new features and improvements for the players. Some of the major updates include the currently released neighbourhood system, new crops and pets, global events and other content updates to offer new things to achieve and explore, as well as giving new tools for the players to build the community, socialize and help each other out in the game. While looking at the user updated version history, it appears that Hay Day has also received updates, new content and bug fixes approximately every other month or so (Hay Day Wikia 2014). These updates are also mainly free, apart from special and vanity items which require a set amount of diamonds to buy. Both the features added to Clash of Clans and Hay Day serve each of the player archetypes depending on their content,

and when looking at the version histories, each archetype has gained new motivations in the past. Picture 20 shows one of the biggest content updates for Hay Day, featuring a whole new area to the game, themed around fishing.

PICTURE 20. Fishing area (Supercell 2013b)

Since Candy Crush Saga was released back in November 2012, it has received a considerable amount of updates. Some examples include the whole map and progression system introduced in Chapter 5.1.3, hundreds of additional levels as well as differently themed episodes and worlds free of charge. Also new boosters have been introduced which the player is able to unlock and buy in the game. One of the biggest updates to Candy Crush Saga, Dreamworld, adds a whole new character into the narrative of the game, and an additional dream world with many levels and even new types of gameplay elements. On top of the traditional gameplay, the player is now randomly given two candies which they have to use equally throughout the levels – if they fail and use the other one considerably more than the other, the owl character standing on top of half a moon, or moonscale as it is often referred to, will tip off balance, fall off and lose the game for the player. Of course there is also a new type of booster included to help the player out. All of this content, within the limitations of the life system and Mystery Quest in the original game, are free for all players to enjoy.

Picture 21 shows the new Dreamworld content with its new theme and look, featuring the owl mechanic on the bottom left corner.

PICTURE 21. Dreamworld Level 54 (Priscilla 2014)

This particular level is considered one of the hardest ones in the Dreamworld update to complete, mostly because of the unstable moonscale mechanic (Priscilla 2014).

New game content	Clash of Clans	Hay Day	Candy Crush Saga
New gameplay features (-)	**x**	**x**	**x**
New unlocks, items, etc. (-)	x	x	x
Regular updates for free (-)	x	x	x

TABLE 5. New game content provided by the chosen three games

Table 5 provides an overview of the content updates received by the evaluated games, and in this case each of the games scores equally. Having a constant flow of new content in all of the chosen three top grossing games ensures that there is always fresh things to do and new content to look forward to for the players. Adding new gameplay features as well as additional unlocks and items can also act as a motivation for veteran players who have completed all the previous content.

Depending on the new content it is possible to cater to any of the player archetypes, but the scope of the thesis is not wide enough to allow going through all of the content updates of the chosen games – hence they are perceived as equally motivating for each of the player archetypes in the above table.

5.3 Additional retention methods

Additional player retention methods offer additional techniques to retain players and keep them engaged. These methods are often added on top of the core gameplay retention methods and advanced retention methods, and can be applied loosely on any game, while not necessarily requiring a strong tie to the core loop.

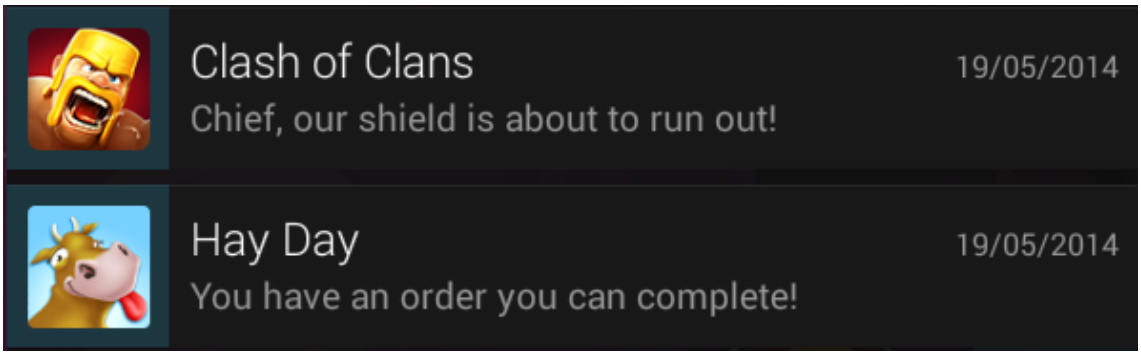
5.3.1 Push notifications

According to Luton, push notifications or nudge triggers are often used in free-to-play mobile games, but they are considered both one of the most ineffective player retention methods and sometimes annoying spam by the players. They often act to remind the player of the existence of the game when they have seemingly already churned, tempting them to return. (Luton 2013, 69). However, according to a research by Urban Airship, mobile application users that use push notifications have a 26% higher retention rate after month one, and double the retention rate after six months compared to users who do not use them (De Vere 2012). Hence push notifications can seemingly make a difference, and will be considered in this chapter as an additional player retention technique, which can be utilized by most games and applications.

Depending on the message given to the player, push notifications may attempt to retain any of the four major player archetypes, but the goal of them is clear – to remind the player of the existence of the game and get them to log back in. The analysis below goes through how the chosen three games utilize push notifications, and what information they contain in order to tempt the player to log back into the game.

Clash of Clans utilizes nudge triggers, or the built-in push notification system of the mobile devices, to alert players about of what is going on in the game. These push noti-

fications provide gameplay related information to the player, alerting them to collect their resources or informing that their village has been raided. While I was playing Clash of Clans, I received only a couple of push notifications which were not gameplay related, telling me for example that my clan needs a leader and I should return to take care of them. This was seemingly aimed at already churned players to remind them of the existence of the game, requesting them to return. Most of the push notification however just informed me about the appointment triggers of the game, and alerted me of tasks waiting to be done and rewards to be collected. Because of their useful nature, they did not feel too pushy or intrusive, and also served to convey messages to each of the player types depending on their content, but ultimately aimed to help the player to progress more efficiently and keep the game in their minds. Picture 22 shows a push notification from Clash of Clans which warns the player about the shield being about to run out, followed by a Hay Day push notification which informs the player that there is an order on their order board which they can complete for money and experience.



PICTURE 22. Push notifications (Supercell 2013ab)

Similarly to Clash of Clans, push notifications in Hay Day did not seem too intrusive, but provided useful information about the different appointment mechanics used in the game, alerting the player when their crops are ready to be harvested or that they have sold all their items on the roadside shop. Rather than annoying the player, they are useful alerts and help the player so that they do not need to check back into the game all the time to see if something is ready to be collected or not, but can effectively manage their time and only come back when told that there is something to log in back for. Just like in Clash of Clans, they serve as reminders that the game exists and there are rewards to be collected and progress to be made. Similarly to Clash of Clans, I only received a very few general messages claiming that my animals missed me and I should return to take care of them, indicating that I had not logged in often enough.

While playing Candy Crush Saga I was surprised not to receive a simple push notification on my Android device despite setting the game to alert me after I have a full set of lives or when I can complete the next Mystery Quest. However, once I connected the game onto my Facebook account, I started getting notifications through Facebook about requests made by my friends and extra lives sent by them. After a while they started to feel slightly intrusive – depending how many friends you are playing with and how active they are in the game, there could be a constant flow of different notifications through Facebook during the day. However, these can be useful if the player has run out of lives and the game sends a notification about obtaining a new one.

After playing all games for a while, despite the notifications in Clash of Clans and Hay Day being useful, they still started to get slightly annoying by the time my notifications solely consisted of game alerts, and more important messages such as emails or text messages were often left unnoticed in the middle of the game alert rush.

Push notifications	**Clash of Clans**	**Hay Day**	**Candy Crush Saga**
Gameplay related (-)	**x**	**x**	**x**
Community related (S)	-	x	x
Competition related (K)	x	-	x
Event and sales related (A, E)	-	x	-
Reminders of existence (-)	x	x	-

TABLE 6. Push notifications used in the chosen three games

Table 6 summarizes the different types of push notifications used in the chosen three games; however the ones from Candy Crush Saga are only received if connected with Facebook. Clash of Clans alerts the player for collectable resources, troops ready for battle, raids occurring in the player's own village and just generally nudges the player about the existence of the game if they have not logged in for a while. Hay Day functions pretty much the same, apart from the lack of competition related nudges and adding community related nudges such as trading information. Candy Crush Saga only delivered messages of receiving lives and being asked for them, however it is possible to post on Facebook if the player manages to beat their friend's score for example. While there was an option to receive gameplay related messages such as information about the

appointment triggers, I did not receive any, but I think this was an application error and hence mark these as included in the above table, too.

While push notifications are not necessarily a game design related player retention technique, they serve as an important messenger between the game and the player, informing them of appointments and other ongoing events in the game, hence they catering to all of the player archetypes. Community related push notifications are especially likely to retain Socializers and competition related are likely to engage Killers. Additionally, if events include rare items or other limited content, they may entice Achievers and Explorers over other player archetypes as well.

5.3.2 Daily login rewards

According to Lovell (2010), one of the simplest player retention methods are daily rewards, which offer a bonus to the player once a day for simply turning up and playing the game. These are given to the player at the beginning of the first session of the day, and often increase over multiple days to encourage the player to return, but the escalation is reset upon missing a day as a punishment (Luton 2013, 66). Since the fear of loss is a strong human motivator, the fear of losing the free bonus if the player does not come back every day is a strong motivator (Lovell 2010). In addition to the increasing reward logic, there is often an element of luck involved. For example, the player may have to choose from a set of mystery boxes or cards, each box or card holding a different item or perk which is revealed to the player after they have made their pick, adding excitement and a random element to the reward process, making it more interesting.

Daily rewards give the players a reason to play the game daily, especially in the case of the increasing reward logic over consecutive days, since the players will be tempted to open the game just to get the reward in order to not feel like they are missing out on it. The evaluation below goes through the daily reward mechanics in the chosen top grossing games and what daily login benefits the games offer to the player.

As discussed in the previous sections, Clash of Clans utilizes appointment triggers and rewards the player with resources for checking back into the game. Players will want to check in daily for multiple reasons, one of them being to collect resources at least once

a day so that they will not hit the cap and stop generating more – or to prevent other players stealing their resources over and over again. However, in addition to these, there is no actual daily login reward system, or any reward for logging in on consecutive days, which feels rather surprising. It will be interesting to see if Supercell adds a mechanic for this in the future.

Even though Clash of Clans does not utilize the daily login rewards, Hay Day has a "Wheel of Fortune", which comes to the farm of each player every day. It can be used once a day for free in order to win items, decorations and rarer goods. If the player is willing to pay one diamond for each spin after the first free one, they can also use the wheel as many times a day as they want. There is also a possibility to win a jackpot, or a bunch of coins, and the more times the player wins the jackpot during the day, the more coins they are awarded, creating a nice sense of additional thrill and excitement, and the possibility to win big if played multiple times. Picture 23 shows the wheel in-game.

PICTURE 23. Wheel of Fortune (Supercell 2013b)

Since the player is able to spin the wheel themselves by swiping the screen, and it is never sure which item the wheel of fortune gives, the element of luck is nicely mixed with an illusions of skill involved, making each spin exciting. This may entice the players to come back daily to win useful items in order to progress in the game, and while

playing Hay Day I often span the wheel the first thing in the morning while waiting for the bus to work – excited each time to see if I will win something rare and useful.

In Candy Crush Saga, there is also something similar to a wheel of fortune, which the player is able to spin once within 24 hours to get rewarded with a different free booster. Since the boosters can be very helpful in order to advance in the game, and this is one of the only ways to get them free apart sending certain boosters to your friends, it acts as a big motivation to come back each day in order to win something which can be measured in real money. Personally I found this was something fun and fast to do, and even if I did not use the booster there and then, I knew I would have it saved up for later use just like in Hay Day. Picture 24 shows the wheel in game.

PICTURE 24. Daily Booster Wheel (King 2012)

As seen in the picture, the wheel in Candy Crush Saga cannot be spun by the player, but continuously spins until the player presses the stop button. Even though there is still an illusion of skill involved since the player can choose when they press the stop button, the implementation in Hay Day feels more exciting because of the manual spin.

Daily login rewards	Clash of Clans	Hay Day	Candy Crush Saga
Basic daily rewards (-)	-	x	x

TABLE 8. Daily login rewards given in the chosen three games

Table 8 gives an overview of the daily login rewards offered by each of the chosen three games. Even though there were no increasing rewards for logging in on consecutive days, the wheels of fortune used in Hay Day and Candy Crush Saga offer a nice random reward each day, though they use a very traditional implementation. However, since they both have an element of luck mixed with an illusion of skill, or choice since the player decides when they stop the wheel or how fast they spin it, the experience is more exciting than just a set reward. Even if the player wins something generic and misses the rare price, just knowing that there is a chance to win it, they may want to check back in the following day to try again. These daily rewards serve each player archetype since they can utilize the rewards to progress in the game and achieve their own goals.

5.3.3 Limited time events

Events and sales as a player retention technique, though self-explanatory, can work as a strong trigger to engage the players. Events, associated with for example Christmas or Halloween, and limited time sales of the hard currency, both feed on the same principle – offering something special and for a limited time only (Luton 2013, 68-69). Reyburn on Inside Mobile Apps further emphasises that the thought of missing out on a cool experience or rare rewards is a powerful concept and a key element to any good event (Reyburn 2013). Depending on the event, in addition to the motivation thriving from exclusivity, they may also cater to different player archetypes more specifically.

According to Luton, these limited time events and sales can also re-engage players who have already quit playing the game, offering them something new and special. However, even though they are great retention techniques, they should not be used too often – if there are too regular “limited time only” sales or constantly repeated events, they lose their value in the eyes of the player (Luton 2013, 68-69). Below analysis goes through the three top grossing games and their special events and sales.

Clash of Clans has had several limited gameplay related events and items. One of the major ones are the always ongoing leagues – even though ongoing events, one seasons only lasts for two weeks, hence making the period of one season still a limited time event. There are several differently ranked leagues, and the higher the player ranking the better league they are positioned to. When the league season ends, the leagues reset, and everyone starts from zero again. These limited time competitive seasons provide endless gameplay for Clash of Clans, and make sure that there are always new challenges, and a new chance to try again if the player is not able to get to the highest league on the first couple of tries. Clan Wars also offer clan tournaments with highly appealing rewards, and only last for a set period of time. These competitive limited time events mainly cater to Killers, but also possibly to achievers, too, if they are after the highest ranking and best league. Picture 25 shows an ongoing Clan Tournament where the clans battle against each other – as seen on the picture, the prices include massive amounts of the premium currency, hence they can be also measured in real money. The tournament in question offers 20,000 gems as the first price, roughly worth of 140 euro.

PICTURE 25. Leagues in Clash of Clans (Supercell 2013a)

In addition to the competitive events, Clash of Clans also has limited time seasonal events such as Christmas and Halloween. They often include special items, attacks and spells, available for a limited time only. Surprisingly however, during my play I did not see any limited time offers or sales for the premium currency, or gems, in the in-game

shop, nor found any evidence of these in the forums – apart from the players asking for a limited time gem sale from the developers (Supercell Forums 2013b).

Just like in Clash of Clans, there are differently themed seasonal events in Hay Day, which offer graphical changes and limited time decorations. Gameplay related events occur, too, which may for example make carrots grow or give double amount of coins for truck shipments. Introduced in an update, the developers also added limited time global events, which may aim for example for a total of 26 million boat shipments globally within a set time. Each player is able to contribute towards the goal, encouraging the community to work together for a mutual benefit – if the goal is reached, everyone gets rewarded, and the reward may include the premium currency of the game, to add to the motivation. Neighbourhoods may also compete against each other in order to achieve a higher position on the leaderboards, according to the shipments made by the neighbourhood as a whole. These types of events may even make the veteran players to check back in to buy and collect the limited time decorations, or to benefit from the gameplay bonuses. In Hay Day I was also offered a few limited time sales of diamonds for a special discounted price. They were both triggered at seemingly random times while I was playing the game, and only lasted for one hour, making them seem very limited and as if targeted for me personally. Picture 26 shows an example of such sale.

PICTURE 26. Special offer (Supercell 2013b)

Whereas Clash of Clans did not offer any gem sales and Hay Day only had a couple of them occurring randomly for a very limited time, Candy Crush Saga seems to offer special sales based on the appropriate celebrations and seasons throughout the year. Actuall,y while I was playing the game over a period of several weeks, there seemed to be always some sort of sale going on, either in terms of boosters or the premium currency of the Facebook version. Ongoing sales popped up as soon as I logged into the game, letting me know that there was only a set amount of days left to utilize the offer before it expired, while showing the discounted items and price accordingly. However, having so many sales reduced how special they seemed, whereas in Hay Day they only occurred randomly and for a very limited time, hence tempting the player to take up the chance rather than knowing that there will be always some sort of sale going on. In Candy Crush Saga, smaller discounts are also constantly ongoing and shown when entering the shop itself. Picture 27 shows one of the continuously occurring sales.

PICTURE 27. Everyday sale (King 2012)

While claiming to be a limited offer, they occurred each time I attempted to buy the boosters, no matter which booster I clicked. While this makes the game cheaper for the player to play, and it may feel like they are getting a good deal, having the sales occurring in a more limited fashion made the deals seem even better. Despite featuring numerous sales however, Candy Crush Saga did not seem to feature any other type of events, which would have offered other benefits.

Limited time events and sales	Clash of Clans	Hay Day	Candy Crush Saga
Hard currency sales (-)	-	**x**	**x**
Seasonal events (E)	**x**	**x**	-
Gameplay events (-)	-	**x**	-
Community events (S)	x	x	-
Competitive events (K)	x	x	-
Limited time items (A)	x	x	-

TABLE 8. Limited time events and sales present in the chosen three games

Table 8 gives an overview of the limited time events and sales present in each of the chosen three games. Clash of Clans offers seasonal events as well as competitive events in the form of the resetting leagues and also community events in the sense of clan tournaments, where the whole clan has to work together to win. Limited time items and spells during the seasonal events are also featured in the game for the players to use. Hay Day has rarely occurring premium currency sales, seasonal events, gameplay events which offer for example double the gold for sold goods, global events where the whole community works together to achieve something while competing against each other, and the game also has limited time items and decorations during seasonal events. Candy Crush Saga, however, only features premium currency and booster sales – and a lot of them – when it comes to limited time events and sales. Even though these sales are more likely to drive monetization rather than player retention, if the player decides to utilize them and invest money in to the game, they are more likely to also return to it since they have then invested both their time and money in.

All in all, Hay Day seemed to offer the nicest mix of different types of events and sales. Whereas currency sales as well as gameplay events are targeted for everyone, Explorers appreciate seasonal discoveries, Achievers are likely to enjoy limited items, and decorations the most and competitive events are designed to entice Killers, while community related events will, on the other hand, motivate Socializers more than the others.

5.4 Summary and findings

Researching and defining the different player retention strategies was both surprisingly difficult yet a coherent experience. There was not a lot of different research or studies to be found about the subject, for the topic is relatively new, and those that did exist were often written by the same authors, so finding variety was difficult. However, although each author suggested something different from the other, there was still a recognizable and unified trend when reading the different sources, hence finding commonly acknowledged player retention methods and defining them into a comprehensive set of categorized techniques was relatively easy. However, defining which player retention method belongs to which category was a small research process on its own.

When evaluating the use of the defined player retention methods in the chosen games, it was noticeable that each of the games features similar core retention methods. Most importantly, all the games have strong core gameplay loops, albeit they are slightly differently implemented, but still easily comparable to Luton's model. All of the games also utilize sessioning and appointment triggers, though they are more naturally integrated within the themes of Clash of Clans and Hay Day, whereas they feel slightly forced and artificial in Candy Crush Saga. Progression, goals and rewards are also present in each game, though Clash of Clans features the most complex system, Candy Crush Saga the simplest and Hay Day positions somewhere in between.

As discussed in Chapter 5.1, the core retention methods include some of the most important retention techniques since they build the whole core of the game and define the structure and gameplay. Table 9 summarizes how many different core retention techniques within the larger categories are used in each game, also summing the total number of the different core retention methods present in the games.

Core retention methods	**Clash of Clans**	**Hay Day**	**Candy Crush Saga**
Core gameplay loops	1	1	1
Appointment mechanics	3	3	2
Progression and goals	6	5	6
Total	**10**	**9**	**9**

TABLE 9. Core retention methods used in the games

Interestingly the numbers almost follow the respective order of the games on the top grossing chart, Clash of Clans having the most core retention methods, while Hay Day and Candy Crush Saga draw a tie. However, Clash of Clans and Hay Day both utilized the full power of the appointment mechanics. Table 10 has gathered together how well the core retention techniques used in the chosen three games cater to the different player archetypes, showing that while all the games target Achievers over Explorers, Clash of Clans caters most to Achievers and Candy Crush Saga to Explorers.

Core retention motivations	**Clash of Clans**	**Hay Day**	**Candy Crush Saga**
Achievers	6	5	5
Explorers	2	2	3
Socializers	-	-	-
Killers	-	-	-

TABLE 10. Motivations provided by core retention methods

When it comes to advanced retention techniques, while Clash of Clans heavily focuses on player versus player content and competition catering to Killers, but also offering the clan system to satisfy Socializers, Hay Day leans towards social interaction by offering motivation for Socializers through trading and the neighbourhood mechanics. Candy Crush Saga features elements of both, though only some of the more basic methods. However Candy Crush Saga utilizes strong social obligation system, since the help of others is required to advance in the game. Each of the games have a long history of revisions and added content, including new levels, features, items and gameplay elements, offering new content to each player archetype and enticing churning players to return.

As discussed in Chapter 5.2, the advanced retention methods are often – but not necessarily – integrated within the core of the game and provide the second layer of retention, usually forming the endgame elements of the game. Table 11 demonstrates the use of different advanced retention methods in the chosen three games, also summing up the total number of advanced retention methods used in each game.

Advanced retention methods	Clash of Clans	Hay Day	Candy Crush Saga
Social interaction	5	6	4
Social competition	3	2	1
New game content	3	3	3
Total	**11**	**11**	**8**

TABLE 11. Advanced retention methods used in the games

This time Clash of Clans and Hay Day draw a tie, whereas Candy Crush Saga is lagging a bit behind. Table 12 illustrates the different motivations offered by the advanced player retention methods, showing that Clash of Clans offers most to Killers when compared against the other games, and Hay Day to Socializers, while Candy Crush Saga is lagging behind again on each of the statistics.

Advanced retention motivations	Clash of Clans	Hay Day	Candy Crush Saga
Achievers	1	1	1
Explorers	1	-	-
Socializers	6	7	4
Killers	3	2	1

TABLE 12. Motivations provided by advanced retention methods

The use of additional player retention methods was more varied in the games. While Hay Day and Candy Crush Saga featured daily login rewards in the form of wheels of fortune, Clash of Clans did not have a specific system for this. However, all three games utilized the push notification system, though Clash of Clans and Hay Day used the built-in system of Android whereas Candy Crush Saga only offered notifications after signing into Facebook, focusing more on the social notifications rather than gameplay related content. Hay Day had the most varied mix of limited time events and sales, whereas Candy Crush Saga only featured sales of the premium currency, and Clash of Clans relied on seasonal events while not offering any sales.

As discussed in Chapter 5.3, additional retention methods offer an added layer of retention and are often only loosely tied onto the core gameplay of the game. While they provide extra means of engagement, they are not necessarily as important tools for retention on their own when compared to the methods in the other two categories.

Table 13 provides a summary the additional player retention methods from each sub-category used in the chosen three games, also summing the total amount.

Additional retention methods	Clash of Clans	Hay Day	Candy Crush Saga
Push notifications	3	4	3
Daily login rewards	-	1	1
Limited time events	4	6	1
Total	**7**	**11**	**5**

TABLE 13. Additional retention techniques used in the games

Hay Day wins in this comparison by far due to utilizing so many types of limited time events and sales, while Clash of Clans comes in second and Candy Crush Saga only scores in daily login rewards, push notifications and hard currency sales. Table 14, on the other hand, illustrates how the different techniques of the additional retention methods cater to different player archetypes, Hay Day leading in the variation with Clash of Clan straight behind, leaving Candy Crush Saga a bit further away again.

Additional retention motivations	Clash of Clans	Hay Day	Candy Crush Saga
Achievers	1	2	-
Explorers	1	2	-
Socializers	1	2	1
Killers	2	1	1

TABLE 14. Motivations provided by additional retention methods

As a conclusion, while Clash of Clans and Hay Day seem to be quite well in balance, Candy Crush Saga is lagging a bit behind on most comparisons. This might be due to the more simple nature of Candy Crush Saga, though the balance between Clash of Clans and Hay Day may also be a result of being developed within the same company, or sharing more similarities as games compared to Candy Crush Saga. Table 15 draws together all the results for a better comparison by summing up the different player retention methods used in the games and the player archetypes which they cater for.

Methods and motivations	Clash of Clans	Hay Day	Candy Crush Saga
Core retention methods	10	9	9
Advanced retention methods	11	11	8
Additional retention methods	7	11	5
Total retention methods	**28**	**31**	**22**
Achiever motivations	8	8	6
Explorer motivations	4	4	3
Socializer motivations	7	9	5
Killer motivations	5	3	2

TABLE 15. All results drawn together

It is surprising to see that Hay Day uses more player retention methods compared Clash of Clans, given their reverse positioning in the top grossing chart. However, Candy Crush Saga uses the least amount of player retention methods out of the three games, and is left as a third, corresponding to its position on the chart, too. When considering the different categories of the player retention methods, the core retention methods form the core of the game and are important for the initial experience, and advanced retention methods form the endgame, leaving additional retention methods to add extra features, often only loosely tied onto the gameplay. Clash of Clans still uses the most core retention methods, and draws with Hay Day on the use of advanced retention methods, Hay Day mostly leading the total score by featuring so many different types of events under the additional retention methods category. This may indicate that the category and type of the player retention methods used is more important than their amount.

Also when looking at the amount of motivations offered for each player archetype by the games, Clash of Clans and Hay Day tie with serving both Achievers and Explorers, but Clash of Clans caters more to Killers and Hay Day to Socializers. Candy Crush Saga on the other hand takes the rear position on each of the comparisons. Overall with Clash of Clans being the number one top grossing game, Hay Day the second and Candy Crush Saga the third, the results may indicate that the total amount of player retention methods is also not as important as which player archetypes they cater for. As stated in Chapter 5.2.2, having competitive and social endgame is a common feature of many of the successful games, and Clash of Clans caters to the Killer archetype better

than either of the other two, offering endless competition between players, while Hay Day relies more on social interaction and Candy Crush Saga to passive competition.

When drawing these conclusions together, first of all the results indicate that the type of retention offered by the player retention methods is more important than their total amount in the game. Core retention methods serve to build the core of the game, and since Clash of Clans as the top grossing games also utilized most of them, it might indicate that they make the biggest difference when it comes to the different categories.

Other findings suggest that also more important than the total amount of player retention methods in the game, is which player archetypes they cater for. While Hay Day used more advanced retention methods, Clash of Clans used methods with catered to the Killer archetype, forming competitive endgame as a result. Hence, when considering the different player archetypes, they could be also categorized when it comes to the player retention rate. While Achievers and Explorers will eventually run out of things to do, Socializers and Killers generate content for each other, making a never-ending endgame situation possible. Because of this, the player retention methods used to cater for those two archetypes may be of higher importance than those targeting Achievers and Explorers when considering advanced retention methods. However, as stated in Chapter 2.3, most players are likely to represent two or more of the player archetypes, and may also change the type during their experience with the game. Hence focusing to offer varied player retention methods catering to each archetype, but making sure to include a strong core gameplay and nerve-ending endgame possibilities, is important.

When evaluating the top three grossing games against the different player retention methods and strategies, it was also noticeable that even though the genres of the chosen games were quite different, they still often included game mechanics with similar aims and goals in order to motivate the players and boost retention. This demonstrates well how differently these generalized theoretical methods can be applied in practise depending on the theme and needs of the game.

In order to improve the research process, having more people to evaluate the games, and also evaluating more and different types of games, would have been useful in order to broaden the perspective. Categorizing the player retention strategies, and treating them as their own entities when considering which player archetype they cater for, was a dif-

ficult process when attempting to be both objective and effective alone. Also, by giving more detailed priorities for each of the different player retention strategies than just the three categories could have been also helpful in order to analyse the results with a higher accuracy. Prioritizing the different player archetypes and their motivations could have also helped when analysing the results. However, to properly prioritize them, would have required extensive research on its own, not fitting the scope of the thesis.

As a whole, the process of researching and defining the different player retention methods, playing through the three top grossing games and evaluating them against the methods while analysing which player archetypes they cater for, was an effective way to gain a deeper understanding of how player retention works. The findings of the research and evaluation process answered the research questions set for the thesis, and provided useful information about the different types of player retention methods, as well as how they can be applied to different types of games in practice. Mechanics which create anticipation and feed motivation also translate into retention.

As a whole, the findings demonstrate how important it is to tie all the game mechanics together. Offering strong core gameplay with never-ending endgame features is effective when aiming for good retention, more so than just implementing a lot of different player retention methods into the game and hoping for the best.

6 CONCLUSIONS AND DISCUSSION

When starting to write this thesis, the purpose was to research how player retention works in free-to-play mobile games – in detail, what player retention is, how it works and what methods can be used to retain players in free-to-play games. The aim was to gather together a concrete set of theoretical methods and practical examples which could be used to improve player retention in free-to-play mobile games. However, critiquing the ethical aspects of the different player retention methods, or assessing if they are essential to make good games, was not a part of this thesis.

Chapter 2 of this thesis introduced the history and evolution of the mobile devices into one of the biggest gaming platforms currently available on the market. Conclusions indicated that since mobile devices have a wide reaching audience, are relatively is easy to access and have a low entry cost for the developer, they are a desirable platform to develop games for. This together with the continuously increasing revenue estimates were important reasons when deciding to focus this thesis around mobile games. The chapter also explained how mobile games often differentiate from the games developed for other platforms, for example by embracing clear user interface design, precise controls and easy accessibility with complexity in layers to keep the players interested. Different Bartle Types, or player archetypes and their motivations to play, were also introduced in this chapter in order to later utilize them in the evaluation part of the thesis.

Chapter 3 explained in more detail the differences between free-to-play games and games using the more traditional pay-to-play business model. An important conclusion was that since free-to-play games make profit by monetising players, and player retention is required before converting players into paying customers, being able to understand how player retention works, and what different methods there are, is a crucial part of the game development process. This together with the increasing revenue share of free-to-play mobile games compared to the traditional pay-to-play business model on mobile were the main reasons when choosing to focus this thesis around player retention methods used in free-to-play mobile games. The chapter also introduced the main concepts of the free-to-play business model, including player acquisition, player retention and player monetization, as well as the different KPIs which can be used to evaluate the success rate of the business model for individual games. The basic structure of free-to-play mobile games was also introduced in the chapter, since it often differs from

the more traditional game design – whereas traditional games aim to entertain the player after the initial purchase, the free-to-play mobile games have to engage the player as soon as possible, so that players will not switch over to another free game.

Chapter 4 introduced the research and evaluation methods which were be used in the following chapter of the thesis. Literature review was decided to be used as the method for the research process – existing professional sources would be researched and the information was to be used to define a set of different player retention methods and strategies. These defined methods would be divided into three categories which were purposefully crafted for the thesis – core retention methods, advanced retention methods and additional retention methods. For the evaluation process, three top grossing free-to-play mobile games were chosen, Clash of Clans, Hay Day and Candy Crush Saga. By using the player retention methods as design specifications, their use in the games would be evaluated, while also analysing which player archetype they cater for. Personal perspective as a player would also be included in the evaluation.

Chapter 5 presented the results of the research and evaluation process. It was organized according to the different player retention categories, core retention methods, advanced retention methods and additional retention methods. Each category consisted of three subcategories introducing the most evident and commonly accepted player retention methods which belonged to that category. Each of these subcategories followed the same structure to present the results in an organized fashion – after defining the method by referencing professional sources, each of the three chosen games were evaluated against the method while also considering the different player archetypes and which types the method in question would motivate. I also gave my personal experiences as a player for each player retention method in order to include a first-hand view of how they felt and functioned in practice. The end result was a research combining both theory and practice, offering a complete view into the different player retention methods used in free-to-play mobile games, and also a topical evaluation of the current top grossing games and how they utilize these methods to retain different types of players.

Findings of the research and evaluation process were interesting on both professional and personal levels. After gathering the results together and combining all the data, the results were analysed more thoroughly. The findings suggest that the amount of player retention methods used in a game is not as important as what type of player retention

the methods represent. Core retention methods seem to be more important, for they form the core and base of the game, and provide the initial experience for the player. On the other hand, advanced retention methods seems to provide long term retention, and form the endgame elements by combining social interaction and competition. However, additional retention methods only seem to add smaller extra elements of retention on top of the core and advanced methods. The results also indicate that apart from the amount and type of the retention methods used, it is also important which player archetypes the retention methods motivate – providing endgame with competitive and social elements seems to ensures long sustaining retention, and hence using methods which motivate Killers and Socializers seems to lead to success. However, for this to work, the core retention methods have to provide a solid base.

It was also apparent from the evaluation process, that while the defined player retention methods were theoretical concepts, they could be implemented in many different ways in practice. It was interesting to see how well each of the evaluated games utilized these methods despite their different natures by crafting them to suit their own theme and needs. Overall, the research results demonstrate that ultimately player retention methods are just basic psychological concepts translated into game mechanics and gameplay – creating anticipation and feeding the different player motivations is the key to success.

The gathered and categorized theoretical player retention methods, together with the examples provided in the evaluation, can be used as guidelines when attempting to improve player retention in an existing game, or when designing engaging free-to-play mobile games in general. According to the above research results, it seems that using the core retention methods to build the core of a game by including a strong core loop, utilizing sessioning and appointment mechanics, as well as including goals and rewards with a clear curve of progression, forms a good base. Adding social and competitive gameplay elements on top of a good core structure, on the other hand, seems to provide long term engaging and never-ending endgame challenges for the players. Additional player retention methods, however, can be used to add extra engagement, even though they do not seem to provide strong player retention on their own. The tables below present all the defined player retention methods in this thesis, and they can be used as guidance and reference when developing free-to-play mobile games.

Core retention methods		
Core gameplay loops	**Appointment triggers**	**Progression and goals**
- Action - Wait - Reward - Upgrade	- Forced player sessioning - Player can affect waits - Player is rewarded for return	- Progressives narrative - Player level system - Scoring and ratings - Upgrades, unlocks - Progression path - Teasing features - Achievements, missions

TABLE 16. All defined core retention methods

Advanced player retention methods		
Social interaction	**Social competition**	**New game content**
- Help required to progress - Help required to succeed - Trading between players - Asking help from others - Sending help to others - Guilds, communities - Real-time chatting	- Direct competition - Indirect competition - Competing as a community - Rankings and leaderboards	- New gameplay features - New unlocks, items, etc - Regular updates for free

TABLE 17. All defined advanced retention methods

Additional player retention methods		
Push notifications	**Daily login rewards**	**Limited time events**
- Gameplay related - Community related - Competition related - Event and sales related - Reminders of existence	- Direct competition - Indirect competition - Competing as a community - Rankings and leaderboards	- Hard currency sales - Seasonal events - Gameplay events - Community events - Competitive events - Limited time items

TABLE 18. All defined additional retention methods

In order to improve the research and evaluation process, it would have been beneficial to include more evaluators, and evaluate more and different types of games to broaden the perspective, and to negate the possibility of a biased personal opinion. However, this would not have been possible within the scope of this thesis. Additionally, setting more detailed priorities for the different player retention methods than just the three categories, and ranking the different player motivations according to priority, could have also been useful in order to better analyse the results. However, this process would have required research already in itself. Also looking at the player retention methods as separate entities in order to determine which player archetypes they cater the best could have used more research on its own, as well as the opinion of other players and developers alike in order to be as accurate as possible.

However, as a conclusion, researching and evaluating the different player retention methods and strategies used in free-to-play mobile games has been a beneficial experience, giving new insights on both professional and personal level. As a game designer and developer, it is now easier to understand the psychology behind player engagement and retention, by considering the different player archetypes and their motivations. Evaluating the top grossing games against the different player retention methods also helped me to see the games as individual entities which are, however, built from separate yet integrated mechanics and features. Utilizing this knowledge, and considering the defined player retention methods and concrete examples from this thesis, will help me to further evaluate and design engaging games in the future.

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