

Monetization of Social Network Games in Japan and the West



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Preface

This thesis is the final report in a Master of Science degree in Industrial Engineering and Management at Lund University, Faculty of Engineering. It was written at the division of Production Management, Department of Industrial Management & Logistics. Work on the project began in late spring 2012 and finished in January 2013. During this period, four months were spent in Japan where Japanese literature on the subject was collected and game testing was performed.

I would like to give special thanks to my supervisor Dr. Ola Alexanderson for giving me valuable feedback throughout the project and for helping out even at short notice. I would also like to thank the people at Drecom Co., Ltd., Tokyo for helping me with ideas, valuable information about the industry, as well as interviews.

The project has helped me better understand the social network gaming industry, and my knowledge about both the Japanese and Western market has expanded. I am looking forward to working in the industry from spring 2013.

Lund, January 2013

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Abstract

Social Network Games (SNGs) first appeared in Asia in the latter half of the 00s, and soon became a widespread phenomenon all over the world. In the West, US developer Zynga quickly rose to fame with their hit title FarmVille, and now enjoys a nearly monopolistic position among games on Facebook. In Japan as well, the SNG industry has grown at an exceptional pace since its birth and is predicted to keep growing. Most SNGs use a business model called *free-to-play*, which allows the player to play the game for free unless the player chooses to pay for some virtual item available in the game. This makes it important for games to monetize their users by providing players with incentives to pay a small fee to enhance their experience. It has long been known that SNGs in Japan are more profitable than Western ones when it comes to revenue per user. The accepted explanation for this has been that special characteristics of the Japanese market make it easier to monetize users on the Japanese market, as they are more willing to pay for games. However, as the Japanese SNG market is becoming saturated, several developers are going global, and 2012 saw a storm of Japanese SNGs being released in the US and other Western markets. Far from all of these games were successful, but some of them are performing very well. In particular, the card battle role playing game (RPG) *Rage of Bahamut* quickly reached the top position of highest grossing apps on both the iPhone App Store and the Android Google Play Store in the US. Moreover, the game's publisher reports average revenue per daily active user (ARPDau) which is twenty times higher than the US market average. Several other Japanese developers with titles released on the US market are reporting similar numbers, which has led to speculation that perhaps the success of Japanese SNGs is not only due to market differences.

The purpose of this thesis is to further understand if and how Japanese SNGs monetize better than Western games. The study seeks answers to the following research questions:

1. How do the game mechanics differ between Japanese and Western SNGs?
2. What game mechanics affect how much a player is willing to pay?

In order to do test this, twelve SNGs, six Japanese and six Western, are tested and analyzed using an analysis model. The analysis model is based on research on game design as well as on gamification; a field which is closely related to SNGs. Using the analysis model, game characteristics which could affect monetization are identified. In addition to the comparative game study, a market analysis is performed for both markets, in attempt to find information about the markets which cannot be easily obtained only by testing the games hands-on.

The study found that Japanese and Western SNGs differ in several ways. For each market, five unique characteristics are identified and explained. Whether the five characteristics found for Japanese SNGs are directly related to the games' monetization or not is difficult to tell without access to the games' KPIs. However, information gained in the market analysis suggests that some of the identified characteristics are indeed what makes Japanese SNGs monetize better.

Sammanfattning

Social Network Games (SNG) är en spelkategori som dök upp i slutet av 2000-talet och som snabbt spriddes över hela världen. I Väst slog det amerikanska utvecklingsföretaget Zynga tidigt igenom med spelet FarmVille, och företaget har numera en nästan monopolistisk ställning bland Facebook-spel i USA. Även i Japan har SNG-industrin vuxit fram i snabb takt enda sen starten, och förväntas fortsätta växa. De flesta SNG använder en betalningsmodell som kallas för *free-to-play*, där spelaren har möjlighet att spela helt gratis om man inte själv väljer att betala för något av de virtuella ting som säljs i spelen. Detta gör att det är viktigt för utvecklarna att hela tiden ge spelarna incitament att betala en mindre summa för att förbättra spelupplevelsen. Det är sedan länge känt att SNG i Japan är mer lönsamma än de i Väst sett till inkomst per användare. Den vedertagna förklaringen för detta har varit att det är unika egenskaper hos den japanska marknaden som leder till att det är lättare att ta betalt från användarna då de är mer betalningsvilliga. Den Japanska marknaden börjar dock bli mättad, och flertalet japanska utvecklare siktar nu in sig på den globala marknaden. Under 2012 kom en storm av japanska SNG som släpptes på den Västländska marknaden, bland annat i USA. Lång ifrån alla dessa spel var framgångsrika, men några av dem presterar väldigt väl. Speciellt väl har det gått för rollspelet *Rage of Bahamut*, som nått topplaceringen på *top grossing*-listan både i iPhone App Store och Androids Google Play Store i USA. Spelets utgivare rapporterar dessutom att spelets genomsnittliga inkomst per dagligt aktiv användare (ARPDau) är tjugo gånger så högt som marknads genomsnittet i USA. Flera andra japanska utvecklare som släppt spel på den amerikanska marknaden rapporterar att de uppnått liknande siffror, vilket har lett till spekulationer om att framgången hos japanska SNG kanske inte endast beror på marknadsskillnader.

Syftet med denna uppsats är att förstå om och hur japanska SNG lyckas vara mer lönsamma än Västländska. Uppsatsen söker svar på följande delfrågor:

1. Hur skiljer sig spelmekanismer mellan japanska och Västländska spel?
2. Vilka spelmekanismer påverkar hur mycket en spelare är villig att betala?

För att utforska detta testades tolv SNG, sex japanska och sex Västländska, och analyserade med en analysmodell. Analysmodellen baserades på forskning inom speldesign samt på gamification, ett område som har många kopplingar till SNG. Med hjälp av analysmodellen identifierades särdrag som kan påverka lönsamheten hos de olika spelen. Utöver speltestandet genomfördes även marknadsanalyser för båda marknaderna, med målet att komplettera spelstudien och hitta information som inte kan erhållas endast genom att direkt testa spelen.

Studien fann att de japanska och Västländska spelen skiljer sig på flera sätt. För båda marknaderna identifieras och förklaras fem unika särdrag. Huruvida särdragen hos japanska SNG är direkt kopplade till deras lönsamhet är svårt att säga utan tillgång till spelens olika KPI, men information från marknadsanalysen tyder på att det faktiskt är några av dessa särdrag som gör att de japanska spelen är mer lönsamma.

Glossary and Abbreviations

ARPU – Average Revenue per User: Usually refers to ARPMAU

ARPPU – Average Revenue per Paying User

ARPMAU – Average Revenue per Monthly Active User: Monthly income / monthly active users

ARPDau – Average Revenue per Daily Active User: Daily income / daily active users

Package Game – A loosely defined term, used in this thesis to refer to games where the product is paid for up front, as opposed to games using the free-to-play business model

Table of Contents

Preface	3
Abstract	5
Sammanfattning	7
Glossary and Abbreviations	9
Table of Contents	11
1 Introduction	17
1.1 Background	17
1.1.1 Background Social Network Games	17
1.1.2 Difference in Revenue	18
1.2 Problem Statement and Purpose	19
1.3 Delimitations	19
2 Method	21
2.1 Research Approach	21
2.2 Research Process	21
2.3 Quality	22
2.3.1 Validity	22
2.3.2 Reliability	23
3 Theory	25
3.1 Why Do We Play Games	26
3.1.1 Definition of a Game	26
3.1.2 Meaningful Play	27
3.1.3 Social Network Games	28

3.1.4	Slot Machine Mechanics.....	29
3.1.5	Critique of SNGs.....	31
3.2	The Gamification Framework.....	31
3.2.1	Bartle’s Four Player Types.....	32
3.2.2	Flow	33
3.2.3	SAPS	34
3.2.4	Alief.....	34
3.2.5	MDA Framework	35
3.2.6	Gamification as an Analysis Framework.....	36
3.2.7	Critique of Gamification.....	39
3.3	The ARM Funnel	40
3.3.1	The ARM Model as a Development Framework.....	41
3.4	Player Acquisition.....	41
3.5	Player Retention	42
3.5.1	Progress Systems	43
3.5.2	Social Aspects	47
3.5.3	Time-Based Limitations.....	47
3.6	Monetization	49
3.6.1	Seven Categories of Virtual Goods.....	49
3.6.2	Sell Real World Items	50
3.7	Analysis Model	50
3.7.1	Mechanics.....	51
3.7.2	Reward system.....	53
3.7.3	Time-dependent events.....	53
3.7.4	Social.....	53
3.7.5	Monetization	54
4	Empirics	55

4.1	Introduction	55
4.2	Market Analysis	55
4.2.1	Player Demographics	56
4.2.2	Difference in Revenue.....	56
4.2.3	Global Push of Japanese Developers.....	59
4.2.4	Virtual Social Graph vs. Real Social Graph	60
4.2.5	Gambling Elements of Japanese SNGs.....	61
4.3	Comparative Study	63
4.3.1	Analysis method.....	63
4.3.2	Game Selection Criteria.....	63
4.3.3	Game List	65
4.4	Results	65
4.4.1	Mechanics.....	67
4.4.2	Reward system	69
4.4.3	Time-dependent events.....	69
4.4.4	Social	71
4.4.5	Monetization	71
5	Discussion	73
5.1	Identified Characteristics	73
5.1.1	Unique Characteristics of Western Games	73
5.1.2	Unique Characteristics of Japanese Games	75
5.2	Discussions and Analysis.....	76
5.3	Quality	78
5.3.1	Reliability	79
5.3.2	Validity.....	79
5.3.3	Analysis Model in Review	80
6	Conclusion	83

7	Bibliography	85
1	Appendix A: Game Analysis – Western Games	91
1.1	Angry Birds Friends	91
1.1.1	Mechanics.....	92
1.1.2	Reward system	93
1.1.3	Time-dependent events.....	94
1.1.4	Social.....	94
1.1.5	Monetization	95
1.2	Bubble Witch Saga	96
1.2.1	Mechanics.....	97
1.2.2	Reward system	98
1.2.3	Time-dependent events.....	98
1.2.4	Social.....	99
1.2.5	Monetization	100
1.3	Candy Crush Saga	101
1.3.1	Mechanics.....	101
1.3.2	Reward system	102
1.3.3	Time-dependent events.....	103
1.3.4	Social.....	103
1.3.5	Monetization	103
1.4	ChefVille	105
1.4.1	Mechanics.....	105
1.4.2	Reward system	107
1.4.3	Time-dependent events.....	107
1.4.4	Social.....	108
1.4.5	Monetization	109
1.5	Diamond Dash	110

1.5.1	Mechanics.....	110
1.5.2	Reward system	111
1.5.3	Time-dependent events.....	112
1.5.4	Social.....	112
1.5.5	Monetization	112
1.6	FarmVille 2.....	114
1.6.1	Mechanics.....	115
1.6.2	Reward system	117
1.6.3	Time-dependent events.....	117
1.6.4	Social.....	118
1.6.5	Monetization	118
2	Appendix B: Game Analysis – Japanese Games	121
2.1	Chokotto Farm.....	121
2.1.1	Mechanics.....	122
2.1.2	Reward system	123
2.1.3	Time-dependent events.....	124
2.1.4	Social.....	125
2.1.5	Monetization	126
2.2	Puzzle & Dragons.....	127
2.2.1	Mechanics.....	128
2.2.2	Reward system	129
2.2.3	Time-dependent events.....	129
2.2.4	Social.....	130
2.2.5	Monetization	130
2.3	Kaitō Royale.....	131
2.3.1	Mechanics.....	132
2.3.2	Reward system	133

2.3.3	Time-dependent events.....	133
2.3.4	Social.....	134
2.3.5	Monetization	135
2.4	Kakusansei Million Arthur.....	136
2.4.1	Mechanics.....	137
2.4.2	Reward system	138
2.4.3	Time-dependent events.....	138
2.4.4	Social.....	139
2.4.5	Monetization	140
2.5	Rage of Bahamut	141
2.5.1	Mechanics.....	142
2.5.2	Reward system	143
2.5.3	Time-dependent events.....	143
2.5.4	Social.....	144
2.5.5	Monetization	145
2.6	Tsuri Star.....	146
2.6.1	Mechanics.....	147
2.6.2	Reward system	148
2.6.3	Time-dependent events.....	149
2.6.4	Social.....	149
2.6.5	Monetization	150

1 Introduction

1.1 Background

1.1.1 Background Social Network Games

Social Network Games (SNGs) are a type of digital games which utilize a social graph to generate and connect users. The SNG industry was formed in the late 2000s and has grown at a fast pace since. One of the first SNGs in Japan, and possibly the world, was the fishing simulation game Tsuru Star developed by the Japanese internet media company GREE. In the game, players visit different fishing grounds to catch different kinds of fish, and players can cooperate or compete with other players. Following Tsuru Star, several other genres of SNGs quickly appeared, and farming simulators soon took off with the success of the game Happy Farm by Chinese developer 5 Minutes. SNGs spread to the West, spearheaded by Zynga with games like FarmVille and Mafia Wars, and the games reached out to a much broader audience than digital games have ever managed to before.

Most SNGs utilize the social graph of an existing social network service in various ways to generate and connect users; for friend invitations, cooperative gameplay and advertising, and use a business model called free-to-play. Free-to-play lets players enjoy the game without paying, but the player is constantly given incentives to invest a small amount of cash in order to further improve their gaming experience. By paying for the game, the player can advance quicker, overcome time limitations or attain rare items. Commonly SNGs are provided as a web service, requiring a constant internet connection to play. Throughout the game, information is fetched from a server which confirms the player's actions and sends out new data. This way of managing games means that the developer has the ability to update and change the game at any time, even after its release. Combined with the free-to-play model, this leads to SNGs having a development style which differs from that of package games. It is common that SNGs are released at an early stage in development since they can easily be adjusted afterwards, and a large part of the developer's focus is on data analysis. By continuously monitoring usage patterns and key performance indicators, the developer can identify problems and improve the game's design in real time. For example, usage data might

show that an unusually large number of players quit the game at a certain stage, indicating that the difficulty level of that part of the game is set too high and should be adjusted. An adept developer will quickly tune this before too many users give up the game. In contrast with package games, SNGs often lack a clear goal or ending, but instead just keep on going forever. They keep players engaged with rewards and quests, inter-player interaction, and some feature gambling-like elements.

Although often criticized for being too simplistic and lacking depth, these games have attracted an audience in large part consisting of people who have never played digital games before. One study found that the average SNG player in the US is a 41 year old female, in stark contrast with the stereotypical image of a gamer. Despite the name, the level of social interaction in SNGs varies, with some games having social actions as a core part of gameplay, while other games provide very few means for interaction between players.

SNGs are a large phenomenon in Japan, where they first appeared on feature phones in 2007. The market is currently dominated by the two dedicated gaming platforms GREE and Mobage, as well as the social networking service Mixi. While the general concept of SNGs in Japan is the same as in the West, the Japanese market has some unique characteristics. Building and farming simulators are immensely popular in the US, but in Japan the genre of card battle RPGs is currently the most popular. Inspired by the popular card trading game Magic: The Gathering, these games let the player perform quests and collect cards which can later be used to battle enemies and other players. While the actual gameplay in the different card battle RPGs remains largely the same, they are differentiated by card motifs. Each card in the game has an illustration of the character the card represents, and the games often use original artwork. A recent trend, however, is licensing intellectual property which is used in the games. The Western and Japanese markets have another important difference; the device used to play the games. While PC gamers playing on Facebook are the majority by in the US, Japanese players play using their mobile phones.

1.1.2 Difference in Revenue

One vital difference between the US and the Japanese market is how much the average player chooses to pay for the game. Japanese developers often see average revenue per daily active user (ARPDau) of up to ten times as high as their US counterparts. This difference in revenue is sometimes explained by the uniqueness of the Japanese market, but some Japanese SNG developers believe that although such differences certainly exist, the major difference is

in the games themselves. In other words, they believe the Japanese games simply monetize their users better.

As a consequence of the Japanese market becoming saturated, Japanese developers have recently begun pushing their products on the global market. Despite many of these games receiving bad reviews by professionals, a few games have managed to enter the highest grossing ranking on the iPhone App Store and the Android Play Store. The most successful game so far, *Rage of Bahamut* by Tokyo based developer Cygames, held the top spot in the highest grossing ranking of the iPhone App Store for several weeks in a row, and the top position on the Google Play Store for months. Although the ARPDAU for the Japanese games on the US market is allegedly not as high as in Japan, they report seeing numbers of up to 5-6 times as high as the average US developer. This suggests that there might be some truth in the bullish claims by some Japanese developers that their games monetize users better.

1.2 Problem Statement and Purpose

The SNG industry has quickly risen to fame over the course of only a few years. In 2012, however, leading US developer Zynga has been struggling with fleeing users and layoffs, and some industry specialists proclaim that the golden era for SNGs is over. Japanese games released in the West have however reportedly managed to monetize far above the market average, which suggests that there is still room for improvement in the field.

The purpose of this thesis is to gain further understanding if and how these Japanese games actually do monetize better than Western games. In order to this, the study seeks answers to the following research questions:

1. How do the game mechanics differ between Japanese and Western SNGs?
2. What game mechanics affect how much a player is willing to pay?

1.3 Delimitations

- For the Western market, only Flash based games available on Facebook will be tested.
- For the Japanese market, only smartphone games will be tested.
- Only games using the free-to-play business model will be tested.
- SNGs often have no end, and can be played indefinitely. In this study, they will be played past the introductory stage, until all key features of the game are believed to be unlocked.

2 Method

2.1 Research Approach

This research project is an exploratory study with the aim of gaining understanding of the inner mechanics of SNGs in Japan and the West. An inductive research approach will be used, where existing theoretical knowledge from prior research is combined with real life observations to draw conclusions. The project approach consists of two parts; a theoretical part, with a literature study of existing research on games, and an empirical part, where a market analysis is conducted, and games are tested based on knowledge obtained in the theoretical part.

2.2 Research Process

In the theoretical part, literature related to the field of game analysis will be studied. Relevant research concepts will be summarized and presented in the Theory chapter, and used to construct a game analysis framework. The game analysis framework will be constructed based on the findings in the literature study, and used for analysis in the empirical part of the study.

The empirical part of the project consists of two studies. The first is a market analysis of the Japanese and Western SNG markets. The second is a comparative case study, where six games from each market, twelve in total, are tested and analyzed using the analysis framework constructed in the theoretical part.

The aim of the market analysis is to understand the structure of the SNG field in the two markets, and what unique characteristics exist. If possible, if and why Japanese games monetize better than Western games will be examined in the market analysis. The SNG market is a constantly changing industry, where new monetization mechanics and game genres appear at a rapid pace. The market analysis will therefore be based on the latest information available, which includes news articles, blogs, personal interviews, and published interviews of people in the industry.

In the game case study, six SNGs from the Western market and six from the Japanese market will be played and analyzed using the analysis framework constructed in the theoretical part. Each game will be played with the aim of testing all key game elements and game mechanics the game has to offer. For games which allow social interactions, these will be tested as much as possible as well.

As an alternative to testing games directly, a research method using a survey is also a plausible approach. A questionnaire survey conducted among SNG players in Japan and the West could be used to identify game design characteristics and common in-game purchases, and this approach could cover a wider range of games than possible with direct testing of games. However, as this thesis is an exploratory study, the purpose is primarily to *identify* design aspects which differ between the two markets and how they relate to game monetization, and not necessarily to *validate* these aspects. Therefore, an approach where the author acts as an instrument in the research process to test games was chosen. This approach increases the validity of the results since game features are tested directly and not using an indirect source. However, as this is an exploratory research project, the findings need to be validated through further research.

Following the empirical part, the theoretical foundation will be used together with the information from the market analysis and results of the game case study to draw conclusions about the two markets and their differences. If possible, unique characteristics for each market will be identified and presented.

2.3 Quality

2.3.1 Validity

To ensure the validity of the theoretical foundation of the thesis, both literature on games research and literature related to SNGs will be studied. The validity is further strengthened by the market analysis, which ensures that special circumstances that may exist in the markets are identified. For the comparative game study, the validity can be negatively affected if the gameplay noted in the study is not representative for the game. Gameplay in SNGs often progresses over time and not all features may be available to all players. Some features may only become available after several months of play, something which will not be tested in this study. To minimize problems and avoid overlooking of game features; game manuals and online resources will be used in addition to testing.

The thesis aims to compare the Western and Japanese markets, but it is difficult to define what the Western market is. The study is conducted under the assumption that English language games on Facebook represent the Western market. For player demographics, it will further be assumed that player demographics in the US are representative for the Western market as a whole. These rough assumptions may compromise the validity of the study.

2.3.2 Reliability

To ensure reliability of the theoretical part and market analysis, bias in the selection of studied material should be avoided. When possible, both Japanese and Western sources will be used in order to not overlook information which may be market-specific. Furthermore, the reliability of the comparative game study can be compromised if the tested games are not representative of their respective market, and selection criteria will be set up to ensure that they are.

For the comparative game testing, the reliability can be compromised if the selected games are not representative for their market. Selection criteria will be decided to get a broad selection of games which are believed to be representative.

3 Theory

In this chapter a theoretical foundation for the thesis is established by looking into previous research in the field. The aim of the chapter is to get a fundamental understanding of what games are, what makes them fun, and what game mechanics drive monetization. Additionally, the chapter briefly examines what SNGs are and how they differ from other digital games.

The first part, section 3.1, describes games in general, as well as what makes them fun to play. The part starts out with a presentation of some of the existing definitions of the word *game*, as well as *social network game*. This is followed by a summary of literature that has been written on the subject of what makes games fun, and what motivates players. A general description of SNGs follows, with explanations for how these relate to other digital games. The first part is rounded off with a brief look at some of the similarities between SNGs and slot machines, and some of the critique of SNGs that has been made.

The second part, section 3.2, introduces the concept of gamification. Gamification is originally an area where design ideas from games are applied in other fields than gaming. There is a strong link between gaming mechanics used in SNGs and gamification, making the concept useful also as a framework for analyzing these games. Literature on gamification often puts a strong emphasis on certain game mechanics such as *badges* and *points*, which can be used to motivate players to improve their performance. Such game mechanics are used in many types of games, but are expressed more distinctly in SNGs. The aim of this part is to get a general understanding of gamification, the ideas it contains and to see how the framework can be used for game analysis. A more detailed look into the specific game mechanics and dynamics used in gamification follows in part three.

The third part, beginning with section 3.3, describes an analysis model called the ARM funnel, developed by research company Kontagent. The model can be used to better understand the business model of SNGs. The model visualizes SNG players as though passing through a funnel, divided into the three stages *acquisition*, *retention* and *monetization*, throughout their lifecycle within the game. For each of these three stages the model suggests

metrics that can be used to measure how well the game performs. Thus, the original intent of the framework is to measure effectiveness by looking at such performance indicators. As shown in Fields & Cotton (2012), however, the ARM funnel can also be used as a framework for describing SNGs and the techniques these games use to improve their metrics. The three stages of the ARM funnel are useful as they provide a structured way of looking at these techniques. The *acquisition* stage deals with how developers can reach out to users, and acquire players. The *retention* stage concerns how to keep players around once they have been acquired. Specifically, it deals with techniques that make game *sticky*, or addictive, and is closely related to the gaming mechanics and dynamics presented in gamification. The final stage, *monetization*, looks at the methods used in SNGs to generate revenue from their users. Since SNGs often make use of the free-to-play business model, it is crucial to provide incentives for players to pay for the product.

The theory chapter is rounded off with a presentation of the analysis model which will be used to analyze games in the empirical section. This analysis model incorporates relevant concepts from the theory to create a flexible model for identifying key design concepts in SNGs.

Together these parts form a theoretical foundation which will be used as the base of the empirical part of the study.

3.1 Why Do We Play Games

3.1.1 Definition of a Game

Games have been around for as long as we can remember, from ancient board games to today's mobile games. Most people have a pretty clear idea of what a game is, but to construct an unambiguous definition of what makes something a game is a difficult task. Salen & Zimmerman (2003) attempts to do this, and starts off by summarizing some of the many definitions of a game that are found in literature on the field. Each definition is found to have its strengths and flaws, often by either including some things that are not games and excluding things that most people regard as games. The authors note the strengths and flaws of different definitions, and provide their own following definition of what a game is:

A game is a system in which players engage in an artificial conflict, defined by rules, that results in a quantifiable outcome.

The authors point out that the definition is intentionally narrow, and acknowledge that it too has some borderline cases such as puzzles and role-playing games, which may or may not be considered games using the given definition.

This defines games in general, but what are social network games? As the name suggests, these are games that are played on a social network. There are, however, discrepancies in what games people considered SNGs. If all games that are playable within a social network service are SNGs, this would mean that a game of solitaire on Facebook is also an SNG. Or is it perhaps a requirement that the game puts the social graph to use for it to be called an SNG? There is no official definition, and the terminology for describing these games is not totally clear either. In addition to SNG, the term *social game* is another common way to refer to them. However, as the term social game also has other meanings, the term SNG will be used in this thesis to avoid confusion. So how can we define these games to clear up the confusion? Fields & Cotton (2012) has chosen to use the term *social games*, and provide the following definition:

A social game is one in which the user's interactions with other players help drive adoption of the game and help retain players, and that uses an external social network of some type to facilitate these goals.

This definition suggests that a game must encourage users to interact with one another, although not necessarily in real-time, to be considered a *social game*. The authors argue that player acquisition and retention are two of the most important aspects of games, especially for those using the *freemium* business model, which is referred to as *free-to-play* in this thesis. This definition also makes a distinction between games that provide their own social network, such as *World of Warcraft*, and games that use external social networks. However, with the ongoing shift to smartphones, where several architectures exist with their own native apps, some developers have chosen not to make use of an external social network in their games. Nevertheless, these games have the same social features and characteristics as SNGs, and will be categorized as such in this thesis. The main focus of this thesis is the techniques used in SNGs to retain and monetize users, and for this purpose only games using the free-to-play model will be studied.

3.1.2 Meaningful Play

What is it that makes some games fun to play, while other games just fall flat? One of the goals of successful game design is to create *meaningful play*. Salen & Zimmerman (2003) defines *meaningful play* as follows:

Meaningful play occurs when the relationships between actions and outcomes in a game are both *discernible* and *integrated* into the larger context of the game.

Meaningful play is contrasted with its opposite, *arbitrary play*, where no rules exist and actions are seemingly unrelated to each other. In order for a game to become meaningful, the actions the player performs must lead to some kind of quantifiable outcome in the game system, and give the player feedback on what effect the actions had. An example of arbitrary play would be a game where player input has no effect on the game world whatsoever, such as a screensaver on a desktop PC. It is probably safe to assume that most people would not consider this a meaningful game, if even a game at all.

Complexity is one of the factors that lead to *meaningful play*. As a game becomes more complex the number of possible outcomes increase, and this often leads to a more interesting gameplay. *Emergence*, which arises from *complexity*, is an important factor in creating an interesting game. The concept of *emergence* describes how even a game with relatively simple rules can still *emerge* into a game of vast complexity. For example, the rules for the Asian board game of *Go* are fairly simple, and apart from some special rules and the scoring system they can be learnt in a matter of minutes. Despite this, a game of *Go* can play out in an almost endless amount of ways, and mastering the game takes many, many years of tough practice. Due to the many possibilities in the game, there is yet no computer program that can beat even an intermediate player. This is precisely the type of phenomenon that the term *emergence* describes: how even the simplest rules can lead to a rich game consisting of many strategic decisions and possibilities. (Salen & Zimmerman, 2003)

3.1.3 Social Network Games

SNGs have reached a much broader audience than other digital games, and the player demographics differ as well. A study, done on behalf of game developer PopCap Games, revealed that 42% of all internet users in the USA had played an SNG during the last three months and that the average American player is a 41 year old woman (Information Solutions Group, 2011).

Many SNG players have never played digital games before in their life. There are numerous studies on what motivates players of digital games, but since SNGs are fairly new concept, not many studies have been done yet on what motivates SNG players specifically. Little is therefore known about how SNG players are using the games, and the major changes in player populations suggest that the behavioral predictors identified by previous studies need to be reexamined (Lee & Wohn, 2012). There are however a few theories that attempt to

explain the popularity of SNGs. Zichermann & Cunningham (2011), a book on gamification, suggests that most players tend to be looking to socialize, suggesting that the social part of these game are what separates them from other digital games. Radoff (2011) attributes much of the success of SNGs to the asynchronous playing style:

Although most games are still played in an order-dependent and time-consuming way, a large part of the success of the new wave of games on social networks is their compatibility with the increasingly asynchronous manner that you access the online world.

In contrast with package games, where it is often not possible to save your progress until you reach a certain saving point, SNGs typically allow the player to exit the game at any time and return at a later time without losing any progress. The gameplay in SNGs tends to be simplistic, with a high focus on clearing certain achievements and raising the score.

A closer look at gamification follows in section 3.2.

3.1.4 Slot Machine Mechanics

Several of the mechanics used in SNGs are often likened with gambling mechanics, especially by critics of the genre. Harrigan, et al. (2010), a paper suggesting that casual game developers have a lot to gain by studying known gambling mechanics, lists some of the similarities between slot machines and casual games. The paper starts out by saying that the most prominent similarities are the sheer simplicity of the gameplay and similarities in player demographics.

Regarding the gameplay, the authors argue that slot machines as well as casual games:

- Require little or no training or previous experience
- Require little time commitment although players can continue to play for hours
- Are quick and easy to play
- Offer instant rewards for play in terms of feedback

One of the major differences between gambling and casual games, however, is that casual games generally do not offer cash rewards to players and thus lack the incentive of playing to win money. The gamification framework attributes casual games' success despite this to the concept of *alief*, which is explained in section 3.2.4 below.

Harrigan, et al. (2010) lists the following seven design principles for slot machines:

Rewards include both financial pay-offs, but also auditory and visual rewards. The importance of sound effects is so apparent that slot machines nowadays use sampled sound effects of coins even when no coins are used on the machines. Even though auditory and visual rewards are common in casual games, they are underused.

Reinforcement schedules refer to timing of rewards. Positive reinforcement, in the form of many small wins, is important and affects player machine choice. On modern slot machines, players may win as often as every third time, even if the reward is small. It is also important that the reward comes immediately and is not delayed.

Non rewards: near misses are when the slot machine shows that the player was close to winning, perhaps by having two out of three numbers match up. This is a very effective mechanic, but one that is seldom intentionally included in casual games.

Non-rewards: losses disguised as wins are wins that are smaller than the amount wagered. Although the player actually lost money, they react as if they had won. Modern slot machines usually have more non-rewards than actual wins.

Illusion of control/skill is a part of slot machine gameplay by allowing the users to use a stop button, to quicker halt the reels' spinning. Players often attempt to press the stop button at a particular instant in order to affect the outcome of the spin, but in reality the stop button only allows them to see the already determined result faster. Nonetheless, this illusion of control makes the game more interesting to the player.

Bonus rounds have a guaranteed win, and are always a positive experience for the player. Slot machine players consistently rate bonus rounds as one of the biggest reasons to why they choose one game over another.

Competition involves competing against the machine, against oneself and against others. The gambler's fallacy that a big win is imminent on machines where no one has won recently leads to competition with other players on the casino floor. Leaderboards are also critical, as they create a meta-game around the slot machine, where players can compete with each other.

These slot machine mechanics, which have been heavily researched and are widely supported, could be incorporated in video game research. The authors note that video game researchers who seek out the properties that make video games fun or engaging often ignore these gambling mechanics and the empirical scientific work that supports it. (Harrigan, et al., 2010)

This research concerns casual games and not SNGs, but the two genres are closely related and these ideas are relevant for SNGs as well. As we shall see in section 3.5, similar techniques are indeed used in SNGs and studied in gamification. Perhaps proper execution of these techniques is one of the keys to successful monetization of SNGs.

3.1.5 Critique of SNGs

SNGs have been widely criticized, both in the west and in Japan, with their simple mechanics portrayed as being designed to milk as much revenue as possible from players. US market leader Zynga is often criticized of using immoral methods; from scamming users for money to blatantly copying game ideas from their competitors. In Japan as well, Japanese newspapers and magazines regularly publish columns criticizing the gambling-like mechanisms of Japanese SNGs and portraying players who have become addicted and spent a fortune on these games. Indeed, until the spring of 2012, Japanese SNGs were virtually unregulated despite their use of gambling-like mechanics.

3.2 The Gamification Framework

Gamification is the latest buzzword in the business world. The relatively new field takes game mechanics and designs and applies these in other areas, in order to facilitate a certain behavior or increase productivity. One such example is the introduction of leaderboards and point systems at work places in order to *gamify* the work environment, i.e. to make work more fun and to drive motivation. As is often the case with new buzzwords, the word gamification is used in different contexts referring to many different ideas, but the core concepts of the field remain the same.

Gabe Zichermann, CEO and founder of Gamification Co., as well as one of the most well know gamification proponents today, defines gamification in the following way:

[gamification is] The process of game-thinking and game mechanics to engage users and solve problems. (Zichermann & Cunningham, 2011)

Wu (2011b) gives a similar definition, and defines gamification as *the use of game attributes to drive game-like player behavior in a non-game context*. The author explains that gamification itself is not a game, and games need not be *gamified* since they are already games. As we shall see in section 3.2.6, however, even though gamification is not originally intended to be applied to games themselves, the close connection between gamification and SNGs makes the framework well suited for analysis of the latter. The presentation of gamification in this

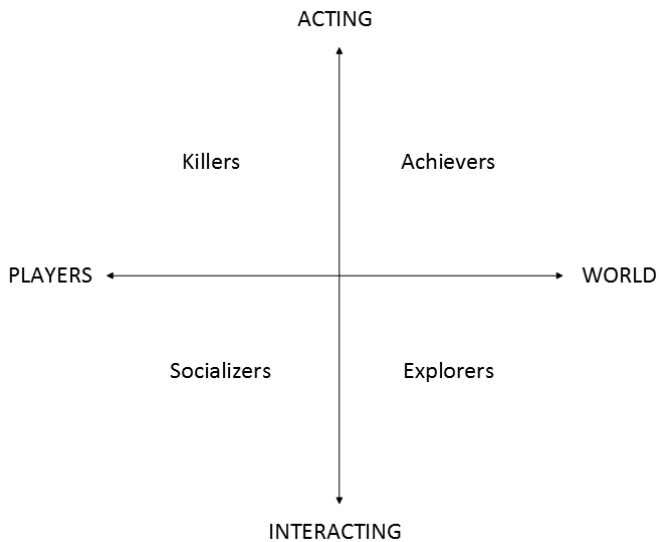
section, except for sections 3.2.6 and 3.2.7, is largely based on Zichermann & Cunningham (2011).

3.2.1 Bartle's Four Player Types

A common concept in gamification is that of Bartle's Four Player Types. It states that players can be largely divided into four subgroups which have separate motivations for playing, and therefore display different in-game behavior. The description of the Four Player Types provided in this section is based on Radoff (2011).

Richard Bartle, the inventor of the Multi User Dungeon (MUD), observed how players moved around in the game and noticed that players enjoyed the game in different ways. While some players focused on progress and becoming stronger in the games, others tended to focus on the social aspects of the game. Bartle eventually concluded that there were four main types of players, summarized in Figure 1 below. Bartle makes a difference between *acting*, doing things *to* someone or something, and *interacting*, doing something *with* someone or something.

Figure 1: Bartle's Player Interest Graph



Achievers are players who act on the world. They are motivated by a sense of mastery over the game world, and enjoy becoming more powerful and making progress.

Explorers are players who interact with the world. They want to learn about their environment and are interested in the game's story.

Socializers are players who interact with other players. They play the game in order to make contact with other people, and enjoy joining groups and gaining friends.

Killers are players who act on other players. The term originally described players motivated by their ability of making other people miserable, but often refers to players who enjoy head-to-head competition. These players like to be feared and appear on the top of leaderboards.

These player categories can help a game developer think about how different types of players interact with the game and are also frequently used in gamification in a similar manner. This system of four categories is simple to grasp and therefore easy to put to use, but critics argue that it might be too simplistic. Bartle later tried to overcome some of the model's shortcomings by creating a new model of eight player types. Radoff (2011), however, says that the new model might instead be too complicated and that it is often difficult to tell which category a player belongs to.

There have been many other attempts to rethink the Bartle model as well. Nick Yee, at Palo Alto Research Center, used survey data from virtual world games to analyze player behavior and identified three major drivers of player motivation: *achievement*, *social gameplay* and *immersion*.

Achievement is somewhat similar to what the Achiever of Bartle's model seeks. The player seeks progress, rewards and to win the game.

Social gameplay refers to socializing, relationships, teamwork, etc.

Immersion is what Bartle's Explorer seeks, to immerse himself in the gameplay and story.

Radoff (2011) points out that even though Yee's model is based on data, the data comes from players of virtual world games and is not necessarily applicable to SNG.

3.2.2 Flow

A concept sometimes used when trying to describe what makes games fun, is the concept of flow. Derived from the research of psychologist and theorist Mihaly Csikszentmihalyi, the state of flow is a state of mind where a participant feels a high degree of focus and enjoyment (Salen & Zimmerman, 2003). It is described as the state between anxiety and boredom, and often makes the participant lose track of time as they focus on the task at hand. For this state to be achieved, the challenge of the task must be closely matched with the skill of the participant; neither too easy nor too difficult (Zichermann & Cunningham, 2011). This

means that the difficulty of the game must continuously increase to match how the player's skill evolves.

3.2.3 SAPS

Zichermann & Cunningham (2011) derives a system of rewards, called SAPS, which can be used to engage users instead of using cash rewards. SAPS stands for status, access, power and stuff, and lists potential prizes ordered from the most to the least desired and sticky, as well as the cheapest to the most expensive. This section briefly summarizes the four categories as presented in Zichermann & Cunningham (2011).

Status

Status refers to the relative position of an individual in relation to others and is the most desired prize of all. In SNGs, status is often represented by game mechanics such as badges and leaderboards, which allows players to compare their progress with other players.

Access

The second most desired reward is that of gaining access to something that is restricted for others. Examples include priority seating or getting head start on sales.

Power

Giving your users the power of control over other players can potentially be used to have players work for free as a moderator, while being compensated with power benefits.

Stuff

Giving free items to users can be a strong incentive, but it is important to be aware of that as soon as the item has been given, most of the incentive is lost.

3.2.4 Alief

The SAPS concept describes what motivates players, but why do these offer value to a player when they only exist in a virtual world? After all, wouldn't the player's time be better spent trying to obtain the real world equivalents of these prizes? Zichermann & Cunningham (2011) looks to the concept of *alief* as a possible explanation for this phenomenon.

As initially described in Gendler (2008), the concept of alief explains how even though logically you are sure of one thing, some part of your brain sometimes still refuses to act according to your belief. One example of alief is the seemingly irrational fear of something that is known to be harmless, such as walking on the Grand Canyon Skywalk; a walkway with a floor made of five layers of transparent glass which extends 70 feet from the rim of the

Grand Canyon. Although the visitors *believe* that walking on the skywalk is perfectly safe, and that there is no way that they will fall, they *alieve* that it is potentially dangerous and find it terrifyingly frightening to walk on.

The phenomenon of alief could be what makes games work so well. In SNGs in particular, we can see how rewards that seemingly provide the player with no value in the outside world can still be appreciated as if they were the real thing. For example, in Zynga Poker, one of Zynga's most successful SNGs, players use real money to buy chips which are used in the game of poker to bet against other players. So far this sounds like any other online poker game, but the big difference is that Zynga Poker does not offer any way for players to exchange in-game currency for real currency. In other words, there is no way to trade your chips back in exchange for real money. Despite this, players apparently enjoy the same sense of gratification when they win in-game currency in a round of Zynga Poker as if they were winning real money. This phenomenon could be explained by the concept of alief; the player knows that their winnings have no real-life value, but still alieve that they have won a large cash prize (Radoff, 2011).

3.2.5 MDA Framework

Zichermann & Cunningham (2011) uses the MDA framework when describing gamification. The MDA framework is a tool used for analyzing and making games, developed at the Game Developers Conference in San Jose during 2001-2004. The framework attempts to analyze the design of a game by breaking it down into the following three parts:

- *Mechanics*, the basic components of a game such as rules, data representation and algorithms
- *Dynamics*, the run-time behavior of the mechanics acting on player input and each other's output over time
- *Aesthetics*, the desirable emotional responses evoked in the player such as joy and frustration (Hunicke, et al., 2004)

Game mechanics and dynamics are heavily used in gamification, but Wu (2011a) notes that there is often confusion between game mechanics and dynamics. He clarifies that game mechanics refer to the basic building blocks of a game, such as points and achievements, while game dynamics are how the player interacts with these mechanics, such as how and when the player gets rewards.

As previously mentioned, gamification is often associated with some of the more simple game mechanics often seen in games, such as points, achievements and badges. In contrast with digital games, since gamification is meant for building nonfiction experiences, things such as narrative structures are often ignored and focus is instead put on these core elements. (Zichermann & Cunningham, 2011) There are many examples of how utilizing such game mechanics have helped propel a service's success. Much of the success of the location-based social networking service Foursquare can be attributed to its use of game mechanics. Foursquare is a service that allows users to report their current location to friends who are also using the service. As an example, you could go to a bar, and report "I'm here" on Foursquare, and friends that are nearby can then see this and join you for a drink. One problem however, is that until the service becomes widely used, not many people are going to see your updates, and there is not much point in reporting your location unless you have friends that can see it. Foursquare managed to overcome this problem by making good use of game mechanics. The service lets users earn badges and mayorships by checking in at certain locations, which makes using the service interesting even if no one nearby is using it. As it turned out, people would check in at different places just to earn badges or to claim mayorship of a certain spot. (Zichermann & Cunningham, 2011)

A more thorough description of the most common game mechanics and dynamics used in SNGs is provided in section 3.5.

3.2.6 Gamification as an Analysis Framework

Though gamification was originally not intended as a framework for analyzing games, the idea of this usage is not new. Kōji Fukada, the president as well as one of the founders of Yumemi, a Japanese company active in mobile and IT, has written the book Fukada (2012) which attempts to explain the success of the largest SNG platform providers in Japan.

The first half of the book explains the gamification framework in detail, as well as how it can be used to analyze SNGs and the game design concepts used in them. In the latter half of the book, the provided framework is used to analyze two of the most popular SNGs in Japan, Tsuru Star by GREE and Kaitō Royale by DeNA. The book also features interviews with developers working at GREE and DeNA, providing valuable insight into the games' development. As analysis of SNGs using ideas from gamification is a large part of this thesis, the framework from this book is explained here, with the analysis of Tsuru Star used as an example.

Tsuri Star is a fishing game, where the player goes to different fishing grounds to try to catch fish. The actual gameplay is very simplistic and the player only has to click a button at the right time in order to advance. The game then makes use of point systems and achievements to create an interesting meta-game around this simple concept.

The following is a description of the framework used in Fukada (2012), which consists of the following seven parts:

Player classification

Based on Barter's Four Player Types, the game elements are analyzed to see what type of player they appeal to. The author also notes how the game adapts itself as the player advances to the higher levels.

Game goal/concept

The theme and goal are examined, and the game content is briefly explained.

Game objectives

This section covers the different in-game objectives which the player has to clear in order to advance. As objectives change throughout the game, they are analyzed separately for beginner, intermediate and advanced players. The author additionally breaks down the objectives for intermediate players into three parts: long-, mid-, and short-term objectives.

For example, in Tsuri Star, the different objectives an intermediate player seeks to clear are explained as follows:

Long-term goal: Proceed to the next fishing ground and catch new types of fish

Mid-term goal: Obtain a better fishing rod

Short-term goal: Score *Fishing Points*

The game is constructed so that the difficulty increases when the player advances to the next fishing ground. As the game becomes more difficult, the player must continuously get better fishing rods to be able to catch any fish, and better fishing rods can be bought with *Fishing Points*. This summarizes how a typical intermediate player might progress through the game, but as the author notes, the game offers many other options as well and the objectives are not always certain. For Tsuri Star, intermediate players may set other objectives as well, such as increasing their rank, looking for rare fish, completing their fish collection, etc.

As the player evolves into an advanced player, other objectives appear. There are fishing teams consisting of only high level players, and a player must show good results to be able to join a strong team. Some of the limited time campaigns in the game are only available to players who are in a team, and as the author notes, in a sense the social part of the game only begins once you reach this part of the game.

The author concludes the section with a graph which illustrates what objectives correspond to what player type in the Bartle model.

Visibility and Feedback

This section analyses what game parameters are shown to the user, and at what timing they are displayed. For example, the author makes note of how experience points and rankings are displayed at the end of each mini-game, making it clear to the player how they progress. The author also notes what parameters are *not* shown to the user, such as conditions for reaching the next rank. Visibility of game contents, such as unlocked parts of the game, social actions and feedback effects are analyzed in this section as well.

Social Actions

The author refers to all actions and elements of social nature in the game as *social actions*. This section of the framework analyses what actions, such as gifting and ranking systems, exist in the game. As an example, since the GREE platform does not use real names but instead makes use of the virtual social graph, explained in 4.2.4, you are generally not connected to your real life friends. The author therefore studies how gifting mechanics help newer players make contact with players they do not know. The author also looks into mechanics used to facilitate viral user acquisition, such as invitation mechanics and public player logs. The section is summarized with a graph placing the different available social actions on a plane illustrating what Barter player types they appeal to.

Play Cycle Design

The section begins with a thorough analysis of the initial tutorial in the game, and how the play cycle evolves as the player progresses. The author also identifies methods used by the developers to increase curiosity and eliminate misunderstandings, as well as how the difficulty of the game progresses. This is followed by a discussion of how the single-player and cooperative player cycles play out, and focuses especially on how elements discussed in previous sections are interlinked, e.g. how visibility is connected to player objectives.

Improvement and Operation

Based on interviews with the developers, this section describes how the game is improved upon based on problems found while studying KPIs. This includes continuous improvement of limited time campaigns, new features, and fine tuning of the game's inner workings.

This concludes the gamification based analysis framework used in Fukada (2012). As the focus of this study is on comparison of a larger number of games as opposed to deep analysis of a few games, it is not directly applicable here. The framework does however contain a lot of valuable analysis aspects which will be taken into consideration when constructing the analysis framework to be used in this thesis.

3.2.7 Critique of Gamification

While gamification is a big buzzword, the concept has also been widely criticized. The field's heavy focus on simple game mechanics such as points and achievements has led to the criticism that it misses the point of what makes games fun. Radoff (2011) puts it in the following way:

Yes, points are important. Badges can be helpful. Leaderboards are compelling. But these are simply the tools of game design; they don't tell you what makes games actually work.

Founder of Beijing based consulting agency Mention LLC Nils Pihl gives a similar critique:

[the proponents of gamification] have mistaken some of the least important parts of games – things like leaderboards, points, and badges – as the essence of games. (Pihl, 2012)

Sebastian Deterding, a PhD researcher at Hamburg University specializing on gamification, heavily critiqued Zichermann's take on gamification in a review of the book *Gamification by Design*. In the review he criticizes Zichermann's use of the original Bartle model which, although arguably useful, is not based on data but on personal observations. Some of the critique of the use of the Bartle model in gamification actually comes from Bartle himself. The model as it is used in gamification is said to be based on a misinterpretation of the original model and as the model is derived from the MUD community it is not necessarily applicable in other areas. Similarly, the SAPS model presented by Zichermann is criticized for not being based on research but personal experience. (Deterding, 2011)

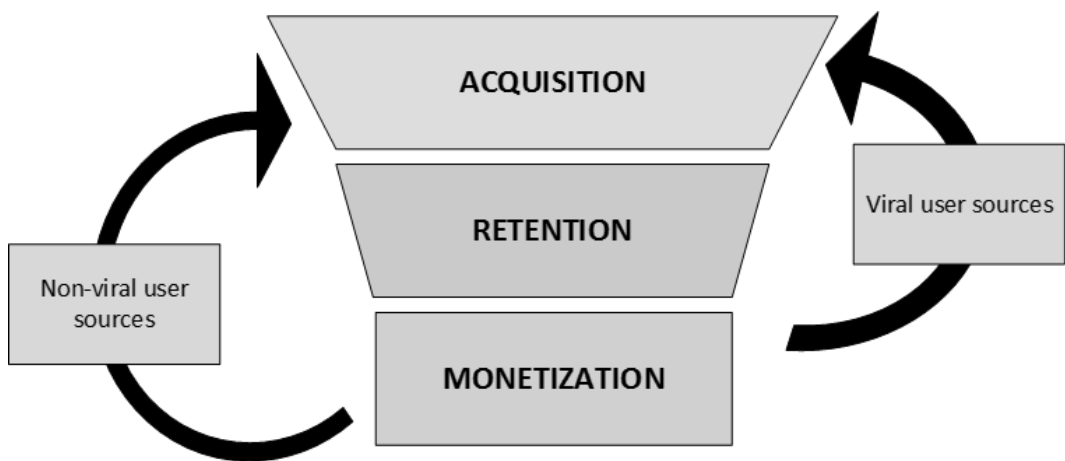
Benson (2011) points out that there appears to be two different disciplines in the field of gamification. One discipline, which Zichermann belongs to, advocates the use of gamification as a marketing tool to power up loyalty and engage users, without necessarily changing the product or service itself. The other discipline, instead advocates the use of

gamification as a means of improving existing products and services to provide a richer experience.

3.3 The ARM Funnel

The research company Kontagen has constructed a model called the ARM funnel for looking at social metrics in game development. The lifecycle of game development is seen as a three-stage system consisting of acquisition, retention and monetization. The original intent of the model is for it to be used to analyze the performance of a social network game using metrics, but it may also be used as a toolkit for developing and analyzing game design. This section contains a brief description of the original model and some of the metrics described for SNGs. This description of the model is based on Huang (2011) and Williams (2012).

Figure 2: Kontagen's ARM Funnel



The ARM funnel's primary usage is measuring user behavior and monetization. The model looks at how players interact with the game through the three stages *acquisition*, *retention* and *monetization*, and provides performance indicators for each stage.

The *acquisition* part of the framework looks at the process of generating new players for the game. More so than package games, SNGs usually require a large number of players in order to be profitable. In the ARM model, user sources are classified as being either viral or non-viral. Non-viral user sources include advertising, offer walls and cross promotion, whereas viral user sources refer to new users which have been generated by existing users. Common viral sources are invitation mechanics or word of mouth, and these usually do not generate

any extra cost for the company. One metric for measuring how well the game generates users through viral sources is known as the K-factor. The K-factor describes the growth rate and is the factor of how many additional users that are gained through virality for each new user. Obtaining a high K-value can greatly reduce the cost of user acquisition and clever usage of incentives for inviting friends are often used by game designers to increase virality.

Retention refers to how well a game can keep its existing users. Since SNGs keep getting revenue from active players through in-game sales, the longer paying users stick around in the game, the more profitable the game will be. One way of measuring how well the game performs when it comes to player retention is by studying player sessions. Common metrics include sessions per user and average session length. Another common measure is the retention rate, i.e. how many players have returned to the game within a certain timeframe. Additionally, average lifetime per user is a measurement of how long players stick around to play the game on average.

Monetization is the third part of the framework, which focuses on how much revenue is generated from the players. To measure how well a game monetizes, developers often look at metrics such as average revenue per user (ARPU) and average revenue per paying user (ARPPU). Since many players only play the game a few times and then abandon it, developers commonly only look at active users, measured as daily active users (DAU) or monthly active users (MAU). These metrics are therefore often referred to as average revenue per daily active users (ARPDau) and average revenue per monthly active users (ARPMau).

3.3.1 The ARM Model as a Development Framework

The ARM model's focus is on metrics that can be used in the three parts of an SNG's player lifecycle: acquisition, retention and monetization. In Fields & Cotton (2012), the authors instead choose to use this framework to explain different techniques used in SNGs to improve these metrics. By using the ARM framework, we get a structured way of looking at SNGs to understand how they work, and the framework is therefore used as a base for the following three sections which describe common game techniques in SNGs.

3.4 Player Acquisition

SNGs generally have much lower revenue per user compared to package games. This means that for an SNG to be profitable, it is important to acquire a large number of users, and the most successful games have well over ten million monthly active users. Fields & Cotton (2012) list the following common methods used by SNG developers to generate users.

Ads

Developers can generate new users by putting advertisements on websites or on social networks. On Facebook, this type of advertisement is frequently seen on the right hand side of the page.

Banner install ads

This is a common promotion method, and is a type of banner advertisement that is placed inside of other applications and games. By putting banners inside another game within the same genre, developers can be sure that the users will have at least some interest in the product.

Offer walls

Instead of using real cash to buy in-game currency, the players can sometimes earn currency by performing certain tasks. Examples of such tasks are installing a product or game, or signing up for a service. Once the task is completed the reward is paid out to the player, and the provider of the offer pays a fee to the game developer. However, since the player is often only interested in getting the reward and not in using the offer they signed up for, users obtained through this method tend to leave quickly. Offer walls are a common method for monetizing users, but can also be used in the reverse sense for player acquisition, by giving offers to players of competitor games.

Virality

By constructing the game so that users are willing to tell their friends about the game, a viral loop is formed. Each new user will in turn invite additional users, which leads to decreased marketing costs. Clever use of incentives for inviting friends is often used by game designers to increase virality.

Cross Promotion

Developers often want to keep users within their own network of games, especially larger developers and platform owners which have numerous titles. By putting banners and offers inside their games, developers can ensure that users also try out their other products.

3.5 Player Retention

Package games are traditionally sold as a package paid for up front. This means that the developer's revenue is not affected by how long player keep playing the game. One player could play a game every day for many years, while another player plays only once and then forgets about it. Regardless, these players will still have paid roughly the same amount for the

game, and how long they keep playing for does not affect the developer's revenue, at least in the short term. For an SNG using the free-to-play model there's no initial fee and revenue depends on having active players consuming in-game content or clicking on banner advertisements. This means that player retention is a very important aspect when it comes to how well a game monetizes. If you can keep players around for a long time, you can withhold a steady stream of revenue. This section summarizes some of the most common game mechanics and dynamics used in SNGs to make the player engage with the game. A large part of the design techniques used in SNGs presented here are taken from literature on gamification.

The design techniques are presented here in three categories. The first category, *progress systems*, looks into common mechanics used in SNGs to manage progress, and how this progress is conveyed to the player. The second category, *social aspects*, looks at how SNGs can be social and promote interaction between players. The third category, *feedback*, deals with feedback systems that are activated when the player completes an in-game objective. The final category, *Time-Based Limitations*, describes techniques and game dynamics used in SNGs to control the length of players' gaming sessions.

3.5.1 Progress Systems

According to Radoff (2011), all games involve progress, and a game without progress becomes stale and boring. An important design element in games is therefore how progress is managed and communicated to the player in the game. This part looks into some of the methods commonly used to manage progress and communicate this to the player.

There are of course many ways of managing progress in a game, but the ones presented here are some of the most common ones that are usually brought up in the field of gamification. Unless otherwise stated, the information in the following section is taken from Zichermann & Cunningham (2011).

Achievements

Often referred to as *badges*, and similar in nature to the merit badge system in the Boy Scouts, achievements are rewards awarded to players who fulfill the required conditions. Some achievements are earned by just playing the game in an ordinary fashion, such as an achievement for clearing the first stage. Other achievements require that the player does something extra, for example fetching every coin in a stage.

Surprise badges or *surprise achievements* are badges which conditions are unknown to the player. As the player is usually unaware of the badge's existence, the reward comes as a happy surprise. This type of badge is used by Foursquare where users will sometimes receive a badge, for example for signing in many times at the same spot, when they sign in.

The opposite, *predictable badges* or *predictable achievements*, are badges which conditions are made clear to the player beforehand. This provides objectives for the player and inspires them to explore parts of a game which they otherwise would not have bothered with.

Points

Whether visible or not, point systems are absolutely vital to a gamified system. The following are some of the point categories found in literature on gamification.

Experience points are the most important, as they represent how far you've gotten in the game. Every action in the game earns experience points and they usually never decrease, nor do they ever max out.

Redeemable points are a type of virtual currency, which the player can earn by performing certain tasks in the game. These points can then be used to buy virtual items within the game. In SNGs, developers often split the virtual currency into two categories called soft and hard currency. Soft currency can only be earned within the game, and has no direct connection to real world currency. Hard currency, on the other hand, is in-game currency that can be bought directly with real world currency (Fields & Cotton, 2012).

Skill points are directly related to some specific activity within the game. For example, these often appear in RPGs where the player has a set of different skills, and each of them has a different score.

Karma points are points that can be given to other players. They rarely appear in classic games, but are commonly seen in SNGs. The main purpose of this point system is to encourage certain behavior among your players. If you want players to thank each other, karma points can effectively be used instead of using virtual currency or gifts.

Reputation points are the most complex of the types listed here. Although not very often seen in games, they are used to represent how trustworthy a certain user is. One example is eBay's reputation point system, which indicates how reliable a seller is. Additionally, Fukada (2012) lists a point system similar in nature to reputation points that he calls *social points*. They take

many different factors into consideration and provide a measurement of how well a user socializes. Examples include *likes* on Facebook.

In addition to these systems, Fukada (2012) also adds *progress point*. *Progress points* accumulate as the player advances in the game. In RPGs, these are often represented by player rank, or level, and show how far the player has progressed in the game. Player rankings are also often based on this point system. Radoff (2011) describes this concept as well, but has chosen to refer to it as *levels*. A player's level usually increases after collecting a certain amount of experience points, and the requirements for reaching the next level usually increase for each level. This is to satisfy the player's need for gratification early in the game, but slows down as the player matures.

Leaderboards

Sometimes referred to as ladders or ranking systems, the purpose of a leaderboard is to make comparisons between players. Most games include some type of leaderboard to let the player know how they rank up against others. In addition to the classic top-10 lists in arcade games, leaderboards used today can be divided into two types, *the no-disincentive leaderboard* and *the infinite leaderboard*.

The no-disincentive leaderboard is a result of leaderboards being used as a tool for creating social incentive, and not disincentive. This is accomplished by putting the player right in the middle of the leaderboard, no matter what his absolute rank is. This gives the player an idea of who is behind him, and how close is he is to passing the person in front of him.

The infinite leaderboard solves the problem of only the top 10 or 20 players being able to fit into the leaderboard in a classic arcade game. By providing different categories of leaderboards, the player can see how he ranks up against other people in different ways. Some examples include social leaderboards, which show only your friends, and local leaderboards, which show people who are in your vicinity.

Levels

Levels are an indication of how far a player has progressed in the game. In games such as Ms. Pac-Man, advancement to the next level was clearly visualized in the game by changing the color of the ghosts and the layout of the maze, etc. The player typically advances to the next level after reaching the end of an area or clearing a certain task in the game. Level difficulty is typically not simply linear, but instead rises quickly for a while, for example at boss stages,

only to become easier again. Progress bars can be an important tool to visualize how close a player is to reaching the next level.

The *progress point* system explained in section 3.5.1 is sometimes referred to as levels. It is similar in nature to the level system explained in Zichermann & Cunningham (2011) as it is also an indication of progress, but differs slightly in that it refers to the level of the game itself as opposed to the player's level.

Onboarding

Onboarding is the practice of guiding new players in the beginning of the game in order to teach how the game works and is supposed to be played. The first minute of a game is the most important since that's when most of a player's decisions are made. SNGs are therefore usually designed in such a way that in the beginning only a few options are available to the user, often featuring a tutorial accompanied by a cartoon character explaining how to proceed. The number of options available to the user then gradually increases as the player advances.

Challenges

In order to progress, a player needs directions on what to do next in the game. By giving the player an objective in his playing, depth and meaning can be added to the gameplay. This is often solved by adding challenges, or quests, for the player to clear in the game. Challenges can be either single-player or cooperative. In a cooperative challenge, the player is dependent on other players to fulfill their part of the challenge in order to complete it. Cooperative challenges are more socially powerful, but are more difficult to build as they require that many players to work together.

Ideally there should always be a new challenge for the player to pursuit, and most SNGs feature *infinite play*. This means there is no clear final goal for the game, but instead the player is allowed to continue advancing and reaching higher and higher levels without end.

Zichermann & Cunningham (2011) recounts a phenomenon which became evident through United Airlines' frequent-flyer program. The company has a Million Miler program with lifetime benefits for important customers, but found that as people reached the one million mile mark, they tended to reduce or stop flying altogether. Since the long-time goal of reaching one million miles was already obtained, it appeared that some customers did not feel any need to keep flying anymore. To remedy this problem, the company later established two- and three-million-mile milestones to keep customers active. In the same way, most

players stop playing a game after the final boss has been beaten and the game has been cleared. Infinite play is one method for overcoming this type of problem.

3.5.2 Social Aspects

Zichermann & Cunningham (2011) says that socializers account for the majority of player types and motivational states, and there is therefore a need to combine game mechanics with social interactions.

As players perform social actions within the game, their emotions increase, and it is easier for them to enter the state of flow. One result of good social interaction in a game is called *goal change*. It refers to how when a player first enter a game, their primary goal of playing is usually the single-player part of a game; exploring, performing quests and gaining levels. But as the game progresses and social interaction becomes more and more important, the player's goal changes. The player now joins the game to play with other friends or team mates, and to socialize. The goal of playing the game has thus changed. (Fukada, 2012)

Radoff (2011) mentions some social aspects that can be incorporated into a game in order to improve player retention and virality. *Gifts* can be exchanged between players in order to deepen emotional involvement. The game may also give the player incentives to send *invites* to friends, which creates a viral user source for player acquisition.

Multiplayer is another important social motivator, and Radoff (2011) categorizes multiplayer social gameplay motivators into *competition* and *cooperation*. According to Salen & Zimmerman (2003), competition occurs *when players struggle against each other within the artificial conflict of a game*. According to the authors, a common criticism of games is that they are all competitive, and that this is something to avoid, ensuring a positive play experience. Salen & Zimmerman (2003) however argues that much of the meaning of a game derives from the competitive struggle. *Cooperation* is defined by Radoff (2011) as *when players interact with each other in a noncompetitive way*. Game functions that promote *cooperation* between players also help strengthen bonds and increase player retention.

Radoff (2011) also lists *special opportunities*, limited time offers available to some players, as a social aspect, and these are explained in the end of section 3.5.3 below.

3.5.3 Time-Based Limitations

Techniques for limiting the playing session lengths are commonly seen in SNGs. The purpose of this mechanism is to prevent the player from exhausting their interest in the game

in one sitting (Radoff, 2011). This in turn raises the probability that the player will return at a later time to continue playing, improving player retention. Game accelerators that overcome these time limitations are the most commonly sold items in SNGs as many players who are eager to keep playing are willing to toss in a small amount of money in order to get a few more minutes of play time. (Fields & Cotton, 2012)

The following is an explanation of three of the most common techniques of time limitation in SNGs.

Energy systems are a common technique for limiting the length of a playing session. Each action the player performs in the game costs energy, and as the player's energy drains to zero, the player has to wait until their energy bar is restored before they can continue. The energy is automatically restored if the player waits long enough, but the impatient player is usually given an option of buying more energy to avoid the wait.

Another common technique is making objects take a certain *time to complete*, forcing the player to wait. This is seen in farming simulators where players place crops, and then have to wait for a few minutes or several hours before they can reap the harvest.

Radoff (2011) also lists *cooldowns*, a time limit on how often certain actions in a game can be performed. Examples include powerful attacks in RPGs that have a cooldown time before they can be reused.

These are techniques to prevent the player from playing for too long in a stretch, at least without paying, but other techniques are used to make the player return at a later opportunity. Fields & Cotton (2012) mentions two such techniques. *Punishment for absence* is a technique where the player gets punished in the game after having been away for too long. One example is how crops often rot in farming simulation games unless they are reaped within a certain amount of time, forcing the player to return frequently. On the other hand, a game may instead *reward retention*, by giving free items to players who return regularly.

Yūki Naitō, founder and CEO of Tokyo based SNG developer Drecom, emphasizes the use of *limited time campaigns* as one of keys to success for Japanese SNGs. These are offers that are available for a limited time only, aiming to make players eager to participate. In Japanese card battle RPGs, these typically take the form of a special quest that can only be accessed during the time of the campaign. Players who clear the quest may receive a highly valued

card, which could be extremely hard to obtain without participating in the campaign. (Naitō, 2012)

3.6 Monetization

Most SNGs rely on the free-to-play business model, which is also the focus of this thesis. With the free-to-play model, players are seldom required to pay in order to keep on playing the game. SNGs instead rely on certain game mechanics to incentivize players to voluntarily invest money in the game. This section summarizes some of the ways that SNGs can monetize.

3.6.1 Seven Categories of Virtual Goods

The main method of monetization in SNGs is through the sale of in-game items. There are many different types of items that can be sold, from enhancement objects that make the player stronger, to avatar items that change the appearance of your in-game character.

Radoff (2011) categorizes virtual goods into seven different types described below.

Gifts are items players can gift to other players and they enable players to express emotion and gratitude. Gifts are sometimes bought for hard currency, but sometimes exist only to increase player-to-player interaction. Other types of virtual items may also be packaged as gifts.

Boosts and Power-Ups are items that give you an advantage in the game. The primary concern with these items is that they can compromise gameplay, as players can become stronger just by paying money. There should always be a way for non-paying customers to, although with effort, reach the same results as paying ones.

Personalization and Creativity are goods that allow you to customize your in-game appearance. Sometimes these also double as *boosts and power-ups*.

Play Accelerators are items that can speed up how fast the player advances in the game by overcoming session limits. Examples of play accelerators include selling energy, or instant completion of buildings to shorten waiting time. As explained in section 3.5.3 on time-based limitations, SNGs commonly limit the length of gameplay sessions. Games can then monetize from players who are willing to pay a little extra to gain more play time. Most games that implement *energy* systems also allow players to buy more energy for real world

cash to recharge. Similarly, games that include objects that take *time to complete* may give players the option of finishing the object instantly in exchange for hard currency.

Collectibles are items that belong to a collection of items and exist only to be collected.

Expansions are extra content for the game that can be bought separately. This type of virtual goods is not common in SNGs today.

Trans-media content is packaged content from other types of media. One example is Crowdstar's collaboration with Bon Jovi to include the band's greatest hits in their game Happy Aquarium.

3.6.2 Sell Real World Items

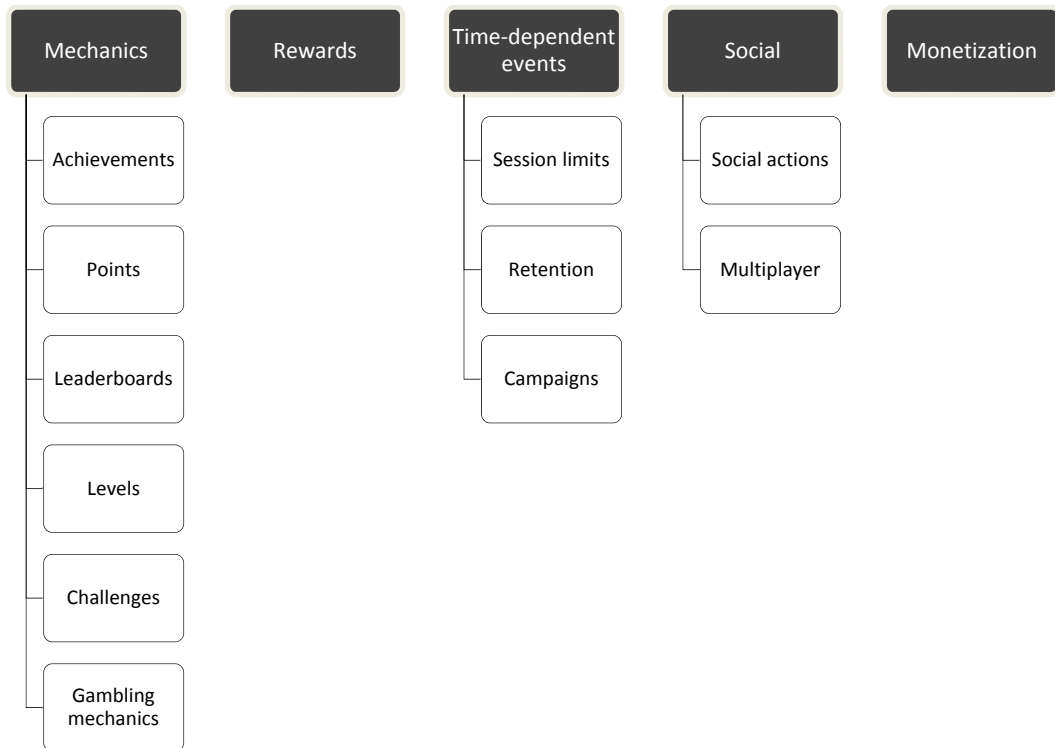
Some successful games may also monetize by selling goods outside of the gaming world. In Japan, there are examples of ties that have been turned into TV shows, cartoon series as well as sales of character goods.

3.7 Analysis Model

The analysis model used in this thesis incorporates ideas from the different fields presented in the theory chapter so far. The model is mainly based on gamification but also looks at reward schedules and mechanics found in slot machine research, as well as SNG specific techniques found in literature on SNGs.

This thesis aims to explain the relatively high revenue per user that Japanese SNGs achieve, and therefore only looks at what is referred to as *retention* and *monetization* in the ARM funnel. Player *acquisition*, while undoubtedly an important factor for monetizing a game, does not immediately affect revenue *per user*. Furthermore, player acquisition often takes place outside of the game itself, through advertising and cross promotion, making it difficult to analyze without inside information on the game's performance.

Figure 3: Visual representation of the analysis model



The framework analyzes the game from five aspects: *mechanics*, *rewards*, *time-dependent events*, *social*, and *monetization*, described in detail below.

3.7.1 Mechanics

As the name suggests, this part of the model focuses on the game mechanics that are used in the game. Six different mechanics from section 3.7.1 are identified and studied.

Achievements

What types of achievements are available in the game, and how are they presented to the player? Does the game feature *surprise achievements* and/or *predictable achievements*? The distinction between *challenges and quests* and *achievements* is however not always clear. In this analysis, a task with certain requirements, known or unknown, that can be completed and *gives the player at least one unique purely decorative reward that can be viewed later*, is categorized as an *achievement*. In other words, what separates quests from achievements is that achievements reward the player with a decorative item that shows that the achievement has been accomplished.

Achievements are also typically not required to clear in order to advance in the game, but are an optional bonus features. Tasks that only reward the player with items that have functions in the game are instead categorized as *challenges and quest*.

Points

What point systems exist in the game? Can these be categorized as *experience, redeemable, skill, karma, reputation* or *progress points*?

Leaderboard

Does the game feature leaderboards and if so, what type? Is it possible to categorize them as *no-disincentive* or *infinite leaderboards*? Does the leaderboard show all players, or is it a *categorized leaderboard*?

Levels

Does the game have a level system and if so, what form does it take? How do levels progress throughout the game?

In literature on gamification, there is often no clear distinction made between player levels, called *progress points* above, and *game levels*. In this analysis framework, players' level points are covered in the point section, and game levels under *levels*.

Challenges

What challenges are presented to the player and how do these change as the player advances?

What makes something a challenge is not clearly defined in the literature, and in the analysis this section will be used to list the main objectives for the player in the game.

Gambling mechanics

Does the game feature gambling mechanics like *gacha*, or other *slot machine* like systems? If applicable, it will also be noted if any of the mechanics, such as *illusion of skill*, from section 3.1.4 are used.

In this analysis, a gambling system is defined as a system where the player must pay either soft or hard currency to play, and where the outcome of the payment is based on randomness.

The concept of *onboarding*, presented in 3.5.1, mostly concerns new users, and since this study focuses on monetization of active users it will not be looked into in detail.

3.7.2 Reward system

As described in section 3.1.4 on slot machine mechanics, rewards and reward schedules are powerful when it comes to motivating players. This part of the model looks at what type of items the game rewards the player for various achievements. If possible, the game's most powerful reward is also noted.

3.7.3 Time-dependent events

This part looks at game dynamics that depend on when the player accesses the game, as described in section 3.5.3. There are three sections: *session limits*, *retention* and *campaigns*.

Session limits

Does the game feature a system that limits player session time? Is there an *energy* system? Are there objects with *time to completion* or *cooldown*?

Retention

Does the game have a system that incentivizes players to return regularly to the game? Does the game *reward retention* or *punish absence*? If the game does reward retention, it is noted whether the rewards given to the player are accumulative, i.e. whether the rewards increase if the player return more often.

Campaigns

Does the game regularly hold *limited time campaigns*? What type of content do these campaigns offer? Are there *game content campaigns* featuring new content and challenges for players? What rewards are offered to players who participate?

Are there *sales campaigns*, where fee-based items are temporarily offered at a discount price?

3.7.4 Social

The social features of the game as described in 3.5.2 are analyzed in this part. It is divided into two sections, *social actions* and *multiplayer*.

Social actions

What social actions are available to the player? For example, are there *gifts* and *inviting*? What are the benefits of having friends in the game?

For gifting, does it cost the giving player anything to send the gift? Gifting that the player can perform freely without cost will be referred to as *free gifting*. On the contrary, gifting that

cost in-game currency or are reduced from the giving player's inventory will be referred to as *item gifting*. Does gifting reward the giving player, the receiving player, or both?

Multiplayer

Does the game feature multiplayer? Is there *cooperative play*? Is there *competitive play*?

Competitive play is a struggle between players, interpreted here as gameplay where one player's actions can negatively influence other players. Cooperative play is multiplayer that is non-competitive, where it is advantageous to cooperate with other players.

3.7.5 Monetization

Which of the seven categories of virtual goods from section 3.6.1 can be bought in the game?

The seven categories of virtual goods are *gifts, boosts and power-ups, personalization and creativity, play accelerators, collectibles, expansions* and *trans-media content*. It will be noted if these items can be bought directly, or have to be won through some kind of gambling system. *Gifts* will only be listed in this section if there are special items that can be bought for the purpose of gifting to another player.

There are sometimes *boosts and power-ups* that belong to a set and can be thought of as collectibles. However, these have other uses than collecting, and will not be categorized as such. *Trans-media content* only covers digital items that are sold within the game and not things such as character goods from the game, as these do not affect the games monetization directly.

4 Empirics

4.1 Introduction

While Japanese and Western SNGs have their similarities, each market also has its unique characteristics. One of the most obvious differences is what game genres are the most popular. Japan's most popular genre, card battle RPGs, was up until recently almost non-existent on the US market. Gaming platforms differ as well; while Western SNGs are typically played on Facebook using a PC, Japanese players use their mobile phone to play games on dedicated gaming platforms. There is also a supposed difference in revenue; the Japanese games reportedly see average revenue per user multiple times higher than US games.

There are two possible factors for the high revenue of Japanese games. Either there is a market difference, such as consumer behavior, or the difference lies in the products themselves. Market differences have so far been the leading explanation for this difference, but recent developments suggest that perhaps this is not the entire truth. To better understand what factors are involved, this part of the study starts off with a market study, where the current state of SNGs in both markets is presented. The market analysis is followed by a comparative study of Japanese and US games, followed by a presentation of the results of the study.

4.2 Market Analysis

This market analysis looks broadly at the Western and Japanese SNG markets, in order to understand how SNGs are played on that market and if there are any key differences.

The market analysis is divided into five sections. In the first section, Player Demographics, the player demographics of the two markets are analyzed, and differences between them are identified. This is followed by Difference in Revenue, an analysis of the average revenue on the two markets, with the aim of establishing whether there really exists a large difference. This section also covers the performance of Japanese games that have been released on the US market. The third section, Global Push of Japanese Developers covers the latest developments where Japanese developers have entered the global market and whether they

have been successful or not. In the following section, Virtual Social Graph vs. Real Social Graph, a key difference in the usage of the social graph between the two markets is explained. The final section, Gambling Elements of Japanese SNGs, explains some of the gambling systems which are commonly seen in Japanese SNGs.

The market analysis is based on scientific articles, news articles, books on SNGs, blog articles and a personal interview.

4.2.1 Player Demographics

One possible explanation for the difference in SNG revenue between Japan and the West could be demographical differences between Japan and Western players. This section briefly examines some of the data available on people playing SNGs. There is not much data available on the Western world as a whole, but since several of the largest SNG developers in the West are US companies, data from the US market will be used.

One often cited study about the US market is the 2011 report done on social gaming on behalf of PopCap Games. The US part of the study is based on a web survey with around 800 respondents. The study found that the average age of an SNG player in the US is 41.2, where 54% of the players are female and 91% of the games are played on Facebook. The study does however not include SNGs for mobile phones as one of the possible answers. The most popular titles found in the study include Farmville, Bejeweled, Mafia Wars, CityVille, Café World and Texas Holdem. (Information Solutions Group, 2011) There are over 450 million players on Facebook alone and the US market was estimated to surpass 1.14 billion US dollars in 2011. (Lee & Wohn, 2012)

In Japan, marketing consulting firm Gameage estimates that around 60% of the players on leading gaming platforms GREE and Mobage are male. (Ikeda, 2012a) Of paying users, the majority are in their twenties, while players in their 30s and 40s make up 22% and 23% of users, respectively. (Ikeda, 2012b)

Although Japan appears to have slightly larger proportion of young players, the demographics of the two markets are fairly similar, with players from all age groups and both genders.

4.2.2 Difference in Revenue

How do the Japanese games compare with their US and western counterparts when it comes to revenue? The SNG industry in Japan is very successful, and has grown by several hundred

percent every year since the start in 2007. Estimates of market size differ widely, but one source approximates that the market has increased from 60 million USD in 2008 to around 1.7 billion in 2010, and predicts continued growth. (Yano Research Institute, 2012) It is believed that the Japanese games generate more revenue per user than SNG developers in the US, and this is commonly explained by market differences between the countries. The Tokyo based consultant Serkan Toto, who specializes in the Japanese SNG industry, lists 14 reasons for how Japanese developers manage to monetize better than Zynga. Many of these are indeed market differences; such as Japan being a gaming nation with digital games being part of the culture, and that Japan is a mobile nation where games are mainly consumed on mobile phones. Other market related reasons include that Japanese players are more acceptant of paywalls, that Japan is a wealthy country, the possibility of making payments easily through carrier billing, as well as pre-installation of games on mobile phones. (Toto, 2012b)

Some Japanese developers, however, do not fully believe in these market based explanations. Hironao Kunimitsu, CEO of leading Japanese SNG developer Gumi, stated during his Tokyo Game Show 2012 presentation that he does not believe in the explanation that difference in markets is the reason that social games have been so successful in Japan. Instead, he says that contrary to the US, where Zynga has had an almost monopolistic position, the intense competition on the Japanese market has led to higher average revenue per paying user. (Imai, 2012a) Eiji Araki, senior vice president of social games at GREE international, believes that Japanese and western players are basically the same, instead attributing the success of Japanese games to how the games are designed:

[...] one of the big differences between the US market and Japan's is that in Japan there are many games in the mobile-social industry [and they have] many integrated social features. Not just gifting or adding friends, but competing or cooperating to achieve a common goal. I believe deeply connected social features encourage the player to continue to play with their friends and pay money to compete against other players or help their friends. That helps Japanese social games be successful. (De Vere, 2012)

In an interview, Yūki Naitō, CEO of the Tokyo based social application provider Drecom, suggested that the in-game campaigns in SNGs differ a lot between Japan and the US. In the US, a campaign is usually a sale where items are offered at a discount price for a limited time, whereas in Japan, a campaign typically consists of new content provided for free in order to encourage players to engage more in the game. (Naitō, 2012)

Many Japanese developers are now releasing English language versions of their success titles as well as new titles on the Western market. The game *Rage of Bahamut* by Cygames, released on DeNA's Mobage platform, has been particularly successful, with over five million registered users and a number one spot on the top grossing charts on both the Apple App Store and the Android Market. (CyberAgent, 2012) So how do the Japanese titles released in the US perform compared to their US competitors when it comes to monetization? Average Revenue per Daily Active User (ARPDau) varies widely between different genres and from game to game, but the expected ARPDau for the US market is about 0.01-0.10 USD (Casual Games Association, 2012). US market leader Zynga reported an ARPDau¹ of around 0.05 USD for Q3 2012 (Zynga, 2012). Many Japanese developers with titles released in the US market report an ARPDau much higher than the Western market average. Platform provider DeNA reports that four of their hit titles released in the US on the Mobage platform, including *Rage of Bahamut*, have achieved an ARPDau higher than 1 USD (DeNA Co., Ltd., 2012b). DeNA's main competitor GREE has arguably been less successful on the US market, but nevertheless reports having reached an ARPDau of around 1 USD for some of their games (GREE, Inc., 2012).² If these numbers are accurate, it would mean that the Japanese developers are seeing ARPDau up to 20 times as high as the US market leader Zynga. It should be noted however that the games are released on different platforms, as the Japanese titles released in the US are games for mobile phones.

Data from the Android Google Play Store also indicates that the Japanese games monetize well, although there is only data on rankings and no actual numbers. On the US Google Play Store, the Android version of *Candy Crush Saga* reached second place on the top grossing list on January 14 2013, following *Rage of Bahamut* which held the top spot. However, while *Candy Crush Saga* ranked 14 among the top free apps, *Rage of Bahamut* was ranked 295. This suggests that *Rage of Bahamut* is downloaded much less than *Candy Crush Saga*. Despite this, the game sees higher revenue than *Candy Crush Saga*, indicating that the game monetizes better.

¹ Reported as average daily bookings

² The report is not clear on what market an ARPDau of 1 USD was reached, but based on context most likely refers to the US market

Although some Japanese games have been successful in the US as well, the behavior of US players does seem to differ slightly from the Japanese. Naohito Shimomura, game director at GREE Japan, says the following regarding market differences in an interview:

In Japan, we set pricing and balance the games in a way we think is suitable for here, but the response to those elements differ overseas. We might launch the game with the same specs and parameters, but the KPIs that come back are very different. (Tanaka, 2012)

Director Akihiro Iino of Cygames has also stated that the company notices differences between how players in the two markets behave. Although the user demography is similar to that of Japanese players, from late 20s to early 30s, it seems that Western users enjoy the battle part of *Rage of Bahamut* more than Japanese players. He says that not much tuning has been required to adapt *Rage of Bahamut* for the US market, and that the often heard claim that since Americans do not travel by train, they will not play social games to kill time is just an urban legend. Compared to Japanese players, western players do however seem to play for longer sessions, according to Iino. (Imai, 2012b)

4.2.3 Global Push of Japanese Developers

With the Japanese market becoming saturated, more and more Japanese developers are expanding globally. Both leading platform providers GREE and DeNA have already launched their gaming platforms across the world and are continuously pushing out new titles.

GREE showed that they were serious about the US market when they acquired the smartphone gaming platform OpenFeint in the first half of 2011. Together with the users gained through the OpenFeint acquisition, GREE reached 150 million registered users and became the largest mobile platform in the world. As a part of their global expansion, GREE also made a deal with instant messaging giant Tencent in China, and SK Telecom in South Korea, and are continuously establishing new offices in major cities all over the world (Sano, 2012b). Meanwhile, rival DeNA has not been idle either. DeNA's Mobage platform is currently available on Western markets as well as in China and South Korea. In China, the company has signed partnerships with leading social networking service Renren, micro-blogging service Sina Weibo, and web portal provider NetEase. In the US, DeNA made news through the acquisition of the American game publisher Ngmoco for up to 400 million USD, their biggest acquisition thus far. DeNA report that they have already had several hit titles in the US, and hold that well-tried game mechanics used in Japan such as continuous in-game

events and limited campaigns, can significantly improve metrics overseas as well (DeNA Co., Ltd., 2012a) (DeNA Co., Ltd., 2012b).

With the two leading Japanese platforms now available in the West, it has become easier for Japanese social application providers to release titles internationally. Many well-known developers such as Cygames, KLab and Drecom have already released English language titles in the US on either Mobage or GREE. Some developers, such as GungHo with their successful smartphone game *Puzzle & Dragons*, chose not to utilize the GREE or Mobage platforms, but instead released the game on their own without the help of a platform.

The Japanese games have generally received poor reviews by critics, often due to their simplicity, in-browser gameplay, and lack of sound. One reviewer criticizes GREE's *Driland* and Cygames' *Rage of Bahamut*'s lack of traditional gameplay, calling the former "immensely disappointing" (Davison, 2012). Indeed, these games are hardly pushing the limits of what can be done on smartphone devices, but instead focus on simplistic gameplay and gambling like mechanics. On the other hand, as SNGs are becoming more and more advanced, with better graphics and higher specs, they are moving closer to other digital games. While game reviewers, who often criticize social games for being too simple and uninspiring, are usually in favor of these improvements, others have raised a voice of concern that this development might lead to making the games less attractive to the new audience of casual gamers, again making the games attractive only to traditional gamers (Sano, 2012a).

The presence of Japanese games on the US market is apparent nonetheless. In September 2012, Japanese titles held five out of the top ten spots in the Google Play top grossing games category (Komoriya, 2012). The most successful title so far is undoubtedly the card battle game *Rage of Bahamut* by Cygames, with the English language version reaching 3 million users in October 2012. The game reportedly sees similar ARPDau in the US and Japan, and may be making as much as 100 million yen, or roughly one million dollars, per month on the Android platform alone, according to the Japanese leading economic newspaper *Nikkei* (Shin, 2012).

4.2.4 Virtual Social Graph vs. Real Social Graph

Apart from the devices that games are played on, the Western and Japanese SNG platforms also differ in how their social graph is formed. Facebook, currently the leading platform for SNGs in the West, strictly enforces real name registration. This means that most Western SNGs make use of the *real* social graph. A *real* social graph consists of friendships and social connections stemming from real life. In Japan, however, the leading SNG platforms use

anonymous registration, which means that players are usually not connected with their real life friends, which forms a *virtual* social graph. The virtual social graph typically contains people who only know each other from within the gaming platform.

Serkan Toto, a Tokyo based consultant focusing on Japan's social gaming industry, explains the concept of the virtual social graph. The main elements of Japanese SNGs are not social actions such as sending messages to each other, so there is no need for other players to be your real friends. According to Toto, the two leading SNG platform providers in Japan, GREE and DeNA, employ hundreds of people screening messages to prevent people from revealing their real identity, and to keep the platforms anonymous. One reason for this concerns player safety, but another reason is that players can play without letting their friends and acquaintances knowing about it, and without fearing that unwanted requests and notifications are sent to them. (Toto, 2012a)

4.2.5 Gambling Elements of Japanese SNGs

A characteristic feature of Japanese SNGs, found in a large number of titles from various developers, is a gambling-like mechanism called *gacha*. The term *gacha* comes from the Japanese word *gacha-gacha*, an onomatopoeia referring to capsule-toy vending machines. When buying something from a capsule-toy vending machine, the customer inserts a coin and turns the handle. When the handle is turned, a random item from the machine comes out, and the word *gacha-gacha* mimics this rustling sound that the machine makes when you rotate the handle. Many Japanese SNGs have a virtual version of this machine, where the player spins the *gacha* and gets a virtual item in return. Typically the player is given a free spin each day, but must pay a fee for extra spins. There are also *special gacha*, or *premium gacha*; *gacha* machines which only include certain rare items and require hard currency to spin. The *gacha* system encourages players to return daily to get their free spin, while also providing an opportunity to monetize from players who are willing to pay extra for the chance of getting a rare item.

Different items in the *gacha* appear at certain probabilities, making the *gacha* system a type of lottery. Despite these lottery-like mechanics, online games were for a long time unregulated by Japanese gambling law, creating a lawless zone where developers were able to set prices however they pleased without disclosing the probabilities of winning. Theoretically, a social game maker could claim that a certain rare item can be obtained by spinning the *gacha*, but set the probability of it appearing close to zero, without breaking any laws. Setting

the probabilities of winning too low, however, will likely lead to players abandoning the game in favor of competitor products.

In contrast, the popular Japanese gambling facilities *Pachinko* parlors are strictly controlled by Japanese law. Pachinko is a popular form of gambling in Japan using mechanical balls which fall down a course creating wins for the player if they reach certain locations, perhaps most similar to Western slot machines. Pachinko laws define lower boundaries for winning probabilities and maximum costs per play, restricting how much a player can spend per month gambling. Although similar in concept, the gambling mechanics of social games were not restricted at all. This led to harsh critique of social games; with a constant stream of news articles portraying addicted players spending thousands of dollars per month. The gacha system in particular has been the target of this critique, as it is said to stimulate the gambling spirit of players and taking advantage of a loophole in the law where virtual items are not regulated.

A special type of gacha called *kompugacha*, or complete gacha, evolved from the gacha mechanic. This special gacha contains rare items which are part of a series, which can typically only be obtained by spinning the gacha. However, the player must obtain all items in the series to complete the collection and make it valuable. The more cards from the series a player has, the stronger the incentive to keep spinning to complete the collection, but at the same time the probability of obtaining the remaining cards decreases as the collection nears completion. Even more so than the regular gacha, this *kompugacha* stimulates the gambling spirit of users, and led to further criticism of the usage of gambling elements in the Japanese SNG industry. In spring 2012, the Japanese government took a stand against this, and effectively banned *kompugacha* in all Japanese games, but continued to allow regular gacha.

After the Kompugacha incident, five major players on the Japanese market, including platform operators GREE, DeNA and Mixi, got together to form an industry council, which later became the association JASGA, to discuss how to avoid further regulation. The council agreed to set up self-regulatory measures which affect all developers releasing games on these platforms. The regulations not only ban *kompugacha* and similar mechanisms but also force game makers to display probabilities of winning items. It is unclear how much these new restrictions affected the profitability of Japanese developers, but it is generally believed to have been a large blow.

Following the ban of *kompugacha*, some Japanese game developers have introduced a new gacha system called *box gacha*. The system functions as a virtual box, unique for each player,

which is filled with items of varying degree of desirability. The quantity of each item is made known to the player beforehand, and can be viewed at any time. The player spins the gacha, and a random item is removed from the box and rewarded to the player. This means that if the player draws a less desirable item, the probability of getting a better item on the next spin increases. This gives players the incentive to keep spinning the gacha regardless of whether they are winning or not. Most box gacha systems also give the player the option of resetting the box to fill it up with its original content again.

4.3 Comparative Study

In this comparative study, six Japanese games and six Western games are analyzed using the analysis framework constructed in the Theory chapter. The results of the study are presented in section 4.4.

4.3.1 Analysis method

In this comparative study, twelve SNGs were tested directly by playing the games and analyzing them using the analysis framework from the theoretical part of this thesis. The game testing lasted for a month, from December 10, 2012 to January 10, 2013.

In order to make it easier for new players, SNGs often use onboarding, which hides features from low level players and increasingly unlocks them as the player advances. In order to analyze all features of the games, the tested games were played at least until all key features were believed to have been unlocked. In addition to hands-on testing; game manuals and online guides were also used throughout the testing to minimize the risk of certain features being overlooked. When possible, both single-player and multiplayer gameplay were tested, and all available features of the game were explored.

However, for some games, a different playing style emerges as players become high level players. Examples include joining or forming restricted teams for high level players only, and working together to complete advanced quests. Reaching the advanced stage of a game often requires several months of frequent playing, and is therefore beyond the scope of this thesis.

All Japanese games tested in the study are the Japanese market version of the game.

4.3.2 Game Selection Criteria

This study aims to compare market differences between Japan and the West. It is therefore important that the tested games are representative of their market, and that a broad range of

games are tested. Because the Japanese and Western markets differ regarding platforms, devices and popular genres, different selection criteria were used for the two markets.

Given the time frame for this project, twelve games was deemed a reasonable number as it allows each game to be thoroughly tested, while still having enough games to be able to identify market differences and not only differences between individual games.

Western Market

As mentioned in section 4.2.1 on Player Demographics, Facebook is by far the dominant platform for SNGs in the West, and only Facebook games have been selected for the Western games in the analysis. Instead of just choosing the six top ranking games on Facebook, games were handpicked in order to get a variety of games of different genres and developers. However, all of the selected games were among the top 20 games on Facebook by MAU, and had over ten million monthly users as reported by Facebook. At the beginning of testing, leading developer Zynga had 11 titles with over 10 million monthly average users, but to avoid that the list of tested games was dominated by Zynga titles, a maximum of two titles per developer were chosen.

Japanese Market

Mobile phone games are by far the most played SNGs in Japan, and only mobile phone games were tested in this study. Many games can be played directly inside the phone's web browser, and do not require a native application to be installed. For Japanese games, both iOS, Android and in-browser games were selected and tested. All games were tested using an iPhone, and when possible the Android version was also tested. On the Japanese market, there are several SNG platforms competing for the top position. Mobage and GREE are the leading platforms at the moment, but there are also SNGs not using any platform at all. The game design and social features of these games that do not use a platform are very similar to those of SNGs that use the leading platforms, and these games are also categorized as SNGs for the purpose of this study. To get a varied selection of games on the market, games from Mobage, GREE as well as games not using any platform were selected.

In order to make sure that the tested games have a stable monetization, long-running games that have managed to maintain a large number of users for a long time have been selected in favor of newer games. As on the Western market, games were picked so that games from different genres and made by different developers were tested. All of the tested Japanese games are the Japanese market version of the game.

4.3.3 Game List

Western market

Title	Developer	Genre	Platform
FarmVille 2	Zynga	Simulation	Facebook
ChefVille	Zynga	Simulation	Facebook
Candy Crush Saga	King.com	Puzzle	Facebook
Diamond Dash	Wooga	Puzzle	Facebook
Angry Birds Friends	Rovio	Action Puzzle	Facebook
Bubble Witch Saga	King.com	Action Puzzle	Facebook

Japanese Market

Title	Developer	Genre	Platform
Rage of Bahamut	Cygames	Card Battle RPG	Mobage
Kaitō Royale	DeNA	RPG	Mobage
Tsuri Star	GREE	Simulation	GREE
Chokotto Farm	Drecom	Simulation	GREE
Puzzle & Dragons	GungHo	Puzzle	None
Kakusansei Million Arthur	Square Enix	Card Battle RPG	None

4.4 Results

This section summarizes the results from the comparative game analysis. Table 1 provides an overview of what features were found in the tested games, and is followed by a more in-detail explanation of the findings for each item from the analysis framework.

The complete results of the study can be found in Appendix A and B.

Table 1: Summary of results

	Angry Birds Friends	Bubble Witch Saga	Candy Crush Saga	ChefVille	Diamond dash	Farmville 2	Chokotto Farm	Puzzle & Dragons	Kaitō Royale	Kakusansei Million Arthur	Rage of Bahamut	Tsuri Star
	West						Japan					
Predictable Achievements	●	●		●		●	●	●	●			
Surprise Achievements	●					●	●					●
Experience Points				●	●	●	●	●	●	●	●	
Soft Currency		●	●	●	●	●	●	●	●	●	●	●
Hard Currency		●	●	●	●	●	●	●	●	●	●	●
Skill Points									●	●	●	
Karma Points												
Reputation Points												
Friendship Points				●			●	●	●	●	●	
Progress Points				●	●	●	●	●	●	●	●	●
Infinite Leaderboard							●	●	●	●	●	●
Non-disincentive Leaderboard												
Categorized Leaderboard	●	●	●	●	●	●				●	●	
Levels	●	●	●				●	●	●	●	●	
Challenges	●	●	●	●	●	●	●	●	●	●	●	●
Random elements	●	●					●	●	●	●	●	●
Hard Currency Gambling							●	●	●	●	●	●
Session Limits		●	●	●	●	●	●	●	●	●	●	
Reward Retention	●		●				●	●	●	●	●	●
Reward Retention Accumulatively	●		●				●		●	●	●	●
Known Rewards									●	●	●	●
Punish Absence				●		●	●					
Sale Campaigns	●	●			●							
Game Content Campaigns	●	●		●		●	●	●	●	●	●	●
Item Gifting		●	●				●		●		●	●
Free Gifting	●	●	●	●	●	●	●					●
Invite Players	●	●	●	●	●	●	●				●	●
Cooperative Play				●		●	●	●	●	●	●	●
Competitive Play	●	●	●		●		●		●	●	●	●
Gifts		●	●									●
Boosts and Power-ups	●	●	●	●	●	●	●	●	●	●	●	●
Personalization and Creativity	●			●		●						
Play Accelerators		●	●	●	●	●	●	●	●	●		
Collectibles												●
Expansions												
Trans-media content	●											

4.4.1 Mechanics

Achievements

All games were tested to see if they contained any achievement systems. If an achievement system was found, it was noted whether it was a system of *predictable achievement* or one of *surprise achievements*. Although the requirements for something to be called an achievement system were defined in the analysis framework, this definition did have its drawbacks, which is explained in detail in section 5.3.3.

Both *predictable achievements* and *surprise achievements* were found in Japanese games as well as Western games, and some games had both types. However, differences in implementation of achievement systems seem more genre specific than market specific.

Zynga's game FarmVille 2 features a predictable achievement system where players are awarded a mastery ribbon if they plant a certain crop enough times, which can be placed on the farm for friends to see. ChefVille, which is also developed by Zynga, has a similar system where recipes cooked enough times rewards the player with a mastery star. Unlike the mastery ribbon in FarmVille 2, the mastery star is not a purely decorative item and the system was not categorized as an achievement system.

Points

Soft currency and *hard currency* is used by all tested games with the exception of Angry Birds Friends, and no market differences were found. Angry Birds Friends has no soft currency at all, and accepts real currency directly instead of using hard currency. Two of the Western games use Facebook Credits, which is provided by the Facebook platform, for hard currency. The remaining three Facebook games instead provide their own hard currency.

On the Japanese market, the tested Japanese games on the Mobage platform used Moba Coins for hard currency, and games on the GREE platform used GREE coins, both of which are provided by the respective platform. The two smartphone games Kakusansei Million Arthur and Puzzle & Dragons do not utilize a social gaming platform, and have their own hard currency systems.

Several games use *experience points*, and except for Tsuru Star, they were always used in combination with *progress points*. When players collect enough experience points they level up, and the progress points increase by one. However, although six Japanese games and only three Western games used progress points, these differences could possibly depend on the games' genres and not on market differences.

Skill points were only found in three games, all on the Japanese market. All three of these games are RPGs, and although the themes of these games differ, the actual gameplay has several similarities. The usage of skill points is thus likely a characteristic of this genre of RPG, rather than a difference between games on the two markets. It seems possible, however, that the RPG genre is more popular on the Japanese market than in the West.

Karma points were not found in any of the tested games, but with the exception of Tsuru Star, all of the Japanese games feature a similar social point system which is referred to as *friendship points* in this thesis. *Friendship points* accumulate whenever the player performs a social action, such as messaging friends, and can be used to buy *boost and power-ups* or *play accelerators*. This makes it directly beneficial for players to cooperate with other players and perform social actions. ChefVille also uses a similar point system called Hearts, which the player can receive by visiting other players' restaurants. Hearts can be used in the in-game store in ChefVille to buy certain *boosts and power-ups*.

Reputation points were not found in any of the tested games.

Leaderboard

In the games tested in the study, there was a clear difference in the usage of leaderboards. Although all of the Japanese games featured an *infinite leaderboard* showing all players, none of the Western games did. Instead, all of the Western games used a *categorized leaderboard* which only displays the performance of the player's friends. Only two of the Japanese games had *categorized leaderboards*. A pure *no-disincentive leaderboard*, which only shows players closely above and below the player, was not found in any game.

Levels

Eight out of twelve tested games featured a system of game levels. However, like achievements, the implementation varied widely, and the concept did not seem useful for comparative analysis. The difficulties with analyzing levels are described further in section 5.3.3.

Challenges

The analysis framework has a rather loose definition of challenges, where it is described as something that gives the player an objective in the game. It would hardly be a game without a challenge, and some type of challenge was found in all the tested games. This problem is also discussed in section 5.3.3.

Gambling mechanics

All of the tested Japanese games had a gacha system. With the exception of Chokotto Farm, they also had a fee-based gacha system which is spun using hard currency. Three of the tested game featured a box gacha system, which was explained in 4.2.5 Gambling Elements of Japanese SNGs.

Although Chokotto Farm did not have a fee-based gacha system, the game featured hard currency gambling as part of a new year's campaign. In the campaign, players could use hard currency to buy a package with an unknown content, similar to a lottery. None of the tested Western games featured any gambling mechanics that required hard currency.

4.4.2 Reward system

Boosts and power-ups are common rewards. The highest possible reward in the Japanese games was often a gacha ticket. In the Western games, the highest reward was not always possible to distinguish, but *boosts and power-ups* are typical.

4.4.3 Time-dependent events

Session limits

Except for two games, one from each market, all of the games used an energy system which limited playing sessions. Some games had more than one energy system, such as *battle points* in Japan, and *visit energy* in the Zynga games. All five Western games which used energy systems also let players ask friends for extra energy, and it could partly be restored using social actions. Two of the Japanese games with energy systems also let players restore energy by performing social actions to collect friendship points. The friendship points can in turn be used to restore energy. All games with energy systems allowed players to restore energy using hard currency.

Time to completion was found in three of the tested games, ChefVille and FarmVille 2 in the West, and Chokotto Farm in Japan. All three games are simulation games, and this is likely a genre-specific characteristic.

Cooldowns were not found in any of the tested games.

Retention

In this case, *reward retention* refers to games that directly reward players for returning to the game. There may be game mechanics in the game that indirectly makes it beneficial to play every day, and players may indirectly be rewarded for returning as they can gain friends by

playing regularly or lose friends if they are absent for too long. Such indirect effects are not covered here.

All Japanese games rewarded retention in some way, but only two out of six tested Western games did. Except for Puzzle & Dragons, the retention bonuses in the Japanese games were accumulative, with bigger rewards the more often a player logged in.

In Chokotto Farm, the player had to log in ten days in a row in order to reward their bonus, while other games had login bonus programs which reward the player for the number of times they log in during a certain timeframe. The login bonus programs are typically presented as campaigns, but for the tested titles, a new one appeared as soon as the previous one expired. The player is often shown a calendar with future rewards clearly displayed for the player. The Western games Candy Crush Saga and Angry Birds Friends also featured login bonus systems, but the future rewards were not made known to the player. In these two titles, the player is rewarded immediately when they open up the game on a new day. Both games had accumulative rewards, with an illustration or text message telling the player that rewards increase if they come back often.

Only three of the tested games *punished absence*. These three games are all simulation games, and this is likely a characteristic of that genre.

Campaigns

With the exception of Candy Crush Saga, limited time campaigns of some sort were found in all of the tested games. *Sales campaigns*, where virtual items are available at a discount for a limited time, were found in three games, all of them on the Western market. Japanese developers instead seem to prefer adding something extra for the same price, such as temporarily raising the probability for rare items in the gacha system.

All of the Japanese games ran *single-player campaigns*, with new single-player game content available for a limited time only. With the exception of Puzzle & Dragons, all of the Japanese games also had *multiplayer campaigns*, where players can cooperate or compete against each other using limited time game content. Three of the Western games also had game content, all of which had both *single-player* and *multiplayer campaigns*.

The Japanese multiplayer campaigns had some unique characteristics, where player compete against each other for a place on the global leaderboard. These are explained in more detail in 5.1.2 below.

4.4.4 Social

Social actions

All the tested games contained social elements and had ways for players to interact with each other. All games also had some sort of gifting system, either *free gifting* or using hard currency. However, the reward system for social actions differed between the two markets. Except for Tsuru Star, all the Japanese games used *Friendship Points*, which players are rewarded for interacting with other players. In the Western games, on the other hand, player to player interaction often rewards the receiving player, and not the player performing the action.

Multiplayer

The games were tested to see whether they featured *cooperative* and *competitive play*.

Cooperative play was found in all Japanese games, as well as the two Zynga titles in the West. *Competitive play*, on the other hand, was found in the four puzzle games on the Western market, but on the Japanese market it was found in all games *except* for the puzzle game Puzzle & Dragons. It is, however, difficult to draw any conclusions from this, given that there was only one Japanese puzzle game tested in the study. However, while five out of six Japanese games mixed both cooperative and competitive play, all of the Western games had only either one of them and never both. Often, the cooperative and competitive play in Japanese games was part of limited time campaigns, which are covered in 5.1.2.

4.4.5 Monetization

For both markets, the most common virtual items that could be bought were *boosts and power-ups* and *play accelerators*. For five out of six tested Japanese games, not all *boosts and power-ups* could be bought directly using hard currency. Instead, the player had to spin a gacha, or a gacha-like gambling system, and win the items.

Three of the six tested Western games sold *personalization and creativity* items, which had no in-game use beyond decoration. Several of the Japanese games sold *boosts and power-ups*, such as cards with appealing illustrations in card battle RPGs, which could possibly also be categorized as *personalization and creativity* items. However, no purely decorative items were found for sale in the tested Japanese games.

5 Discussion

This chapter discusses the findings of the study, its reliability, and some of the problems with the analytical framework. The chapter attempts to use the results of the study to answer the questions in the problem statement.

The chapter consists of four parts. In the first part, Identified Characteristics, five unique characteristics that were found for each market are presented and explained. This is followed by Discussions and Analysis, which discusses how the results can be used to answer the questions from the problem statement. In the final section, Quality, issues that may affect the quality of the study as well as some of the problems with the analysis framework are discussed.

5.1 Identified Characteristics

The results from the comparative study reveal that although the tested Western and Japanese games are similar in several aspects, there are some key differences. Both markets had unique features that could not be found in games on the other market. For some mechanics, such as gifting, games from the two markets used different methods to achieve the same effect. For others, no equivalent at all could be found on the other market. The unique characteristics of the respective markets are summarized below.

5.1.1 Unique Characteristics of Western Games

Sales campaigns

Three of the Western games had sales campaigns, where virtual items were available at a discount price for a limited time only. These were presented using a popup window making the player aware of the offer. The campaign showed the original price as well as the campaign price.

Gifting

Several of the Western games featured a gifting system where the players can gift energy to other players, or ask other players to give them energy. In Bubble Witch Saga, for example, the player is encouraged to send lives to friends every time the game is started. On the other

hand, if the player runs out of lives, the game suggests that they send a message to friends asking for more lives. Most of the tested Western games allowed players to gift each other in this way once a day per friend.

Categorized Leaderboard

All four of the tested Western puzzle games used a categorized leaderboard showing only the player's Facebook friends. Although two of the Japanese games also had categorized leaderboards, they were presented in connection with a global infinite leaderboard. From the tested games, there seems to be a tendency for Western games to encourage competition between friends, and none of the tested Western games allowed competition between players who are not friends. As explained in section 4.2.4, Western SNGs on Facebook use a real social graph, whereas Japanese games on the largest SNG platforms use a virtual social graph. Japanese players often do not have a personal connection to their in-game friends, and this could be a reason why competition between friends is not a popular game feature in Japanese SNGs. The Japanese games tested in this study instead use competitive campaigns, which are explained in section 5.1.2 below.

Help of Friends

Four out of six tested Western games required the player to get help from their friends in order to clear key challenges of the game. In Bubble Witch Saga and Candy Crush Saga, the player was asked to get help from three friends or pay hard currency in order to unlock new levels. In FarmVille 2 and ChefVille, asking friends is a key game element required for many tasks such as setting up new equipment and buildings.

This feature makes the games difficult to play for free without inviting friends, and is perhaps a mechanic to filter out unwanted players. It was noted, however, that the lock in Bubble Witch Saga was automatically unlocked after it was ignored for a long enough time.

Creativity and Personalization Items

In Angry Birds Friends, ChefVille and FarmVille 2, the player can customize their in-game appearance, and some of these customizations cost hard currency. These items had no usage in the game except for changing the player's visual appearance, and none of the tested Japanese games sold purely decorative *personalization and creativity* items. This could be related to the difference between real and virtual social graph, as players could be more willing to customize their appearance for real friends than for virtual ones.

5.1.2 Unique Characteristics of Japanese Games

Friendship Points

With the exception of Tsuru Star, all of the Japanese games featured a social point system not covered in the Theory chapter. In *Rage of Bahamut* and *Puzzle & Dragons* they are referred to as Friendship Points. In the other games they are called Happy Points, Cooperation Points or Bond Points, but the basic function remains the same. Whenever the player performs a social action, such as helping a friend or sending a message, they are rewarded Friendship Points. Some games also rewarded Friendship Points as part of a daily login bonus system.

The usage for Friendship Points differed slightly between games. In three of the games, the Friendship Points were used to spin the free gacha system, where the player can win *boosts and powerups*. In the remaining two games, the Friendship Points could, once enough had been collected, be used as *play accelerators* to restore energy.

A system with similar features was found in *ChefVille*, which has a point system called Hearts. These are rewarded when the player visits a friend's restaurant, and can be used to buy some *boosts and power-ups* in the in-game store.

Login Bonus Campaigns

Four out of six Japanese games used a special mechanism that rewards returning players, often called login bonus. The system rewards returning players accumulatively. The system has a stamp calendar, which clearly shows the player what rewards they can get by frequently returning to the game. The calendar is shown every day the player logs in during the login bonus campaign, and the player receives their daily reward immediately. For some games, the system did not require the player to log in every day in a row, but only a certain number of days during the campaign.

In the Western games that featured accumulative login bonus mechanisms, the actual content of the rewards was kept secret from players. Japanese games instead reveal the reward and use it as an incentive to keep players coming back. Of course, this method only works if the final reward is something that the player is willing to work for.

Infinite Leaderboard

While Western games seem to prefer the categorized leaderboard, all of the Japanese games had a global infinite leaderboard of some kind. The risk of the infinite leaderboard is that new players may lose their incentive to play if their score is compared to that of the strongest players. The Japanese games, however, did not show the leaderboard unless the player

actively chose to view it, and often only in connection with competitive campaigns, explained below.

Cooperative and Competitive Campaigns

A special type of game content campaign featuring both cooperative and competitive gameplay was found in four of the Japanese games. In these campaigns, players are challenged to collect as many as possible of some item which is part of the campaign. Players are rewarded in two ways: for the amount of items collected, and for their placement in the ranking. There are several rewards for collecting items set at different levels, and the more items collected the higher the rewards. For lower level players, the campaign becomes cooperative as the player tries to obtain their target of number of items to collect the reward they are aiming for while cooperating with other players. For higher level players, the challenge is instead to reach a high spot in the leaderboard. The rewards for a spot in the leaderboard are also set at different levels with different rewards. For example, in a recent campaign in Kakusansei Million Arthur, the top 100 players got the best reward, but there were other rewards for players all the way down to position 50,000 in the campaign.

There are several variations on this type of campaign. For example, sometimes players are challenged to, instead of collecting items, battle each other for a spot in the ranking. It appears that developers are trying to give each campaign its unique quirk to prevent that the gameplay becomes stale and predictable, while still using a format which is familiar to the players.

Hard Currency Gambling

All of the Japanese games, possibly with the exception of Chokotto Farm, had some kind of gambling system which could be played with hard currency. Most of the games used a gacha system, although sometimes the system used a different name. The games offer the fee-based gacha in combination with a free gacha. This teaches the player how the gacha system works, and makes them more inclined to try out the fee-based version. The most powerful boosts and power-ups in the game can often not be bought directly using hard currency, but must be won in a campaign, or by playing the gacha system. It is possible that there are legal issues that regulate Western games' use of gambling mechanics.

5.2 Discussions and Analysis

In this section, the results from the study are discussed and used to attempt to answer the problem statement of the thesis.

This thesis attempts to answer the following questions regarding SNGs on the Western and Japanese market.

1. How do the game mechanics in SNGs differ between SNGs in Japan and the West?
2. What game mechanics affect how much a player is willing to pay?

Regarding question 1, the results of the comparative study and market analysis suggest that Japanese SNGs have several unique characteristics not found in Western ones, and vice versa. One large difference is that of the social graph; while Western SNGs are played together with real friends, Japanese ones are played with virtual ones. The Japanese games also featured game modes where players compete with players outside of their social graph, but no such modes were found in the Western games.

The difference in the social graph is possibly the reason behind some of the market characteristics. For example, gifting systems differ slightly between the two markets. In Western games, free gifting often rewarded only the receiving player, but in Japanese games the giving player was rewarded as well. This could be because players are more inclined to perform social actions that only reward the receiver if they are part of their real social graph, rather than a virtual one.

Leaderboards differ as well, and it is likely that the categorized leaderboard that only shows friends is more effective if the game uses a real social graph. If the players' friends are virtual ones that they have no real connection with, they are likely less inclined to fight hard to beat them in the game. Instead, Japanese games let the player cooperate with others and compete against the game itself, or compete with all the other players. For creativity and personalization items as well, it is possible that players are more willing to pay for customizing their avatar if it is shown to their real friends.

Aside from characteristics which are likely related to the virtual graph used, several other characteristics were identified. The types of campaigns used in Western and Japanese games differed. Sales campaigns were only found in Western games, while Japanese games focused more on game content campaigns. The results from the market analysis also suggest that limited time campaigns are an important way to monetize the game in Japan.

The Japanese games also had a special login bonus campaign system which rewards returning players. Similar systems were found in some Western games, but the Japanese ones made the rewards known to the player beforehand.

The largest difference is perhaps that of hard currency gambling. While it was not found in any of the Western games, all of the Japanese games used it in some form. Players are often offered to try out the free version of the gambling system, and sometimes rewarded a free spin on the fee-based gambling system. This will teach the player how the system works and possibly increase the likelihood that they pay for it in the future. While Western games let the player buy boost and power-ups directly using hard currency, Japanese games often only let the players win items through gambling mechanisms.

As for question 2, the comparative game study reveals several unique game features on Japanese market, but it is not known how, or if, these affect monetization. Information gathered through the market analysis does however give some suggestions. Eiji Araki, senior vice president of social games at GREE international, says that the key to monetization lies in the social features where players are *competing or cooperating to reach a common goal*, and is likely referring to the *cooperative and competitive campaigns* of Japanese games. Yūki Naitō, CEO of the Tokyo based social application provider Drecom, also expresses that the Japanese campaigns provide extra value to players, in comparison with pure sales campaigns in Western games. As these are key people in the industry, with insight in key performance indicators which are otherwise not made public, it is reasonable to believe that these statements are based on experience.

The market analysis also reveals that the unique Japanese hard currency gambling system known as gacha has been criticized by Japanese media as the culprit leading to players spending more money than they can afford on these games. In particular, a system called kompu-gacha was especially targeted and was later banned. It has since been replaced by the use of a system called box-gacha. Out of the six tested Japanese games, a hard currency gacha system was found in five of them. The games do not allow players to buy the most attractive items directly, but players who are willing to pay must instead win the items in the gacha system.

5.3 Quality

This section covers the quality of the research performed in the study, and discusses some of the problems which may affect its validity, reliability. As the study only looks at twelve games out of hundreds of games on the two markets, the results found are difficult to generalize. Instead, the results can indicate what parts of the games that could be worth researching further.

5.3.1 Reliability

A study's reliability concerns whether the measurements give consistent results, and this partly depends on the sample used. In the comparative study, a number of games were handpicked for testing, and the way these are picked can affect the reliability of the study. The Western and Japanese SNG markets differ in many ways, and it was therefore not possible to create selection criteria valid for both markets. Instead, selection criteria were constructed separately for the two markets, with the intent of getting a selection of games which are representative for that market.

In order to avoid bias, games from different genres and developers were selected when possible, while still only testing top games that are likely to monetize well. However, monetization data and other key performance indicators for SNGs are typically not available to the general public, and there is no guarantee that the tested games actually do monetize well. It is also unclear how much revenue differs between different game genres and developers. Not having information on the games' monetization makes it difficult to draw conclusions regarding what game mechanics affect monetization.

5.3.2 Validity

The validity of the study concerns whether the study adequately answers the research questions. The purpose of the thesis is to understand if and how Japanese SNGs monetize better than Western. The way SNGs are constructed and provided to players can create problems which affect the study's validity. Some of these problems are discussed here.

SNGs are provided as services which are constantly updated, and it is hard to tell whether the game features observed during the testing period is representative of what the game usually features. SNG developers also use A/B testing where new features are tested on only a small part of the players. This means that the game experience might not always be the same for all players. Many SNGs also feature limited time campaign, and the content of these usually varies slightly, and there is always a possibility that the campaigns seen during the testing period were not representative of the campaigns usually seen in the game. Some features of the games are only unlocked later on in the game, and it is sometimes difficult to tell whether all features have been fully tested. However, to minimize the risk of game features being overlooked, game manuals and online guides were studied for each game.

The games were played at least until all key features were believed to be unlocked, but testing of game features exclusive for high level players was deemed beyond the scope of the study. There is therefore a risk that some important mechanics that only appear after reaching a

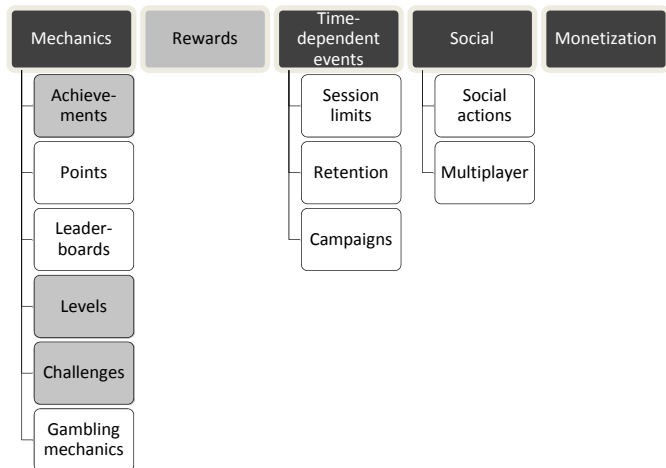
high level in the game were overlooked. There is a possibility that advanced players contribute the most to a game's revenue, and that the most important market differences appear at this stage, and this fact should be taken into consideration when interpreting the results of this study. The Japanese and Western markets also had several differences in how games are played. In the West, players use Facebook on a PC, in Japan they use a smartphone. It is possible that some of the observed differences in revenue and game mechanics depend on this, and not market differences.

The validity of the study is also affected by the validity of the analysis model. The analysis model is used when testing games in order to identify game features which may affect monetization. If the analysis model is not optimized for this, important game features may be overlooked in testing. The theoretical part of the study covers both literature on games in general, as well gamification literature which is in many ways related to SNGs in particular. The analysis model is constructed based on this theoretical framework and was constructed to test as many aspects of the games as possible. However, some items in the analysis framework proved difficult to use, as explained in the following section.

5.3.3 Analysis Model in Review

The relevance of the analysis model's design can affect the validity of the study. This section reflects on the analysis model and discusses some aspects that could be improved upon. In general, the analysis model fulfilled its purpose and market differences in game design could successfully be identified by using it. However, some parts of the

Figure 4: Visual representation of analysis model with parts deemed less useful shown in gray



model proved difficult to apply when comparing different games, which are shown in gray in Figure 4.

The meaning of achievements can be interpreted in different ways, and are difficult to analyze equally for a range of games of different genres. In the analysis model, achievements

were defined as tasks with certain requirements, known or unknown, which can be completed and *give the player at least one unique purely decorative reward that can be viewed later*, to separate them from quests. For some games, it was clear whether the game had an achievement system or not. In FarmVille 2, for example, players are rewarded with ribbons for mastering certain crops. This purely decorative ribbon represents that the player has achieved something, and this is a typical achievement system. For other games, the concept of achievements proved troublesome. A common feature of card battle RPGs and other Japanese role playing SNGs is the battle mode where players can battle each other. Typically players compete to complete a set of some kind of treasure, and the player is rewarded if they manage to complete the set. In Kaitō Royale, the player is rewarded with an avatar if they successfully do this, and the avatar can be viewed on the player's profile page on the Mobage platform. This fulfills the requirements of an achievement system, and was considered as one. However, Kakusansei Million Arthur and Rage of Bahamut feature nearly identical battle systems where players battle each other to complete collections. In these games, however, there is no avatar or other purely decorative reward, and it is therefore not an achievement system. Even though the requirements and basic concept is the same in all three games, the decorative award turns it into an achievement system in only one of them. The same thing goes for FarmVille 2 and ChefVille. A player can master crops in FarmVille 2, which earns them a ribbon and is an achievements system. In ChefVille, players can master recipes and earn Mastery Stars. Mastery Stars are however not purely decorative, and it is therefore not an achievement system under the given definition. The definition used for the term *achievement* was set so that it closely matches the author's interpretation of its usage in gamification literature. Although the term *achievement* could possibly be redefined to better suit a comparative study, there is a risk that the original meaning of the term is lost. The concept of levels was also difficult to apply, as it can be interpreted in many different ways. For some games, the level system is very clear and easy to identify, but with SNGs of different genres it is difficult to compare between games, and the concept was not very useful in the analysis.

Challenges were defined as something which gives the player an objective in the game, and using this definition there would hardly be a game without them. This part of the analysis framework was instead used to clarify what objectives were given to the player in the game. Like challenges, the concept of rewards is difficult to quantify and compare between games, and it was not possible to draw any clear conclusions from the results in these parts of the model.

The parts mentioned of the analysis framework mentioned above are likely suitable for analyzing one game, but perhaps less so for a comparative study where several games are compared. These parts of the model should be revised to counter the problems found if the model is used for comparative game studies in future research.

6 Conclusion

This study used an inductive research approach consisting of a theoretical part and an empirical part with a market study and a comparative study of games. This section summarizes the answers found for the problem statement in the thesis.

1. How do the game mechanics in SNGs differ between SNGs in Japan and the West?

The study shows that games on both the Western and Japanese market have unique characteristics that the other market lacks. Many of these are possibly a product of the fact that there is a difference in the social graph that is mainly used in the respective markets. Western games use a real social graph, which makes it favorable to produce games with focus on competition between friends and monetizing on decorative items. Japanese games, on the other hand, use a virtual social graph, and the connection between friends is likely not as strong. This makes social interaction less rewarding for players, and the games instead have special reward system for rewarding social actions.

The Japanese games make extensive use of the virtual gambling system called gacha, where players gamble hard currency with hopes of winning desirable items. The gacha system is an integral part of several of the tested Japanese games, as it is the only way player can acquire boost and power-ups by using hard currency. None of the tested western games had any type of hard currency gambling whatsoever.

2. What game mechanics affect how much a player is willing to pay?

The comparative game study does not reveal specifically what game mechanics are related to game monetization. Instead, the information gathered through the market analysis was used in conjunction with the results of the comparative study to attempt to answer this question. From this, it seems likely that the Japanese limited time campaigns, which feature new cooperative and competitive game content, significantly boost monetization of Japanese SNGs.

The gacha gambling system has been targeted by Japanese media as unfairly stimulating the gambler's spirit of players. Although the most lucrative type of gacha, kompu-gacha, was banned early, it is likely that the gacha system is still highly profitable for Japanese SNGs.

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1 Appendix A: Game Analysis – Western Games

1.1 Angry Birds Friends

<u>ORIGINAL TITLE</u> Angry Birds Friends	<u>DEVELOPER</u> Rovio Entertainment
<u>TESTED PLATFORM</u> Adobe Flash	<u>SOCIAL GAMING PLATFORM</u> Facebook
<u>GENRE</u> Action Puzzle	<u>PRICE</u> Free
<u>RELEASE DATE</u> 2012-02-14	<u>COUNTRY OF ORIGIN</u> Finland

Angry Birds is a video game franchise by the Finnish game developer Rovio Entertainment which has been a success all across the world. The game has sparked several spin-off games and other types of media with character goods, an official theme park in Finland and its own soda. The original Angry Birds is a casual game released on several different platforms. In the beginning of 2012 the SNG version of the game, called Angry Birds Friends, was released on Facebook. The core gameplay is the same as the original Angry Birds, but it uses the free-to-play business model and makes use of the social graph on Facebook.

In Angry Birds Friends, the challenge is to advance through levels by flinging birds with a slingshot to destroy structures and pigs which are statically placed on the game field. The player receives a total score for the level depending on how much is destroyed, and is rewarded stars for their performance. For each level, the player receives between one and three stars depending on the score. There are different types of birds with different properties, but for every level the birds and shooting order is predetermined. The player can use power-ups that aid them in clearing the level. There are four types of power-ups that can be used,

but limited time campaigns sometimes introduce new power-ups. The number of power-ups a player has is limited, but the player can be rewarded more power-ups in the game, or can buy more in the in-game store.

In addition to the basic sets of levels, Angry Birds Friends has weekly tournaments with new levels, where players battle against their friends to get the highest score for that week. The players who have achieved the top score when the week is over are rewarded power-ups.

The player has an avatar which is displayed to their friends which can be customized. Some of the possible customizations are available for free, but others must be paid for using real currency.

1.1.1 Mechanics

Achievements

The main objective in the game is for the player to clear levels and earn stars and feathers. Clearing a level rewards you with between one and three stars, and the number received is determined by the achieved score. Feathers can be earned one per level, but can only be obtained through the usage of a power-up called Mighty Eagle. The player is given a few Mighty Eagle power-ups in the beginning of the game, but to get more you have to buy them in the in-game store.

The stars and feathers that have been earned are displayed for each level, but the total number is also displayed on a leaderboard on the game's main screen, together with the scores of friends. To proceed to the next level in the game, the player must collect stars. Feather, however, are a bonus feature without function and therefore categorized as a system of *predictable achievements*.

Additionally, the game has a special set of levels called Golden Eggs, where each level has to be unlocked by finding a hidden egg somewhere in the game. The locations of these eggs are not known to the player, and finding an egg often comes as a surprise to the player. This is categorized as a system of *surprise achievements*.

Points

Angry Birds Friends is limited in its usage of point systems. Apart from the stars and feathers the player can earn, the game only has a score points, which track the player's score on the different levels in the game. The game has no soft currency; rewards instead consist of power-

ups that are given to the player directly. The game does not have a hard currency system, and the items in the in-game store can instead be bought directly using real currency.

There are no experience or progress points, and progression in the game is instead indicated by the number of stars and feathers collected.

Leaderboard

There are three leaderboards in the game, all of which are *categorized leaderboards* which only show the scores of Facebook friends who also play the game. The game's main screen features a leaderboard which ranks players by the total number of stars and feathers collected in the game. There is also a leaderboard for each level in the game, listing players' total score for that particular level. Finally, there is a leaderboard for every weekly tournament, where the player's rank is determined by the total score achieved for the levels in that tournament.

Levels

The game has several sets of levels with increasing difficulty that the player can clear.

Challenges

The basic challenge in the game is the five sets of levels that the player can clear. The sets may be cleared in any order, and there is no indication of the difficulty of each set. Once the sets have been cleared, the player may replay them in order to collect more stars and feathers or try to beat friends' high scores. Alternatively, the player can participate in the weekly tournaments which continuously provide new content in the game.

Gambling mechanics

The game does not make use of slot machine-like gambling systems. However, the reward for winning a weekly tournament is animated in a slot machine-like fashion, where the reward is seemingly decided from a number of available rewards. Whether the rewards are actually random or this is just an animation is unknown. The game's gifting system also makes use of randomness. You can send one gift per day, but the actual content of the gift is unknown to the giver.

1.1.2 Reward system

As the game does not have soft or hard currency or level points, rewards consist of unlocking of new levels and free power-ups. Clearing a level rewards the player by unlocking the next level in the set. Winning the weekly tournament rewards you power-ups, and players are also rewarded power-ups through gifting.

1.1.3 Time-dependent events

Session limits

There is no energy system or other system that limits playing sessions in Angry Birds Friends.

Retention

The game has a daily rewards system, which consists of power-ups that can be used in the game. By coming back every day, the size of the reward supposedly increases, but the actual content of the rewards is unknown to the player.

Campaigns

During the testing period, Angry Birds Friends had an ongoing winter tournament campaign consisting of four unique weekly tournaments. In addition to new tournament levels, the campaign also contained a power-up called Santa Bomb, and game elements such as sleds and snowball cannons, all of which were only available during the time of the campaign. As a bonus, free rewards were given to players who logged in during the period of this campaign. Occasionally, the game features *sales campaigns* where power-ups and gifts could be bought at a discount.

The weekly tournaments contain new levels that the players can compete with their friends on, and are categorized as *game content campaigns*.

1.1.4 Social

Social actions

In the game, the players can send a mystery gift which may contain a power-up to all friends who are playing the game, at a maximum of once per day. Sending a gift does not cost the giving player anything, and rewards the receiver. The player can also invite new users to come play the game, which rewards you with free power-ups.

Having many friends in the game have no other benefits than that competitions become more fun.

Multiplayer

Multiplayer is a large part of the gameplay in Angry Birds Friends. The weekly tournaments allow you to regularly compete with friends using new game content. If a friend beats your score in the tournament, you are automatically notified, and you can send a message bragging if you beat friends' scores. If you win the entire tournament, you get the option of

posting about this on your Facebook wall. The game thus has *competitive play*, but apart from gifting, players cannot cooperate and the game does not have *cooperative play*.

1.1.5 Monetization

During the testing of Angry Birds Friends, three types of items were found on sale.

In the in-game shop, players can buy *power-ups*, which can be used in the game's levels. These power-ups can also be used in the weekly tournament to improve your score, but may only be used twice per level. This means that paying users can get a slight edge over players who play for free. In the weekly tournaments, sometimes not all levels in the tournament are unlocked at once, and can only be played a few days into the tournament. A player can however pay a small fee to unlock these levels ahead of time and get a head start. This could possibly be thought of as a *play accelerator*, but since the main function is to give you an advantage in the game, it is categorized as a *power-up* here. During the winter tournament campaign, the player was also given the possibility to buy a bundle with unlimited usage of special items and access to all locked levels of the tournament.

Players can optionally choose an avatar for their in-game appearance, and some of the goods that change the appearance require that the player pays a fee. This is an example of *personalization and creativity* goods.

The game also features *trans-media content*, with a campaign promoting the rock band Green Day. This was presented as a 20 level campaign with enemy pigs representing the band.

1.2 Bubble Witch Saga

<u>ORIGINAL TITLE</u> Bubble Witch Saga	<u>DEVELOPER</u> King.com
<u>TESTED PLATFORM</u> Adobe Flash	<u>SOCIAL GAMING PLATFORM</u> Facebook
<u>GENRE</u> Action Puzzle	<u>PRICE</u> Free
<u>RELEASE DATE</u> 2011-09-15	<u>COUNTRY OF ORIGIN</u> Multinational

Bubble Witch Saga is one of the most successful games in King.com's family of Saga games, with over 16 million monthly active users on Facebook as of December 2012. The game was originally released as a Facebook game in 2011, and an iOS version became available in November 2012. Recently, a flood of bubble shooters have been released on Facebook by many different developers. During the time of this study, Zynga's Bubble Safari was the top ranked bubble shooter, with Bubble Witch Safari following closely behind.

The gameplay is typical to that of a bubble shooter. The player advances through different levels, all of which must be cleared from bubbles. Bubbles of four different colors are attached to the ceiling of the level, and by shooting bubbles from the bottom the player attempts to remove them. Bubbles are removed if the player manages to hit a group of two or more bubbles of the same color as the one shot. The player cannot choose the color of the bubble being shot, but can switch between the current bubble and the next one, often given the player the choice of two different colors. Clearing groups of bubbles make spiders come down from the ceiling, which can give extra bonus points at the end, and failing to pop a group of bubbles removes a spider. As more and more bubbles are removed, the player can reach the bubbles on the top layer in the ceiling. If the player can remove enough bubbles from the ceiling, all the remaining bubbles fall down and the level ends. Depending on the score achieved, the player can be rewarded between one and three stars for clearing the level, but fails if the minimum score required for one star is not reached. The player has a range of power-ups, magic potions and charms, which can be used to help them reach a higher score. Magic potions are bought using soft currency, but are limited in number and only last one level. Charms, on the other hand, can be made permanent with hard currency, or enabled only for the current level at a cheaper rate.

1.2.1 Mechanics

Achievements

The primary objective in the game is to collect stars by clearing levels. A maximum of three stars can be obtained for each level, and collecting stars sometimes unlocks surprises in the game. The number of stars required to unlock a surprise is clearly shown on the game's main map, and turns into an icon showing that they have been unlocked after clearing. This icon can be thought of as a decorative reward, and the system is thus categorized as an achievement system. These surprises consist of new power-ups that can be used in the game. Although the reward is kept secret from the player, the number of stars required to unlock the surprise is known, making this a *predictable achievement*.

Points

The game has score points for each level, as well as stars that can be collected. The game has a classic dual currency system, with a soft currency called Coins, and uses Facebook Credits for hard currency.

Coins can be obtained through a daily bonus system or by finishing levels, and are required to use magic potions in a level.

Hard currency can only be obtained by paying, and has several uses in the game. It can be used to activate charms, permanently or temporarily. Hard currency can also be used to retrieve a bubble of a specific color at any time during a level, which can help a player that is stuck. Hard currency is also used in tournaments, a special multiplayer section of the game explained below.

There is no player level progression, and thus no progress points in the game.

Leaderboard

The game features a *categorized leaderboard*, which only shows the player's friends. There is a global star top-list which ranks friends by how many stars they have collected in total. There is also a leaderboard for each level, where players are ranked by top score.

Tournaments, explained below, also have a leaderboard showing the score obtained by all the participating players.

Levels

The difficulty of the game levels continuously increases throughout the game as the player advances through the different levels. By clearing more levels, the player can obtain more stars and reach a higher position on the star top-list.

Challenges

The game uses a level system to give the player new challenges to complete level. Difficulty continuously increases, and new power-ups can be unlocked. Alternatively, the player can compete with other players to win charms in the tournaments.

Gambling mechanics

The game does not feature a slot machine like gambling system. The game however, does have some elements of randomness. When clearing a level, bubbles fall down the ceiling and bounce on spiders which give a score boost, before falling down into jars on the bottom of the screen. Depending on the jar the bubble falls into, the player is given a different score boost. This adds a randomness factor to the gameplay. There is however no way to directly influence this mechanic with soft or hard currency, and it is unclear whether this has any relation to the game's monetization.

1.2.2 Reward system

When a level is cleared, the player is rewarded gold which can then be used to add magic potions when playing a level. By collecting stars, the player can sometimes unlock new charms. The charms are merely unlocked, however, and the player still has to pay hard currency to actually use them.

1.2.3 Time-dependent events

Session limits

The player has a limited number of lives, and need at least one life to be able to play. A life is regenerated every 30 minutes, up until a maximum of five lives. Optionally, you can pay hard currency to instantly get more lives or ask friends to help you out.

Retention

Each day the game provides a daily bonus level, and by clearing this level the player can receive their daily bonus. However, this does not directly reward a returning player, and is instead categorized as a daily *limited time campaign*.

Campaigns

During testing, Bubble Witch Saga held a Christmas campaign where players were given the option to buy a special package with power-ups at a 50 % discount, which is an example of a *sales campaign*. There were no campaigns providing new game content. The in-game store has daily campaigns where charms and magic potions can be bought at a discount.

The game has daily bonus levels, categorized as *game content* campaigns. Players who clear the daily bonus levels are rewarded soft currency, and the reward is usually much greater than that for clearing a regular level.

1.2.4 Social

Social actions

Players receive soft currency for clearing a level, which can optionally be shared with friends. If a player runs out of lives they have the option of asking friends for new lives through Facebook, or buying lives with hard currency. Players can also use hard currency to buy charms and gift these to friends, but there is no option to gift magic potions. The game will occasionally suggest that you invite your Facebook friends with a nag screen.

The game also sometimes required the player to ask three friends for help in order to unlock the next set of levels, or unlock it immediately using hard currency. If the player chooses not to do this, they can only replay previously unlocked levels. It was noted, however, that if this message was ignored for long enough, the levels were automatically unlocked and the player could continue.

Multiplayer

The game is multiplayer centered and shows *categorized leaderboards* with friends' scores at the start of each level. This encourages players to compete with their friends to try to beat their score. Players can also compete with their friends for a spot on the star top-list where players are ranked by total number of collected stars.

There is a tournament section where players play an entry fee using hard currency and compete to win a charm. Each charm has its own tournament and the entry fee varies depending on the charm. Each tournament has 25 players which compete for the charm, and the top scoring player wins it. The level is set up so that each player receives the same color bubbles in the same order, making the tournament fair for all players. Players are however

still allowed to use charms and magic potions, giving paying users an advantage. This is an example of *competitive play*.

The game does not have *cooperative play*.

1.2.5 Monetization

There are three types of items that can be bought in Bubble Witch Saga; *gifts*, *boosts* and *power-ups*, and *play accelerators*.

The game's *gifting* system requires hard currency and allows players to buy charms which can be sent to friends. As explained above, charms that give the player an advantage in the game can be bought using hard currency, and is categorized as selling of *boosts* and *power-ups*.

Players may also buy lives which lets the player skip waiting times, a type of *play accelerator*.

1.3 Candy Crush Saga

<u>ORIGINAL TITLE</u> Candy Crush Saga	<u>DEVELOPER</u> King.com
<u>TESTED PLATFORM</u> Adobe Flash	<u>SOCIAL GAMING PLATFORM</u> Facebook
<u>GENRE</u> Puzzle	<u>PRICE</u> Free
<u>RELEASE DATE</u> 2011-04-12	<u>COUNTRY OF ORIGIN</u> Multinational

Like Bubble Witch Saga, Candy Crush Saga is a game in King.com's Saga series of game. At the time of testing, the game had over 24 million monthly active users on Facebook, and was the top ranked game by developer King.com. The game is available both on Facebook, King.com and for iOS.

Candy Crush Saga is a tile-matching puzzle game with gameplay similar to that of Bejeweled. The game board has a grid which is filled with candies that can be cleared by matching sets of at least three. The player can switch the position of two vertically or horizontally adjacent candies, as long as the switch leads to a match. When candies are cleared by matching, new candies fall down from the top of the board, again filling it. If the player clears matches more than three candies at once, special candies appear which can be used to clear entire rows or more at once. In the first levels there is no time limit, but the player instead has a limited number of moves to reach the target score required to clear the level. As the game progresses new game modes are introduced. For example, there is one mode where the player must guide ingredients which appear on the board down to the bottom of the screen by clearing candies below them. There is also a time attack mode where players have to complete the level before time runs out.

1.3.1 Mechanics

Achievements

Like the previous two puzzle games analyzed above, the player collects stars which are rewarded for each level that the player clears, from one to three depending on the score. Unlike Bubble Witch Safari, there are no known targets for number of total stars to unlock special items, and thus no system of *predictable achievements*. Instead, new power-ups are

sometimes unlocked when the player clears a level, but there is no decorative reward for unlocking them, and this is not categorized as an achievement system. Candy Crush Saga is therefore not considered to have an achievement system/

Points

The game keeps track of the player's score for each level, as well as the number of stars collected by clearing levels. The game has no soft currency system, and boosters can therefore not be bought. Instead, the player has a limited number of each booster in their inventory.

For hard currency, the game uses Facebook Credits, which can be used to buy boosters, or to unlock parts of the game which otherwise require you to ask friends to help out.

The game has no leveling system for the player, and no progress points.

Leaderboard

The game has a *categorized leaderboard* for each level, showing the player's score compared with that of their friends. There is no global leaderboard that shows how many stars friends have collected, but a level progress screen displays how far other players have progressed in the game, perhaps encouraging competition between friends.

Levels

The game has a map which different the levels which can to be cleared in order to advance. The player can only advance to the next level after clearing the previous one.

Challenges

The challenge of the game is to clear levels and collect stars. The difficulty of levels in the game appears to continuously increase throughout the games, and sometimes new game modes are introduced.

Gambling mechanics

During testing, no gambling mechanics were found in Candy Crush Saga.

1.3.2 Reward system

Since the game does not use soft currency, power-ups and unlocking of new game modes are the only way players can be rewarded. Clearing a level often does not reward anything besides unlocking the next level, but sometimes the player receives boosters, or unlocks new boosters that can be used. Using boosters can increase the score significantly, and are therefore valuable to players.

1.3.3 Time-dependent events

Session limits

Candy Crush Saga has an energy system with lives, where a life is lost every time the player fails a level. At least one life is required to be able to play, and a new life regenerates every 30 minutes, up to a maximum of five. Instead of waiting, the player has the option to ask friends for lives, or pay hard currency to restore lives fully.

Retention

The game had a retention reward system called Reward Week, where the player got a daily reward every time they log in. The reward increased for every consecutive day the player logs in. The specific contents of future rewards were unknown to the player, but during testing always contained power-ups. The reward system seems to have been active for a limited time only as part of a campaign.

Campaigns

With the exception of the Reward Week campaign explained above, no limited time campaigns were observed.

1.3.4 Social

Social actions

When the player achieves something in the game, such as clearing levels or unlocking new power-ups, the player has the option to share this on Facebook. The game also suggests that you *like* the game on Facebook, and invite your friends to play.

Within the game, you can freely send lives to your friends, or boosters to friends who are stuck on certain levels. This costs nothing to the sending player and rewards the receiver. You may also buy a package of boosters in the in-game store, for gifting to friends.

Multiplayer

Candy Crush Saga features multiplayer as players compete to beat each other's score in every level. Players can gift each other, but there is no way to directly influence another player, neither positively or negatively. The game thus has *competitive play*, but not *cooperative play*.

1.3.5 Monetization

Candy Crush Saga monetizes on *gifts, boosts and power-ups* and *play accelerators*.

The game has two types of power-ups: boosters that can be used for free, and charms that require hard currency. This means that the game sells *boosts and power-ups*. When the player runs out of lives, they must wait until these regenerate, but can skip this waiting by buying lives directly. Additionally, the player must sometimes get the help of friends in order to advance to the next set of levels, but can skip this task by paying hard currency. Both of these items are categorized as sale of *play accelerators*. Finally, players can buy *gifts*, containing power-ups, which can be given to friends within the game.

1.4 ChefVille

<u>ORIGINAL TITLE</u> ChefVille	<u>DEVELOPER</u> Zynga
<u>TESTED PLATFORM</u> Adobe Flash	<u>SOCIAL GAMING PLATFORM</u> Facebook
<u>GENRE</u> Simulation	<u>PRICE</u> Free
<u>RELEASE DATE</u> 2012-08-06	<u>COUNTRY OF ORIGIN</u> US

ChefVille is a restaurant simulation game by leading US SNG developer Zynga. At the time of testing, the game was Zynga's fourth most popular game on Facebook with over 19 million monthly average users.

In the game, the player is the owner of a restaurant with the goal of expanding and getting more customers. The player must collect ingredients, which are in turn used to cook meals which can be served to customers. Each recipe requires a different set of ingredients, but most ingredients cannot be bought directly. Instead, the player must buy a unit that produces the ingredient, which requires the help of friends to be set up. Alternatively, the player can use hard currency to instantly finish the unit. The player is constantly given quests to clear, which typically include cooking some recipe or setting up new kitchen equipment. Setting up new kitchen equipment also requires the help of friends or hard currency, but the new kitchen equipment makes it possible to cook recipes that were previously locked. By clearing quests, the player unlocks new recipes that can be cooked and served to customers. As the game progresses, the player can unlock new parts of the map, where new ingredients can be collected and new quests appear.

The player can add friends as neighbors and visit their restaurants. The player can perform actions at friends' restaurant, and is typically rewarded soft currency and ingredients.

1.4.1 Mechanics

Achievements

ChefVille does not have an achievement system where the player is rewarded purely decorative items. However, some limited time campaigns and quests reward the player with

decorative items that can be put on display in the restaurant. Although these could arguably be said to be part of the quest system, they fill the function of an achievement system, and are categorized as *predictable achievements*.

Points

ChefVille has an extensive point system with several types of points. There is a dual currency system with a soft currency called Coins, and a hard currency called Cash. Both Coins and Cash can be bought with real currency, but only Coins can be earned within the game. There is also a second soft currency called Hearts, which is earned by visiting friends' restaurants and helping out. All three items can be used to buy things in the in-game store, but the accepted currency depends on the item.

ChefVille has a point system called Recommendations, a special type of points that are received when the player entertains customers in the restaurant. These points are required to clear some of the quests in the game, and to unlock land expansions.

There is a point system called Mastery Stars, which keeps track of which recipes the player has mastered, and is explained below.

The game has a classic player leveling system with experience points and progress points. Experience points can be obtained by collecting ingredients, serving customers and completing quests. As experience points accumulate, the player levels up to the next level. When the player levels up, it can unlock new kitchen equipment and other equipment, as well as new quests that can be performed.

Leaderboard

The game does not have a leaderboard, but the player can sort a list of neighbors at the bottom of the screen. The list can be sorted by number of Mastery Stars, or sometimes by another point system from an ongoing limited time campaign. This system fills the function of a *categorized leaderboard*.

Levels

The game itself does not have levels, instead it is the player that progresses and unlocks new parts of the game.

Challenges

Challenges, or quests, in ChefVille are called goals. The player is constantly fed new goals, which often include setting up new equipment and cooking recipes. Some of the goals appear

when the player levels up, but there are also goals that are part of limited time campaigns in the game.

A lot of the goals in the game require the help of friends to be completed. Unless the player has a many neighbors, many of these goals cannot be completed. The player may however choose to skip the task by paying hard currency. The option of paying hard currency instead of performing a task is always available to the player.

ChefVille also features a system called Mastery Stars, which also serves as a challenge for the player. The player can earn up to three Mastery Stars for each recipe by cooking it several times. Mastering a recipe increases the amount of servings that is produced when the recipe is cooked, but also adds up to a total count of Mastery Stars. By gaining Mastery Stars, the player can unlock new recipes, new cooking tools that are required for some recipes, and unlock land expansions. Some quests also require that you master certain recipes, and the Mastery Stars system is a central concept of the game.

Gambling mechanics

During testing, no gambling mechanics were found in ChefVille.

1.4.2 Reward system

The player is instantly rewarded whenever a goal is completed. Typically, the reward consists of coins, experience points and ingredients. Sometimes, completing a goal may also unlock new goals or reward the player with a trophy that can be placed in the restaurant. There is also a connection to the offline world as the player can get real recipes for dishes that are produced in the game.

1.4.3 Time-dependent events

Session limits

Playing sessions are limited by the use of an energy system, with points called Energy. Most actions in the game cost Energy to perform, and when the player runs out of Energy they cannot proceed until the energy regenerates. Alternatively, the player can ask friends for Energy or pay hard currency to restore it instantly.

When the player visits neighbors, another energy system called Visit Energy is used. The player has a limited amount of Visit Energy for each friend, which decreases for every action performed at the friend's restaurant. Visit Energy regenerates every 24 hours, but can also be bought with hard currency in the same way as Energy.

The game also features *time to completion*, as dishes that are being made take a certain time before they finish. The player has the option to instantly complete the dish using an item that can be bought for hard currency.

Retention

ChefVille does not have a system that directly rewards returning players, but there are some mechanics that indirectly do this. If the player visits a neighbor for three days in a row, they can become a regular and are rewarded Pepper. Pepper is an ingredient required for several recipes in the game, but which can only be obtained by becoming a regular at a neighbor's restaurant. However, since the reward is not direct, this is not categorized as *rewarding retention*.

The game punishes players for absence, as food that is being cooked can get burnt if the player is absent for too long. Once a dish is burnt, the player can either restore it using a special item that can be bought for hard currency, or throw it away.

Campaigns

During the testing period, ChefVille had several limited time campaigns. Many of the campaigns have new kitchen equipment that can be built, together with new goals and recipes. These campaigns are categorized as *game content campaigns*. No *sales campaigns* were observed during testing.

During the campaigns, the player is often challenged to complete a number of goals, and is rewarded if all goals are completed within the time of the campaign. The player may be rewarded a unique decorative item that can only be obtained from the campaign, as well as *play accelerators* that otherwise cost hard currency. Sometimes players who invite friends to join the campaign are given an advantage in the campaign, and clearing the goals ahead of time gives extra rewards.

1.4.4 Social

Social actions

ChefVille is heavily focused on social interaction, and a lot of tasks in the game can only be completed by asking friends for help or paying hard currency. To set up new buildings, the player must staff neighbors, or pay game characters to become staff members. The player can send free gifts to friends up to once per day per friend, which rewards the receiving player. When a player clears a goal, they can chose to share the reward on Facebook, and other

players can then get extra coins by clicking on the post. Similarly, players can share free energy with friends.

Visiting friends' restaurants rewards the player with coins and ingredients, and having many neighbors can greatly increase the pace at which the player advances in the game.

Multiplayer

ChefVille features extensive *cooperative play*, as players can help each other advance quicker by gifting items and visiting each other's restaurants.

There are sometimes limited time campaigns where players collect certain items during the timeframe of the campaign. During these campaigns, the player can view how far the player's friends have progressed in the campaign, and it is a type of multiplayer campaign. This leaderboard like functionality makes it possible to interpret this as an example of *competitive play*, but it is not made clear that beating your friends' scores is an objective. The game is thus categorized as not having *competitive play*.

1.4.5 Monetization

ChefVille offers a vast selection of virtual items, and most of them can be bought in the in-game store. Players can give each other free gifts, but no way of gifting items bought for hard currency was found during testing.

There are *boosts and power-ups* that can be bought to give the player an advantage in the game. One example is better kitchen equipment that finishes dishes faster than the standard equipment does.

The player can customize their avatar by changing facial features and clothing items, and some of the items available cost hard currency. The player can also place items in or around the restaurant that have no function in the gameplay, but are merely decorative items. Both of these are examples of *personalization and creativity* items.

ChefVille also offers many different *play accelerators*, such as recovery of energy, instant finish of dishes and skipping of mundane tasks. Additionally, the player can buy Hearts, Coins and skip staffing friends to advance quicker in the game.

1.5 Diamond Dash

<u>ORIGINAL TITLE</u> Diamond Dash	<u>DEVELOPER</u> Wooga
<u>TESTED PLATFORM</u> Adobe Flash	<u>SOCIAL GAMING PLATFORM</u> Facebook
<u>GENRE</u> Puzzle	<u>PRICE</u> Free
<u>RELEASE DATE</u> 2011-03-16	<u>COUNTRY OF ORIGIN</u> Germany

Diamond Dash is German developer Wooga's most successful title with over 21 million monthly active users at the time of testing.

The game is a puzzle game where the player clears diamonds of different colors which fill a large grid that makes up the game board. Diamonds are cleared by clicking groups of three or more adjacent diamonds of the same color, and the gameplay mainly consists of quickly finding and clicking new groups of diamonds. Each round is 60 seconds long and the goal is to get a score as high as possible before the time runs out. If the player clears 10 groups of diamonds in a row within a certain timeframe and without any mistakes, a special charge called Diamond Fire is activated. This boosts the number of diamonds that are cleared with each click, and dramatically increases the score. There is also a meter called the Magic Diamond Bar at the top of the screen, which indicates how close the player is to having a Magic Diamond appear. If a Magic Diamond appears, the player can click it to destroy large groups of diamonds at once. There are also additional boosters that can be bought with hard or soft currency that help the player.

The basic gameplay in Diamond Dash is consistently the same. Instead, players compete against their friends in weekly tournaments, where a winner is decided every week. The player can level up by playing the game, which makes it possible to get slightly higher scores, and give them an advantage against their friends.

1.5.1 Mechanics

Achievements

During testing, an achievement system could not be found in Diamond Dash.

Points

The game has a dual currency system with a soft currency called Coins, and a hard currency called Gold. Coins are earned by playing the game, or bought with real currency. Coins can be used to buy certain power-ups that help boost the player's score. Gold is rewarded to the player sometimes when they level up, but must otherwise be bought with real currency. Gold can be used to buy energy or to get 15 extra seconds at the end of a round in the game, as well as to buy certain power-ups that cannot be bought with coins.

The player can gain experience points by playing the game, and after a certain number of experience points have accumulated, the player's level increases. For certain levels, the player's score bonus increases. The score bonus is a bonus percentage that is added to the player's score in the game, and having a higher score bonus thus gives the player a slight advantage.

Leaderboard

The game's main concept is the weekly tournament where players compete against their friends. There is a *categorized leaderboard* showing friends' top scores for that week, which is reset when the week ends. When a weekly tournament finishes, a popup listing last week's winners is displayed the next time the player logs in.

Levels

In contrast with the other puzzle games tested in this study, Diamond Rush does not have game levels. The challenge is constantly the same, and the only change is the player's level and the power-ups that are used.

Challenges

The challenge in Diamond Dash is to compete with friends in the weekly tournaments. Alternatively, the player can enjoy the single-player game and collect experience points to level up. The player can increase their level up to level 100.

Gambling mechanics

During testing, no gambling mechanics were found in Diamond Dash.

1.5.2 Reward system

For clearing a level, the player is rewarded experience points and coins. When the player levels up, the game sometimes rewards the player with gold, but often there is no reward at all. Leveling up can sometimes unlock new power-ups.

1.5.3 Time-dependent events

Session limits

The game has an energy system with lives which regenerate every 8 minutes. Every time the player plays the game, a life is lost. New lives can be gifted by friends, or bought using hard currency.

Retention

The game has weekly tournament, which arguably work as an incentive to make the player come back every week. Thus, there is a social aspect which provides players with an incentive to return to the game, but there is no game mechanic which directly rewards player retention.

Campaigns

Diamond Dash regularly has *sales campaigns* called Magic Chest Offer, where the player is given a large discount on different game items. The discount percentage continuously increases, giving the player a larger and larger incentive to pay money. During testing, there were no campaigns featuring new game content.

1.5.4 Social

Social actions

The game lets you ask friends for lives, and you can gift lives to your friends once per hour, which rewards the receiving player. You can post new high scores on your Facebook wall, and brag on the timeline when you beat a friend's score in the weekly tournament. It is also possible to invite friends to come play the game.

Multiplayer

The multiplayer component of the game consists of the weekly tournaments where players compete against each other in order to get the highest score. As the players fight for a decorative medal which can be posted on the Facebook wall, the game is categorized as having *competitive play*.

1.5.5 Monetization

The player monetizes on *boosts and power-ups* as well as *play accelerators*. The game is also the only one among the tested games which provides a subscription model.

The player can buy Magic Powers which give the player an advantage in the game and can help them beat friends' scores for Gold or Coins, both which can be bought using real

currency. Additionally, the player can extend a playing round by 15 seconds with hard currency which also gives them an advantage. These are examples of *boosts and power-ups*.

Playing sessions are limited by the amount of lives the player has, but the game sells *play accelerators*, as the player can buy new lives for real currency.

The game has a subscription model called the Diamond Dash Club, where the player gets bonus experience points, unlimited lives and new power-ups for a fixed monthly fee.

1.6 FarmVille 2

<u>ORIGINAL TITLE</u> Farmville 2	<u>DEVELOPER</u> Zynga
<u>TESTED PLATFORM</u> Adobe Flash	<u>SOCIAL GAMING PLATFORM</u> Facebook
<u>GENRE</u> Simulation	<u>PRICE</u> Free
<u>RELEASE DATE</u> 2012-09-05	<u>COUNTRY OF ORIGIN</u> US

FarmVille 2 is Zynga's sequel to their long running hit title FarmVille. It is the most popular game on Facebook by December 2012, with over 42 million monthly users.

The gameplay of FarmVille 2 is very similar to that of its predecessor, and is typical for a farming simulation game. The player is the owner of a farm, and responsible for taking care of all the activities there. The player is given quests to plant seeds and harvests crops, in order to get the farm economy going. As the game progresses, different types of crops that can be grown become available, and new parts of the farm become unlocked. The player may also keep animals and plant trees, as well as construct new buildings that unlock new features of the game. The items produced on the farm can be sold on the market, or used to craft new items. The animals on the farm can, if taken care of properly, regularly generate new items such as milk and cheese for the player. The concept of crafting is new feature in FarmVille 2 and was not available in the original FarmVille. In certain parts of the farm, the player can craft new items out of existing ones. These can then be sold on the market for a higher price. For example, the game has a crafting kitchen where the player can make bread and cakes out of things grown on the farm.

In a SimCity-like fashion, the player starts out with a small budget, but builds up the economy by growing crops and clearing quest. The player can then buy more expensive and better seeds and animals, which generate more revenue. Many parts of the game, such as setting up new buildings, require the help of friends. Optionally, the player can pay hard currency to get help from a non-playable character in the game instead. The game focuses heavily on social features, and friends can be added as neighbors within the game. Having many friends and neighbors within the game makes the player advance much faster, and it is

difficult to progress in the game with no friends or neighbors. By visiting friends' farms regularly, the player can receive extra coins and experience points.

There is no definite goal of the game, but the player is constantly fed new quests which can be performed, and is encouraged to improve the farm economy and expand the farm to new areas.

1.6.1 Mechanics

Achievements

FarmVille 2 features an achievement system where the player can be awarded mastery ribbons for crops which have been grown many times. Every time a crop is harvested in the game, the player earns a mastery point for that crop. If enough mastery points are earned, the player can *master* that crop. Mastering a crop adds a ribbon beside the crop's icon in the in-game store, and lets the player set up a sign on their farm to show off what crops they have mastered. A crop can be mastered to three different degrees, rewarding the player with either a yellow, red or blue ribbon. The player can view how many more mastery points are required until a crop is mastered in the general store, and can then choose to plant that crop in order. Since the requirements of the achievement are known, this is a system of *predictable achievements*.

FarmVille 2 also has prized crops prized animals. Animals kept on the farm and fed enough will eventually turn into prized animals. When an animal becomes prized, a medal of decoration is shown next to them on the farm. Prized animals produce more items and are more valuable to the player. The player can see how close an animal is to becoming prized, and this system is also one of *predictable achievements*. Prized crops, however, are random, and appear sometimes when the player harvests crops. Prized crops are larger than normal crops, and the player's record prized crop for each type of plant is stored in the general store. When the player finds a prized crop, they are rewarded mastery points, coins and experience points. However, since the prized crops appear at random, it is a system of *surprise achievements*.

Points

FarmVille 2 has an extensive point system with many different types of points, all with differing usage areas. The game features a dual currency system with a hard currency called Farm Bucks, and a soft currency called Coins. Both Coins and Farm Bucks can be bought with real money, but one cannot be used to buy the other. Coins can be earned by

performing tasks within the game, but Farm Bucks can generally only be bought using real money.

For many of the tasks performed in the game, the player receives experience points. After obtaining a certain number of experience points, the player will level up to the next level. As the player's level increases, more parts of the game become available and the gameplay becomes more advanced. For the first few levels, new features such as the ability to keep animals are introduced for each level. As the game progresses, increasing your level becomes less important, but there are parts of the game still not available until level 30.

Leaderboard

FarmVille 2 does not have a large leaderboard, but the neighbors' levels are constantly shown at the bottom of the screen. The list is seemingly ordered by level, and fills the function of a *categorized leaderboard*.

Levels

FarmVille 2, like ChefVille, does not have a system where the game itself has increasing levels. Instead, the player's progress points increase, which unlocks new features.

Challenges

From the very beginning of the game, the player is constantly fed new challenges. The challenges are presented by non-playable characters that provide the player with tasks that need to be carried out in order to clear the challenge. In the early stages of the game, most tasks can be cleared without help of others, but increasingly the tasks require the player to ask friends for help to be able to complete the tasks. This forces the player to socialize with friends through the game and makes it important to have neighbors who frequently play the game. The player is however always given the option to skip a task by paying hard currency.

There are also daily challenges from the Village Grocer, which are orders the player must finish within a day in order to get rewards. If the player manages to complete all the orders for that day, they receive the reward, but the actual content of the reward is not known.

Gambling mechanics

During the time of testing, no slot machine-like gambling mechanics were found in FarmVille 2.

1.6.2 Reward system

Completing challenges provide different rewards depending on the challenge, but typically rewards the player with experience points, soft currency and sometimes *power-ups*. When the player levels up, they are rewarded new animals and plants that become available, and all planted crops instantly become ready to harvest. Leveling up sometimes also unlocks new game features, and triggers new challenges. When a player visits a neighbor's farm, they are rewarded with coins, experience points and water.

1.6.3 Time-dependent events

Session limits

FarmVille 2 uses both *time to completion* and an *energy system*. Depending on the crop, the player has to wait a certain time until the crop is ready to harvest. This is just a few minutes for cheaper crops, up to several hours or even days for others. The player can use speed-grow, which can be bought using hard currency, to instantly finish crops.

Water is the main energy and usually what limits a playing session. After a crop has been sowed, the player must water it for it to start growing. If the player runs out of water, there is no way to plant new crops anymore. There are several ways to get water, either from a well on the farm or by asking friends, but the supply is still limited. Water may also be bought using hard currency. In addition to the water system, the player also has Visit Energy for each friend, which limits how often they can perform actions on neighbors' farms. Finally, there is craft energy, which limits how often the player can craft new items and recipes out of other ones.

Retention

FarmVille2 has a system of *punishment for absence*. Crops will begin to wither unless you harvest soon after they've ripened. This forces the player to constantly come back to the game to make sure that plants do not wither. However, no system that directly rewards players that frequently return to the game could be found.

Campaigns

FarmVille2 constantly has running campaigns with challenges and unique items that can be bought for a limited time only. In the challenge campaigns, the player is typically given a limited number of days to finish a challenge, and if they manage to do so they get a unique, often decorative item. This item is often unique for the campaign, and cannot be obtained through other means. For some of these campaigns, players must cooperate with friends. The

in-game store also sells special seasonal items that match the current season, which are only available for a short while. These campaigns are categorized as *game content campaigns*.

No pure *sales campaigns* were found in FarmVille 2 during testing.

1.6.4 Social

Social actions

In FarmVille 2, social actions are an important aspect of the game. Almost every time you achieve something, you are given the option to share it on Facebook. The game also constantly asks you to invite friends, and to send in-game gifts to your friends.

The player must often ask friends for help to complete certain tasks, such as setting up new buildings, or optionally pay hard currency to skip this. The player can ask friends for water and other items. If a friend accepts to give you this item, they also receive one for themselves, which rewards both players. This may however only be done once every few hours per friend, but makes having many friends advantageous in the game. You can visit neighbors' farms, and perform actions there which reward the player, and the more friends a player has, the more rewards can be received.

Multiplayer

The game is a multiplayer game in the sense that many tasks require the help of friends and that you constantly interact with your friends. In this sense, the whole game is built on *cooperative play*. However, no part of the game where players directly compete against each other could be found during testing, and the game thus does not have *competitive play*.

1.6.5 Monetization

FarmVille 2 monetizes on *boosts and power-ups, personalization and creativity items, and play accelerators*.

There are several types of *play accelerators*. The player can buy water, the main energy system, to be able to plant more crops in one session. They may also instantly finish crops by buying Speed-grow. All tasks that are part of challenges for the player can also be skipped using hard currency, saving the player the trouble of doing tedious tasks or tasks that cannot be completed yet. This is also true for tasks where the player needs help from friends, as the player may instead use hard currency to staff non-playable characters.

The game focuses heavily on *personalization and creativity items*. The player can change their avatar, with some of the changes only available at a fee. The in-game store has limited time items with seasonal themes. For example, during the winter season, many Christmas themed items such as Christmas trees were available in the store. Not all of these items are decorative only, but at least part of their function is decorative.

Finally, there are *boosts and power-ups*, such as fertilizer which increases the size of harvests. By using this, the player can harvest more from at once, and get an advantage in the game.

2 Appendix B: Game Analysis – Japanese Games

2.1 Chokotto Farm

<u>ORIGINAL TITLE</u> ちよこつとファーム	<u>DEVELOPER</u> Drecom
<u>TESTED PLATFORM</u> Smartphone in-browser	<u>SOCIAL GAMING PLATFORM</u> GREE
<u>GENRE</u> Farming Simulation	<u>PRICE</u> Free
<u>RELEASE DATE</u> 2011-01-19	<u>COUNTRY OF ORIGIN</u> Japan

Chokotto Farm is one of Tokyo based developer Drecom's most popular titles. It is an in-browser game that can be played either on feature phones or smartphones. At the end of December 2012, the game was the third most popular feature phone game on the GREE platform.

The gameplay is typical for that of a farming simulator, but the format has been adapted for the smaller screen of mobile phones. The player sows seeds on their farmland, which consists of a 5x5 grid. After sowing, the crop start growing, and after a certain amount of time depending on the type of seed, the crop is ready to be harvested. Depending on the player's level, there is a maximum for the number of crops that can be grown at once. The player can also keep animals on the farm, which produce an item once before disappearing. The player is constantly given quests, called customer orders, to complete. A typical quest is for the player to grow a certain number of a certain crop, which can then be sold to complete the quest. Quests are ordered by rank, and when a certain number of quests for a level have been completed, the player can move on to the next quest rank. The player also has a level, which

is increased by gaining experience points which are received when harvesting. Occasionally, disturbance animals can attack the player's crops. The player can attempt to catch these animals, and they must be removed before the crop can be harvested. The player can make friends in the game, and by visiting friends they can get experience points and points called Happy Points. Happy Points can in turn be used to restore the player's energy.

The game frequently has limited time events with special quests where players can win unique items for participating. There are also local items only available in the in-game store, which depend on the physical area that the player is in. Instead of physically moving, the player may use a rare feather which lets the player transport to any part of Japan.

2.1.1 Mechanics

Achievements

In Chokotto Farm, the player can change the appearance of their farm by changing the background or the fence around the farmland. The function of these items is purely decorative, and the items cannot be bought, but only won in the game. Some backgrounds are received when the player reaches a certain quest rank, but the reward is unknown to the player beforehand, and is a *surprise achievement*. Often, however, backgrounds and fences are offered as a reward for completing quests in time limited campaigns. In this case, the requirements for the achievement are known to the player, and it is a *predictable achievement*.

Points

The game has a dual currency system with a soft currency called Puri P, and uses the GREE platform's currency GREE coins for hard currency. There's a point system called Happy Points, which the player receives by helping friends, and which can be used to restore energy twice per day.

Chokotto Farm has a classic player leveling system, with experience points and player levels. Experience points are gained by performing actions on the farm, and the player reaches a new level when enough experience points have accumulated.

Leaderboard

Chokotto Farm has no global leaderboard, but the game has limited time campaigns at regular intervals, where player compete against each other for a place in the rankings. In these event campaigns, there is an *infinite leaderboard* showing the position of all players, and the players' rewards are decided by their position on the leaderboard. These events are covered in the section Campaigns below.

Levels

The game has a level system called quest rank. Each quest rank has a limited number of quests, and to get new quests, the player must clear a predetermined minimum number of quests from the current rank. Once these have been cleared, a special quest appears, and clearing this lets the player move on to the next rank.

Reaching both higher player levels and quest ranks can unlock new features in the game that were previously inaccessible.

Challenges

The player receives quests called customer orders. They typically request the player to harvest a certain quantity of some crop, but may also challenge the player to try out functions in the game. Once a quest has been completed the player receives a message. The player can then choose to complete the challenge and receive their reward. As described above, challenges are sorted by quest rank, and the requirements increase as the game progresses.

Gambling mechanics

Chokotto Farm features a gacha mechanic, which can be spun daily for free. There is also a feature called friend gacha, which is a gacha system that the player can spin once per day for every friend on the GREE network that they are also friends with in the game. Typically the player is rewarded *boosts and power-ups* that can otherwise be bought for soft currency in the in-game store. During testing, no fee-based gacha was found.

In the beginning of 2013, the game ran a campaign where players could buy Fukuburo, a bag with unknown content that is often sold in stores in Japan as a New Year's Day custom. The reward for buying the bag is random for each player and unknown, and is classified as a hard currency gambling mechanic.

2.1.2 Reward system

For basic actions on the farm, the player is rewarded experience points, which are required to level up. When a player clears a quest, they are typically rewarded soft currency, energy recovery and *power-ups*.

When the player levels up, they get a higher maximum energy level and sometimes get extra spots to plant seeds and keep animals. When the player reaches a higher quest rank, besides unlocking new quests, they are sometimes rewarded new backgrounds.

In the in-game store, the player can register their current location using a location service, and are able to buy items that are exclusive for that region. If a player collects all local items for that area, they are rewarded a new farm background. They can also get a special item for travelling distances over 1 kilometer.

From rewards in limited time campaigns, it appears that the largest rewards in the game are items such as backgrounds, fences and exclusive animals, which mainly serve a decorative purpose.

2.1.3 Time-dependent events

Session limits

The game has an *energy system* and items with *time to completion*.

The energy system is based on points called Health Points, and most farm actions cost Health Points to perform. Health Points regenerate with time, but there are methods to skip this waiting time. The player can either use a special item to revive Health Points instantly, or use Happy Points; points that can be obtained by helping out on friends' farms. Happy Points can be used twice a day to reward Health Points.

Crops and animals on the farm take time before they complete, but in the same way as energy, the player can speed up this process by using special items.

Retention

The game has a free daily gacha, and if the player logs in every day for ten days in a row, the probability of receiving a rare item increases. This system give players an incentive to return every day to the game and *rewards retention accumulatively*.

As with many other farm games, crops can rot if the player does not harvest in time. Plants that have rotted can be revived by watering, but the player must wait for the crop to grow once again. This is categorized as *punishment for absence*.

Campaigns

The game regularly features limited time campaigns, and there are often more than one campaign going on at once.

There are frequent multiplayer competition campaigns, where players have the chance to get unique farm background and fences. During these campaigns, special crops and disturbance animals appear. Typically, the player must plant the crops, and then catch the disturbance

animals that appear. With a certain probability the player can then get hold of a new kind of plants, which the player then plants. This circle of planting and catching continues for a while, and there are detailed instructions for how the player can complete the campaign and what rewards exist. By clearing these quests, the player can get special backgrounds and fences. These are *game content campaigns*.

There is often a campaign ranking, where players who have caught the most animals are listed. Players' are rewarded depending on their position in the campaign ranking, with players in high positions receiving the best rewards. Each of these competition campaigns has its own theme with new content. No *sales campaigns* were observed during play testing.

2.1.4 Social

Social actions

There are a large number of social actions that can be performed in Chokotto Farm. Players can visit their friends' farms to help out by watering crops, harvesting or by releasing disturbance animals. Releasing disturbance animals is sometimes helpful to friends, if they are looking to catch that particular animal, but may also be done to disturb other players. Players can also help out on farms of players they are not friends with, but the available actions are fewer.

Players can also send gifts to each other, with items from their item box. The gifted item is removed from the giving player's inventory and added to receiving player's. There is an option to invite friends from the GREE platform to join the game.

During testing, there was also a ticket exchange campaign. During the campaign, players could send items called item tickets to each other once a day. If the player collected enough tickets within the time frame of the campaign, they could claim rewards that help them advance in the game, as well as decorative items. Sending a ticket only rewarded the receiving player.

Multiplayer

Player can help each other by visiting each other's farms, and cooperating gives an advantage in the game. This is a form of *cooperative play*. In the competitive campaigns, players compete against each other for spots in the event ranking. This, as well as releasing disturbance animals on friends' farms, is a type of *competitive multiplayer*

2.1.5 Monetization

Chokotto Farm monetizes on *boosts and power-ups*, and *play accelerators*.

Players can send *gifts* to each other directly from their item box. The player can freely choose to either send free items or items bought using hard currency. There are however no items that are sold exclusively for gifting, and the game is therefore not considered to monetize on gifting. In the in-game store, players can buy items that increase harvest size and other *boosts and power-ups*. Although the game has farm background and fences which are *personalization and creativity* items, no way of buying these items directly using hard currency could be found during testing. There are several *play accelerators* that can be bought in the in-game shop, such as HP recovery items and items that shorten growth time for crops.

2.2 Puzzle & Dragons

<u>ORIGINAL TITLE</u> パズル&ドラゴンズ	<u>DEVELOPER</u> GungHo Online Entertainment
<u>TESTED PLATFORM</u> iOS, Android	<u>SOCIAL GAMING PLATFORM</u> Game Center/None
<u>GENRE</u> Puzzle RPG	<u>PRICE</u> Free
<u>RELEASE DATE</u> 2012-02-20	<u>COUNTRY OF ORIGIN</u> Japan

Puzzle & Dragons is a puzzle by Tokyo based developer GungHo, and one of the most successful SNGs exclusively for smartphones in Japan. The game is available on both iOS and Android, and reached 4 million downloads by the end of 2012. The game has held the top position on the Japanese iPhone top grossing rank almost constantly since its release, and was still the number one game at the end of 2012.

The game is a puzzle game where the player moves around drops on a grid in order to get three or more in a row. The player can move a drop freely on the grid using the touch screen interface, and the drop switches position with drops it collides with. The player only has a few seconds to move the drop, but a skilled player can match up several groups of three or more drops on the game board during this time. The game incorporates RPG elements which add an extra element of excitement to the game. The player collects monsters that are used throughout the game, and having stronger monsters makes it easier to advance. Five monsters are picked out for a team is then used to explore different dungeons. Each dragon has a cost, and the total cost of the player's team cannot exceed the player's maximum team cost. This maximum can be increased by gaining experience points and leveling up. A dungeon is a type of quest, filled with tough enemies that the player must defeat until a boss fight appears at the end. The player can attack enemies, either by clearing drops on the puzzle grid, or by using special abilities that some monsters have. When drops on the board are cleared, the player's dragon of the corresponding color will launch an attack on the enemies. As the player advances through these dungeons, they can collect stronger monster, but the enemies also become tougher.

The game, together with Kakusansei Million Arthur, is unique in that it does not use any of the large Japanese SNG platforms. Instead, the iOS version uses Apple's Game Center, and the Android version uses no platform at all. However, the game's characteristics are typical to that of an SNG, and the game is generally considered as being one. When a player enters a dungeon, they can choose another player as a friend to bring with them. The friend's team leader dragon will then help the player attack enemies in the dungeon, and cooperating makes it easier to advance in the game.

2.2.1 Mechanics

Achievements

The iOS version of Puzzle & Dragons has an achievement system that can be viewed in Apple's Game Center. The achievements can be found in a list and the player may view the requirements for clearing the achievements. This is a system of *predictable achievements*.

Points

Puzzle & Dragons uses a dual currency system with a soft currency called Coins, and a hard currency called Magic Stones. The hard currency can be bought using real currency, but is sometimes given as a reward in the game.

The game has a leveling system with experience points and progress points called rank. Players gain experience points by exploring dungeons, and level up by gaining enough experience points. Leveling up raises the maximum team cost for the player's monster team, and lets the player equip stronger dragons which are needed in more difficult dungeons.

Additionally, the game has a point system called Friendship Points, which can be received from limited time campaigns and by cooperating with other players. Friendship Points are used for one of the gacha systems in the game, called Friendship Gacha.

Leaderboard

The iOS version of Puzzle & Dragons uses Apple's GameCenter platform, and has a global *infinite leaderboard*, that can be viewed outside in the GameCenter application.

Levels

The game features dungeons that the player explores, and these dungeons have increasing difficulty, which is a system of game levels.

Challenges

The challenge in the game is for the player to explore and clear dungeons in order to unlock new ones. In addition to the basic dungeons, there are special dungeons that can be unlocked, or which sometimes appear as part of limited time campaigns. The enemies in the dungeons progressively become more difficult to beat, and the player must level up and get stronger monster to be able to advance.

Gambling mechanics

The game has two permanent gacha systems, where players can spin the gacha to receive new monsters. The first one is known as Friendship Gacha and is spun using Friendship Points. Friendship Points can be obtained through cooperating with other players in the game, and often received as a login bonus once per day.

The second one is a fee-based gacha called Rare Gacha which guarantees that rare monsters appear at a certain probability. Rare Gacha is spun using the hard currency Magic Stones. Occasionally, there are ongoing limited time campaigns which offer other gacha systems, where a special type of monsters typically appears at a higher probability.

2.2.2 Reward system

When a player clears a dungeon, they are rewarded coins, experience points and new monsters. By cooperating with other players in the dungeon, the player is rewarded Friendship Points. The best reward in the game is arguably Magic Stones, which are sometimes rewarded during special campaigns.

2.2.3 Time-dependent events

Session limits

Puzzle & Dragons has an energy system called stamina. Entering a dungeon costs stamina, and once the stamina has depleted, the player must wait for it to regenerate. Alternatively, the player can restore stamina instantly using hard currency.

Retention

The game has a daily login bonus where players are rewarded soft currency and Friendship Points. The bonus does however not reward the player extra for successive logins, and is a system of *rewarding retention*, but not accumulative.

Campaigns

The game continuously runs campaigns with new dungeons and extra rewards for players. During a New Year's campaign, players were rewarded extra Friendship Points and hard currency for daily logins. There were also special dungeons and new special monsters. There are events with special gacha mechanics where players can win unique monsters. Although there were several campaigns with increased gacha probabilities or hard currency given away for free, no *sales campaigns* were observed during testing.

There are also weekly campaigns such as the Friday's dungeon where players can explore new dungeons. Often certain dungeons will for a limited time only give extra bonus to the player, such as extra experience points or cost half stamina. These are considered *game content campaigns*

2.2.4 Social

Social actions

Players are rewarded Friendship Points for cooperating in dungeons. New player can send a free spin of the Rare Gacha to friends, but this can only be done once in the game. After this, there is no way of sending gifts to friends. There is an option of sending messages to other players. The game does not offer a way for players to invite friends.

Multiplayer

Players cooperate in dungeons, which rewards them with Friendship Points and help the player to advance quicker, and thus has *cooperative play*. No competitive multiplayer mode could be found, in the standard game or in limited time campaigns, and the game does not have *competitive play*.

2.2.5 Monetization

Puzzle & Dragons monetizes on *boosts and power-ups*, and *play accelerators*.

New monsters help the player advance faster through the game, and are an example of *boosts and power-ups*. They can however not be bought directly. Instead, if the player wants to pay for better monsters, they must spin the Rare Gacha for a chance of getting stronger monsters.

If the player's stamina depletes, they may revive it by paying hard currency, which is a *play accelerator*.

2.3 Kaitō Royale

<u>ORIGINAL TITLE</u> 怪盗ロワイヤル	<u>DEVELOPER</u> DeNA
<u>TESTED PLATFORM</u> Smartphone	<u>SOCIAL GAMING PLATFORM</u> Mobage
<u>GENRE</u> RPG	<u>PRICE</u> Free
<u>RELEASE DATE</u> 2009-10	<u>COUNTRY OF ORIGIN</u> Japan

Kaitō Royale is one of SNG platform Mobage's operator DeNA's most successful and long running titles. In the end of 2012, it was the third most popular feature phone game on the Mobage platform, and in the top ten for smartphone games.

The game is a browser based game where the player takes on the role as the leader of a gang of bandits. The player chooses one of three classes, which is permanent for the rest of the game, and takes on quests and clears missions in order to gain experience points and new items. Missions are cleared by a simple tap of a button, but require an energy system called Mission Henchmen. At the end of a set of missions there is a boss which the player must defeat to move on to the next set of missions. As the player gains experience points, they can level up and get more Henchmen and better items. The player is also rewarded more Henchmen for clearing missions. New Henchmen can be distributed in a *skill point* system, where the player distributes them between Mission Henchmen, Attack Henchmen and Defense Henchmen. Mission Henchmen are used as stamina in the energy system for missions, and Attack and Defense Henchmen are used when battling other players.

Players battle each other in order to collect treasures. Treasures come in sets, and the player must collect all the treasures of a set to complete it. Players can choose to attack other players and try to obtain a certain treasure, and the outcome of the battle is decided by the players' number of Attack and Defense Henchmen, as well as the items the two players have. The players can collect weapons, shields and vehicles, which together decide the player's strength in battles. For some missions, the players is required to use certain items, which can be bought with soft currency if the player does not already have them

2.3.1 Mechanics

Achievements

In Kaitō Royale, players collect and complete sets of treasures. Treasures can be found by performing missions, but what treasures can be found depends on the player's class, and to complete collections the player must battle other players. If a collection is completed, the player receives an avatar which can be displayed on their profile page on the Mobage network. This system is one of *predictable achievements*. Treasures can also be gifted between players, making it beneficial to have strong friends in the game.

The game also has a classic badging system, where players can earn badges by fulfilling certain requirements. If the requirements are cleared, the player receives a badge, and this is a typical system of *predictable achievements*. However, although this system is described in the game's official manual, the list of available badges could not be found during testing, and is possibly being phased out.

Points

Kaitō Royale has a soft currency, simply called Money or Dollars, and uses the Mobage platform's hard currency Moba Coins for hard currency.

There is a type of social points called Cooperation Points, which are obtained through social interaction with other players. These points can be used to revive energy required to execute missions.

Kaitō Royale has a player leveling system with experience points and progress points. By clearing missions and battling other players, the player gains experience point and can level up. By leveling up, the player gets more Henchmen to distribute as *skill points*.

There is also a point system called Treasure Points, but which apparently has no usage in the game anymore.

Leaderboard

No global leaderboard was found in Kaitō Royale, but the game frequently has limited time campaigns where players are rewarded based on their position on the campaign's leaderboard. In these events, players can view an *infinite leaderboard* showing how many points other players have collected in the event campaign.

Levels

Players clear missions in order to gain experience points, and the player must clear a missions in order to move on to the next one, giving the game increasing levels.

Challenges

The game challenges the player to clear missions and to level up, but the player is also given specific challenges that can be cleared. The challenges are found in a challenge box, with clear requirements and rewards clearly listed. Challenges can be to defeat a certain boss or execute missions, but challenges the player to try out other parts of the game as well.

Gambling mechanics

There appears to be no permanent gacha system in the game, but Kaitō Royale occasionally offers a fee-based gacha as a part of limited time campaigns. The system is a box gacha system, with the contents of the box known to the user. The player can spin the gacha once for hard currency, or buy a discount ticket that lets the player spin the gacha several times in a row at a lower price.

As a part of limited time campaigns, Kaitō Royale also sometimes has a dart game, but the mechanics of this is similar to a box gacha system. Instead of spinning a gacha, the player throws a dart at a dartboard, and is given a random reward. The player can choose the timing at which the dart is thrown, but this likely does not affect the outcome, and is an example of the gambling mechanic *illusion of skill*.

2.3.2 Reward system

The player is rewarded experience points, soft currency, and sometimes an item for clearing missions. By beating a mission boss, the player is typically rewarded energy revival kits or *power-ups* that can be used in battles. If the player levels up, they are rewarded restoration of energy, and new Henchmen that can be distributed. From login bonus campaigns, it appears that the best rewards in the game are strong items that can be used, as well as tickets for the gambling systems.

2.3.3 Time-dependent events

Session limits

Kaitō Royale has an energy system with Mission Henchmen as the energy factor. Executing missions reduces the number of Henchmen, and the player must wait for these to regenerate to keep doing missions, or use Cooperation Points to instantly restore them. Alternative, the player can use an item that instantly revives energy, which can be bought using hard currency.

In the same way, the player loses Attack Henchmen and Defense Henchmen when they attack or are attacked by other players, respectively. To regain them, the player can either wait or restore them with an item.

Retention

The game has a bonus program for players who keep playing, where they are given rewards for the number of days they have been registered for. These rewards are known to the player from the beginning.

There are sometimes login bonus programs in limited time campaigns, where players are required to log in every day for a number of days in a row in order to get certain rewards. The rewards that can be received are made clear to the player beforehand. This *rewards player retention accumulatively*.

Campaigns

The game has regular campaigns with new items that can be won, and competition between players. In these campaigns, players collect special treasures and beat special campaign bosses. The player can either play this as a single-player campaign by clearing quests for rewards, or compete against other players for a spot in the campaign's leaderboard for bigger rewards. These quests sometimes have special gambling mechanics with dart and roulette games which the players can play. The player can earn tickets to these by performing the quests from the campaign. These campaigns are categorized as *game content campaigns*.

There were no pure *sales campaigns* found during testing.

2.3.4 Social

Social actions

When fighting bosses in the game, players can get help from friends of other classes to fight the boss together. This lets the player beat stronger bosses and helps them advance quicker. Friends can also help you if you get beaten in a player-to-player battle. Players can wink to each other to get Connection Points, which can later be used to restore energy. The players have the possibility to gift treasures and other items out of their inventory to their friends. There is also a trading system where players can trade different items between each other. Players can invite other players from the Mobage platform.

Multiplayer

Players can cooperate together to beat bosses, and gift and trade items. This is categorized as *cooperative play*.

Players can battle each other in order to complete sets of treasures, and can thus rob other players of their inventory. In certain limited time campaigns, players battle each other for spots in the ranking. In these campaigns, players are both rewarded for performing the quests in the campaign, but also for their position in the campaign's total player ranking. These are examples of *competitive play*.

2.3.5 Monetization

Kaitō Royale monetizes on *boosts and power-ups*, and *play accelerators*.

Items that help the player get stronger, categorized as *boosts and power-ups*, can be bought in the game's in-game store. The items that can be bought in the store are limited however, and some items can only be bought by playing the fee-based gambling systems.

Playing sessions are limited by the game's energy system, but players can buy *play accelerators* which revive energy instantly to keep playing longer.

2.4 Kakusansei Million Arthur

<u>ORIGINAL TITLE</u> 拡散性ミリオンアーサー	<u>DEVELOPER</u> Square Enix
<u>TESTED PLATFORM</u> iOS, Android	<u>SOCIAL GAMING PLATFORM</u> None
<u>GENRE</u> Card Battle RPG	<u>PRICE</u> Free
<u>RELEASE DATE</u> 2012-04-09	<u>COUNTRY OF ORIGIN</u> Japan

Kakusansei Million Arthur is the second game by Square Enix' smartphone label SiSiLaLa OVERDRIVE. The game has held a strong position in the Japanese iPhone top grossing ranking since its release, and was the number two game, next only to Puzzle & Dragons in December 2012.

Kakusansei Million Arthur adapts the card battle RPG concept for smartphones, with native applications for both iOS and Android. The basic gameplay is similar to that of other card battle RPGs. The player performs quest by exploring in order to collect soft currency, cards, and gather experience points. There is no actual gameplay in the exploring; the player simply clicks a button to continue. The objective in the game is to collect strong cards, which can then be combined with other cards to strengthen them even more. Cards are ranked according to their strength, from normal to super rare plus. Cards are used for battling bosses or other players in the game, and having strong cards is an important aspect of the game. Campaign bosses will occasionally appear when exploring, and the player is rewarded for beating these. If the player fails to beat a boss, their friends can instead help out, and all players involved in defeating the boss are rewarded. As players gain experience points, they can level up to the next level. As a reward for leveling up, they are rewarded *skill points* which can be distributed between action points and battle cost. Action Points correspond to maximum energy in the game's energy system, and Battle Cost is the maximum cost of cards that can be used in battle.

Players can choose to battle other players in order to collect Element pieces, which are collection that together forms an Element. If the player manages to collect all pieces of an Element, they are rewarded a card. When battling other players, the player's *skill points* called

Battle Cost come to use. Each card in the game has a certain cost, and the total cost of the cards used in a battle cannot exceed the player's maximum Battle Cost. This means that even if the player has collected strong cards, they may have to level up and increase their Battle Cost to be able to use them.

The above gameplay style is similar to that of other card battle RPGs, but Kakusansei Million Arthur also features a single-player story mode. The player is one of one million Arthur's who have managed to get hold of the sword Excalibur, and now fight against each other in order to become the king of Britain. The story mode contains a text based story, combined with occasional boss fights. By playing the story mode and beating bosses, the player can get premium tickets for the game's gacha system, as well as other rewards. Like Puzzle & Dragons, the game does not use any of the large Japanese SNG platforms.

2.4.1 Mechanics

Achievements

An achievement system could not be found in Kakusansei Million Arthur.

Points

Kakusansei Million Arthur has a dual currency system with a soft currency called Gold, and a hard currency called MC. There is a friendship point system called Bond Points. These can be obtained by playing the story mode and performing social actions. Bond Points are used to play the Bond Gacha, a gacha system found in the game.

The game features a classic player leveling system, where the player can gain experience points by exploring areas, and levels up after collecting enough experience points. As the player levels up, they receive *skill points* to distribute.

Leaderboard

The game has a global battle *infinite leaderboard*, ranking players by the number of battles they have won. Optionally, you can view a *categorized leaderboard* showing only your friends.

Additionally, there are limited time campaigns where player compete for a place in the ranking. These event campaigns also have an *infinite leaderboard*, showing players ranked by how far they have gotten in the campaign.

Levels

The player is constantly given new areas to explore, and this could be considered a system of game levels.

Challenges

The player is challenged to explore the different areas in the game. Additionally, there are frequent limited time campaigns with special areas that the player can explore as well. If the player clears all special areas within the time frame of the campaign, they are given a reward.

Alternatively, the player can choose to collect elements in the battle part of the game in order to complete different sets of Elements.

Gambling mechanics

The game has a gacha system with a free gacha that is spun using Bond Points, where the player can win cards that are used in the game. Bond Points can be obtained through the story mode or by performing social actions. There is also a fee-based premium gacha that costs hard currency but guarantees that the player receives at least a rare card. Sometimes the player may receive a gacha ticket for the premium gacha as a reward, and spin it for free.

There are also temporary premium gacha that are part of campaigns, which typically offer a higher probability for players to receive the best cards during the time frame of the campaign.

2.4.2 Reward system

For exploring areas, the player is often rewarded energy and battle cost restoration items. For beating bosses, the player gets cards. From the login bonus system, it appears that the highest reward in the game is the premium gacha ticket which is also rewarded through campaigns and the story mode.

2.4.3 Time-dependent events

Session limits

Playing sessions are limited by an energy system called Action Points. Exploring areas in the game cost Action Points, and take time to revive. Optionally the player can use an item that regenerate energy, which is sometimes rewarded to the player but can also be bought for hard currency.

Similarly, the battle part of the game is limited by Battle Cost. Battling once reduces Battle Cost by the cost of the cards that were used in the battle. Battle Cost regenerate with time as well, and may be restored using an item.

Retention

The game has a monthly login bonus. It displays a calendar which clearly shows the rewards the player can get by logging in every day. If the player logs in every day for 30 days in a row they are rewarded a ticket for the premium gacha. This is a system which *rewards retention accumulatively*.

Campaigns

The game has frequent campaigns with new bosses to battle and new strong cards that can be won. Often the player has to collect a special coin by exploring new places that are part of the campaign, and by collecting a certain number of coins they can gain a reward. The rewards typically consist of special cards that can only be gotten through the campaign. The strongest cards, however, are obtained by reaching a certain position on the campaign's *infinite leaderboard*, which ranks players by how many campaign coins they have collected. This turns the campaign into a multiplayer campaign where they compete with other players.

There are also battling campaigns, where players get rewards for battling each other, and the top performing players are rewarded. The campaigns may also have limited time gacha systems, with higher probabilities for rare cards. Both types of campaigns are *game content campaigns*.

During testing, there were no pure *sales campaigns*.

2.4.4 Social

Social actions

For each friend the player adds, they get extra *skill points* which can be distributed. If the player loses friends, these points disappear again. Players can send short messages to each other once per day, which rewards them with Bond Points that are used for the Bond Gacha. The game offers no way to invite friends.

Multiplayer

Players can help each other to fight bosses that appear when exploring, and share the reward. This is an example of *cooperative play*, and makes it beneficial to have many strong friends.

Player may also steel Element pieces from each other, as well as compete for a spot on the leaderboard in limited time campaigns, and the game thus has *competitive play*.

2.4.5 Monetization

There are only four items that can be bought in Million Arthur.

The player can buy a fake card, which can be used to prevent element pieces to be stolen by other players in the battle mode. This is an example of a *boost and power-up*. Players may also pay hard currency in order to get new cards, but with the exception of some temporary campaigns these cannot be bought directly. Instead, the player must pay to spin the gacha and hope that they get a good card. This can also be categorized as a *boost and power-up*.

Players can also buy Action Point recovery and Battle Cost recovery items, which are *play accelerators*.

2.5 Rage of Bahamut

<u>ORIGINAL TITLE</u> 神撃のバハムート	<u>DEVELOPER</u> Cygames
<u>TESTED PLATFORM</u> Smartphone	<u>SOCIAL GAMING PLATFORM</u> Mobage
<u>GENRE</u> Card Battle RPG	<u>PRICE</u> Free
<u>RELEASE DATE</u> 2011-09-01	<u>COUNTRY OF ORIGIN</u> Japan

Rage of Bahamut is a popular card battle RPG by Tokyo based developer Cygames, and arguably the Japanese SNG title that has been the most successful on the Western market. In Japan the game is, over two years after its initial release, still on the top 10 list on the Mobage platform, both for smartphones and feature phones. The game is a card collection RPG set out in a fantasy world, where players complete quests in order to get a strong deck of cards. In this analysis, the Japanese market version of the game has been tested.

The player begins by choosing one out of the three classes Humans, Gods, and Demons, which is the class the player will represent for the rest of the game. The player then begins by performing quests in order to grow stronger and collect better cards for their card deck. Each card has a set of attributes, such as Attack, Defense and Cost, as well as special skills, which together decide how strong the card is. There are six different ranks for cards, from Normal to SS Rare, which indicate the usefulness of the card. The player collects cards and can make cards stronger by enhancing them with weaker cards, in order to improve the card's attributes. In addition to collecting cards through quests, the player can also battle other players in order to steal holy treasures which always come as a set. If the player manages to complete a set, they are rewarded with a card.

In addition to this basic gameplay of the game, there are constantly ongoing events with competitions and quests that the player can perform which gives variation to the gameplay. There are many different types of limited time events which appeal to players of different levels. Players may also join teams, called orders. By joining an order, players can take part in multiplayer team campaigns, where the different teams battle each other for the best rewards.

2.5.1 Mechanics

Achievements

An achievement system could not be found in Rage of Bahamut.

Points

Rage of Bahamut has a soft currency called Rupee and uses the Mobage platform's Moba Coins for hard currency. Rupees can be collected by performing quests, and are used for enhancing cards.

The game also features a social point system called Friendship Points. These are obtained through the daily login bonus or by performing social actions, and can be used for the Friendship Gacha system.

Rage of Bahamut has a typical RPG player leveling system, where players gain experience points by performing quests, and level up after getting enough experience points. Leveling up earns the player *skill points* that can be distributed between Stamina, Attack Power and Defense Power.

Leaderboard

For limited time campaigns, Rage of Bahamut has extensive leaderboards, where the player can see a global *infinite leaderboard* and a *categorized leaderboard* with the player's friends only. In the same manner, the player can view clan rankings and rankings within the player's clan.

Levels

The quests in the game appear in sequence and have increasing difficulty, and are a system of game levels.

Challenges

The game challenges the player to explore quests, which are completed by simply tapping a button. Exploring costs stamina, but gives the player experience points. Quests appear in chapters, and at the end of a chapter the player encounters a boss fight. If the player beats the boss, they are rewarded stamina and battle power restoration items, or new cards. As the game progresses, the bosses become tougher to beat.

The player can also pursue holy treasures, which are obtained by battling other players. Holy treasures belong to sets, and the player must get all treasures in that set in order to complete

it. To become stronger in player-to-player battles, the player must get stronger cards, and increase their Attack and Defense Power.

Gambling mechanics

Rage of Bahamut is heavily loaded with gacha mechanics, with several gacha systems, both free and paid. The free gacha system is spun using Friendship Points which are rewarded for daily logins, or obtained through social actions.

The paid gacha are box gacha which require hard currency to spin. Each box contains a different set of cards and appeal to different players. There are often discounts for buying more than one spin at once, and many of the gacha are available at a limited time only. There are also different ways to draw cards from the box. The cheaper gacha spins gives the player a totally random card, but if the player pays a premium fee, they are guaranteed a certain amount of rare cards. The content of the box gacha can be viewed in detail.

2.5.2 Reward system

When the player levels up, they are rewarded new *skill points* to distribute, as well as having energy restored. The player is also rewarded *skill points* for clearing quests. If the player beats a quest boss, they are rewarded *boosts and power-ups*, and soft currency. From the login bonus program, it appears that rare cards and tickets for the fee-based gacha are the best rewards in the game.

2.5.3 Time-dependent events

Session limits

Playing sessions are limited by the game's energy system. When the player explores quests, they lose Stamina which takes time to regenerate. Players also lose Attack Power when attacking other players in battle, and lose Defense Power when they are attacked. Both of these restore with time, much like Stamina. All three energy systems can be restored instantly using special items.

Retention

Rage of Bahamut has a login bonus program with a ten day calendar showing the rewards the player gets if they login up to ten times during the two week campaign. The rewards are cheaper in the beginning, with soft currency and energy restoration items, followed by rare cards and finally a ticket for the fee-based gacha system on the tenth day. This system *rewards retention accumulatively*.

There is also a bonus system rewarding players that have been registered for a long time. These rewards are typically rare cards or gacha tickets, and the next reward is made known to the player.

Campaigns

Rage of Bahamut has frequent campaigns and often run more than one campaign at once. There are quest campaigns, where new quests and bosses appear, and players who beat the bosses are rewarded unique rare cards that are only available through the campaign. Lower level players can aim for the rewards that are given for collecting campaign specific items, while higher level players will aim for a place in the campaign ranking. The campaigns often have an *infinite leaderboard* showing the positions of participants, and campaign rewards are given based on the player's position. In Rage of Bahamut, in addition to player rankings, there are also team rankings and Strong teams can compete against other teams in the rankings. These are *game content campaigns*.

There are also limited time gacha systems, where special rare cards are available, or can be gotten at a higher probability than otherwise. No *sales campaigns* were found.

Rage of Bahamut regularly runs TV commercials in Japan, and the game has in-game campaigns matching these. If a player logs in during a TV campaign, they are rewarded a special rare card.

2.5.4 Social

Social actions

Players can interact and send short messages to each other, and these social actions are rewarded with Friendship Points which can be used for the Friendship Gacha. It is also possible to gift items to other players. Players can help their friends defeat bosses, making it beneficial for the player to have strong friends. Players can also invite their friends from the Mobage platform to join them in the game.

Rage of Bahamut has a trading system, where players can trade items with each other. Players can trade with their friends, but there is also a bazaar where you can put items, such as cards, up for sale. In these trades, energy restoration items are often used as a currency. Lower level players often find these items when performing quests, and can then sell them to stronger players who need them during certain campaigns, in exchange for strong cards.

Multiplayer

Having many friends in the game gives the player an advantage, and players can help each other fight bosses and gift items, giving the game *cooperative play*.

Like many other social card RPGs, players can battle each other in order to complete sets of treasures and steal gold. They also compete directly for spots in the ranking in the limited time campaigns. The game thus features *competitive play*.

2.5.5 Monetization

Rage of Bahamut monetizes on *boosts and power-ups*, and *play accelerators*.

Player can buy energy restoration items directly with hard currency, with are *play accelerators*.

There are special campaign *boosts and power-ups* that can be bought directly that give the player an advantage in the campaigns. Cards cannot be bought directly; instead the player must spin the gacha system and hope for a strong card.

2.6 Tsuru Star

<u>ORIGINAL TITLE</u> 釣り☆スタ	<u>DEVELOPER</u> GREE
<u>TESTED PLATFORM</u> iOS, Android	<u>SOCIAL GAMING PLATFORM</u> GREE
<u>GENRE</u> Simulation	<u>PRICE</u> Free
<u>RELEASE DATE</u> 2011-09-01	<u>COUNTRY OF ORIGIN</u> Japan

Tsuru Star was first released in 2007, and is by some considered the first social game in the world. Although the game is over five years old, it was ranked among the top ten most popular games for iOS and Android on the GREE platform by the end of 2012.

The game is a fishing simulator, where the player visits different fishing areas to catch fish. There are two modes, river fishing and sea fishing, with different fish that can be caught, and different tools that are used. The gameplay differs slightly between river and sea fishing as well. Before fishing, the player has the option to choose fishing rod, reel, and lure. The player must then make a fish bite by tapping the screen at the right timing. If a fish bites, the player has to catch the fish by tapping when the struggling fish is positioned over a large circular target which is shown in the background. With better fishing rods fish struggle less, and are easier to catch. The reel determines the probability of catching a large fish, and the lure affects the type of fish that bite. Fishing rods are ranked by their rarity, much like cards are ranked in social card RPGs. Rods are rewarded in the game, but may also be bought or won through a gacha system.

The objective in the game is to collect as many different types of fish as possible, and to catch large ones. Each fish that is caught has a rank on a four level scale based on its size, and one objective is to catch top rank fishes of all types. Fishes that have been caught are logged in a logbook, where their type and size is noted. By catching fish, the player earns soft currency which can be used to buy better fishing tools, which in turn makes it easier to catch better fish. The player has a rank, and by catching more fish the player can level up to unlock new fishing grounds. The type of fish that can be caught depends on the fishing grounds, and the player must explore different grounds in order to collect all types of fish.

There are also fishing teams that can be joined, and teams can compete against each other in limited time competitions.

2.6.1 Mechanics

Achievements

Tsuri Star has an achievement system called Lucky Fish. Lucky Fish campaigns run at regular intervals, and are special fish that can be caught. It is unknown to the player where and how these fish can be caught, and is thus a *surprise achievement* system. There is a campaign ranking showing the players who have caught the most Lucky Fish, and players that catch many are rewarded with an avatar that is displayed on the GREE platform.

Points

The game uses a dual currency system with Fishing Points for soft currency, and GREE coins for hard currency. Fishing Points are earned by catching fish in the game, and GREE coins must be bought using real money. One cannot be exchanged for the others, but many items in the in-game store can be bought using either one. In Tsuri Star, the soft currency Fishing Points also works as a point system, as it is used in player rankings.

There is also a special currency called Fish Gold Coins, which can be earned in limited time campaigns and can be exchanged for limited items that cannot be bought in the in-game store.

For fishing teams, there are points called Solidarity Points, which is used in team rankings. The team's Solidarity Points increase when members donate Fishing Points to the team.

Tsuri Star has a player level system, called rank, but does not have experience points. Instead, the player's rank increases depending on the fishes the player has caught, but the actual requirements are not known to the player.

Some of the fishing rods in the game, called Evolving Rods, also have levels. These rods have experience points which increase when the rod is used for catching fish, and the rod levels up after enough points have accumulated. When the rod levels up it becomes stronger and easier to catch fish with. Additionally, some of these rods, called Slot Rods, have slots which can be filled with items that add special powers to the rod.

Leaderboard

Tsuri Star has a global *infinite leaderboard*, both daily and total, where players are ranked based on the amount of Fishing Points they have. There are also leaderboards for each fishing ground, and for each fish. For fishes, the leaderboards shows the players who have caught the biggest fish of the specific type. There is also a global leaderboard of teams, ranked by Solidarity Points.

Levels

The game has several fishing grounds that can be unlocked, but the player may be stuck in the same fishing ground for weeks, and the requirements to unlock new ones are not known. This is therefore not a system of game levels, and the game could be considered not having one.

Challenges

The player is not fed challenges or quests, but is challenged to collect different types of fish, rank up and unlock new fishing grounds. Optionally, the player can join a fishing team to cooperate with others.

Gambling mechanics

The game has a gacha like system called Rod Mikuji, where players have the chance of winning better fishing rods. The gacha can be played for free once per day. There is a fee-based gacha which guarantees better rods than the free one, and which is a box gacha system. There are often campaigns with special gacha offers. These offers may contain limited time rods, or offer a higher probability of winning special rods. There is also a discount for new players where they can play the fee-based gacha cheaper the first time.

2.6.2 Reward system

The player receives Fishing Points for catching fish, which doubles as both a point system and soft currency. Catching bigger fish rewards the player with more points. For Lucky Fish, explained above, the player gets extra Fishing Points as well. The player is also rewarded extra Fishing Points for catching the same type of fish several times in a row.

By catching fish the player can reach a new rank, which unlocks new fishing grounds. The player is sometimes rewarded gacha stamps when ranking up or participating in campaigns, which can be used to spin the fee-based gacha for free if enough are collected.

2.6.3 Time-dependent events

Session limits

Tsuri Star does not have an energy system, or otherwise limit playing sessions. The player is free to keep playing for as long as they want.

Retention

The game has a monthly login campaign with a calendar clearly showing the rewards the player will get if they login up to 25 times that month. For the first few days, the player is rewarded points, and *boosts and power-ups* that help them advance quicker. If the player logs in 25 times that month, they are rewarded a rare item. The system *rewards retention accumulatively*.

Campaigns

There are frequently new campaigns with new content and quests for players to challenge. There are tour campaigns, where players can explore new fishing grounds for a limited time and catch exclusive fish that is only available by participating in the campaign. There are also contest campaigns, where registered players are split into group and battle each other for rewards. Similarly, there are team contests, where fishing teams battle against each other for rewards. There are also limited time gacha systems, where the probability of getting rare items is temporarily raised. All of the campaigns above are categorized as *game content campaigns*. No sales campaigns were observed during testing.

As part of a campaign, active players could gift each other Fish Gold Coins once per, as long as they have caught a fish that day. Fish Gold Coins can in turn be exchanged for exclusive items.

2.6.4 Social

Social actions

Players may also gift each other special gift items from the in-game store. During a limited time campaign, players could also gift each other Fish Gold Coins daily. Player can invite friends on the GREE platform, or using the phone's address book. There is also a community forum where players can ask each other for help and discuss the game.

Multiplayer

Players can join fishing teams, where they work together to reach the top of the ranking or compete in events. Team rankings are decided by the team's Solidarity Points, which increase

when members donate their Fishing Points to the team. Cooperating is important to make a team strong, and this is an example of *cooperative play*.

Players also battle each other directly in the limited time contests that appear frequently. In these, players compete for a spot in the ranking, and the game has *competitive play*.

2.6.5 Monetization

In Tsuru Star, players can buy *gifts, boosts and power-ups and collectibles*.

New and better fishing rods, reels and lures can be bought in the in-game store for hard currency, but the very best rods are only available through the gacha system. The player has a chance to get rare rods through the daily free gacha, but has a higher chance of getting them by spinning the fee-based gacha. Rods, reels and lures are examples of *boosts and power-ups*. The game is unique among the Japanese games in this study in that it does not have an energy system limiting session limits. There are therefore no *play accelerators* for sale in the game.

The in-game store has a special *gift* section where players can buy rods, reels and lures, as well Fish Gold Coins, which can be sent to other players.

Players can buy a fish print set, where they can store images of fish that they catch. The set can only store a limited number of fish, and costs hard currency. Images of fish have no function in the game, other than storing the memory and the ability to brag about caught fish to other players. The fish do not come in collections, so it is not a *collectable*, but instead an example of a *personalization and creativity* item.