



Free2Play Research Project Final Report

Edited by
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Frans Mäyrä

With additional guest articles by
Tuomas Pirinen, Reforged Studios
Aki Järvinen, Game Futures



Game Research Lab
School of Information Sciences
University of Tampere

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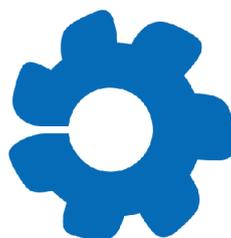
University of Tampere



Tekes - Finnish Funding Agency
for Innovation



Grand Cru



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Introduction

The free-to-play revenue model has gained wide popularity in the video games industry. Distributing games for free and monetizing through in-app purchases has been proven to be a lucrative business and a promising approach for many. While industry news has been filled with success stories, player attitudes have been reserved, and sensationalism has found its way to mainstream media. Simultaneously, online social gambling has taken new forms while taking influences from traditional video games, and vice versa. To understand holistically these new phenomena, a closer examination is needed.

Free2Play research project (Tekes 40134/13) was launched to provide scientific knowledge on free-to-play and new forms of online social gambling. Based on the Tekes Skene program, the project started on the 1st of March 2013 and ended on the 30th of June 2015. Utilizing both quantitative and qualitative research methodologies, the project goal was to provide new knowledge on design practices and player behavior in free-to-play and online social gambling environments, and also to study the similarities and differences of the two. This report summarizes the project results, which have been previously disseminated in project steering board meetings and seminars within our research consortium (Grand Cru, Housemarque, Moido Games, RAY, Remedy Entertainment, and Supercell), and in academic conferences and journal publications.

This report is structured into four different sections. The first section focuses on free-to-play consumer behavior research featuring survey study experiments. The second section presents qualitative research featuring interview and case studies on attitudes, ethics, experiences, and design issues in free to-play. The third section covers free-to-play and online social gambling research exclusively. These three sections cover both published and forthcoming articles. The fourth section features guest articles by two game industry experts, Tuomas Pirinen and Aki Järvinen.

We hope you find this research report interesting and inspiring. Good research should foster innovation, provoke discussion, and present new research questions. We believe that we have succeeded in this and that these results will be interesting for game industry practitioners and the academic community alike.

We thank our research partners Tekes, Grand Cru, Housemarque, Moido Games, RAY, Remedy Entertainment, and Supercell for making this research possible. In addition, we give special thanks to all our informants, survey respondents, interviewees, colleagues, and co-authors for helping us carry out this research. Lastly, we thank Aki and Tuomas for their guest articles and Jonna Koivisto for her help with the survey studies.

Good game, well played.

Janne Paavilainen
Free2Play Project Manager

Section I

Consumer Behavior in Free-to-Play

The Rise of Mobile Gaming in Finland

Mäyrä, F. & Ermi, L. (2014). Pelaajabarometri 2013 - Mobiilipelaamisen nousu.

The Finnish Player Barometer 2013 is a survey into the forms of game play in Finland, carried out for the fourth time (previously done in 2009, 2010 and 2011). In 2013 the responses were collected from a sample of 972 respondents, aged 10-75 years. In digital game playing, the only game type which had significantly increased its share of game players was mobile games, accessed via smartphones and tablet devices. While in the first Player Barometer in 2009 the share of active mobile gamers was c. 13%, in the 2013 sample this share had risen to almost 29%. In practice this means that almost every third Finn plays some mobile game at least once a month.

The overall popularity of game playing has remained on the same level as in the previous Player Barometers. If all the various game playing forms and even very casual and occasional playing are taken into consideration, 98.5% of Finns play at least something. Circa 88 percent of Finns play actively, which in this context means playing at least once a month.

The portion of active digital game players in Finland in this 2013 study was 52.5%. It is worth noticing that traditional gambling games appear to be decreasing in popularity: the scratch cards, betting and lottery games of Veikkaus, the slot machine and casino games of RAY and the horse race betting have lost a few percent of their popularity when compared to the situation in 2011. The greatest decrease has taken place in slot machine gambling. There is no corresponding increase in digital, online gambling.

While the average age of all Finnish game players in this survey was over 42 years, the average digital game player was over 37 years of age. There were no significant differences between male and female gaming when casual game playing and traditional, non-digital game playing forms are taken into consideration. However, digital gaming is a bit more popular among men and boys than among women and girls. When individual games and game series are taken under closer scrutiny, the solitaire family of games is once again clearly the most popular digital game. Angry Birds is the second most popular game series, and the lottery and betting games provided by Veikkaus come third. The most popular games are played by both computers and mobile devices. The digital and traditional analogue games also often utilize same game

mechanics, brands or themes. Outside of solitaires and Angry Birds games, there are some clear differences between the most popular games among men and women. Men play more betting games, the NHL sports video game series, and some action oriented game series. The most popular games among women include various mahjong games, Candy Crush, and The Sims game series; as for gambling games, Finnish women actively prefer only Lotto.

The time and money spent on games has remained approximately on the same level in all four Barometer studies. The adjusted mean of typical game playing time is a bit over three and a half hours per week. An average Finn invests little over six euros per month in games. There is considerable variation in the amount of time and money invested in games. Also, one specific issue relates to the gambling game players, part of whom had stated the value of their entire bankroll in the survey, while others had only stated the value of money they had lost or won in gambling.

A new dimension in this Player Barometer was related to the buying of games and game features (or "virtual goods"). Digital distribution via online services and mobile "app stores" has become increasingly common in recent years. Another topical issue in the business of game development and distribution is related to the free-to-play (or "freemium") business model, which means that it is free to download and start playing a game, but additional features will be provided for sale in the game. Among the active digital gamers there was 41 percent of players who downloaded games from an online service at least occasionally. Furthermore, 19 percent of active gamers reported having paid for additional features in a free-to-play game. Among all respondents the corresponding percentages were 27% and 1%.

Key Findings

- 98.5% of Finns play at least something.
- 88 percent of Finns play at least once a month.
- Almost every third Finn plays some mobile game at least once a month.
- While all the traditional gambling games are decreasing in popularity, the greatest decrease has taken place in slot machine gambling.
- The adjusted mean of typical game playing time is a bit over three and a half hours per week.
- An average Finn invests little over six euros per month in games.

Factors for Predicting Adoption and Use of Games

Hamari, J., Keronen, L., & Alha, K. (2015). Why Do People Play Games? A Review of Studies on Adoption and Use. In proceedings of the 48th Annual Hawaii International Conference on System Sciences (HICSS), Hawaii, USA, January 5-8, 2015.

In collaboration with Koukku & Neuroeconomics of Gaming -research projects.

During the last decade games have become an established vein of entertainment, consumer culture, and essentially, a common part of people's daily lives. With the increased penetration of games, the ways in which people play and employ games have become more varied as well. The long-tail is getting longer: there are more different kinds of games available for multitude of different platforms that cater for differing gaming needs for widening audiences and use a wide variety of business models. Especially the free-to-play revenue model, which enables developers to offer major parts of the game for free, has further fed into this development. Moreover, games are also increasingly used for instrumental purposes through gamification, for example.

Due to this divergence, such questions as why people play games are particularly timely. Even though the topic has been widely studied, the current body of literature seems scattered. It is important to look back and review what we currently know about why people adopt games, why they keep playing them and what makes them loyal to certain games. The purpose of this study is to review past literature pertaining to these aspects.

This paper presented an overview of 66 studies that have examined adoption, continued use and loyalty in the context of games. The purpose of the review was to look back and provide an overview of what has been done in these areas of game research. This paper focused on independent variables that directly predict use, dependent variables, methods, investigated games, as well as on the direct relationships between the direct predictor variables and the dependent variables.

From the most commonly measured independent variables, based on the results, attitude, flow, satisfaction, perceived enjoyment and perceived playfulness were the strongest predictors for use (based on weighted means of the coefficients). From these, attitude was clearly the strongest predictor. This is not surprising given its established role as the main predictor in related theoretical frameworks as well as the fact that in addition to subjective norm, it is the only variable in the model that directly predicts use intentions. In this literature review it was apparent and expected that technology acceptance model, theory of reasoned action and theory of planned behavior formed the core of the research models in most studies. Aside from the core variables, such variables as perceived enjoyment, playfulness and flow were very often used to predict use. These notions suggest that while the core of the body of literature is rather homogenous with respect to theoretical backgrounds, the studies were also quite scattered with respect to other independent variables.

Key Findings

- Attitude, flow, satisfaction, perceived enjoyment and perceived playfulness were the strongest predictors for the use of games.
- Attitude was the single strongest predictor for the use of games.

Why Do People Buy Virtual Goods?

Hamari, J., & Keronen, L. (2016). Why Do People Buy Virtual Goods? A Literature Review. In Proceedings of the 49th Annual Hawaii International Conference on System Sciences (HICSS), Hawaii, USA, January 5-8, 2016.

In collaboration with Koukku & Neuroeconomics of Gaming -research projects.

This paper reviews quantitative literature that addresses the questions of what explains why people buy virtual goods. The study reviews independent and dependent variables, path coefficients, used methodologies, theoretical backgrounds as well as types of services covered in the relevant literature. The goal of the paper is both to provide an overview of the literature and to investigate the reasons for virtual good purchase. The results in the body of literature reveal, for example, that purchase behavior is most strongly driven by how satisfied people are with the use of virtual goods and whether they have a positive attitude towards using real money in virtual environments. Moreover, people seem to purchase virtual goods in order to give a favorable image of themselves. Furthermore, interestingly the enjoyment of using the platform where the virtual goods are sold in does not predict virtual goods purchases.

During the last decade virtual items have become an important target of consumption in digital and virtual environment such as games and virtual worlds. While literature on the subject has been accumulating during this time, we still lack a clear and coherent understanding of the reasons why people purchase virtual items. To this end, in this study we investigate the question of why do people purchase virtual goods. We employ a mathematical meta-analysis to analyze quantitative results on the topic from the existing literature (34 studies), with the aim of disseminating the results thus far.

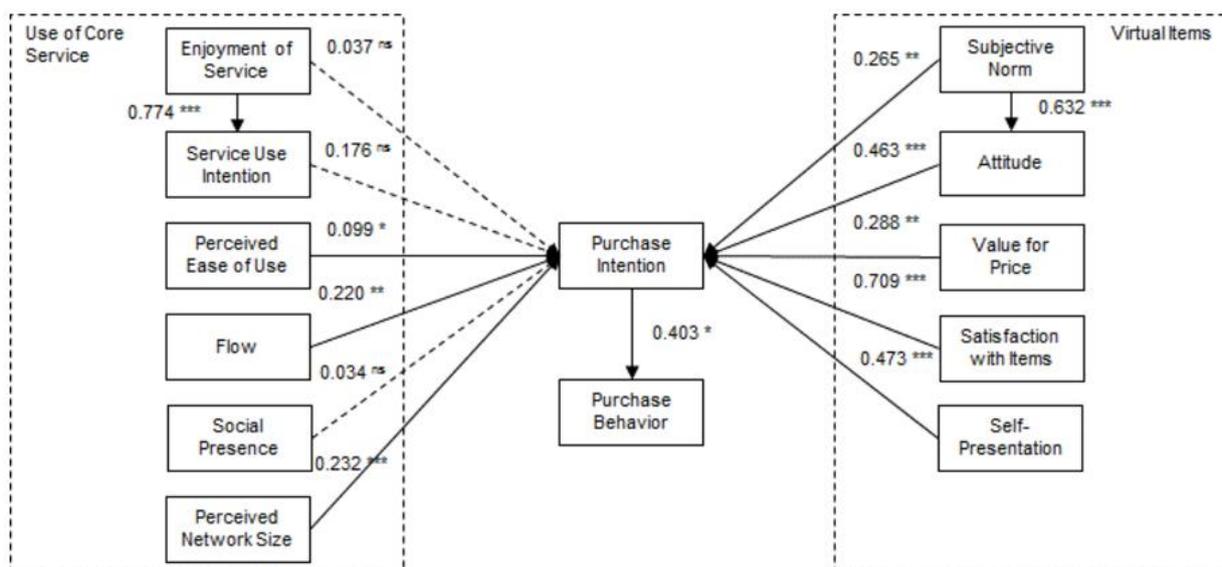
The review reveals that studies thus far have converged into studying either the experiences related to the virtual items themselves or the experiences related to the platform in which the virtual items are used in and their relationship to purchase behavior. The results of the meta-analysis show that factors related to the virtual goods themselves are strong predictors of purchases when compared to the use of core service related variables. The results show that people are motivated to purchase when they are satisfied with previous purchases, when they have a positive attitude towards purchasing as well as when they wish to express themselves with virtual accessories. In addition, the opinions of others

about purchasing virtual items as well as the perception of item value relative to its price both slightly affect purchase motivations.

We also examined how motivations differ between games and non-game virtual environments, and to our surprise the results were rather similar. Nevertheless, it seems that valuable items are more desirable for game users and the players are more demanding for items to meet their expectations. On the other hand, virtual accessories are a more popular choice in non-game environments and experiencing flow predicts purchases more strongly in these type of services. With wider perspective, it is interesting how traditional pricing of the whole service has shifted into purchasing goods inside, making the experiences in core service considerably less important for the income of service providers.

Key Findings

- Factors related to the virtual goods themselves are strong predictors of purchases when compared to the use of core service related variables.
- People are more likely to purchase virtual goods when they are satisfied with previous purchases, when they have a positive attitude towards virtual good purchases as well as when they wish to express themselves.



Why Do People Buy In-Game Content in Free-to-Play Games?

Hamari, J., Koivisto, J., Järvelä, S., & Kivikangas J. M. (FORTHCOMING). Why do people buy in-game content in free-to-play games? An empirical study on reasons to buy that stem from the game design.

In collaboration with Koukku & Neuroeconomics of Gaming -research projects.

Today most games are no longer sold from the shelves of retail stores but rather employ the free-to-play business model where the revenue is generated through the sales of in-game content. While several studies have been published during the recent years on psychological factors that may explain why people purchase in-game content, the academic literature has not thus far focused on the different kinds of practical and concrete reasons to purchase in-game content. In this paper we form a measurement instrument for investigating reasons to purchase in-game content that are related to the issues and aspects of gameplay in free2play games.

A comprehensive list of different reasons (19) to buy virtual goods in free-to-play games was developed by triangulating from existing research and in cooperation with industry specialists. These reasons were operationalized into a survey that was administered to free-to-play game players (N=519) who had purchased in-game content.

The results of factor analyses indicate that the purchasing reasons converge into four main dimensions: 1) Unobstructed continuance of playing, 2) Social interaction, 3) Becoming the best and showing it to the others and 4) Economical reasoning. From these dimensions unobstructed play, social interaction and economical reasoning (0.249***) were positively associated with how much money players spend on in-game content.

Key Findings:

- Players spend more money on in-game content that is related to unobstructed play (such as speeding timers and removing limitations), social interaction with other players (such as gifts), and economical reasoning (such as wanting to support a good game or because players felt they got a good deal).

What Kinds of Gamers Buy In-Game Content and Why?

Hamari, J., Koivisto, J., Järvelä, S., & Kivikangas J. M. (FORTHCOMING). What Kinds of Gamers Buy Virtual Items and Why?

In collaboration with Koukku & Neuroeconomics of Gaming -research projects.

During the recent years virtual goods sales has become the dominant business model for online games. However, only a small percentage of the players of these free-to-play games purchase virtual items. In this study we investigate what kinds of players (achievement, immersion and social-oriented) purchase virtual goods for what kinds of reasons. Data was gathered with the developed survey instrument from players (N=519) of free-to-play games who have made in-game purchases.

Achievement orientation was positively and significantly associated with purchase motivations related to unobstructed play and becoming the best, and negatively with keeping kids happy. Immersion orientation was positively associated with purchase motivations related to unobstructed play, social interaction, and unlocking new content. Social orientation was positively associated with purchase motivations related to social interaction, becoming the best and economical reasoning, as well as negatively associated with purchase motivations related to unobstructed play.

Key Findings:

- Achievement-oriented players are more likely to purchase items that are related to unobstructed play and becoming the best, as well as less likely to keeping the kids happy.
- Immersion oriented players are more likely to purchase in-game items that are related to unobstructed play, social interaction, and unlocking new content.
- Social-oriented players are more likely to purchase in-game content that is related to social interaction, becoming the best in the game, and economical reasoning - while they are less likely to purchase because they want unobstructed play

Demographic Factors and In-App Purchases

Hamari, J., & Paavilainen, J. (FORTHCOMING). Who buys virtual goods? The relationships between purchase behavior, demographic factors and playing habits.

Online services such as games and social networking services generate revenue increasingly through the sale of virtual goods and other in-game content rather than employing the more traditional retail model. However, commonly only a small percentage of users are willing to purchase virtual goods. This paper addresses the gap in our understanding of the contributing factors on purchase behavior in online games, SNSs and virtual worlds by investigating which demographic factors and playing habits predict virtual goods or in-game content purchases. On the basis of the data gathered via an online survey (N = 2889), we examine the relationship between gender, age, education level, employment status, different playing related variables and purchase behavior.

The findings indicate that being employed is positively associated with purchases, whereas no association was found between age, education and family size and purchases. Males were slightly more likely to use more money on virtual goods than females. Moreover, the results show that different indicators related to playing frequency, longevity and hours spent playing the game where the purchases are being made are positively associated with money being spent on virtual goods. Furthermore, purchase behavior is also explained by the diversity of play; the more platforms one plays on and the more time they spend playing free-to-play games, the more likely they are to use more money on virtual goods.

Key Findings:

- Employment, gender (male), playing frequency, longevity, and hours spent playing are positively associated with money spent on virtual goods.
- Diversity of play, i.e. the more platforms one plays on, is also positively associated with money spent on virtual goods.
- Age, education, and family size had no association with money spend on virtual goods.

Enjoyment and Purchase Behavior in Free-to-Play

Hamari, J. (2015). Why Do People Buy Virtual Goods? Attitude towards Virtual Good Purchases versus Game Enjoyment. *International Journal of Information Management*, 35(3), 299-308.

<http://www.sciencedirect.com/science/article/pii/S0268401215000080>

The number of companies developing games has increased dramatically due to cost efficient publishing. This development has led to a fierce competition for not only potential players, but also for product visibility (e.g. in Apple App Store and Facebook). The increased competition has effectively led to a situation where most games are now offered for free (free-to-play). However, it is clear that no game can survive without some kind of a revenue stream and thus game publishers have started to sell virtual items inside their games. However, game publishers face dire negative attitudes toward the business model as it can entice publishers to degrade the enjoyment of the game in order to sell more virtual goods that address the artificial gaps in the game.

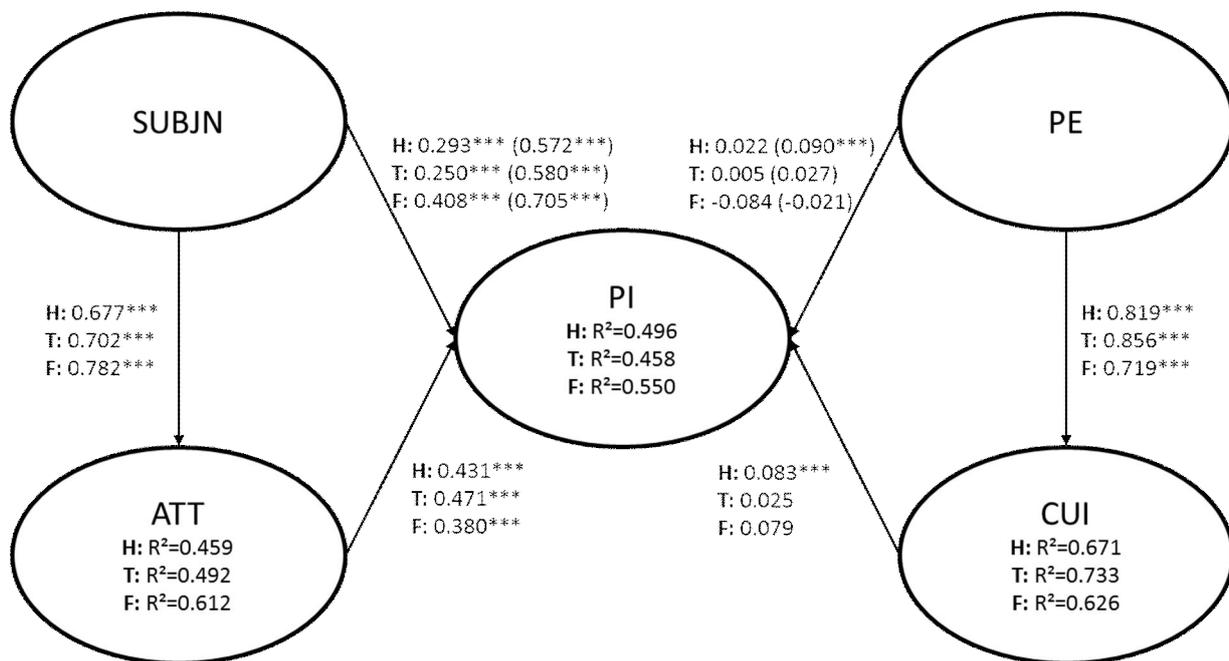
This study investigated the purchase intentions for virtual goods in three free-to-play games. Player responses (N = 2791) were gathered from three different game types: social virtual world (Habbo Hotel) (n = 2156), first-person shooter Team Fortress 2 (n = 398), and social networking games (Facebook games) (n = 237). We specifically focused on investigating two main explanations in the general discussion on why so few people buy so few virtual goods in free-to-play games: (1) factors related to the enjoyment of the game and play continuance as well as (2) factors related to the attitude toward buying virtual goods and beliefs about other people's opinions.

The results support both main hypotheses: (1) the enjoyment of the game reduces the willingness to buy virtual goods while at the same time it increases the willingness to play more of the game. Continued use, however, does positively predict purchase intentions for virtual goods. (2) Attitude toward virtual goods and the beliefs about peer attitudes strongly increase the willingness to purchase virtual goods.

Roughly similar results recurred across the three different game types: social virtual worlds, first-person shooters and social networking games, as well as when exploring differences across degrees of social interaction.

Key Findings

- Game enjoyment reduces willingness to purchase virtual goods if at the same time the player still keeps on playing.
- Attitude towards virtual goods purchases is a strong predictor of purchase intentions.
- The opinions of others matter: the more one’s friends think that buying in-game content is a good idea, the better the player’s attitude and willingness to buy in-game content is.



- P = * < 0.1, ** < 0.05, *** < 0.001
- Bracketed coefficient indicate the total effects between the IV and the DV
- H = Habbo, T = Team Fortress 2, and F = Facebook games
- ATT = Attitude towards purchasable virtual goods, CUI = Continuous Use Intentions for the core service, PE = Perceived Enjoyment of the core service, PI = Purchase Intentions for virtual goods, and SUBJN = Subjective Norms towards purchasing virtual goods

Enjoyment and Purchases of Premium Content in Freemium Services

Hamari, J., Hanner, N., & Koivisto, J. (FORTHCOMING). The “demand through inconvenience” -hypothesis: Enjoyment reduces the need to buy more in freemium services. An empirical study in free-to-play games.

In this study we investigate customer behavior in freemium services, particularly in the context of free-to-play games. This study focuses on the looming question in freemium business about how the perceived value (PERVAL; emotional value, social value, perceived quality and economical value) of the service affects people's willingness to use more of the service as well as purchase premium content. Player responses regarding free-to-play games (N = 869) were gathered through an online survey.

Firstly, we find support for the Demand through Inconvenience -hypothesis proposed in this study indicating that the more enjoyable the players perceive the service to be, the more they are willing to use it, but the less they are willing to purchase premium content. In other words, the less users enjoy the service, the more they are willing to spend on the premium product if at the same time they are still willing to continue using the service. Secondly, as expected, social value is found to act as driver for purchasing game content. Thirdly, quality of the freemium service interestingly does not affect purchase intentions. Fourthly, the inexpensiveness of freemium services does indeed positively predict why people want to continue using them, but it has no direct effect on the purchases of premium content. The freeness translates to purchases of premium content only through the increased use of the freemium service.

Key Findings:

- The more enjoyable the players perceive the service to be, the more they are willing to use it, but the less willing they are to purchase premium content.
- Social value is found to act as driver for purchasing game content.
- Quality of the freemium service interestingly does not affect purchase intentions.
- The inexpensiveness of freemium services does indeed positively predict why people want to continue using them, but it has no direct effect on purchases of premium content.

Service Quality and User Conversion to Premium

Hamari, J., Hanner, N., & Koivisto, J. (FORTHCOMING). Service quality explains why people use freemium services but not if they go premium: An empirical study in free-to-play games.

During the last decade, the “freemium” business model has spread into various services, especially online. However, service developers have faced a dilemma of balancing between making the service as high quality as possible but simultaneously creating a demand for the premium products that augment the core free service. If the service is of high enough quality, augmenting premium products might not offer significant added value over the otherwise free service. In this study we investigate how perceived service quality predicts customers’ willingness to continue using the freemium services and to purchase premium content. User responses were gathered from freemium services (free-to-play games) (N=869).

The results indicate that while expectedly the different dimensions of service quality (assurance, empathy, reliability and responsiveness) positively predict the intentions to continue using the freemium service, they do not significantly predict why people would be willing to spend more money on premium content beyond the retention effect. These findings indicate that increasing the quality of a freemium service has surprisingly little effect on the demand for additional premium services. Therefore, service developers should seek to improve the demand for premium products and services in freemium services by other means than increasing the quality of the cores services.

Key Findings:

- Service quality positively predicts intentions of continuous use, but not the willingness to spend money in the service.
- Therefore, service developers should improve the demand for premium products and services by other means as well.

Section II

Attitudes, Ethics, Experiences, and Design of Free-to-Play Games

Developer Attitudes on Free-to-Play

Alha, K., Koskinen, E., Paavilainen, J., Hamari, J., & Kinnunen, J. (2014). Free-to-play Games: Professionals' Perspectives. In proceedings of Nordic DiGRA 2014.

<http://www.digra.org/digital-library/publications/free-to-play-games-professionals-perspectives/>

Free-to-play-games were typically seen by game professionals to be as ethical as other games, and only relatively few ethical problems were seen to concern the entire model. The future of the free-to-play games was seen bright, both for the developers and the players, as it was believed that both games and attitudes are improving.

In this article we investigated the free-to-play revenue model from the perspective of game professionals. To court larger player audiences and to address their wide willingness-to-pay spectrum, game developers have increasingly adopted the free-to-play revenue model. At the same time, worrying concerns over the revenue model have been voiced, deeming it as exploitative and unethical.

We investigated this contrast by conducting an interview study. We interviewed 14 game professionals from six Finnish game companies with respect to their attitudes towards free-to-play, presumed players' attitudes, ethics concerning the model and the future of free-to-play games. We employed thematic qualitative text analysis process with the interview data.

The results show that the free-to-play model is something that developers generally view in a positive light, though there was some variation in the attitudes. In contrast, when it comes to perceived player attitudes, they were seen as quite negative or even hostile, sometimes unfairly so. Still, it was noted that there is a large, silent audience that likes to play the games. Free-to-play games were mostly seen to be as ethical as other games and other forms of media. The respondents saw relatively few ethical problems that would address the entire model. One much discussed topic was the combination of children and free-to-play, which was seen as problematic. Even in some of these cases, the developers called for the responsibility of the parents. While game developers have their share of the responsibility, the platforms are at the center of the problem as well. The second problem point was the high spenders ("whales"). It was presumed that situations differ: can the spender afford the loss of money? Does he/she suffer from addiction or something that makes him/her spend the money. Many practices from the gambling industry, such as pre-set spending limits, player behavior detection and

information providing tools, could be implemented to free-to-play games. Responsible gaming policies could even work as a competitive advantage in player acquisition between free-to-play companies.

Even with some concerns at the moment, the future was expected to be bright, as it was believed that games are improving and attitudes are getting more accepting and positive. However, the free-to-play developers are in a tight spot: balancing between a fun game and earning revenue and increasing the conversion rate are tough problems to battle with. While aggressive monetization, paywalls and pay-to-win are the usual faults of the model and are used as arguments against it, it seems that the interviewed game professionals agree with these features being negative and try to avoid them in their own games. Rather than characteristics of free-to-play, it can be speculated that these are the marks of bad (or past) free-to-play games. Even though most respondents believed there will continue to be a place for retail games, there were also speculations that if the new generations of players get used to free games, will this be the only way to make games in the future?

Key Findings

- Game professionals had relatively positive attitudes towards free-to-play games while player attitudes were seen as quite negative.
- Relatively few ethical problems were seen, although children and high-spenders were seen as ethically problematic user groups.
- Future of free-to-play games was seen promising, as it was believed that both games and attitudes are improving.

Ethical Issues in Free-to-Play Game Design

Koskinen, E. (2015). Free-to-play-pelien suunnittelun eettisiä ongelmia. Bachelor's thesis. University of Tampere, Finland.

Due to the novelty of free-to-play, the possible ethical problems have not yet been properly examined or solved. Bad game design has not truly been examined among academia, aside from some exceptions like work in game usability. In general, we do not know much about ethics of free-to-play.

Zagal et al.¹ have examined elements of game design whose purpose can be argued to be questionable, against the player's best interests, and perhaps even unethical. Zagal et al. call these elements Dark Game Design Patterns. In this research, ethical problems related to free-to-play-games have been examined through this concept. Mid-level principles of ethics have been reflected on dark game design patterns, and it has been analyzed whether or not dark patterns are unethical from the point of view of these principles.

Zagal et al. describe a dark game design pattern to be "a pattern used intentionally by a game creator to cause negative experiences for players which are against their best interests and likely to happen without their consent". Bad design is often a result of ignorance, bad choices, and lack of time and resources. The challenge is to define whether there has been a real mistake in the game design causing unintended results or whether these results have been pursued. Zagal et al. categorize dark game design patterns into three groups: Temporal Dark Patterns (grinding, playing by appointment), Monetary Dark Patterns (pre-delivered content, pay-to-skip, monetized rivalries) and Social Capital-Based Dark Patterns (social pyramid schemes, impersonation). In addition, they present some shades of grey (encouraging anti-social behavior, psychological tricks, games for other purposes).

According to the mid-level principles model, ethical problems can be approached through four principles: principle of respecting autonomy, principle of non-maleficence, principle of beneficence and principle of justice. Advocates of the model argue that these principles are of general application because they can be derived from traditional philosophical

¹ Zagal, J.P., Björk, S., Lewis, C. (2013). Dark Patterns in the Design of Games. In proceedings of FDG 2013. http://www.fdg2013.org/program/papers/paper06_zagal_et.al.pdf

theories and everyday intuition. They are also easier to apply to any situation than high-level ethical theories.

Zagal et al. argue that experience of the game design pattern is subjective, and the pattern's darkness is heavily dependent on its use and context. This is why we can only make an informed estimation about how a pattern might affect most of us. Also, once the players understand the effects of a pattern so that they can give consent, the pattern is no longer dark.

According to Dodig-Crnkovic and Larsson², one way of improving game design would be expanding documentation to include discussion of the target group, ethical implications, potential or expected positive and negative effects on players and their environment, and pedagogical aspects: what will the players learn, how and why. Game developers need education in ethics within their professional training.

As mentioned, according to Zagal et al. dark game design patterns are constructed of the negative experience of the player and the game developer's intention of creating a negative experience for the player. Do these two presumptions capture what is unethical? It can be argued that the definition is too narrow, since all unethical issues cannot be reduced to these two characteristics. Positive experiences may lead to negative consequences as well, for example in game addiction. On the other hand, the definition can be seen as too wide: Wilson and Sicart³ have defined that the purpose of an abusive game design is to force the players out of their comfort zone. In this way the player will experience negative emotions while playing and it has been the game designers' intention, but not for the sake of making money.

Key Findings

- Free-to-play business model can be seen to include some ethical issues, which can cause problems.
- Issues raised by Zagal et al. can be seen ethically problematic through mid-level ethical principles as well.
- Ethical issues should be taken into consideration in game design, as well as in the teaching and education of game design.

² Dodig-Crnkovic, G., Larsson, T. (2005.) Game Ethics - Homo Ludens as a Computer Game Designer and Consumer. *International Review of Information Ethics* Vol. 4, 19-23.

³ Wilson, D., Sicart, M. (2010). Now It's Personal: On Abusive Game Design. *FuturePlay 2010*. http://dooogle.net/articles/Abusive_Game_Design.pdf

Player Experiences on Free-to-Play Social Games

Paavilainen, J., Hamari, J., Stenros, J., Kinnunen, J. (2013.) Social Network Games: Players' Perspectives. *Simulation & Gaming*, 44(6), 794-820.

<http://saq.sagepub.com/content/early/2013/12/24/1046878113514808>

In this research we investigated how people perceive and play social network games (i.e. social games) on Facebook. These games are designed to cater for large audience: free-to-play revenue model and social network integration make them easily approachable and playable with friends. For this study, we interviewed 18 Finnish Facebook users with various gaming backgrounds from a larger questionnaire respondent pool of 134 people. This study focuses on a user-centric approach, highlighting the emergent experiences and the meaning-making of social games players.

Social games offer a wide spectrum of experiences and cater for different needs. True to the casual games design values, they are also easily accessible with acceptable themes, flexible gameplay, and they offer instrumental value for the player. These games are played for many different reasons and also in different, surprising ways, both in casual and hardcore manners. In regard to the criticism provided by both academics and industry practitioners, our findings show that social games do provide meaningful and rich experiences for their players, but are not without their limitations.

Some academic definitions for games would exclude social games to begin with, as a large part of the gameplay activities are not governed by clear and explicit goals. The gameplay of social games rather resembles free-form play; though social games have strict rules, their lack of clear goals fosters player agency. This aspect appeals to a portion of both novice and experienced gamers, despite the lack of a real challenge. This playfulness is connected to the variety of affordances offered (e.g., varied goals, competition, decoration), enabling heterogeneous players to enjoy the same game.

Social network integration and the free-to-play revenue model can cause playability problems, which stem from the contradictory goals between the developer and the player. Our findings reveal that social games are usually regarded as single player games with a social twist, but the limited sociability is nevertheless important for the players. In regard to in-game monetization, this study revealed mainly negative attitudes toward in-game purchases, as none of the interviewees wanted to use real money in social games.

Perception of Social Games

- More like toys than games
- Simple and repetitive
- Single player with a social twist
- Meet different needs than traditional video games
- Integrate well into daily life
- Non-immersive
- Lacking challenge and conflict

Playing Social Games

- Flexible game and play sessions
- Playable at work and home
- Suitable for brief sessions
- No concentration required
- Fit into daily or weekly rhythm
- Playable in parallel
- Similar grinding as in MMOs
- Susceptible for cheating
- Displacement activity

Fun and Motivation in Social Games

- Killing time, filling gaps
- Relaxation
- Build, organize, progress
- Visually pleasing
- Cooperation and competition
- Obligated by game mechanics
- Emotional attachments

Frustrations in Social Games

- Spam and notifications
- Monotonous, repetitive play
- Excessive clicking, click fatigue
- Confusing mechanics and UI
- Crashes, bugs, glitches
- Perceived obligation to return

Sociability in Social Games

- Shallow but essential
- Sometimes annoying sociability
- Encourage competition
- Friends recommendations
- Makes monotonous play fun
- Feeling of playing for audience

Microtransactions in Social Games

- Purchases are not valuable
- Purchasing is a vice
- Fear of getting addicted
- Give unfair advantage in game
- Game becomes too easy
- Distrust in transactions

The players rejected the idea of paying for social games for four major reasons. First, social games do not have enough valuable content. This opinion was heightened if social games were compared with other games, suggesting that players are accustomed to certain game types or have negative attitudes toward social games to begin with. Furthermore, the interviews showed a general negative attitude toward spending money for exclusive in-game content.

Second, social games were considered as vices and potentially addictive, which makes them resemble gambling games. People tend to strongly limit their consumption of vices by setting strict mental limits on how much money they are willing to spend. Gamblers often have exactly these kinds of mental limitations. Our findings also support this in the context of social games. This perceived threat may not be complete hearsay, as different game mechanics in social games closely resemble tricks that capitalize on the loss aversion tendencies of players. Our data brought up aspects of social games that can be seen to tap into peoples' loss aversion tendencies in the form of sunk-cost fallacy and endowment effect.

Third, purchasing virtual goods was perceived as affecting gameplay in a negative way by unbalancing the game between the players. Another rationalization is that money can render a game too easy, and thus disturb the optimal experience. Last, the transaction costs were considered too high and the purchase procedure was perceived to be too complicated or awkward.

Key Findings

- Social games provide meaningful and rich experiences for their players, albeit being simple and casual.
- Social network integration and the free-to-play revenue model can cause new types of playability problems, which is due to the contradictory goals between the developer and the player.
- Social games are not considered to be especially social, but the limited social features are nevertheless important for the players.
- Reluctance to pay in social games is related to perceived poor quality of the game, risk of payments becoming vices, payments unbalancing the gameplay in a negative way, and awkward purchase procedures.

Playful Experiences with Free-to-Play Social Games

Paavilainen, J., Koskinen, E., Korhonen, H., Alha, K. (2015). Exploring Playful Experiences in Social Network Games. In proceedings of DiGRA 2015.

<http://www.digra.org/digital-library/publications/exploring-playful-experiences-in-social-network-games/>

This research focuses on playful experiences in social games. We executed series of experiments where 110 informants played 23 social games and reported their playful experiences by utilizing the Playful Experiences (PLEX)^{4 5}framework.

There are multiple ways to study player experiences in games and one approach is to use analytical methods to analyze and categorize experiences in a structured manner. For this purpose, we used the PLEX framework to understand what experiences are elicited by social games and what experiences emerge from certain social game genres. We analyzed 110 informant reports containing 330 PLEX descriptions and present findings from three perspectives. First, we provide an overall analysis on playful experiences in social network games. Then we focus on the playful experiences in three specific social games genres: casual puzzle, casual management, and mid-core strategy games. Lastly, we provided examples of interesting outlier experiences from the whole data.



Based on our study, Competition, Completion and Challenge are the most common playful experiences in these games, making up to 39% of all reported experiences. Competition emerges on three levels: against oneself, against friends, and against the game system. Competition was most prevalent in casual puzzle and mid-core strategy games, and also in hidden object and shooter games. Casual management games did not promote Competition; instead they featured Completion, which was also present in mid-core strategy games. Related to Completion, psychological biases such as quota anchoring and endowed progress effect were identified in the informants' reports.



⁴ Korhonen, H., Montola, M., Arrasvuori, J. (2009) "Understanding playful user experience through digital games". In Proceedings of Designing Pleasurable Products and Interfaces (DPPI), Université de Technologie de Compiègne, 274- 285.

⁵ Arrasvuori, J., Boberg M., Holopainen J., Korhonen H., Lucero A., and Montola M. (2011) "Applying the PLEX framework in designing for Playfulness". In Proceedings of Designing Pleasurable Products and Interfaces (DPPI), ACM Press.

Playful Experiences with Social Games

PLEX category	Mentions
Competition	48
Completion	43
Challenge	38
	39%
Exploration	24
Fellowship	19
Control	19
Discovery	18
Relaxation	17
	29%
Suffering	16
Fantasy	15
Nurture	14
Captivation	14
Thrill	12
	22%
Humor	8
Cruelty	6
Submission	6
Simulation	5
Expression	5
Sensation	1
Sympathy	1
Subversion	1
Eroticism	0
	10%

Challenge was mostly experienced in casual puzzle genre, and also in hidden object and action games in general. Interestingly, mid-core strategy games were not considered particularly challenging. There was also a meta-level challenge in game play, as informants played against the monetization mechanics so they would not have to pay for in-app purchases.

The genre comparison showed expected differences between the game genres. Casual puzzles were mostly about Competition, Challenge, Suffering and Relaxation. Casual management games were mostly about Completion, Nurture, Discovery, and Exploration. Mid-core strategy games featured Control, Completion, and Competition. Control was regarded important as it made failure in the game possible.

There were also interesting outlier experiences, such as learning yoga poses from a yoga game through Discovery. Cruelty was experienced in combat orientated games, either by bashing helpless non-player characters or giving hard time to inexperienced players. Submission was experienced in the ranking system, as usually there are friends who had played the game for some time already and they were way ahead in ranks. This can be frustrating as well, as catching friends might be practically impossible.

This research has provided interesting details on playful experiences in social games. The PLEX-framework can be used for analyzing experiences in a structured way, or used as an inspiration for game design. For example, we can utilize the PLEX model to aim for certain experience flow in a tutorial. Providing structured vocabulary for utilizing playful experiences can be seen useful in many design contexts - not just in games.

Key Findings

- Competition, Completion and Challenge were the most common playful experiences in social games, covering 39% from all the reported experiences.
- Exploration, Fellowship, Control, Discovery and Relaxation made the second cluster, featuring 29% of all reported experiences.
- Casual puzzle, casual management, and mid-core strategy games had both similarities and differences in the emerging playful experiences.
- The PLEX-model reveals many playful experience types which are not utilized in games, offering potential approaches for innovative game design.

Domain-Specific Playability Problems in Free-to-Play Social Games

Paavilainen, J., Alha, K., Korhonen, H. (2015). Domain-Specific Playability Problems in Social Network Games. *International Journal of Arts & Technology*, 8 (4). <http://dx.doi.org/10.1504/IJART.2015.073579>

Paavilainen, J., Alha, K., Korhonen, H. (2012) Exploring Playability in Social Network Games. In proceedings of ACE 2012. http://link.springer.com/chapter/10.1007%2F978-3-642-34292-9_24

Playability Heuristics

Game Usability

GU1	Audio visual representation supports the game
GU2	Screen layout is efficient and visually pleasing
GU3	Device UI and game UI are used for their own purpose
GU4	Indicators are visible
GU5	The player understands terminology
GU6	Navigation is consistent, logical and minimalist
GU7	Control keys are consistent and follow standard conventions
GU8	Game controls are convenient and flexible
GU9	The game gives feedback to player's actions
GU10	The player cannot make irreversible errors
GU11	The player does not have to memorize things unnecessarily
GU12	The game contains help

Gameplay

GP1	The game provides clear goals or supports player created goals.
GP2	The player sees the progress in the game and can compare the results
GP3	The players are rewarded and rewards are meaningful
GP4	The player is in control
GP5	Challenge, strategy, and pace are in balance
GP6	The first time experience is encouraging
GP7	The game-story supports the gameplay and is meaningful
GP8	There are no repetitive or boring tasks

To be continued on next page...

Playability is the combination of game usability and gameplay design. It is an important factor for player experience, especially in free-to-play context where competition in the market is fierce and players can easily switch from one game to another. This research studies the domain-specific playability problems in social games by focusing on playability problems emerging from the free-to-play revenue model and social network integration.

Heuristic evaluation method together with playability heuristics has been used successfully in evaluating games on different platforms. In heuristic evaluation, the inspectors evaluate the game design and search for problems according to heuristics which are rule of thumb statements or guidelines. If the game design violates these heuristics, it can lead to playability problems and diminished enjoyment. Playability heuristics are used to support the evaluation and to help pay attention to certain aspects that are known to have influence on playability.

We present results from two different studies. In the first study 18 inspectors evaluated a social game with established playability heuristics⁶. The purpose of the first study was to test if heuristic evaluation with playability heuristics is a feasible method for identifying playability problems in social games. The method proved to be useful and we identified interesting preliminary playability problems which we wanted to study further. In the second study 58 inspectors evaluated 12 social games with the same heuristics. A total of 614 playability problems were reported, which we organized into 38 categories. After reviewing the inspectors' reports, we confirmed the earlier findings in the first study and revealed new issues as well.

⁶ Korhonen, H., Koivisto, E.M.I. 2006. Playability Heuristics for Mobile Games. In Proceedings of MobileCHI'06. <http://dl.acm.org/citation.cfm?doid=1152215.1152218>

Gameplay (continued)

GP9	The players can express themselves
GP10	The game supports different playing styles
GP11	The game does not stagnate
GP12	The game is consistent
GP13	The game uses orthogonal unit differentiation
GP14	The player does not lose any hard won possessions

Mobile

MO1	The game and play sessions can be started quickly
MO2	The game accommodates with the surrounding
MO3	Interruptions are handled reasonably

Multiplayer

MP1	The game supports communication
MP2	There are reasons to communicate
MP3	The game supports groups and communities
MP4	The game helps the player to find other players and game instances
MP5	The game provides information about other players
MP6	The design overcomes lack of players and enables soloing
MP7	The design minimizes deviant behavior
MP8	The design hides the effects of the network

Based on these two studies, there are at least six different domain-specific playability problems in social games.

1. Repetitive, boring gameplay
2. Aggressive monetization
3. Interrupting pop-ups
4. Friend requirements
5. Spammy messages
6. Click fatigue

Repetitive and boring gameplay is related the casual nature of social games. Due free-to-play model, these games try to provide play experiences for the widest possible audience. Therefore simple game mechanics and interaction loops might become boring quickly, if the gameplay is not versatile enough. Similarly, if the game world (in world building games) grows too big, it might result to tedious clicking, emphasizing the monotonous experience. Aggressive monetization comes from the demands of free-to-play revenue model and this problem was usually connected to interrupting pop-ups as well. Similarly, friend requirements utilizes the viral nature of the social network, and like aggressive monetization, interrupting pop-ups were used to lure players to recruit new players into the game. This might lead to message spam, which is generally frowned upon by social network users. These problems are highlighted when games demand recruitment of friends for progressing in the game.

We believe that with good game design these problems can be easily avoided. Although this experiment focused on social games, understanding these problems is relevant to all free-to-play games with social features. Designing for good playability lays a foundation for good player experience, which in turn results to better retention and monetization.

Key Findings

- The established playability heuristics are suitable for evaluating social games as they are helpful identifying playability problems in them.
- Six domain-specific playability problems in social games are boring gameplay, aggressive monetization, interruptive pop-ups, friend requirements, spammy messages, and click fatigue.
- These domain-specific playability problems result from a poor execution of free-to-play revenue model and social network integration in the game design.

Common Playability Problems in Free-to-Play Social Games

Paavilainen, J., Korhonen, H., Alha, K. (2014). Common Playability Problems in Social Network Games. In CHI'14 Extended Abstracts on Human Factors in Computing Systems.

<http://dl.acm.org/citation.cfm?doid=2559206.2581336>

Identifying, understanding, and fixing playability problems is important in free-to-play games. As players do not make monetary commitment when trying out free-to-play games, it is easy for the players to quit the game and switch to another one if there are problems in game usability or gameplay design. In this experiment 58 inspectors used heuristic evaluation method to identify playability problems in 12 social games. We utilized the same playability heuristics as in the previous study (see previous pages). The purpose of the study was to identify the most common problem categories which cause playability problems in social games.

The top six problem categories found were all related to game usability: user-interface (UI) layout, navigation, help, visual clarity, feedback, and camera view. The three gameplay problem categories were related to challenge, goals and rewards. The one platform problem category was related to browser and Flash technology issues. Interestingly, a majority of the problem categories were related to game usability. To improve the quality of social games, more emphasis should be placed on the UI design. Some of the problems are likely to be conscious design decisions. For example, trying to force the player to buy virtual goods or invite friends without a clear cancel option for a pop-up dialog might be beneficial for the business - at least in the short-term perspective.

The most common gameplay problems were related to the fundamental basics of game design; challenge, goals and rewards. There are social games which do not feature challenge, but they constantly provide repetitive goals and ultimately offer little or no rewards for the players' efforts. The design practice that lacks challenge might appeal to new players, but uninteresting goals and meaningless rewards might cause the players to abandon the game quickly as the game play becomes meaningless.

Understanding these problems is useful in game design in general. Although this experiment focused on social games, we believe these issues are relevant in other types of video games as well.

#	Type	Category	Games	Mentions	Playability Problem examples
1	Game usability	UI layout	12	57	Too many UI elements on the screen UI elements hide important gameplay elements UI does not scale with windowed and full screen modes
2	Game usability	Navigation	12	54	Players are unable to find the correct action from UI Confirmation is not asked for in-app purchases Minimap cannot be used to for game world navigation
3	Game usability	Help	11	68	Help is not readily available for the player Player is missing information how to complete actions Soft and hard currencies are not explained
4	Game usability	Visual clarity	11	28	Avatar's movement animation is not consistent Small texts are difficult to read It is difficult to distinguish game units from each other
5	Game usability	Feedback	11	28	Feedback from the game is sluggish Certain actions have no feedback loop at all There are no visual indicators for upgraded units
6	Game usability	Camera view	10	24	Manipulation of the camera not possible (zoom/angle) Moving around the camera in the game world is awkward Some gameplay elements are off-camera
7	Gameplay	Challenge	10	24	Difficulty ramps up too quickly Game items wear out too fast Random element plays too much of a part in the game
8	Platform	Flash	9	21	Right click (genre convention) cannot be used in a game Keyboard shortcuts do not work in full screen mode Chat is disabled in full screen mode
9	Gameplay	Goals	8	21	Player is given too many tasks at a time End condition for the level is not presented clearly The game lacks long-term goal
10	Gameplay	Rewards	8	19	The rewards are too small when compared to effort Player gains ranks which have no meaning in the game Rewards are not given for resource consuming actions

Key Findings

- Playability problems are relatively common in social games.
- Six most common playability problem categories were related to game usability issues: UI layout, navigation, help, visual clarity, feedback, and camera view.
- Three gameplay problem categories were related to challenge, goals, and rewards, and one category was related to Flash technology issues.
- Some problems are intentionally designed in order to promote in-app purchases or viral activity.
- Heuristic evaluation is a proven tool for identifying playability problems in games.

Sociability in Free-to-Play Social Games

Paavilainen, J., Alha, K., Korhonen, H. (FORTHCOMING). Review of Social Features in Social Network Games.

Social Features in Social Games

1st Tier

PRE5	Off-game sociability
PRE6	Presence information
PRE7	Scorekeeping
PRE8	Social UI element
COM3	FB wall posts
COM4	FB notification
COM5	Invite request

2nd Tier

INT4	Receive Items
INT9	Send infinite items
PRE1	Activity information
COM8	Request items
PRE4	Friend requirements
PRE2	Community challenge

3rd Tier

PRE9	Visit game space
COM2	FB wall post to a friend
INT1	Competitive action
COM7	Request activity
COM9	Synchronous communication
INT2	FB click post reward

4th Tier

COM1	Asynchronous communication
INT6	Remove a friend
INT10	Synchronous interaction
PRE3	Friend bonus
COM6	Rematch / Replay
INT8	Send IAP item
INT5	Relocate game space
INT7	Send finite items

An interesting question regarding social network games is their perceived and actual sociability. This research studies the sociability of social games with applied thematic analysis of 16 social games. As a result, we present a list of 30 social features categorized in three categories; presence (PRE), communication (COM) and interaction (INT). The list shows what kinds of features are actually used in social games to promote sociability. The results show that there is a common set of features that was found in all the analyzed games.

The first tier features were all found in all the analyzed games. These form the *de facto* standard for social features in social games. The second tier features were all found in at least 10 games, making them common as well. The third (6-9 instances) and fourth (1-5 instances) tier social features are more dependent on the game genre, theme, and type. For example, visiting a friend's game space (PRE9) was found in nine games and it is mostly related to world building games and not relevant to casual puzzle games. Similarly, relocating game space (INT5) was found only in a mid-core strategy game.

Sociability in social games is mainly focused on the presence and communication aspects and is lacking interaction between the players. Furthermore, social features are mainly used for player acquisition and retention rather than monetization. These findings can be used for the benefit of the study and design of sociability in social games - and for video games in general.

Key Findings

- Sociability in social games is mostly focused on presence and communication, while lacking on social interaction.
- Based on the analysis we found 30 different social features, which were organized into four tiers.
- The first tier features, seven in total, were found in all social games. All the second tier features were found in at least 10 games.
- The third and fourth tier features are more depended on the game genre, theme, and type.

Design Guidelines for Free-to-Play Games

Paavilainen, J., Alha, K., Hamari, J., Kinnunen, J. (FORTHCOMING). Design Paradigms and Principles for Free-to-Play Games.

We interviewed 14 Finnish game developers about their insights into free-to-play game design. Ten developers had previous work experience with free-to-play games, six with gambling games. During the interviews, both good and bad practices were discussed.

The developers emphasized rather traditional values for free-to-play design, focusing on meaningful player experience as the basis for design. Malicious monetization schemes were commonly rejected as well as pay-to-win mechanics. All content should be available for free at least in theory, and the general idea was that paying expands play style possibilities and makes a fun game even better. Providing real value for in-app purchases is important and giving away premium currency in reasonable amounts is a good way to teach players how and when to use it. In addition, the ability to provide new and fresh content, especially for the players who spend a lot, was considered crucial, as otherwise the game becomes boring and stagnated for them.

This research will be visualized into a design matrix with two axes. The horizontal axis represents the continuum from traditional game design towards free-to-play specific design. The vertical axis represents the continuum from abstract design paradigms to concrete design guidelines and mechanics. In addition, the final publication also discusses bad design practices.

Key Findings

- Traditional game design values are also important in free-to-play as meaningful player experience is the most important aspect. It is believed that good experience leads to good retention which then turns into good monetization.
- Malicious monetization models, pay-to-win, and skipping frustrating content by paying were seen counter-productive for good business.
- Fair play, loose virtual economy, all content available (at least in theory), and ability to provide new and fresh content were emphasized.

Player Attitudes towards Free-to-Play Games

Alha, K., Paavilainen, J., Koskinen, E., Kinnunen, J. (FORTHCOMING). Player Experiences and Attitudes towards Free-to-Play Games.

Player attitudes have been one of the most visible issues in the public discussion about free-to-play games. To get a wider perspective on player experiences, attitudes and opinions about free-to-play games, we conducted 16 in-depth player interviews.

While attitudes towards free-to-play games varied among the interviewees, they had been changing in a positive direction, mainly because the players have had positive experiences with good free-to-play games. The free-to-play model was not seen as unethical as a whole, but it was seen to make exploitation easier. Particularly misleading or misinforming about being free were seen as unethical. Marketing to children and problem-players are problematic issues as well. Mobile free-to-play games were seen as more ethically problematic than full-fledged PC free-to-play titles.

Spending money on free-to-play games divides players. While some have a strong principle against using money on free games, others do not consider it rational not to use money if spending enhances the game experience. Using money is usually more impulsive on free-to-play than with retail purchases. Characteristically the high-spenders did not see their spending as a problem, as they spent a lot of time with the game and felt they were getting their money's worth.

Free-to-play games have the same criteria for a good game than other games, but in addition they include specific criteria. For example the game must be a good experience both as free and as paid. Also there must be rewards for daily quests and frequent updates to keep the game fresh. In a bad free-to-play game everything is for sale, victory can be bought and the game spams frequently.

Key Findings

- Free-to-play is not unethical as a whole, but the model makes exploitation easier.
- Spending on a free-to-play game strongly divides the players. Some have principles against spending while others willingly pay to enhance the experience.
- High-spenders do not see their spending as a problem, if they get their money's worth.

Relation of Critical Acclaim and Commercial Success

Alha, K., Koskinen, E., Paavilainen, J., Hamari, J. (FORTHCOMING). Critical Acclaim and Commercial Success in Mobile Free-to-Play Games

Critical acclaim is considered to be one of the main predictors of profitability and commercial success of game products. For this reason, major game publishers go through tremendous challenges in order to fare well in different forums that review and rate their products. However, little evidence exists on the relationship between the ratings and profitability. We used both quantitative and qualitative methods to investigate the relationship between critical acclaim and commercial success in mobile free-to-play games.

We used top-grossing charts and Metascores to compare the commercial success and critical acclaim. While previous studies have found strong positive correlation between higher Metascores and better sales with other types of games, the correlation between mobile game reviews and their position on the top-grossing chart was negative. Free-to-play games were reviewed with lower scores on average, but free-to-play games were significantly more commercially successful.

We chose 5 games with high Metascores and 5 top-grossing games for an in-depth analysis. Games with high Metascores differ substantially from the top-grossing games by being less aggressive in their monetization and by resembling traditional single-player games.

The less aggressive monetization might explain why the high Metascore games are not as commercially successful. In a way, the high Metascore games might be too good to make money, which is supported by our earlier findings that enjoyment actually decreases purchase intentions. The more traditional nature and the lack of aggressiveness might appeal to the traditional game media, thus resulting in higher review scores.

Key Findings

- The correlation between mobile game reviews and their position on the top-grossing chart was negative.
- High Metascore games differ substantially from top-grossing games.
- High Metascore games are less aggressive and resemble traditional single-player games.

Synthesis on Player Types Research

Hamari, J., & Tuunanen, J. (2014). Player Types: A Meta-synthesis. Transactions of the Digital Games Research Association, 1 (2), 29-53.

Recent developments in game business practices have especially elevated the need to distinguish between types of players and play styles. For example, the new business models related to selling virtual goods have multiplied the amount of sold products within one game product or service as opposed to the retail sale of games. With the new business models game publishers subject the entire game and game design with its different value offerings to more accurate scrutiny in terms of marketing. Virtual items in games are no longer designed only to be an integral part of the finely tuned game balance. Designers also have to think who would potentially be the customer for the virtual goods in question. These increasingly relevant questions that linger in the crossroads of game design and marketing call for the use of marketing practices of segmentation and differentiation as a part of game design.

The field of study in player types is perhaps surprisingly uniform. Current studies could be synthesized into five key dimensions pertaining to motivations of play or orientation of the player: Achievement, Exploration, Sociability, Domination, and Immersion. Additionally, notions of how intense the mode of play was commonly articulated as a continuum or dichotomy between hardcore and casual.

This study highlights that regardless of whether the player types were referred to as nominal or as ordinal in previous studies, the types will nevertheless provide ground for further measurements of player traits, attributes and motivations and help form a more refined understanding of them. At this stage of the research continuum, a couple of different perspectives of player types mix together, such as types in accordance with motivations of play, gaming mentalities, traits of the player, their behavior and self-selected in-game demographics. The aim in this study was to bring together these separate perspectives, which all have a common nominator: "player types."

Our findings also show that the amount of dimensions pertaining to player types is rather low in the respective literature and very much based on Bartle's original work. In addition to the Bartle's achiever, explorer, socializer and killer, only immersion oriented play as a qualitative mode of play/player orientation could be found on the same

abstraction level in other literature. Outside these psychographic types, previous literature has also suggested using gaming intensity and in-game demographic factors such as class and progression as one basis for typifying players through behavioral measurement. Some works do provide a sub-dimension to the higher abstraction level player motivation and mentalities; however, on this abstraction level the studies do not add additional dimensions of player types. We were surprised, for instance, that within this stream of literature there were no mentions of motivation to play like sensory enjoyment, aesthetic enjoyment, playfulness or utilitarian gaming motivations - such that professional eSports player might have, for example.

The results of this paper could help game companies better understand their clientele, and the results could be used as a starting point for a more thorough and "exact" segmentation. In addition, in relation to game design, designers now have in their knowledge the common behavioral patterns and motivational factors of players and they can design and develop their games accordingly. Furthermore, established psychometric measurement scales can further be used in predicting the use and purchase behavior within games between players with different motivational orientations, for example.

Key Findings

- The gamer types in current literature on gamer types could be synthesized into five key dimensions pertaining to motivations of play or orientation of the player: Achievement, Exploration, Sociability, Domination, and Immersion as well as in the intensity of play.

Section III

Gambling and Free-to-Play Research

Multi-Methodological Research on Gambling

Kinnunen, J. & Mäyrä, F. (2014). Online Gambling and Data. In Raento, P. ed. *Gambling in Finland*. Helsinki. Gaudeamus. 173-189.

In this text, we examine online gambling studies by discussing the special features of information networks as a research environment and where online games find their place among cultural gaming forms.

Gambling and other gaming have changed considerably in the last few years. The increasingly close connection between games and information technology, digital media and the Internet challenge not only how games are distributed and how participation in them is regulated, but also any scholar attempting to understand gaming. Individual games have common features, which connect them together as part of the same phenomenal field, but there is no single feature that all games share. Gambling games such as poker or the lotto and the way they are played have apparently little in common with roleplaying games or action videogames, for example. The study of these gaming forms has also been highly specialized and dialogue between the research traditions has been limited. Digital games, however, increasingly mix and combine features of individual games. The relationship between games played for entertainment and games played for money is changing in a way that challenges scholars to study online games, in particular. Dialogue between fields of research and multi-methodological research collaboration are ways of meeting these challenges.

It may be easier to gather data on the Internet than outside of it. For this reason, combining different ways of data collection is easier than before. Online playing itself generates rich data, which can be recorded, stored and analyzed. In addition to this kind of automatic gambling data, the researcher can also collect questionnaire data and observe players on the various Internet forums. One data set can serve as the foundation for collecting another set. Pieces of data gathered by different methods complement each other and open new perspectives for the analysis.

Neither is it necessary to limit oneself to online data when studying online gaming. In addition to the electronic data from the game, online surveys, online interviews and observation in the online environment, gamblers can be observed outside the Internet, taking into account the gambler's activities on the other side of the screen. In this task, too, the Internet proves to be useful.

Games can be understood as research objects in various ways. It is possible to emphasize the features of the game or the role of the players, their modes of action or the surrounding society as the foundation of game-related practices or meanings. Disciplinary, methodical and methodological diversity potentially increases the reliability of research, when crossing points of view and data collected by multiple methods expose blind spots hidden in the research setting.

Key Findings

- The relationship between games played for entertainment and games played for money is changing in a way that challenges scholars to study online games.
- In addition to the electronic data from the game, online surveys, online interviews and observation in the online environment, gamblers can be observed outside the Internet, taking into account the gambler's activities on the other side of the screen.

Convergence of Gambling and Digital Gaming

Kinnunen, J. (2014). Online Gambling in Convergence Culture. Paper presented at Crossroads in Cultural Studies Conference 2014. 02.07.2014. Tampere, Finland.

This study analyzes the convergence culture of online gambling and gaming in the network society. The significance of social interaction and social rewards for gambling and gaming experiences are discussed.

In recent years, there have been some notable developments in digital gaming industry: games are increasingly developed like online services, the line between gambling games and other games has become blurred in online environments, and the social interaction connected with gaming has become increasingly important. These trends are especially visible if we consider the games in social networks, such as Facebook games. One of the most popular Facebook games for years has been free-to-play Texas hold'em poker by Zynga. Social casino games in general have been among the most profitable types of free-to-play games. Players can't bet or win real money in these games, but they can consume money as in any free-to-play games.

Even if players can't win real money from online games, playing can create other rewards. Large part of new forms of digital gaming takes place in social surroundings. Games can be situated directly on social networking sites or they are part of or linked to larger social networks. The actual playing doesn't necessarily involve direct social interaction, but players can communicate and be in contact with other players before and after games through internet's multiple channels. In addition to playing against each other, players can share experiences in different game-related forums and they can learn to be better players by communicating with each other. By playing and acting in these game-related forums with other players, players can gain social rewards from gaming and gambling. Social rewards can be evaluated and experienced as more valuable than monetary losses or winnings in gambling. Even if poker players, for example, lose money in gambling, their playing styles or representation of character can be positively acknowledged by their peers. Peer appreciation can be highly valuable social reward for players and can make them continue playing, even if monetary losses can be severe.

In the same way, playing poker in Facebook without real money can produce social rewards. If playing is valued in the Facebook users' social networks, it is socially acceptable or even expected that they also start to play. Winning an opponent in a free-to-play poker game can in itself be rewarding. In Facebook it is easy to communicate about one's playing to other members of one's social networks. Positive feedback about one's gaming can be valuable social reward. Feedback can take several forms and use all the possible means available in Facebook or in internet, such as sharing or liking friends' game scores, inviting friends to play or giving game-related gifts to friends. Similarly, real money online gamblers utilize all the possible means of online environment, social networks and surrounding society and culture to build their optimal gambling experiences.

Key Findings

- Social rewards are important both in real money gambling and free-to-play gaming.
- Players can build their optimal gambling experiences by utilizing all the possible means gambling or gaming sites and social media offer.
- Mediated social interaction is also important for players' gaming experiences.
- Social rewards have various representations in online gambling and social media.

Social Rewards of Gambling and Free-to-Play Gaming

Kinnunen, J. (2013). Identities at Stake: Similarities between Free-to-Play Games and New Forms of Online Gambling. Paper presented at 15th International Conference on Gambling and Risk Taking. 31.05.2013. Las Vegas, USA.

This study compares Facebook's free-to-play social casino games with new forms of Finnish online gambling games and analyzes the similarities and differences between them. Further, experiences of players of these games are also analyzed based on the interview data of 16 Finnish online gamblers and 18 Finnish Facebook gamers. Based on the analysis, this paper concludes that free-to-play games are not actually free, and "real" gambling games are not fundamentally played for monetary rewards. In both game types, players stake their identities that are constructed in the same networks in which the games are played. Social rewards received from playing guide the identity construction processes. Only the representations of identities and social rewards vary between different games. That's why the line between different game types will keep on blurring in social networks.

Key Findings

- The line between gambling games and other games has become blurred in online environments.
- The social interaction connected with gaming has become increasingly important.
- Regardless of the monetary value of the bet, gam(bl)ing is meaningful for players, if the bet represents their identity.
- Players get social rewards both from social games and from gambling, only the representations of rewards vary between different games.

Identification in Gambling and Social Gaming

Kinnunen, J. (2013). Learning to Play Online: Social Gam(bl)ing and Identity Play in Social Networks. Paper presented at The Second Asia Pacific Conference on Gambling & Commercial Gaming Research. 02.12.2013. Kaohsiung, Taiwan.

This study analyses the gaming experiences of Finnish online gamblers and Finnish Facebook gamers. It compares the similarities and differences between different game types and social interaction connected with them. The focus is on the social learning processes of online gaming. Both Facebook gamers (18 interviewees selected based on the questionnaire data of 134 respondents) and online gamblers (16 interviewees selected based on the questionnaire data of 409 respondents) have similar gaming careers. New games are learned based on the examples of other members in players' social networks. Playing continues if players identify with the games they start to play. For example, football players continue to bet on sports and "horse girls" continue to gamble on horse races. On the other hand, if the game has no or only a thin connection to players' identity, players seek a new game. However, if the games benefit their identity play, eventually gam(bl)ing becomes a part of their everyday life.

Key Findings

- Facebook gamers and online gamblers have similar gaming careers.
- Social networks are important in finding new games.
- Playing continues if players identify with the game.
- If the game is beneficial to one's identity play, gam(bl)ing eventually becomes a part of players' everyday life.

Gamblers and Social Casino Gamers

Kinnunen, J. (2015). Do Gamblers Play Social Casino Games? An Investigation of Finnish Online Gamblers. Paper presented at SNSUS 2015 Conference (Stiftelsen Nordiska Sällskapet för Upplysning om Spelberoende). 3.6.2015. Stockholm, Sweden.

In this study, questionnaire data of 304 Finnish online gamblers is analyzed. 25.7% of the gamblers had at least tried free-to-play social casino games. Preliminary results indicate that social casino gamers are younger than non-social casino gamers and they often play also other types of digital games, especially free-to-play games, mobile games and games in skill gaming sites. They seem to be social gamers also in the sense that they value game related social interaction in traditional offline gambling games as well. Their offline gambling is associated with other leisure activities, such as going to nightclubs or cruises.

Key Findings

- Real money gamblers play also free-to-play social casino games.
- Social casino gamers are younger than non-social casino gamers.
- Social casino gamers also play other digital games.
- Social casino gamers prefer social forms of real money gambling.

Responsible Gambling Tools for At-Risk Gamblers

Kinnunen, J. & Heiskanen, M. (2013). At the Interface of (ir)Responsible Online Gambling? Experiences and Practices of Recreational and Problem Gamblers. Paper presented at The Second Asia Pacific Conference on Gambling & Commercial Gaming Research. 03.12.2013. Kaohsiung, Taiwan.

Digital and networked gaming environments have made it possible to track and monitor all the player activities. This is evident especially in online environments. At the same time, new responsible gambling tools have been created and integrated into online gambling games and sites. These tools enable individual limits for money and time consumption for the players. They are often voluntary but in some cases have predetermined maximum limits.

Responsible gambling emerges at the interface of recreational and problem gambling. In this study, we analyze the responsible gambling tools of a Finnish and a foreign online gambling operator. Based on the interview data, we will also analyze gambling experiences of 16 recreational gamblers and 17 problem gamblers and the practices they utilize to manage their consumption of money, time and other resources. The focus is on how players' experiences and practices are connected with the tools and policies of gambling operators and how they reflect other levels of the concept of responsible gambling.

Key Findings

- Online gambling is often regarded as more dangerous than offline gambling.
- Responsible gambling tools can make online gambling safer than anonymous offline gambling.
- Responsible gambling tools are most beneficial to at-risk players.
- Responsible gambling tools are not targeted for problem gamblers.

Responsible Gambling and Free-to-Play Games

Kinnunen, J. (2014). Game Developers' Perspectives on Responsible Monetization of Gam(bl)ing. Paper presented at EASG Conference 2014. 10.09.2014. Helsinki, Finland.

As the line between different types of games keeps on blurring and there are also many levels of convergence between gambling and gaming industries, questions of the social responsibility of the new forms of gam(bl)ing have emerged. Even if players can spend as much money to free-to-play games as gambling games, these games are not regulated in the same way. In this study, we analyze the interview data of 14 game developers who work in Finnish gambling and gaming companies. The focus is on how developers regard the ethicality and social responsibility of different games and their business models. Differences and similarities between development practices in gambling industry and digital gaming industry are further discussed in relation to responsible gam(bl)ing research literature.

Key Findings

- Gambling regulators have expressed their interest to regulate also free-to-play social casino games.
- Non-gambling game developers don't want external regulation.
- Gambling game developers are used to working within the boundaries which have been set by external authorities.
- An ethical and responsible game is implicitly included in the game developers' definition of a "good game".

Section IV

Guest Articles

Many Faces of Free Games

Tuomas Pirinen, CCO, Reforged Studios

A few years back, when approaching the famed Staples Center in LA, I heard a roar. At first I thought it was a sign of a natural disaster, perhaps people escaping the Big One, the dreaded mega-earthquake that the West Coast has nervously waited for the last hundred years. But I was wrong. This was the sound of free-to-play gaming: It was the euphoric roar of thousands upon thousands of fans cheering the entrance of one of the most popular teams of the free-to-play game League of Legends. It was my welcome to this new era of gaming.

The free-to-play revolution has had the power to both create and destroy within the games industry. Many famed games studios have closed down in the recent years, as they have been caught between two raising trends. On one hand, the traditional big publishers are now producing fewer and fewer games with ever higher production values, costing anywhere up to 250 million dollars each to make. On the other hand, new free-to-play giants offer huge, polished, complex games free of charge, with the explicit aim of only ever having a fraction of the players providing their revenue. Caught between these two seismic forces, many studios have found it impossible to compete and have been forced to close their doors, much to the agony of their fans and employees.

The new platforms and the new distribution model have also given birth to a myriad new studios. Many, like Riot Games and Grinding Gear Games, are shining paragons of the industry, centers of creativity that are truly taking the culture and social involvement of the gaming companies to a whole new level. But the new gold rush also brought some unscrupulous and shady operators who have focused on trying to gauge their players as much as possible.

But the biggest change is that free-to-play has brought into the fold of gaming hundreds of millions of new people who otherwise would never have picked up a video game. Gaming is finally, after decades of trying, entering the mainstream and it is led by both the quality and popularity of the free games where the barriers of entry have been brought as low as possible.

The free-to-play has also heralded countless new game genres and gameplay innovations that have brought completely new ways of playing games to the masses, breaking the trend in the industry where innovation has become rarer and rarer over the recent years.

Yet despite all these myriads of new additions to the industry, to my dismay the discussion in both media and academia has focused on the business model and has mostly ignored the player experiences that are what really makes a game successful. Free-to-play games such as League of Legends, Puzzle & Dragons, DOTA2, World of Tanks and many others boast the most fiercely loyal players in the history of gaming: the secret of their success is how the games can engage their players over a long period of time.

In some ways, the term “free-to-play” that was first coined to describe free games is ill-advised. “Games as service” is far more descriptive and focuses on the quality that determines the life and death of a free game: the service you provide to your players. Indeed, this model of engaging with the players has seeped over to more traditional console gaming, where games like Destiny keep bringing new events and content into the game all the time, while offering additional content with microtransactions to the most dedicated fans.

The problem with the perception of free-to-play games is that the business model of a free game can range from the fairest possible (the game is absolutely free and you cannot spend money on it even if you want to) to utterly unethical where the game makers have made sure that progress in an ostensibly free game is impossible without the expenditure of money. This exploitation of video gaming for short-term gain is nothing new: indeed, the original gaming craze started with the arcade machines that were designed to munch quarter after quarter with utterly punishing difficulty.

The future of free games holds both promise and danger to the video game industry. If things are done right, we will now enter the golden age of gaming with abundance of free, high-quality gaming supported by loyal and well-treated fan base. The challenge for us game developers is to avoid the temptation of unethical practices and focus on what has always mattered the most to the players: the quality and sheer fun of the user experience.

I, however, have the utmost faith in the player's ability to eventually choose the best and most ethical games. The future of free-to-play games belongs to excellent games like League of Legends, DOTA2, World of Tanks, Puzzle & Dragons, Path of Exile and many others that are destined to be the classics of tomorrow.

Tuomas Pirinen has been creating games for 18 years, and has worked at Electronic Arts, Ubisoft and Games Workshop. His design credits include games such as Warhammer, Need for Speed, Driver, and Mordheim. He is currently the founder and CCO of Reforged Studios in Helsinki, Finland.

Manifesto for Sustainable Free-to-Play

Aki Järvinen, Game Futures

In 2013, I had the opportunity to give a conference talk with the title 'Sustainable Free-to-Play'. The motivation for the talk was two-fold: First, I wanted to use the opportunity to take a look at the history and evolution of the free-to-play business model. Second, as someone who was working within the constraints of the model, I had an inkling that the model would not be sustainable in the long term, at least in its predominant form on the mobile games market.

What history tells us is that free-to-play has been tried with most notable game genres, starting with a text-based RPG Achaea in 1997. Ever since, players have opened their wallets for micro-transactions for a broad variety of things to extend or embellish their play experiences in games as different as NeoPets (launched 1999), Runescape (2001), and Zynga Poker (2007) on the way to the current top-grossing juggernauts.

So, there is a more considerable history than a casual observer might believe. And yet, the early history is largely a history of viable niches, whereas the model only hit the mainstream game audience from Mafia Wars (2008) and FarmVille (2009) onwards. With this in mind, I wanted to think about principles which would give the model the necessary sustainable foothold going forward.

Arguing for sustainable free-to-play basically means acknowledging that the model is here to stay. Thus, arguing for sustainability also means arguing for how the model can co-exist with principles of good design - something that the cruder and more opportunistic implementations out there, e.g. during the 'gold rush' of Facebook gaming days (roughly 2010-11), definitely did not accomplish. There was a host of design choices that were misleading, disruptive, and downright damaging to the player experience, ranging from mandatory email registration popups to misleading value propositions regarding in-app-purchases. No business model or product category can be sustainable if such design decisions take precedence.

Fortunately, players have largely voted out the extremes with their wallets. Yet, the model is evolving. More precisely, it has to evolve. It just does not make sense for any market to carry on successfully if roughly two percent of the audience is financing the fun for the remaining 98 percent. If you know of a historical precedence for such dynamics, please let me know.

Design principles that aim for sustainability have to do with player satisfaction: The more one pays, the more fun and engaging the game should become. The need to purchase in-game items and resources should arise organically from the fun the players are having, instead of aggressively pushing the purchasing options to their face or artificially gating content. Even if such aggressive tactics create immediate revenues, they are in danger of constituting spending that ultimately exhausts engagement. Instead, the game design should strive to keep the engagement relative to spending, while accommodating non-paying players as well. This is not easy - I've been there and have the scars to prove it - but nevertheless it should drive design.

Going forward, will such principles resonate? How could we come up with an educated guess? Strategic foresight is a business practice concerned with preparing for different future outcomes in a specific marketplace or, e.g. geopolitical scenario. Future cannot be predicted as such, but organizations can prepare for unpredictable outcomes by researching a number of different scenarios. These are built on observations about current and emerging trends.

For game studios, such practices give ammunition to predictions where the market is heading. As I am writing this in late 2015, relevant trends for mobile games include the following: Time spent on mobile games is going down (according to a study published by Flurry in August 2015). User acquisition costs keep on rising. China is becoming the largest mobile marketplace.

All these are factors that shape up the landscape. At the same time, during 2015, games with relatively loose executions of the free-to-play model, such as Crossy Road and Hearthstone have been quite successful. Based on these design solutions, there is definitely a plausible scenario where the model will increasingly move towards the direction of the old arcade type 'insert coin to continue' or 'free to start' solutions, where the amount of free play is restricted quite transparently - instead of slowing down player progression in various ways.

In terms of game features that drive monetization, this means less so-called appointment mechanics, e.g. in the form of timers. Instead, there will be clearer, one-off decision points for players to opt in with their wallets to the whole game, at the heels of a positive early experience. The number of repeat purchases and thus lifetime value per individual player will go down, but conversion to paying users will go up from the now non-sustainable two percent. Engagement instead of exhaustion means that time spent on games should pick up again.

This is something that I think needs to happen in order for the model to be not only financially sustainable but also more broadly socially acceptable among players. It is in every free-to-play developer's interest to evolve the model towards more inclusive directions, not to devolve it. To evolve free-to-play is to make it sustainable.

Aki Järvinen was creating free-to-play games from 2009 to 2015 with three different studios. Now he is focusing on forecasting the future of fun at Game Futures.

Conclusions and Future Work

On the basis of this research, the game playing, game development, and game culture all appear to be currently undergoing a process of transformation. Free-to-play revenue model has thoroughly changed the ways how games are designed, distributed, and consumed, leading to developments that evoke positive as well as critical reactions among the various stakeholders.

From the player and game culture perspective, the main effects of free-to-play model relate to the wider availability of games and the lower threshold for trying out and starting to play various types of games. For example, the total number of apps that are, or have been, available in the Apple iOS App Store is over two million. Many of them are game applications, and free-to-play is widely used as the monetization strategy among them. Only a fraction of this multitude of games becomes popular or commercially successful, of course, but the phenomenal growth in publication and distribution of digital games is a remarkable phenomenon in itself. To compare, the Mobygames.com web database which mostly tracks commercial video and computer games, has “only” c. 100,000 games in its register.

It could be claimed that this explosion of growth has come at the expense of quality. Certainly, most (mobile) free-to-play games are more small-scale and casual in character when compared to a traditional pay-to-play console or computer games. Moreover, common criticism among game players has focused on the negative role of money or payment incentives to the game play experience: in one end, the game might include “pay to win” aspects that appear unfair. On the other side, the mechanisms that slow down or dampen the gaming enjoyment for non-paying players are also met with player critique. From a cultural perspective, one could say that the free-to-play model is currently undergoing a process of “domestication”, where the new innovation (freemium business model in game design) is being tested out by both game developers and by game players. Sometimes this leads to non-satisfying extremes, but simultaneously it is gradually “tamed” into forms that all parties involved experience to be striking a satisfying balance or the middle ground. However, it remains to be seen what the next step in digital, game business and design models will be.

Convergence of gambling and digital gaming has been an interesting trend during the research project. App-based social casino games have become one of the most popular and lucrative forms of free-to-play gaming. Companies both from the gambling industry and the digital gaming industry have joined forces to produce new games. Results of our research project show that gamblers and free-to-play gamers are not separate groups, but there is overlap among these players. Real money gamblers also play social casino games and vice versa. Younger social casino gamers can expect similar experiences with real money gambling when they come of legal age. This continues to challenge game designers in the future as well.

The video games industry is moving fast and there are many interesting directions for future work. First and foremost is the issue of discoverability. As free-to-play games are bloating the marketplaces, it becomes imperative for the developers and publishers to be visible for the players. Word-of-mouth and being featured in market places are regarded as important elements for discoverability, but this should be studied further.

In relation to above, in-game video advertising has become an important part of the revenue stream for free-to-play games. In mobile advertising, acknowledging what, when, why, and to whom to show videos is crucial for successful game design and marketing. These issues have become an integral part of game design but fairly little research has been done on this field as well.

Understanding players and play through game analytics has become a vital strategy for game companies. Metric-driven design has become a pervasive approach for free-to-play games, but there is still room for improvement in the way metrics are used - and which metrics are utilized. An interesting question would be: To what extent we can evaluate player experience through the use of metrics?

Lastly, there is the emerging phenomenon of game play streaming. Services like Twitch and YouTube Gaming provide endless streams of game play for a growing audience. This provides all kinds of opportunities for game design and marketing, for example.

As the game industry and gaming culture keeps evolving and finding new ways to manifest the playful nature of humans, we can be sure that there will be interesting opportunities for players, practitioners, and academics alike in the future.

Publications & Presentations

Publications

Alha, K., Koskinen, E., Paavilainen, J. & Hamari, J. (FORTHCOMING). Critical Acclaim and Commercial Success in Mobile Free-to-Play Games.

Alha, K., Koskinen, E., Paavilainen, J., Hamari, J., & Kinnunen, J. (2014). Free-to-play Games: Professionals' Perspectives. Nordic DIGRA 2014. Visby: DIGRA & University of Uppsala.

<http://www.digra.org/digital-library/publications/free-to-play-games-professionals-perspectives/>

Alha, K., Paavilainen, J., Koskinen, E. & Kinnunen, J. (FORTHCOMING). Player Experiences and Attitudes towards Free-to-Play Games.

Hamari, J. & Tuunanen, J. 2014. Player Types: A Meta-synthesis.

<http://todigra.org/index.php/todigra/article/view/13/19>

Hamari, J. (2015). Why Do People Buy Virtual Goods? Attitude towards Virtual Good Purchases versus Game Enjoyment. International Journal of Information Management, 35(3), 299-308.

<http://www.sciencedirect.com/science/article/pii/S0268401215000080>

Hamari, J., Keronen, L., & Alha, K. (2015). Why Do People Play Games? A Review of Studies on Adoption and Use. In proceedings of the 48th Annual Hawaii International Conference on System Sciences (HICSS), Hawaii, USA, January 5-8, 2015.

Hamari, J., Hanner, N., & Koivisto, J. (FORTHCOMING). "No Pain, No Deal" - Enjoyment Reduces the Need to Buy More in Freemium Services: An empirical Study in Free-to-Play Games

Hamari, J., Hanner, N., & Koivisto, J. (FORTHCOMING). Service Quality Explains Why People Use Freemium Services but Not if They Go Premium: An Empirical Study in Free-to-Play games

Hamari, J., & Keronen, L. (FORTHCOMING). Why Do People Play Games Meta-Analysis of Technology Acceptance Studies

Hamari, J. & Keronen, L. (FORTHCOMING). Why Do People Play Games? A Meta-Analysis.

Hamari, J. & Keronen, L. (FORTHCOMING). Why Do People Play Games? A Meta-Analysis from Technology Adoption Perspective.

Hamari, J. & Keronen, L. (FORTHCOMING). Why Do People Buy Virtual Goods? A Literature Review.

Hamari, J. & Keronen, L. (FORTHCOMING). Why Do People Buy Virtual Goods: A Meta-Analysis.

Hamari, J., Kinnunen J., & Koivisto J. (FORTHCOMING). Why Do People Gamble: An Empirical Study on Service Quality in Online Gambling

Hamari, J., Koivisto, J., Järvelä, S., & Kivikangas J. M. (FORTHCOMING). What Kinds of Gamers Buy Virtual Items and Why.

Hamari, J., & Paavilainen, J. (FORTHCOMING). Who Buys Virtual Goods: The Relationships Between Purchase Behavior and Demographic Factors

Kinnunen, J. & Mäyrä, F. (2014). Online gambling and data. In Raento, P. ed. Gambling in Finland. Helsinki: Gaudeamus. 173-189.

Koskinen, E. (2015). Free-to-play-pelien suunnittelun eettisiä ongelmia. Bachelor's thesis. Tampere: University of Tampere.

Mäyrä, F. & Ermi, L. (2014). Pelaajabarometri 2013 - Mobiilipelaamisen nousu. Tampere: University of Tampere.

Paavilainen, J., Hamari, J., Stenros, J. & Kinnunen, J. (2013.) Social Network Games: Players' Perspectives. *Simulation & Gaming*, 44(6), 794-820. doi: 10.1177/1046878113514808
<http://sag.sagepub.com/content/early/2013/12/24/1046878113514808>

Paavilainen, J., Koskinen, E., Korhonen, H. & Alha, K. (2015). Exploring Playful Experiences in Social Network Games. DiGRA 2015. Lüneburg: DiGRA & University of Lüneburg.
<http://www.digra.org/digital-library/publications/exploring-playful-experiences-in-social-network-games/>

Paavilainen, J., Alha, K. & Korhonen, H. (2015). Domain-Specific Playability Problems in Social Network Games. *International Journal of Arts & Technology*, 8(2).

Paavilainen, J., Alha, K. & Korhonen, H. (2012) Exploring Playability in Social Network Games. In proceedings of ACE 2012. New York: ACM.

http://link.springer.com/chapter/10.1007%2F978-3-642-34292-9_24

Paavilainen, J., Korhonen, H & Alha, K. (2014). Common Playability Problems in Social Network Games. In CHI'14 Extended Abstracts on Human Factors in Computing Systems.

<http://dl.acm.org/citation.cfm?doid=2559206.2581336>

Paavilainen, J., Alha, K & Korhonen, H. (FORTHCOMING). Review of Sociability in Social Network Games.

Paavilainen, J., Alha, K., Hamari, J. & Kinnunen, J. (FORTHCOMING). Design Paradigms and Principles for Free-to-Play Games.

Presentations

Hamari, J., Kinnunen, J. & Koivisto, J. (2015). The relationship of perceived service quality and playing intentions in online gambling. Paper presented at SNSUS 2015 Conference (Stiftelsen Nordiska Sällskapet för Upplysning om Spelberoende). 2.6.2015. Stockholm, Sweden.

Kinnunen, J. (2015). Do Gamblers Play Social Casino Games? An Investigation of Finnish Online Gamblers. Paper presented at SNSUS 2015 Conference (Stiftelsen Nordiska Sällskapet för Upplysning om Spelberoende). 3.6.2015. Stockholm, Sweden.

Kinnunen, J. (2014). Game Developers' Perspectives on Responsible Monetization of Gam(b)ling. Paper presented at EASG Conference 2014. 10.09.2014. Helsinki, Finland.

Kinnunen, J. (2014). Online Gambling in Convergence Culture. Paper presented at Crossroads in Cultural Studies Conference 2014. 02.07.2014. Tampere, Finland.

Kinnunen, J. & Heiskanen, M. (2013). At the Interface of (ir)Responsible Online Gambling? Experiences and Practices of Recreational and Problem Gamblers. Paper presented at The Second Asia Pacific Conference on Gambling & Commercial Gaming Research. 03.12.2013. Kaohsiung, Taiwan.

Kinnunen, J. (2013). Learning to Play Online: Social Gam(bl)ing and Identity Play in Social Networks. Paper presented at The Second Asia Pacific Conference on Gambling & Commercial Gaming Research. 02.12.2013. Kaohsiung, Taiwan.

Kinnunen, J. (2013). Identities at Stake: Similarities Between Free-to-Play Games and New Forms of Online Gambling. Paper presented at 15th International Conference on Gambling and Risk Taking. 31.05.2013. Las Vegas, USA.

Paavilainen, J. (2015). Experiencing The Revenue Model in Video Games. Presentation for Sepeli ry. 20.5.2015. Seinäjoki, Finland.