INFIM

DEPARTMENT OF INFORMATION STUDIES AND INTERACTIVE MEDIA

Games as Services
Final Report

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(toim.)

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Introduction

In May 2010, Bill Mooney laid out the foundations of game studio Zynga's methods for game development. Mooney is the general manager of *FarmVille*, the most popular computer game in the world (over 80 million monthly active users in May 2010) and therefore his insights should not be underestimated. In his talk at *GDC* Canada, Vancouver, Mooney highlighted that since the launch of the game in June 2009, Zynga has introduced new features and tweaks to the game on a weekly basis. This ongoing development is based on constant testing and live metrics. Mooney further defined that Zynga sees its role primarily as a web service provider. The games they host are run as services that Zynga expects people to play still years from now.

While Zynga's design fundamentals reflect a very particular conception of digital game development, at the same time they nicely highlight the transition the global game industry has faced in the past years. The ultra competitive nature of global game industry, characterized by spiraling production times and development costs, has forced the developers to search for alternative approaches. As a consequence, digital distribution systems, subscription-based models and micro-transactions have challenged the traditional circuits of game development, play and distribution. A common theme across the transformations ranging from persistent game worlds and casual games to automatic content updates and player-created content is that they make games, more or less, available "as services".

The need for a particular research project examining the rise of the service paradigm among game industry was identified already in relation the Neogames centre surveys conducted in 2007. The Finnish game industry representatives were widely aware of the change towards service-driven models but the individual game studios had no resources for a larger analysis. The practical objectives of the *Games as Services* (*GaS*) project are motivated from this background. The project, conducted in collaboration between the University of Tampere Department of Information Studies and Interactive Media (INFIM) and The Helsinki Institute for Information Technology (HIIT), has aimed at producing an overview on the nature of the service paradigm and its consequences to games, game culture and business. In addition, individual case studies have been conducted in order to shed light on particularly interesting subthemes.

During the project's timeframe (2008–10), the core themes of the *GaS* have only increased in relevance and visibility. The reasons for this are twofold. Firstly, the online games market of games, including subscription, digital game download, DLC, virtual commodities and value-added services is steadily expanding (PwC 2009). Secondly, with the advent of casual and social games, entirely new audiences have been introduced to digital games. Players are not so much asked to structure their lives to fit the demands of a game

(Juul 2009). Instead, the games are increasingly designed to serve the players and to fit into their lives. In the age of "contextual gaming", play is increasingly tied to the practices and rhythms of everyday life and playful behaviors are often rooted in social relations and exchanges of information that are used to maintain and expand the networks of relationships (Mäyrä 2008).

Many signs indicate that the days of digital games packaged as "fire and forget" commodities are numbered. The global game industry is actively moving from providing discrete offerings towards establishing ongoing relationships with players (Chang 2010, 24). Not all games will be based on a constant update model, but even the more traditional releases will be transformed after the launch by patches, upgrades, expansions and modifications. The development budgets are forecast to reflect this change, as significant investments are moved from the launch to operating the ongoing service. The transitions described are not entirely unique to the games market but similar developments can be identified in other media markets. It is, however, noticeable how easily and successfully many sectors of gaming have already shifted towards a service-based economy. In this respect, all the traditional media industries have a lesson or two to learn from games as services (ibid.).

This report collects the results of the research conducted during the *Games as Services* project. The chapters draw a multifaceted picture of the ongoing change. While the final report concludes the central findings, it should also be seen as a starting point. As many of the phenomena defined here remain under-researched, we warmly welcome all further contributions. In addition, our own work will continue in the follow-up project titled *Future Play*.[1]

[1] http://futureplayproject.wordpress.com/

Structure of the report

The report is divided into three sections. The first section, entitled "Rise of the Service Paradigm", contributes to the general understanding of the ongoing change. The first chapter by Jaakko Stenros and Olli Sotamaa provides a cultural and economic background for the rise of the service paradigm in the realm of games. Both the complicated relation between products and services and a variety of contemporary examples are examined in order to develop a detailed understanding of the ecology of games-related services. From mapping the history of games and the current situation the chapter moves on to create a particular player service model. The model is created both to help analytically dissect what player services are and to pinpoint some blind spots in current service design. The model can also be used to rethink the current industry ecology and potentially to find entirely new semi-independent service domains.

In the second chapter, Saara Toivonen and Olli Sotamaa examine game distribution as a service. While the brick-and-mortar retailers and physical copies still hold a dominant position in the overall market, the online market has rapidly developed in the past years. At the same time we know very little of the player attitudes towards digital distribution of games. Therefore the chapter focuses on examining the players' experiences and notions concerning online distribution of full game titles and other forms of downloadable content. Based on the findings, the following factors have

a significant influence on how players consider digital distribution: the amount of time used on game playing, the social activities related to games, and familiarity with other forms of downloadable content. A notable majority of those who had downloaded games highlighted the importance of the following issues: wide variety of games available, ease of finding downloadable games, affordability and simple payment methods. Furthermore, the chapter examines why more than half of the respondents still preferred to have their games as physical copies. Finally, some implications for service design are introduced.

The second section, "Rethinking Play and Players", puts the emphasis on the role of players and game experience. The section further discusses the importance of platforms and the methods of studying contemporary games.

The section is started with Olli Sotamaa's "Console Gaming, Player Production and Agency" by looking at player agency among the players of the console game *LittleBigPlanet*, or *LBP* (Media Molecule, 2008). The special focus is in analyzing the technical and economic strategies the game and the console environment uses to position the productive activities of players. Related to this, the chapter discusses whether *LBP* can be seen to challenge Zittrain's much cited argument about tethered appliances. Secondly, the chapter aims to describe the limits of player agency available for *LBP* players. If the game from the start invites players to co-design the game itself, how much is there room for resistance and transformation? Based on the observations, there are reasons to argue that the recent developments in the console market have turned the latest generation consoles into an increasingly inviting platform for different forms of player production. At the same time the chapter highlights how the new options available for players do not automatically make all of them active participants – instead, a variety of different roles can be identified. It is further argued that while *LBP* does not allow radical reprogramming of the console environment, it does support more subtle ways of re-purposing the console.

In chapter 4, Tero Karppi elaborates how virtual services such as automatic updates have changed the experience of playing with video game console. The focus is on Xbox 360 and the associated proprietary network service *Xbox LIVE*. The starting point is Microsoft's claim that Internet services have changed the experience of playing with a video game console. This argument is materialized in the Xbox 360's operating system, named as the *New Xbox Experience*, which is connected with Internet services from marketplace to automatic downloads. Karppi considers how *Xbox LIVE* is quite literally connected to autopoietic understanding of living entities. Internet-related services are seen as actors that maintain the functions of the console operative and also establish an environment where the player may spend time, even though the console is not used for playing per se.

In chapter 5, entitled "Methodological Observations From Behind the Decks", Tero Karppi and Olli Sotamaa approach one of the core research methodologies of game studies, namely playing research. The starting point for the article is Espen Aarseth's conception of playing research, which is tested with Activision's game *DJ Hero* (2009). Empirical observations indicate that there are many actors

involved in the event of playing that mere focus on the interaction between the software and the player does not acknowledge. According to the authors, an improved model of playing research takes into consideration three things: first, the game is a dynamic entity that is transformed due to different kinds of services ranging from updates to downloadable content; second, there are different ways of playing, and for example cheats cannot be excluded from the research; third, it is vital to position the game into a wider economical, social and cultural context in order to thoroughly understand it. After having made these improvements, Karppi and Sotamaa replay the game, observing how it relates to the contextual popular culture. They observe that the game gives only limited opportunities to experiment with the cultural materials. For example, while the turntable controller simulates a real turntable, the players are not allowed to create their own remixes. Understanding these factors relevant to gameplay experience lead the authors to propose, following T. L. Taylor, that playing research would benefit from using an assemblage theory. Using the example of a modded turntable-controller, the authors show how new potentialities can be unleashed with interactions of material and virtual services.

In chapter 6, Olli Sotamaa analyses the rationale behind game reward systems and connects the phenomenon to the larger game-cultural frame. Sotamaa argues that different player motivations do not fully explain the dynamics of game achievements. Therefore the article introduces and reformulates the idea of gaming capital and uses it to show how the effects of game achievements on the culture of gaming may be more profound than we might think in the first hand. By making games quantifiable and comparable, game reward systems build bridges between very different games, and by pushing the focus beyond a single game, these services may change our idea of the game experience. Support for such activities as metagaming and collection building can bring entirely new levels to one's gaming hobby. Furthermore, the chapter discusses how game achievements find their way to social networking sites like Facebook and in this respect work to make gaming capital visible in new domains and to new audiences.

The third section presents insights on the business and design of current digital games. A shared objective across the articles of this section is to discuss the challenges of game development in the environment defined by recent transformations.

The section starts with a chapter entitled "Ten Questions for Games Businesses: Rethinking Customer Relationships". In the chapter, Kai Kuikkaniemi, Marko Turpeinen, Kai Huotari and Lassi Seppälä synthesize some of the findings of the project as a list of ten questions for games businesses. The core ideas presented are mainly based on a study of game industry from the perspective of marketing sciences, especially considering the service dominant logic. The goal of the chapter is to provoke new thinking and function as a stimulus for game companies in order to perceive game development projects in alternative ways.

In chapter 8, Kai Huotari investigates how and why the users of a large web-based gaming site use the customer-to-customer (C2C) communication features that can be found on the site. This is of importance, as various web-based services currently offer chat rooms, discussion forums, tell-a-friend systems, comment postings

and other features that enable C2C communication. The results reveal that the use of C2C communication features divide the users strongly: for some, C2C communication is as important as the games, some use C2C communication features as a support for game play, and some are completely indifferent to these features. The results suggest that users engage frequently in electronic word-of-mouth (eWOM) communication during service use. Furthermore, the motivations for eWOM during service use seem to be similar to motivations before and after service use.

Chapter 9 by Annakaisa Kultima examines the phenomenon of casual games and the underlying transformation of digital play. The chapter suggests that the exposition of the design values helps us both to understand the real width of the casual games phenomenon and to see further possibilities for design solutions and new innovations. Casual design solutions are divided into four different value categories: acceptability, accessibility, simplicity and flexibility. These categories are further applied to different kinds of casual games. In addition, the "casuality" of other digital games is considered. Casual games also highlight how a transformation from gameplay-centric design models to more holistic and service-oriented design is needed. Therefore, the report provides a framework of casual games design values and a model of Expanded Game Experiences (EGE). The EGE model brings together the ideas of consumer cycle and experience design. The model identifies six different activity sets along with their corresponding transition steps. In conclusion, the model is supposed to clarify the game design process in which different actors work on different aspects of the design. The EGE model also helps to understand the wide variety of game-related experiences for the user and thereby possibly rationalizes the overall design decisions.

In the final chapter, Lassi Seppälä introduces a practical design-oriented approach on the role and potentials of camera-based games. The purpose of the chapter is to study the possibilities of using a mobile phone's camera in mobile multiplayer games and playful social applications, as well as to define the key design features for mobile multiplayer camera-games. Seppälä examines how some game-like and playful elements can be utilized for functional applications, or how to use games in functional tasks. This is done by using the word-guessing game concept presented in this study for a functional objective, i.e. metadata creation for mobile digital photos.

The various chapters in this final report are based on earlier presentations and publications as noted at the beginning of each chapter. Author copies have been used, with updates and reworkings. When quoting, use the earlier published version if possible.

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tantly pinpointed some topical case studies and encouraged us to challenge the most obvious approaches.

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RISE OF A SERVICE PARADIGM

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Chapter 1
by Jaakko Stenros & Olli Sotamaa

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Understanding the Range of Player Services

The recent couple of years have witnessed an increasing focus on games as services in the games industry. A variety of phenomena from persistent game worlds and micro-transactions to content updates and player-created content have inspired industry representatives to pronounce the rise of games-related service business.[2] The emphasis on services is not limited to the eloquent rhetoric. At the same time the game industry has introduced a variety of subscription based business models, digital distribution systems and other innovations that make games, more or less, available "as services". However, academia has thus far mostly stayed silent on the matter.[3] It is also symptomatic that the emergence of service-design thinking (Kultima 2009) is seldom discussed in the current game design literature. Developing a detailed understanding of the broad scope of games-related services is challenging for several reasons. Service is an ambiguous and slippery term and in relation to games it is used in a variety of contexts. The lack of theoretical literature also complicates the objective.

In this chapter we provide a cultural and economic background for the service-centered thinking. Contemporary examples are examined to shed light on the service-driven game paradigm. The complicated relation of products and services is further discussed from different perspectives. From mapping the existing conceptions we move on to bring clarity to the gamut of player services. A player-service model is created to help dissect analytically what player services are, but also to help design a better user experience by pinpointing possible services that one might add to a portfolio. The model is meant to be pragmatic and inspirational rather than dogmatic. It is created from the point of view of the player, not the games industry, and we hope that this fresh angle can shed light on the anatomy of game related services that traditional economics-based models render invisible. The service paradigm currently dominant in the games industry has been built on the idea of games as commodities; viewing games instead as *activities* opens a whole new (service) design space and sharpens our understanding of the expanded play experience.

The emergence of service-driven paradigm

In their critical analysis of the global game industry, Kline et al. describe digital games as the ideal commodity of post-Fordism (Kline, Dyer-Witheford & Peuter 2003). They argue that digital games bring together the most important production techniques, marketing strategies, and cultural practices of an era: the production of games, characterized both by its reliance on networked computer

[2] For example,
"Understanding Free to Play: Nexon's Min Kim speaks out"
http://tinyurl.com/5jmdv6

"Getting Interactive"
http://tinyurl.com/d4qc2c

"Y Control: Joe Ybarra on Cheyenne Mountain's Massive Plans"
http://tinyurl.com/crmwdr

"LittleBigPlanet: it's a 'service' as much as a game"
http://tinyurl.com/czxrue

[3] The few contributions that discuss game services mostly focus on the technical service infrastructure for online games.

technologies and its youthful and precarious workforce, typifies the new entrepreneurial regime. At the same time the digital game exemplifies post-Fordism's tendency to fill the everyday life of consumers with fluidified, experiential, and digital commodities. The intangible and experiential nature of post-Fordist commodities has inspired theorists to ponder the increasingly fluid border between goods and services. As economist Jeremy Rifkin puts it:

> As goods become more information-intensive and interactive and are continually upgraded, they change character. They lose their status as products and metamorphose into evolving services. (Rifkin 2005.)

Many examples of this development can already be identified in the different sectors of game industry. Scholarly accounts on the relation of games and services are, however, rare. This is partly connected to the more general lack of service theorization.[4] Therefore, we need to shed light to the historical context of this change.

From activities to products and finally to services

Traditionally games have been anonymously designed and in the public domain. They have spread as folk lore and evolved over time. Historically games have often been played with pieces crafted by the players themselves. Proprietary board games first appeared in the eighteenth century, major games companies (such as Parker Brothers and Ravensburger) arose in the nineteenth century, and during the twentieth century proprietary games grew to rival traditional ones. (Parlett 1999.) The slow shift from traditional to proprietary games both heralded the rise of the designer and introduced the idea of game as a product. Traditional games were not supposed to make money and they were not owned as intellectual property by anyone. As this started to change, selling games became an industry – and the constant need for new games arose. The traditional way of viewing playing games as an activity was challenged by the market-inspired way of seeing them as products to be sold.

From the 1970s onwards, it became more common to treat games as products. This was related to adopting strategies from more established branches of popular culture: new versions of popular games were published, the concept of a game sequel was introduced, expansions to existing games were sold, and branding and tie-ins to existing intellectual properties became more popular. While pinball machines, other arcade games and some board games may have pioneered many of the methods, it was digital games and to some extent role-playing games that lead the way.[5] Sequential digital games importantly exemplify many of the consequences of commoditization. Today the production of game sequels and exploitation of licensed IP are unquestionably central to the industry.[6] Sequels build on the story (or story-world) of the original game, offer a new version of the rules, or both. Expansion packs are similar to sequels as they tend to expand the story-world of the game and bring in new systemic elements. Episodic games form the latest adaptation of the so-called branched serialization. The idea is that each installment contains a limited amount of gameplay storywise. Though these episodes can be played individually – there is no original self-sustained game that they augment – they are designed to be played in order. The popularity of game franchises, sequels, expansion packs and episodes highlights that the products sold

[4] Chesbrough & Spohrer (2006), probably the most visible proponents of "services science", argue that while the services sector has in the past few decades grown to dominate economic activity in the advanced (western) economies, the academic understanding of services remains rudimentary.

[5] It is worth noting that though games have been sold as products for some time now, the way they are played – game playing as an activity – is still much more open than the economic model suggests. For example, modding is as old as digital games (Laukkanen 2005; Sotamaa 2005), and board games continue to have house rules. Indeed, Partlett (1999) notes that the shift in board games from traditional to proprietary coincides with a shift in emphasis of the play as an activity away from the board towards the circle of players, exemplified by quiz games, such as *Trivial Pursuit*, and role-playing games, like *Dungeons & Dragons*.

[6] According to the Entertainment Software Association's (ESA) sales charts, out of the twenty best-selling video game titles (console games) in 2007 no less than 18 were either licensed, sequels or remakes (*Wii Play* and *Assassin's Creed* being the exceptions). Out of the top-20 computer game titles (PC games) only *Bioshock* can be considered to be based on original IP. No fewer than six of the twenty titles are expansion packs and thus can not be played without the original game they augment. (ESA 2008.)

need not be self-sustained games. This brings us to our main theme: the role of services in contemporary gaming.

As already discussed above, a new shift has recently taken place primarily in the realm of digital games: Games are being viewed not only as activities or products but also as *services*. For example in the case of episodic game content, the business logic is unmistakable: instead of selling a game to the player once, why not create a continuous relationship where the player pays a fee at regular intervals. This subscription fee entitles her to receive a new "expansion pack" regularly. However, it seems that (at least at the current phase) the game product stays pretty much the same.[7] What changes is the way the product is distributed – and the way it is experienced. For example *Sam & Max Season One*, a six part series of downloadable game episodes, was available for the customers of Game Tap from the fall of 2006 to the spring of 2007. Later the content was available in a boxed release as a DVD. *Wing Commander: Secret Ops* was first released over the Internet for free and later available as part of the *Wing Commander: Prophesy Gold* retail package. In both of these cases there is a product, a game, that the consumer purchases. What varies is the way that the content is delivered and how it is consumed. A comparison can be made to television: the content of a television show stays the same regardless of whether one watches a broadcast episode once a week or a whole season in one session from a DVD box – but the experience is hardly the same.[8]

There are some games that a player cannot play without a service offered by the manufacturer. *World of Warcraft* is a game where the player purchases the game (and two possible expansion packs) for a set price, but in addition she needs to pay a monthly service fee to be able to access the servers where playing takes place. In *GuildWars*, a *World of Warcraft*-style MMO, the player pays for game packages, but not for the access to the servers (though the access is still needed to play).[9] Still, it is debatable whether games themselves have changed, or whether it is simply the marketing of games that has undergone a shift.

Ludic system as a platform for fiction

The evolution of the commercial game product from a stand-alone game to an updatable product to a self-updating product seems very natural. However, a closer look to what exactly is updated and expanded reveals that the emphasis is not so much on the ludic system, but on the fiction of the game. The added emphasis on the role of story-worlds in games ties into the commoditization process of the last century. As games became commodities they evolved from systems to include fiction (Juul 2005). Perhaps coming up with new game mechanics and systems is more difficult than just superimposing a new story-world on an existing system. Branding an old game with thematic content (for example *Star Trek Chess*) does not really require a story-world, but "new" games created around the idea of spin-off merchandise often use story-world to disguise the fact that the underlying game system is recycled.

In regard to digital games, David Myers has argued that for many games the fiction becomes irrelevant over time. Though the fiction of the game is relevant for players when they begin playing, these meanings gradually vanish, as the "signs become disassociated from

[7] It is worth noting that the business models based on digital distribution have, however, made the development of more small-scale game projects economically viable.

[8] This paper concentrates on player services. For a compatible model on the expanded game experience, see Kultima (2009).

[9] Note that MMOs are not the only type of games that tie a product to a service: for example alternate reality games such as *Majestic* also require an active service element (Taylor & Kolko 2003). On the other hand, MUDs show that the server need not necessarily be hosted by a corporation.

[10] Myers was primarily talking about an individual player, but when the process happens culturally, a game is stripped of its fiction and reduced to its system. This has happened to chess and arguable it is happening to *Monopoly* as an increasing amount of various thematic *Star Wars* and *Simpsons Monopolies* seemingly recontextualize the gameplay, when in fact they are exposing it to anyone who plays more than one version.

their real-life referents and more definitively associated with their roles and relationships within the context of the game interface, interaction, and rules" (Myers 2004). Myers used *Spacewar!* as an example, but a first-person shooter might be a more apt example today.[10] This does not mean that for many games the fiction is not an integral part of the game, but once the story content has been consumed, its meaning to the player is diminished. Creating games where new story content is constantly available seems like a perfect solution. In a way, the game system becomes a *platform* for stories and other player activities. As Kücklich (forthcoming) argues, the narrative dimension of digital games has always been tied to the commodity form. Early arcade games did not have an end, as the economic model was based on players inserting quarter after quarter, but console games had to introduce a narrative closure to make consumers purchase a new game. The closure of a story – the finite nature of fiction, if you will – also gave birth to the sequel and the expansion. The expansions can both extend the existing narrative and reveal new parts of the game world. Selling games through a particular *service relationship* and charging monthly fees for the opportunity to play seems like the logical conclusion of the serialization of games that started when the fiction was married with the system to create sales.

Games through a service relationship

In order to understand what a service is or can be in relation to games, it is helpful to take a step back and shortly ponder the various interpretations of the term. Depending on the context, the word *service* can refer to an industry branch, to a certain group of professions, or to particular "service products". According to *Merriam-Webster* online dictionary, *service* is "a helpful act" ("the act of serving") or "useful labor that does not produce a tangible commodity". In economic jargon, services are activities that are neither products nor construction. Services are often characterized as intangible and insubstantial, as they cannot be handled, heard, tasted or smelled. They cannot be stored or transported, and they are inseparable and perishable.

One of the consequences of the recent emphasis on services is that "instead of thinking of products as fixed items with set features and a one-time sales value, companies now think of them as "platforms" for all sorts of upgrades and value-added services" (Rifkin 2005). Several examples from the games sector indicate that this development has already had an impact on the game industry rationale. Recent examples include *Grand Theft Auto IV: The Lost and Damned*, the episodic expansion pack for the *Grand Theft Auto IV* game that provides several hours of new adventures in the Liberty City for Xbox 360 owners. The expansion, published in February 2009, costs approximately one third of the price of the original game. Another well recognized example is the racing game *Burnout Paradise*. The game was first published in the early 2008. Since then both several free updates and downloadable packs have been made available and the game itself has undergone a notable change. In the early 2009, the game was re-released with all the new content as *The Burnout Paradise Ultimate Box*.

As discussed, expansions have for long been typical in role-playing games, collectible card games, and lately also in board

games and digital games. In the PC games industry expansion packs as specific mode of branched serialization have become a popular way to exploit existing intellectual property and to expand the life span of a game. Console game expansions are also becoming increasingly prevalent, particularly due to the proprietary online services like *Xbox Live* and *PlayStation Network*. Currently various kinds of add-ons from map packs and team packs to skin packs are already provided via these services.

Business-wise, the objective behind the different kinds of upgrades and add-ons is to create a long-term service relationship with the customer. Subscription-based game services have a very similar aim. The success of subscription-based models – utilized for example in MMOs, online distribution services like *Steam* or *Gametap* or value-added services like *Xbox Live* (Live Gold Membership) – indicate that players are willing to create long-term relationships with the service providers when the service is both attractive and accessible. As Rifkin (2005) argues, present-day customers may no more seek so much the ownership of material goods but they are buying access to segments of experience. This seems to be increasingly the case with digital games, as most players are not primarily interested in the plastic and cardboard but they rather buy the right to experience the challenges designed into the virtual game world. Pine and Gilmore (1998) have discussed experience economy as the next step after service economy: an experience occurs when a company intentionally uses services as the stage, and goods as props, to engage individual customers in a way that creates a memorable event. Commodities are fungible, goods tangible, services intangible, and experiences memorable.

Yet it seems unlikely that this stage can be achieved without a thorough understanding of one of its central building blocks, services.[11] The server-dependent technological structure behind the subscription-based models has in the past few years made the breakthrough and is there to stay. The server-centered model has not only produced a unique chargeable commodity but it also makes it possible to mostly avoid traditional forms of piracy and limit the second hand market of game titles. Thus, from the point of view of economics, the situation seems rather clear-cut: games that are sold "as services", paid for incrementally or cyclically, and games that require the consumer to repeatedly be in contact with the seller can be easily construed as services.[12] However, this point of view does not pay much attention to the objects that are sold; *what* is being sold is not as important as *how* the sale takes place. The understanding of "service" is fairly limited. By reducing service to a digital sales channel through which products and add-ons are sold, it blinds itself to play as an activity and the "useful labor that does not produce a tangible commodity" that the players are interested in. Instead of viewing games as products and services, looking at them as activities, or rather, as a platform for activities, yields new insights.

In the following, we move on and approach the service dilemma from the angle of players. We argue that the transition from game products to services is not primarily based on the changes in the very artifact. The emergence of the service-paradigm does not so much represent a change in the nature of the game itself – both as an abstract system and an activity – but more in the expedients of

[11] For a discussion on the design and facilitation of pervasive game experiences as services, see Söderlund, Scahn & Ghellal (2005).

[12] The dominance of technological terminology has also shaped the way services are perceived in the games sector. Servers, web services and other lingo relating to computation architecture is not entirely compatible with the way services are conceived of in this paper. For an example, see Foster & Kesselman (2004).

bringing them to the players. Thus, rather than considering games bluntly "as services", we suggest that contemporary games are often both based on and provide a basis for various kinds of services.

Player service model

In this section, player services are divided into five major categories: maintenance of environment, support of initiation, facilitation of playing, assistance of play, and socialization of player (see Figure 1). It is interesting to note that the categories correspond with what is often perceived as the core of services in other industries. For example Anderson and Narus explain the spectrum of supplementary services as follows:

> By services, we mean much more than technical problem solving, equipment installation, training, and maintenance. We also are talking about programs that help customers to design their products or reduce their costs as well as rebates or bonuses that influence how customers do business with a supplier. And we also include systems such as logistics management; electronic data interchange for placing orders and tracking their status; and expert systems that figure out, for example, which materials can deliver desired functional performance to customers. (Anderson & Narus 1995.)

In the games industry it seems that the latter services are much better understood than the core. This model seeks to help with that. All of the player services identified here are activities that support playing. The first three service types are available for a player (or a potential player) during the process of deciding to play and progressing to actually playing: they make playing possible in a given environment, lower the threshold of initiating play, and facilitate the actual process of playing. The last two are transformative services relevant for the act of playing, they help the player play the way she wants – either by teaching her to play better or by adjusting the game to her wants and needs.

Figure 1. Player service categories.
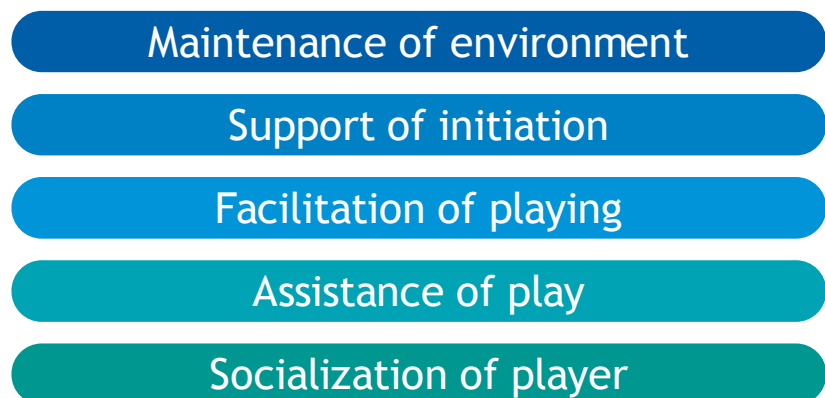
In this model no distinction is made between playful paideic activities and structured ludic games (see Caillois 1961). Staging a children's party at a fast-food restaurant, facilitating bungee jumping or tandem parachuting, hosting a karaoke night, or providing erotic role-play scenarios all count as player services just as hosting an online world, teaching how to serve better in tennis or recommending a game a user might like based on her past purchases. Additionally, these service types apply both in physical space as well as in digital environments. And finally, a transaction of money is not seen as a necessary criterion for a service: many

player services are provided on a player-to-player basis for free.[13] The model was created in an iterative process of analyzing features and processes of games and play. The research process has followed a particular hermeneutical circle by bringing together both top-down and bottom-up approaches. By learning more about the details and example cases we have been able to acquire a better conception of the whole, which in turn has provided a deeper understanding of each particular case.

Maintenance of environment

Play happens in a context. This context can be physical or digital, public or private, unique or mass-produced, etc., but in order to make the play possible, the environment must meet certain requirements. What these requirements are, varies from one game to another, but most games require a certain kind of space. Playing ice hockey requires a flat frozen field, online games require servers to run the code (as well as all kinds of administration) and playful activities on social networking sites are not possible without the platform. The space can be physical, virtual or mediated depending on the needs of the game.

Environment maintenance refers to the actions that make playing possible, to the actions that provide a practical setting for the ludic structures of play, to providing a platform for play. Maintenance and administration of the play environment means, for example, keeping all the game devices at an arcade or a casino functioning correctly. It means looking after the rides at an amusement park and cutting the grass on a golf course. It also includes actions to maintain the virtual worlds where play takes place, such as *World of Warcraft* and *Second Life*, but also networking sites that provide access to games and playing fields, such as *Facebook*.

A concrete example of active maintenance of an environment can be found in *Second Life*, where the administrators need to control the so-called *gray goo*. In *Second Life*, it is possible for the users to create new items and functionalities in the virtual world. Gray goo is a term that refers to self-replicating objects that, if left unchecked, will fill the whole virtual world. Gray goo was attached to the system in November 2006 and the world simulator had to be shut down momentarily to deal with the problem.[14]

It is tricky to draw the line between administration or maintenance which is related to the support of ludic actions and that which is not. Online game services need accounting, and arcade floors need wiping; though the play environment would not be available without these actions, it would be ludicrous to call them player services.

Support of initiation

Before playing, one must choose to play and choose the game. This is where the service of play-initiation support comes in: offering games as an activity option, supporting the decision to start playing a game, providing games to choose from, aid in picking content, helping find playmates. Initiation support also means providing physical and mental accessibility to games. In practice, initiation support means informing a potential player of the choices available (from *Facebook* to *Steam*), but also keeping a potential player updated on what her friends are playing (through services like *Raptr*).

It also means the presentation of a catalogue at game service sites ranging from *Playstation Store* and *Gametap* to *Popcap Games* and *N-Gage Arena*. Recommendation systems based on past purchases (or patterns of play), such as the ones used on *Amazon* for books and on *Netflix* for films, would also be a clear example of a service where a potential player is supported in her choice of activity. Digital distribution is also a part of this group of services.

Naturally, the initiation support is not limited to the digital realm. A familiar clerk in a game store who knows your taste in games can help pick a game you are likely to enjoy. The placement of games and rides in arcades, casinos and amusement parks also helps a player find what she is looking for – and helps to migrate from one game to another. Even the positioning of a lonesome slot machine in the corner of a gas station falls into this category.

Facilitation of playing

Some games must be facilitated so that they can be played. Facilitating play is a service where a game is staged based on existing content or form. This can mean game-mastering a session, administering an experience or running a packaged game.

Hosting a murder dinner[15] based on a ready-made scenario is an archetypal example of facilitating play. Again, it is important to note that money does not need to change hands, as it is possible to provide services for free. So hosting a murder mystery for friends or game-mastering a role-playing game based on a ready-made scenario, both count as facilitation of play.

This category also entails activities where a person participates in game play, but they do not do this primarily as a player, such as dealers, croupiers, referees, and online game masters. These people are required for the play to take place, but they are not (only) playing themselves. Similarly, leading play at a children's party, organizing raids in MMOs and setting up FPS tournaments are also facilitation services.

Assistance of play

Once play commences, or is about to commence, the players may want to fine-tune their experience. This might mean tweaking the rules, or changing the difficulty level, but in essence play aid is about providing support for the act of playing, for different styles of playing and controlling playing. The aim is to modify the game to suit the needs and wants of the exact people who are playing it, thus personalizing or localizing it.

Digital games have widened the array of play aids. Most games ship with multiple difficulty levels the player can choose between. In addition to these, there are numerous walkthroughs, game wikis, additional programs and plug-ins available for the popular games. While majority of these services may be provided by other players, this is notably an area in which the so called paratextual industries are highly visible. Consalvo (2007) explicates how games spawn various secondary industries – ranging from gaming magazines and strategy-guide publishers to mod-chip makers. The products of these industries have an important role as they help players to further customize their experiences.

In addition to the services that do not directly alter the game, there are the ones that do: mods, hacks and patches. These addi-

[15] For example, *Dinner and a Murder* http://www.dinnerandamurder.com/

tions and alterations can be developer-made or player-made. While a minority of players are involved in developing modifications, they can have an influence on the experiences of large player populations. Modifications also remind us of the fact that throughout the history, players have bent and transformed game systems into new shapes (Sotamaa 2005).

In case of non-digital games, most of the issues mentioned above can be dealt with by applying house rules. Alternate rules are much easier to implement when the game system is operated by the players than when they are coded. It is also possible to outsource parts of playing. Usually these are parts that are deemed uninteresting and tedious. In online role-playing games this has resulted in a shadow economy that provides services that the game publisher does not condone, such as gold farming and sales of high level characters (for example Castranova 2001). Again, there are also precedents in the non-digital world: ball boys in tennis and caddies in golf let the player concentrate on what is perceived as the core of gameplay. Finally, the aid to control when not to play is also a service in this category. Parental controls, different kinds of time limits and the like are all player services assisting play.

Socialization of player

The final category of game-related services is socialization of a player and teaching play: training or teaching a player to play a game, or to play better, to teach the player the relevant playing culture, to provide the player with an outlet where she can reflect on playing, and help her manage or develop her player identity.[16] This varies from providing official rules to tutorials and to full scale teaching with rehearsals. Also, providing a forum where players can discuss the game and reflect on it can be seen as a part of the socializing process – and a site where more experienced players will become teachers themselves.

This type of service is an industry in itself: there are countless tutors and instructors teaching golf, tennis, skiing, yoga, and every other conceivable sport. There are personal trainers and coaches helping people become better at their chosen field. Extensive training services are not only limited to non-digital sports; e-sports have their own trainers as well. Still, in the digital realm most of these functions have been automated: most games ship with a tutorial mode that teaches the player how to play the game. Some games, such as *Halo 3*, also provide hints and tips when it seems that a player is stuck. Yet teachers are also present in virtual worlds: some experienced players make it their business to see that new players get a handle on the game play.

Discussion

The five service types presented provide a practical way of dividing the pie of game related services. It clearly communicates that viewing service simply as a relationship between the provider and the player, as a pipeline through which to sell products, hinders gaining a more comprehensive view of the possibilities provided by the service paradigm. The implication is that players crave a wider spectrum of services, not just digitally distributed game content. It seems that service-driven business models adopted by the game industry thus far cover only a small portion of the possibilities.

[16] Online services such as *GameStrata*, *Raptr* and *MyGamerCard* exemplify existing online services that help players to manage their player identities.

Province of the model

The player-service typology introduced here has certain limitations. The lines between different categories are often blurry: Does explaining the rules of a game count as initiation support or as socialization? Does a caddie in golf facilitate play, or does she provide a play-aid service? In this regard, the five categories are not mutually exclusive but rather represent five different angles on the construction of the activity of play. As discussed, the player service model also relies on the idea that the game itself is not seen as a service. Yet one cannot deny the fact that games can be used to fulfill certain needs, to smuggle certain type of content, to provide certain "helpful acts" – to provide services. In this respect, the model presented above applies to games that are played – for the lack of a better word – for fun. When playing the game is a *paratelic* (Apter 1991) or *autotelic* (Salen & Zimmerman 2004) activity, basically an activity that one engages for its own purpose, then there is not much point in looking at it as service. However, games that are played for *telic* reasons (Apter 1991) can benefit from being considered services. If a game is played in order to learn, to understand a political message, to encounter an artistic agenda, or to fill a clearly defined function (such as stimulate memory, enhance cognitive capabilities, even fall asleep), then the player engages in the playing for an external purpose. The act of playing is done in service of some other, external, need. Partly this is simply linguistic posturing and hair-splitting. Telic games are still products and often the service is to provide access to them. However, the design process and customization of telic games seems more prominent than in autotelic games as the purpose of the product is not (just) to create an experience of fun, but to fulfill some other, often more specific need or function.

Finally, the model does not differentiate between digital and non-digital play. This is a conscious analytical choice; the aim is to make the similarities visible. Looking for precedents in the non-digital world can help avoid inventing the wheel again. The downside is that the very real differences between digital and non-digital services are mostly rendered invisible. For example, it is possible to argue that digital games have a rather unique way of being used as platforms for other activities (such as creating machinima). These kinds of activities, if they indeed are services, do not comfortably fit in the model.[17] More importantly, most digital games are based on screens of various kinds and one could most probably specify some of the service characteristics of the particularly screen-based gaming. A larger analysis would, however, require some more elaboration and will therefore be left to future contributions.

Digital games further underline the need for a more clearly defined understanding of what a game (or play) is. If a game is seen as an abstract system, then any presentation of the game can be construed as facilitation. Similarly, just as it can be argued that in a digital game the code facilitates play, it can be said that digital games assist the style of play by handling menial tasks.

[17] It is, however, easy to come up with parallels in the non-digital world: using role-playing games to craft stories for books (as Margaret Weiss and Tracy Hickman did with *Dungeons & Dragons* to help create *Dragons of Autumn Twilight*), soccer team as a social network.

Implications for the industry

The player service model reveals the variety of forms a service aimed at players can take. It shows that while games may not be services as such, there is a plethora of game-related needs that players have and the game industry can fulfill. Some of the services identified in our model are produced in-house or outsourced to sub-contractors. Yet providing other, additional services can provide a basis for complementary businesses of their own. In this respect, our model can be used to rethink the current situation and to potentially find entirely new semi-independent service domains. This support ecology reveals services that the game publishers have so far not seen fit to provide. For example, there is a wide variety of assistance-of-play services that are provided by other players underlining the want and need for such services. The game industry seems reluctant to surrender control over how playing takes place to the degree wanted by the users. This has created a niche for hacks, mods and remixes, but also a shadow economy for selling gold on virtual worlds.

One of the most often mentioned benefits of digital distribution is the chance to "cut out the middle man", meaning that developers can improve their shares by simplifying the value chain. In some cases it can be highly beneficial for developers to free themselves from the control of retailers and publishers. Other times the situation may, however, not be that simple. In free games or advertising-based business models the ecology of related parties is very different from the simple relation between buyers and sellers. Additional services – and thus additional value – provide an opportunity for other actors in the field.

One of the benefits of digital distribution is that the developers will have much more information available concerning their customers. While in the traditional retail model developers often have very little information on the people who play their games, online services can provide detailed data on the buying habits and play behavior of their customers. Feedback from players allows developers to serve the player needs more quickly and precisely. Constant communication between developers and players provides other kinds of options as well. Various player-involving strategies from focus groups and playtesting to supporting different forms of player-created content indicate that game industry has already absorbed many important features on the way to becoming a full-blown service business. Business models that rely on player-created content necessitate a variety of services for player-creators. For example, better supporting socialization of players is something game companies need to learn to do better (e.g. providing the production tools for maintaining the community forums, creating tutorials).

In his analysis of product-to-service transition Rifkin argues:

> Instead of commodifying places and things and exchanging them in the market, we now secure access to one another's time and expertise and borrow what we need, treating each thing as an activity or event that we purchase for a limited period of time. Capitalism is shedding its material origins and increasingly becoming a temporal affair. (Rifkin 2005.)

If this is indeed the case, then subscription-based models that alter the focus from traditional ownership into readily chargeable access to game worlds (maintenance and facilitation in our terms) is

[18] Popular advertising-based models provide a bit different perspective to the development as it is the time the players spend with the game that is sold to advertisers.

probably the most visible example of this development within game business.[18] Increasing focus on the temporal aspects of play can challenge the traditional thinking of the actual player needs that should be served and what kind of services provide a basis for viable businesses. Viewing games not as commodities, but as an activity of playing is compatible with this view of temporality. The provocative stance our model takes on services can hopefully provide fresh ideas in relation to these questions too.

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Chapter 2
by Saara Toivonen & Olli Sotamaa

Digital Distribution of Games: the Player's Perspective

The past few years have witnessed a significant increase in online distribution of games. PC games have traditionally been in a pioneering position but the current generation of consoles provides a solid basis for digital distribution as well. As the development costs are spiraling and the risks associated with producing AAA games are increasing, many game developers are directing their creative investments to downloadable games. It is clear that publishers, distributors and retailers need to react to the emerging trend. At the same time we know very little of how players see the ongoing change. The study at hand focuses on examining the players' experiences and notions concerning online distribution of games. We find this extremely important as downloading games is currently becoming an everyday practice for an increasing number of players. The data analyzed in this article comes from a survey conducted among Finnish gamers. While the results should not be generalized to larger player populations, they can surely highlight some of the developments in the area.

The article starts with an overview of the digital distribution of games. Both the recent academic research and marketing studies provided by the industry are used to outline the current phase of the development. After the overview, we introduce the practical implementation of the study, including the survey method, the sample and the characteristics of the collected data. The analysis of the data is divided to three subchapters. First of all, we examine the variables that define how actively the respondents have downloaded games and other games-related material. We also compare the popularity of game downloading with more traditional forms of distribution. Secondly, we contemplate the differences between PC and console downloadables and specify some platform-dependent questions. Thirdly, we briefly consider the appeal of physical game copies. After this, we move on to discuss the potential design implications of our study. Finally, the relevance of the central findings is evaluated by contextualizing them to the recent discussions concerning the digital distribution of games.

Online distribution of games

[19] Just to give a couple of examples, *CVC GameLine* allowed players to download games for the Atari 2600 via a telephone line. *PlayCable* enabled cable operators to send games for Intellivision Master Components owners over the wire with the TV signal. *Quantum Link* started in the mid-1980s as an online service for North American Commodore 64 users and famously transformed to America online in the early 1990s.

When compared to traditional media industries like music or cinema, digital games appear perfectly suitable for online distribution. Similarly to any piece of software, digital games exist in digital form from the beginning and therefore no conversion is needed (Jöckel, Will & Scwarzer 2008). In addition, the core audience of digital games has traditionally been relatively computer-savvy. While the game industry has experimented with online distribution technologies at least from the early 1980s,[19] the digital delivery models have until recently had a relatively marginal economical

significance. In most cases the game product is still printed to a carrier media, an optical disc or a cartridge. The copies are then packed with instructions in a box and sold by specialty stores, department stores and online retailers. During the past decade, with the advent of broadband Internet connections and networked game consoles and the emergence of both massively multiplayer online worlds and casual games, various forms of gaming became increasingly dependent of online components. At the same time, the scale of online distribution of games and games-related content expanded significantly.

Games played on personal computers have had a pioneering position in introducing new distribution schemes. Most of the PCs have for years been connected to the Internet and thus enabled both forms of networked play and access to games-related online communities. Furthermore, PC games are traditionally based on common standards, open architectures and non-proprietary technologies and therefore they are open to updates (Kerr 2006). Thus, PC-game players are accustomed to downloading both developer-provided patches and player-made modifications. The console game market has until recently been much more closed in nature. As O'Donnell (2009) carefully explains in his eye-opening article, ever since the 10NES chip was installed into the Nintendo Entertainment System (NES), the console manufacturers have carefully controlled the market. In the recent years, the introduction of network connections, hard disks and proprietary services has significantly changed the console gaming scene. While for example Screen Digest, a renowned market analyst company, forecasts that it will take until the next generation of consoles that the online market can be "commercially exploited to its full potential", they at the same time admit that the number of active online game consoles is constantly increasing and the players are expected to become increasingly active in downloading games and other games-related content.

The brick-and-mortar retail model is not only challenged by the online distribution of full game downloads. The revenues are also increasingly generated through service subscriptions, game expansion and other downloadable add-ons, micro-transactions and advertising-based strategies. According to a recent marketing study, already twenty percent of the money U.S. players spend on digital games "goes toward MMOs and game portals, primarily for monthly subscriptions and online credits" (Caoili 2009). In the European countries the share is a little smaller (between 10 and 18 percent) but still relatively significant. The move away from package-goods industry necessarily puts more emphasis on providing the players with additional services (Jöckel, Will & Scwarzer 2009; Chang, Lee & Lee 2004). These days, digital games are often both based on and provide a basis for various kinds of services (Stenros & Sotamaa 2009). Successful examples like Xbox Live Marketplace or iPhone App Store indicate that design of the pleasant "service experience" may often be as crucial as the very design of the game. We will come back to the central online distribution platforms a little later. In the following, we will move on to discuss the details of our study.

Implementation of the study

The survey had a twofold focus. First of all, we wanted to collect and examine the existing experiences our respondents had about the different forms of downloadable content. Secondly, the aim of the study was to map players' overall notions and opinions concerning online distribution of games. The online questionnaire consisted of 37 questions, many of which had several parts, so in the analysis there were no less than 193 variables.

The questionnaire was marketed on a few Finnish websites. The selection included a range of different sites: *Pelit.fi* is the online extension of the biggest game magazine in Finland, *Tilt.tv* is the website related to the weekly video game television programme, and *Digitoday.fi* is a popular ICT-business news site. Respondents of a bit different kind were recruited through the websites of *Yhteishyvä* and *ET* magazines. *Yhteishyvä* is a customer magazine of a large everyday market chain and *ET* is a lifestyle magazine for seniors and people at their late middle age. The 1184 respondents broke up so that around one half of them (53 %) were reached via the *Pelit.fi* site, while other channels provided the rest of the sample.

The questionnaire was divided into a few thematic parts. First of all, we had a few general questions concerning one's playing habits, use of digital games and digital content downloads, including music, films, computer programs and games. After this, we had more detailed questions about PC games and an almost identical set of questions concerning console games. Finally we had a few questions about browser games. The questions covered for example the following issues: the time and money spent on playing, gaming habits, experiences and opinions concerning downloading games.

Before we move on to the findings of the survey, a few words need to be said about the Finnish context. First of all, personal computers are widely used in Finnish households and work places. According to the most recent surveys, over 80 % of the Finnish households have a PC (Tilastokeskus 2009). Furthermore, 57 % of the employees use a computer as part of their work (Kauppinen 2007). Therefore it is rather unsurprising that almost sixty percent out of 10–75-year-old Finns play PC games at least once in a while (Karvinen & Mäyrä 2009). While playing digital games is most common among young men and boys, even in the age group 70–75 years, 17 % of people report to play PC games at least sometimes. Console gaming is quite popular as well: one third of the 10–75-year-olds play console games at least from time to time (ibid.). In our sample, no fewer than 92 % of respondents played PC games (including browser games) at least once a month. Console games were played monthly by 60 %.

In this respect, it is fair to say that the sample of our survey is obviously biased. While Finns can be seen as relatively active gaming nation in general, it is clear that most of the respondents of our survey exceed the national average time spent on playing digital games (Figure 1). Thus, it is useful to remember that the players consulted in this study are mostly early adopters. With certain exceptions they are white males with unrestricted access to gaming technologies and the required skills to master them. In this respect, it is probably wise to assume that as digital distribution of

Figure 1. Time spent on playing digital games per week.
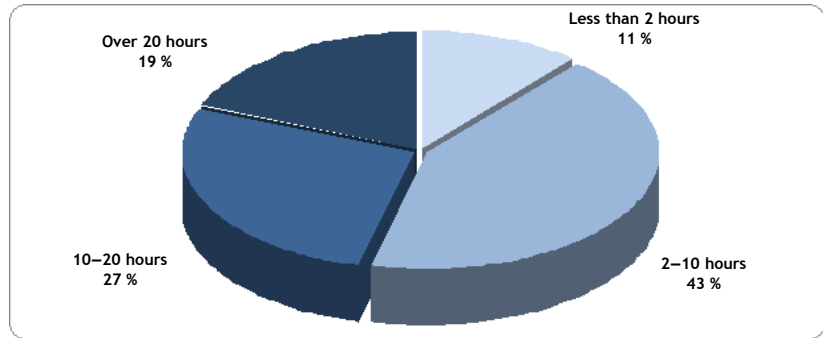
games becomes more common, the practices will not remain entirely the same.[20] However, at the present, these pioneers and early adopters constitute the best chance we have to examine the player opinions concerning downloadable games and other new distribution models. Altogether, the results presented in the following provide an understanding of how avid Finnish gamers see the different aspects of digital distribution. While these results can surely highlight some of the future directions in the area, they should not as such be generalized to larger player populations.

Who downloads and what?

The participants of the survey were on average quite familiar with downloading games. When asked if they had downloaded games during the past six months, 80 % of the respondents answered in the affirmative. An alternative way to measure the prevalence of online distribution based on our data is to count together the answers from both the PC and console sections. This approach revealed that no less than 93 % of respondents had at least once downloaded games of some kind (from full retail games to freeware games). Furthermore, 66 % of the respondents had paid money for game downloads. The majority of participants, however, used less than 10 euros a month for game downloads.

The first central observation that can be made based on the data is that the more the respondents play, the more they download games. While around one half of those who played games under one hour per week had downloaded games during the past half a year, among the respondents who played over five hours, the corresponding figure was over 80 % (Table 1). The correlation applies to both PC and console games, but it is clearer in relation to PC gaming. Our data further shows that there is a connection between playing times and willingness to pay for game downloads. Those who play more than 10 hours a week prefer to buy their games as downloads more often than others. In addition, the amount of time spent on playing had a noticeable linkage to the sum of money used.

Table 1. Correlation between weekly playtime and the familiarity of digital distribution.

Downloading console games by time spent to playing

Weekly playtime on console	None	< 2 h	2–10 h	> 10 h	Total
Has downloaded games to console	4.3 %	34.8 %	66.8 %	75.6 %	41.5 %

Downloading PC games by time spent to playing

| Weekly playtime on PC	None	< 2 h	2–10 h	> 10 h	Total
Has downloaded games to PC	28.0 %	85.5 %	90.5 %	95.1 %	87.3 %

The survey also explored how active the respondents were in game cultural activities other than mere playing. The survey included four claims exploring these activities. The claims were presented as five-point Likert items (choices ranging from "Completely agree" to "Do not agree") and read as follows: "I usually talk about games with others", "I actively follow online game forums", "I actively take part in conversations on online game forums" and "I'm a member of a game community". These were used to build a sum variable that was compared with other variables. As a result we can say that *the more active the respondents were in these activities, the more likely they had downloaded games*. When only 22 % of the least active respondents had downloaded games in the last half a year, in the most active group the corresponding number was 89 %.

The readiness to accept game downloads also has a linkage to other activities. *Those who had downloaded music, films or computer programs, had more likely downloaded games as well*. While this may not be a very surprising result, the interconnection seems to be rather strong when we examine the downloading habits from the past six months. Out of those who had not downloaded any other forms of digital content, one third reported that they had downloaded games, whereas over 80 % of the respondents who had downloaded other content had downloaded games as well. Another related finding is that those respondents who had downloaded some other content than games – be it free or chargeable – had more likely paid for the game downloads.

These days, digital games compete with many other commodities for the attention of consumers. Therefore, the buying habits of the respondents were also explored. Interestingly enough, *the income level had no correlation with the amount of money used to downloading games*. Furthermore, when asked whether the low price of downloadable games was an important factor, the income had no significant influence on the answers. We also asked if the respondents had used torrent services (where some of the content is distributed illegally). Interestingly, *those who had downloaded any content from torrent services had more often paid for their game downloads. They also used more money for downloading games than the others*.

As we were interested in knowing how online distribution platforms rank among the more traditional forms of retail, the respondents were asked to choose their preferred way of buying games (Figure 2). The respondents mostly preferred online stores and specialty game stores. However, 16 % of the respondents reported that they rather downloaded games than used any method including physical copies. Interestingly, this group of players is already bigger

Figure 2. The first choice option for buying digital games.
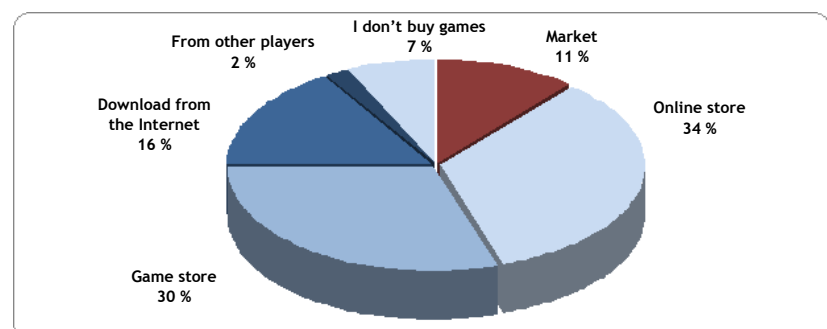
than those who prefer to buy games from a department store. In addition, there were noteworthy differences between those who had downloaded games and those who had not. 60 % of those who had not downloaded games did not buy games at all. Among those who did buy games but not by downloading, the most popular forum to buy games was a department store.

Distribution platforms

The platforms examined in this study included PC and the latest game consoles (Microsoft Xbox 360, Sony Playstation 3, Nintendo Wii), but for example mobile platforms were excluded. The focus was consciously on sectors in which the traditional retail model has dominated for long. The two markets – PC and console – are also easily comparable, as the selection of games available is partially identical. However, while a slew of multi-platform games are available for download both on PC and on one or more consoles, the distribution platforms vary significantly.

As it has been recently argued, "computer and console games differ in use and in the cultures they create because of differences in game-play, game usage, and game type" (Taylor 2007). The differences are not, however, limited to playing itself but there is variation in the very environments in which the games-related services – downloading services included – are used. First of all, while almost all PCs are connected to the Internet, this is not the case with game consoles.[21] Online play and distribution has been prevalent on PC for several years, whereas only the latest generations of console systems have provided a solid basis for online gaming. This difference is visible in our study as well. Out of those who play PC games on a weekly basis, almost three-fourths play online, whereas among console game players the corresponding number is 45 %. We will in the following take a more detailed look at the downloading habits of both PC and console gamers.

Out of those who had at least one of the current game consoles in their household, 72 % had downloaded games (full retail games or smaller games) and 88 % had downloaded some content (including game demos, expansion packs, levels, characters and trailers) to their console. As regards PC gaming, 87 % of the respondents had downloaded games, and 93 % had downloaded at least some form of game-related content. One noticeable finding echoing the prevalence of online distribution on PCs was that not less than 88 % of the PC gamers had downloaded updates and patches for their games. The console game sector is clearly moving to this direction as well, as the players are already routinely asked to download updates not only for the individual games but also for the operating system.

Despite the differences in the platforms, the PC gamers and console gamers were surprisingly unanimous when asked about what they found important in relation to downloading games. Both among PC gamers and console gamers, over 75 % of those who had downloaded games found the following claims important: finding games is effortless, a wide variety is available, the game is affordable, paying the purchase is simple. The theme of the game seemed relatively unimportant, as less than 25 % of the downloaders found a familiar theme or an experimental approach important.

[21] It is practically impossible to find reliable numbers of how many consoles are actually online. Microsoft claims that the "active user base of *Xbox LIVE* online gaming service is over 20 million" (Stenros & Sotamaa 2009). In *Tokyo Game Show 2009*, Sony announced that there are some 29 million *PSN* accounts. It is, however, clear that many gamers have more than one account as the number of PS3 consoles sold just exceeds 27 million at the time of writing (vgchartz.com).

Possibly the most significant difference between the platforms is that while almost three fourths of the console owners thought that easy access to game demos was important, among PC downloaders the corresponding figure was under 60 %. Here one has to remember that Nintendo Wii does not support game demos and therefore the Wii owners (out of whom only 45 % found game demos important) actually diminish the difference. Therefore, the margin between PC gamers and Xbox 360 or PS3 players is even clearer. Furthermore, when compared to owners of other consoles, Nintendo Wii owners less often agreed that downloadable games were easily accessible and that downloading was easy. The same difference between Nintendo Wii and the other consoles can be found from the recent UK marketing study (TNS 2009).

While our data offers no straightforward explanation for this finding, it is relatively safe to say that the shortcomings of the Wii online service can be named as the major reason for the difference. Other statistically significant differences between the consoles were very hard to find. This is partially related to the fact that a little over one fourth of console owners had access to more than one console. The proportion does not significantly differ from the numbers presented by a recent study on the North American console owners (NPD 2009).

In the case of game consoles, the distribution of games is integrated to the very user interface of the console and the online marketplaces are easily accessible and difficult to miss. For PC gamers the scene is much more fragmented: one can found dozens of different online services that provide downloadable games. Tellingly, 17 % of the respondents said that they do not regularly download PC games because they are not familiar with these services. Out of the existing online distribution platforms Valve's *Steam* was recognized far more often than any other service. Not less than 92 % reported to be aware of *Steam*, and 59 % had also used the service. Correspondingly, 39 % of the respondents recognized *Direct2drive*, and 27 % were familiar with *Gametap*. The casual game sites included in the survey were rated around the same, as 38 % of the players recognized *PopCap Games*, and 26 % of them knew *Big Fish Games*. When compared to the other platforms, *Steam* is in its own class, as all the other sites were used by less than 10 % of the PC gamers.

The appeal of physical copies

When asked about the reasons why they had not used the online distribution platforms, one fifth of the respondents stated that they did not like downloading games. Practical issues like limited Internet connections can partially explain the answers but in any case it is notable that so many players are ready to make such a strong statement. Even more strikingly, a little over one half of the respondents who had at some point downloaded games still found it important to own their games as physical copies. This finding is somewhat surprising, especially as we are talking about players who rank above average in playing time and awareness of the available services.

Our data provides some preliminary explanations for the wide appeal of physical copies. First of all, physical copies allow rela-

tively easy returns and refunds. This, however, seems not to be the case with digital copies, as only ten percent of the respondents found returning easy. Secondly, the secondhand market of digital copies is practically non-existent. Contrary to the physical copies, in the downloadables market there is no easy way to resell the games you do not play any more. One third of the respondents mentioned this as a reason that affects their willingness to download games. Furthermore, every single participant who preferred to buy games from other players had at least once downloaded games, so ignorance is not to blame here. Finally, around one half of the respondents (55 % of the console owners and 41 % of the PC players) were afraid that the downloaded copies may vanish in case of a system malfunction.

As mentioned earlier, digital games would for many reasons appear perfectly suitable for online distribution: they are, after all, software and consumed by a relatively computer-savvy audience. In addition, the recent studies show that it is increasingly commonplace for consumers in general to invest money on virtual goods and items (Lehdonvirta 2009). At the same time, based on our data, large player populations still seem to be strongly attached to physical copies. These mutually conflicting development trends indicate that the issue deserves further scholarly attention.

While the practical issues discussed above are surely related to the remaining popularity of physical copies in the digital games market, alternative explanations can be found as well. To gain more information on the subject, we implemented a new survey in which 33 respondents were recruited for a qualitative study consisting of 11 open questions. They had all downloaded games, but still for one reason or another preferred physical copies. The participants were asked to elaborate the differences between physical copies and downloads and the daily practices related to them. The analysis of this data has only started. Nevertheless, the early results already indicate some intriguing findings. The data supports our hypothesis of the importance of such practical issues as refunds, reselling and loaning, but there are other interesting issues as well. Related to the physical copies, a majority of the respondents expressed that they appreciated the opportunity to look and touch the game cartridges and booklets. This gives them a concrete feeling of ownership, different from the one connected to digital copies. Many of the informants also emphasize the reliability and safety of physical copies. This is a somewhat intriguing find, as one would assume that avid players are aware of the limited life span of game discs and the widespread opportunity to re-download any lost digital copies. In this respect, the feeling of reliability cannot be entirely reduced to technical aspects. This leads us to consider the often-mentioned aspects of collecting and identity building.

The centrality of collecting in the answers is somewhat surprising. While collection building can surely direct the behaviour of gamers, digital items seldom gain a status of a rarity (Sotamaa 2010). Most of our informants denied to be game collectors as such. Still, at the same time they often listed quite a catalog of memorable game cartridges, had a separate place for them or actively showcased some of the games to other people. In many ways, gathering and controlling meaningful objects can give one an improved sense of self. As games are intimately tied to the personal histories

of players, a physical copy becomes a sort of symbolic guarantee that even after years they can return to the significant experiences. Based on our data, the same kind of attachment was rarely associated with downloadable games or other digital content. We suggest that a deeper understanding of players' experiences and their behavior in and outside the virtual playgrounds can give an important contribution to the design of the distribution platforms. As discussed earlier, the role of related value-added services is accentuated once the distribution moves to the web. In the following we discuss some of the implications our findings can have for the development of distribution services.

Potential design implications

As we have discussed, the global game industry has recently introduced a variety of online distribution platforms, subscription based business models, and other innovations that make games, more or less, available "as services". Similar to other knowledge-intensive industries, games business is transforming from selling fixed items with set features and a one-time sales value to providing platforms with virtual commodities and all sorts of upgrades and value-added services. Online distribution of games turns the focus away from the carriage media and accentuates the significance of additional services that build a mutually beneficial and long-lasting relationship between the platform holder, developer and the player. Established platforms like Valve's *Steam* and the current generation consoles have already showed that online distribution is not only about providing access to games but serving the players in a very comprehensive manner. Furthermore, the potential success of projects like *OnLive* and *Gaikai* depends not only on their futuristic sounding cloud computing resources but eventually it all comes back to providing a versatile, long-lasting, and reliable experience for players.

Our earlier contribution to the subject (Stenros & Sotamaa 2009) divides player services into five major categories. These categories are as follows: maintenance of environment, support of initiation, facilitation of playing, assistance of play, and socialization of player. While various existing services can be identified in all of these categories, many potential areas still remain uncommercialized. Most of the services associated with current games (see the five-part model introduced in Chapter 1) are in use during the game session, but the services provided before, after and between game sessions may be at least as important for the long-term success of the game. Based on the findings we suggest five potential application areas:

1) Virtual game collections. Our survey results indicate that surprisingly many active players still hang on to physical game copies. According to the informants, only the physical copy can produce the feeling of really owning something: it can be touched and showed to others. Furthermore, reselling and loaning is relatively simple. First of all, as long as the secondhand markets for downloadable games are next to non-existing, there are good reasons to stick with the cartridges. Furthermore, many players highlight how the traditional physical game collection allows them to return to the significant game experiences by only looking at the cartridges. They can also be easily shown to friends or anyone interested in

knowing what kinds of games one prefers. So far, the design of online distribution platforms has mostly not taken into account these kinds of aspects.

2) Player identity management services. Many players spend a lot of time and effort in customizing their player characters, properties and other aspects of the gaming experience. While for players it would be natural to transport the results of their investments (ranging from user names to valuable virtual items) between the game worlds and services, this is seldom possible. Currently players can access a variety of games with one authentication only within a particular distribution service. A general standard similar to *OpenID* would open a variety of new possibilities.

3) Recommendation systems and social navigation. Most online distribution platforms ranging from *Xbox Live* to *iPhone App Store* have problems in introducing the games selection in a clear and user-friendly way. This is somewhat surprising, as at the same time platform holders and developers have more detailed information about the player behavior than ever before. There seems to be no particularly good reasons why recommendations based on personal player statistics (already extensively collected by services such as *xFire*) and other players' choices (social navigation) could not be provided.

4) Eco-gamer services. One aspect of digital distribution that still mostly remains under-researched are the ecological aspects of virtual consumption. In a general level one can argue that a more sustainable overall development can be supported by replacing physical products with virtual ones. Downloadable games do not consume natural resources in the same way as those based on carriage media. Increasing the awareness of players by developing services like "player carbon footprint meter" may have a significant influence on the consumer choices. Recently it has been suggested that the effects of digital distribution may not be limited to eliminating the need to physically transport commodities but the new platforms can also support consumer practices that further reduce e-waste (Moore 2009).

5) The new forms of what is tangible. As discussed, one of the reasons why many players still prefer physical copies is the look-and-feel factor. It is, however, clear that there are alternative ways to provide the tangible experience. Oftentimes the virtual currencies ranging from *Xbox Live's* points to *Habbo Hotel's* credits are delivered with a physical voucher. While these cards normally include just a unique code to be entered into the system, in some cases the cards themselves can became collectibles and in this sense take the role of the physical cartridge or disc.

Similarly to music and movies, the game industry has for long provided exclusive collector's editions alongside the standard versions. The special editions facilitate the enthusiasts with tons of detailed background information and special items. For example the *World of Warcraft Burning Crusade Collector's Edition* includes not only the game but also a behind-the-scenes DVD, a soundtrack CD, a hardcover art book, a set of *WoW* trading cards and an exclusive mouse pad. It is easy to predict that the demand for the extensive special editions will remain even in the era of ubiquitous digital distribution. One can also predict an increasing exchange between the digital and the tangible levels of gaming. It is not a

surprise that the *Burning Crusade* special edition also includes an exclusive in-game pet. This pet or any other *WoW* character can be further printed as a 3D miniature – an exclusive service provided by a 3rd party company called FigurePrints.[22]

Altogether, these observations are very preliminary. The application areas mentioned here are most probably not the only ones that need more attention in the future. The findings are, however, empirically grounded and therefore represent the concerns of players in the current situation.

Conclusion

The current forecasts concerning the progress of digital distribution greatly vary. Console manufacturers and distribution platform developers predict a relatively quick end to the traditional forms of distribution. On the other hand, influential retailers have until now mostly shrugged aside online distribution as a marginal market. To forecast the rate of change is not the objective of this article as such. Instead, our findings can help in better understanding the various aspects that affect the attitudes towards the new distribution paradigm.

In conclusion, according to our data, the income level of the gamers seems to have no effect to the downloading behavior. Instead, such factors as the amount of time used on game playing, the social activities related to games, and familiarity with other forms of downloadable content have a visible influence on the attitudes towards digital distribution. A notable majority of those who had downloaded games highlighted the importance of the following issues: wide variety of available games, ease of finding downloadable games, affordability, and simple paying methods. At the same time, more than half of these people announced that they still preferred to have their games as physical copies. In many occasions the relation between physical and digital copies is obviously not that of opposition or even alternative. Many popular games build on a hybrid model in which the starter pack is sold as a physical copy, but downloading updates or the playing itself requires the players to connect to the official game servers. While models of this kind provide a new role for the physical copy, it seems that the attitudes do not change overnight.

Altogether, it seems clear that the wildest game-industry manifestos celebrating the death of physical game copies must be taken with a pinch of salt. It would, however, be far too simplifying to explain it with mere resistance to change. First of all, as long as the rights to refunds, resells and loaning are constricted, the allure of digital copies will remain limited. Secondly, no fundamental changes are in the horizon as long as the distribution services fail to take into account the everyday practices of large player populations. Once the art of service design reaches the level required from successful game design, we may see more dramatic changes.

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RETHINKING PLAY AND PLAYERS

<div align="right">

Chapter 3
by Olli Sotamaa

</div>

Console Gaming, Player Production and Agency

Playing is only the half of it... With LittleBigPlanet you get a fantastic adventure AND the tools which we used to make it [...]. [Y]ou can build anything you've seen in the Story mode, or simply draw inspiration from it, and then create something even more complicated and grandiose! You can be a visionary.

http://www.littlebigplanet.com

When the console game *LittleBigPlanet* (in the following abbreviated as *LBP*) was launched in the late 2008, the marketing materials highlighted how the players can now begin to fulfill their creative ambitions and carry out projects traditionally reserved for professional game developers. The marketing rhetoric of *LBP* epitomizes the recent innovation paradigms that emphasize the new roles reserved for users. In the past few years, the central role of creative consumers has been noticed in various fields. As the user-centred production processes are finding their way to the core of contemporary economies, value is increasingly created between the companies and their customers. Digital games have been frequently used to illustrate the new organizational frameworks that are based on persuading users to carry out tasks and assignments not traditionally associated with them. Be it "user-innovation" (von Hippel 2005), "crowdsourcing" (Howe 2008) or "pro-am revolution" (Leadbeater & Miller 2004), the list of contemporary examples always includes digital games.

A closer look at the recent open innovation manifestos reveals that the oft-cited examples almost entirely come from PC games, while console games are mostly nonexistent in these texts. It is clear that PC and console games differ both in use and in the cultures they create (Taylor 2007). Equally, the technological and economic backgrounds of the market sectors are different (Kerr 2006). There is, however, something more in to this. In his important book, Jonathan Zittrain (2008) argues that the generativity of technologies and associated co-creative practices have recently been threatened by increasingly closed and "tethered" appliances. According to Zittrain (ibid., 8), centrally controlled appliances, like game consoles, persuade "mainstream users away from a generative Internet that foster innovation and disruption, to an appliancized network that incorporates some of the most powerful features of today's Internet while greatly limiting its innovative capacity". It seems that the concept of *LBP*, a console game inherently dependent on player production, at least to some extent challenges Zittrain's much cited argument about tethered appliances.

It is from this observation that the first set of research questions rise. What are the technical and economic constraints and affordances the console as a platform uses to position the productive activities of players? How do these differ from the forms of player production typical of PC gaming (examined, for example, in Sotamaa 2007a and Sotamaa 2007b)? What kind of insights and new per-

spectives the case of *LBP* offers to questions Zittrain discusses? Secondly, I try to describe the characteristics of player agency available for *LBP* players. If the game from the start invites players to co-design the game itself, how much room is there for resistance and transformation? What would "illegitimate player activities" mean in this context? These questions are tightly connected to the theorizations of creation and distribution of user-created content. Banks and Deuze conclude the recent discussions in a nutshell:

> [M]uch work can be characterized by debates and discussions between those scholars emphasizing consumer empowerment and recognition of fandom, and those who tend to be more sceptical of the unequal power relationships that remain between a handful of media corporations and the multitude of consumers. (Banks & Deuze 2009, 422.)

Furthermore, as Terranova (2000) importantly points out, it is crucial to bear in mind that the very existence of free labor rests on the dynamics of informational capitalism. The forms of this affective labor are not produced simply to the needs of the capital, but they are voluntarily given. Altogether, the relations between production and consumption need to be evaluated case by case, as the relations can simultaneously include disruptive, exploitative and mutually beneficial elements. The case of *LBP* allows us to take a closer look at the negotiations between platform holders, developers and players that practically define the limits between supported and unwanted player activities.

The article begins with a short introduction to the game. The next sections analyze the contexts in which console games are traditionally played, and describe some of the recent trends that have made game consoles more responsive to player production. After this, the article moves on to examine more closely the creative projects coming from the players. The article is concluded by evaluating the central findings in the light of the contemporary theories of co-creative production.

The game of many levels

LBP is a puzzle platformer developed by the UK studio Media Molecule and launched in late October (North America) or early November (other areas) 2008. The PS3 exclusive has been acclaimed by critics, and during its first year in the market *LBP* has received several recognized awards. While the sales figures have failed to reach the boldest forecasts, the one million unit mark was reached in five weeks, and a year and a half after the launch a respectable 3 million copies had been sold globally.[23] A significant number of patches, expansions and downloadable content packs have been released after the launch, making *LBP* one of the most updated games in the history of the PS3 console. As the continuous flow of updates indicate, the game has been carefully nurtured by the platform holder Sony. However, *LBP* not only showcases how PS3 supports developer-driven software updates but perhaps even more importantly, it also highlights the capabilities of the *PlayStation Network* in delivering and filtering player created content. The catch phrase of *LBP*, "play, create, share", further accentuates how the appeal of the game is significantly based on the content created by the players. I will in the following use the slogan to further introduce the game and to connect it to the recent theoretical discussions around player production.

[23] For the detailed sales figures, see http://www.vgchartz.com/game.php?id=12390

Play. In *LBP* the player controls a small creature, known as Sack-boy or Sackgirl. The character can run, jump, hang onto objects and drag or push them. The game provides a particular aesthetic, borrowing the central mechanics from the traditional platformers but introducing a handmade visual style seldom seen in digital games before. The merits of the game are, however, not limited to the aesthetic originality but the concept also promotes creativity and sociability in a compelling way.

Create. Although *LBP* features a set of pre-built levels for players to explore, of equal importance are the parts of the software that allow players to customize the existing levels and to create new levels of their liking. Players can personalize the appearance of their sack characters and alter the decor of the pod that functions as the main interface. Stickers collected from the levels can be plastered both onto the walls of the pod and on any surface in the levels, and screenshots taken from the levels can be used to create custom stickers. Furthermore, the game includes an advanced level editor that enables players to participate in the design of the game.

As Sue Morris (2004) argues, "neither developers nor players can be solely responsible for production of the final assemblage regarded as the game, it requires the input of both". Media Molecule has made this visible by allowing players to familiarize themselves with the very same creation mechanic used by the studio's professional designers. In the editor mode the players can create new objects from scratch by starting with basic shapes and filling them with a material of their liking. These objects can be further combined with each other. A variety of strings, bolts, triggers, and jets are available for connecting objects to the level and each other. Custom objects can be saved to a library for later use and shared with the players of the level. Undoubtedly creating a level takes more time and creativity than playing a level. The editor, however, preserves the visual style and feel of the game and also most of the accessibility experienced in gameplay. While accessible and relatively easy to use, the editor allows player-designers to create unique and complex objects by combining existing components and materials.

Share. While providing players with production tools can surely stimulate creative motivations, easy access to the distribution may be an even more important driver for user contributions in the current networked media environment (van Dijck 2008, 43–44). In the case of *LBP*, the player has no need to leave the console, as both creating levels and sharing them with other members of the community is carried out entirely in-game. Players can also rate and tag levels created by other players. To evaluate a level, a player can choose appropriate adjectives from a list of predefined words. Players can also mark their favorite levels, stickers and decorations with "hearts". Other players can then check the hearted items and get more information on them and their creator. The recommendation features are mostly familiar from the social networking services and other websites. They are, however, pretty much seen for the first time in the context of a single console game.

Design-wise, it is quite an achievement to implement a drag-and-drop editor that is entircreaely manipulated with the console controller and at the same time able to produce complex and com-

pelling levels. The particular beauty of the *LBP* approach on creation, however, lies in the way the game integrates play and player production together. It is far from the first time a digital game is bundled with an editor. Few designers have, however, mastered the integration of the editor with the gameplay experience. In the case of *LBP*, the original levels include so-called prize bubbles that players collect in order to increase their score. The bubbles can also contain items, such as new stickers, decorations, materials and objects. In the Create mode these objects can be used for the players' own levels. In addition to this, the original levels also operate as a sort of tutorial for the editor. Playing through the levels helps players understand the relations between different objects and the ways of combining them. The design of different monsters and vehicles is relatively intuitive, as one is already familiar with similar artifacts from playing the game. Related to this, the preface in the official Bradygames strategy guide states the following:

> The guide you are about to read will show you all sorts of tricks to help you Play, Create and Share. I'd like you to treat the Create aspect in a similar way as the Play aspect. It should be fun and experimental. (Smith 2008.)

The book itself first includes a detailed walkthrough and after that a guide to using the editor. The order suggests that when the players approach the editor, they are expected to be familiar with the affordances of the various objects.

Now, if we briefly go back to the appeal of consoles, it is clear that many people prefer to sit on a couch while playing games. While this is possible with a PC, consoles are particularly well suited for laid-back (or less laid-back) living-room gaming with friends. In this respect, significant work has been done to make the *LBP* editor suit the console gaming situation. The editor not only preserves the visual style of the game but also borrows some other features of the game to sustain the playful mood. First of all, the player navigates the editor with her personalized sack character. Similar to the game, the tutorials need to be "played through" in full before a new set of objects is unlocked. Secondly, in addition to his narration for the tutorial of the game, the British comedian Stephen Fry provides a witty voice-over for the interactive tutorials that accompany the Create mode. Furthermore, the distribution scheme for player-made levels is somewhat unorthodox: instead of a conventional list or index, the menu is represented as a planet and the levels are situated on its surface. Finally, after a major update in November 2009, the multi-player action, originally reserved only for the Play mode, is also supported in the Create mode as the game now allows up to four players to use the editor together across the Internet.

To get an initial understanding of the roles traditionally reserved for console game players, I will in the following move on to discuss the technical and economic contexts of console games.

Particularities of console gaming

Console games form the most significant segment of the games industry in terms of market share. The console market is often described as oligopoly, with the three major players responsible for platform manufacturing and also involved in software production. The competing console platforms – Microsoft Xbox 360, Sony Play-

Station 3 and Nintendo Wii – are proprietary, closed and non-compatible by nature (Kerr 2006). Dissimilar to PC games that have traditionally been designed to be modifiable for corrections, the consoles have in a historical perspective rarely allowed any modifications to the code sealed in the game cartridge or disc. Due to the concentrated market structure and the particular technological composition, content production has throughout the history of consoles been reserved to a limited number of developers.

Since Nintendo in the mid 1980s launched NES, which included the 10NES lockout chip, every mainstream console system has contained a mechanism for protecting production rights (O'Donnell 2009). This decision has allowed the platform holders to carefully guard the content itself and the number of parties capable of providing this content. Every third-party developer needs to obtain a license from the platform holder. The developers are also obliged to turn a share of their profits over to the platform holder. As a consequence, the console environment has provided very little room for players to reprogram or repurpose the machines and until recently, easy updates or modifiable content have had a marginal role in the lives of console gamers. During the years, various solutions, ranging from production control (production lockout mechanisms, license fees, high-priced production tools, mothballing of projects) to access control (regional lockout, digital rights management, user license agreements) have been used effectively to restrict the agency reserved for people willing to repurpose the video game consoles and to redesign their personal experiences.

Due to the platform holders' reserved attitude on player production, "console mod" has until recently mostly referred either to the imaginative case customizations built by hobbyists or to the mod chips that are installed to disable the built-in limitations of the game consoles. Symptomatically, mod chip users are routinely banned from using the official online services like *Xbox Live*. This highlights how the technical restrictions have for long been complemented with legal threats. Players are not only tied by strict end user license agreements (EULAs) that determine the permitted uses of the software, but hobbyist projects have routinely received suspension requests and cease-and-desist letters from the platform holders and other copyright owners. Other projects with minimal economic significance, ranging from imaginative wiimote hacks to simple flash-based games for the console Internet browsers, have been mostly tolerated by the platform holders. It is, however, clear that these projects are not encouraged by the platform holders.

Historically, the forms of player production have enjoyed no support from the console manufacturers, but in the past few years the strategies of platform holders have started to change, as the significance of players' productive potentials has finally been acknowledged. The development is partly due to the success stories in the more open PC environment. It is also connected to the fact that the current generation video game consoles are powerful computers: not only do they have as much computing power as a standard PC, but they are also equipped with large storage space and connected to the Internet (Zittrain 2008). The network connection has quickly extended the uses associated with video game consoles. While already the 1980s witnessed some experiments with downloadable console content,[24] it is the late emergence of hard drives

[24] Early experiments included projects such as the Control Video Corporation's *CVC GameLine*, a cartridge for the Atari 2600 which could download games using a telephone line, and *PlayCable: The All Game Channel* that enabled local cable operators to send Intellivision games over the wire with the TV signal.

and manufacturers' proprietary networks that has really boosted the possibilities invested in digital distribution. The console networks have both allowed easy updates for the software and created an entirely new market for downloadable games and other content. At the same time it seems that the new features have significantly extended the number of potential console game producers.

To exemplify the recent development we only need to take a look at the Microsoft press release from August 2006 that describes the future of console gaming in the following manner:

> In the 30 years of video game development, the art of making console games has been reserved for those with big projects, big budgets and the backing of big game labels. [...] XNA Game Studio Express will democratize game development by delivering the necessary tools to hobbyists, students, indie developers and studios alike to help them bring their creative game ideas to life while nurturing game development talent, collaboration and sharing that will benefit the entire industry. (Microsoft News Center 2006.)

Strikingly similar rhetoric can be found from a Nintendo press release from the early 2008:

> By reducing the barriers that make console game development prohibitively expensive, WiiWare showcases original ideas in the most democratic environment in industry history, connecting the people who make games more directly with the people who play them. (Nintendo 2008.)

Democratisation in itself may be a somewhat haughty way to describe the new openings, and the industry strategies most probably do not deserve to be confused with self-governance and citizenship (Bogost 2008). Nevertheless, openly available tools provided by these two projects represent an aberration from the traditional policy that has seen the platform manufacturers strictly control the flow and quality of content onto their systems. While *XNA* and *Wii-Ware* are not primarily aimed for large player populations but mostly for small development studios and game design students, they exemplify the new line of thinking that is winning ground at the console market.

While mod-savvy PC game developers realized the benefits of player-made modifications over a decade ago, developer-supported and manufacturer-acknowledged content mods on consoles are a somewhat recent entrant. Still in 2005 the Californian game developer Tecmo sued *ninjahacker.net*, an online community dedicated to creating custom content and modifications for Xbox games. The community members had created their own "skins" to Tecmo titles, including *Ninja Gaiden*, *Dead or Alive 3*, and *Dead or Alive Xtreme Beach Volleyball* and used the website to swap skins and share expert information on how to change the appearance of game characters. In his telling but somewhat questionable accusation, the company spokesperson stated:

> We spent millions of dollars to develop these games, and people are coming in and changing the code to their liking, and that's illegal. (Poulsen 2005.)

This announcement somewhat epitomizes the "old paradigm" that is based on distrust and excludes the forms of mutual co-operation between developers and players.

PC game modding, as we know it today, can be seen to originate from the genre of first-person shooters (Laukkanen 2005). Therefore it is no surprise that the first line of modder-friendly console games came from known FPS developers. In the late 2007, Epic Games vice president Mark Rein announced the release of the very

[25] "First user created content for UT3 PS3 is released" http://utforums.epicgames.com/showthread.php?t=593988

[26] Somewhat confusingly, the mods cannot be downloaded straight to the PS3 hard drive, but players need to use a USB memory stick or any other external memory device that is readable by PS3.

[27] *Guitar Hero: World Tour*, launched in 2008, approximately at the same time as *LBP*, provides its players with somewhat similar features. The in-game "Music Studio" can be used to create player's own tunes. The songs can be further uploaded to the *GH Tunes* service and after this they are available for all *GH* players via an in-game menu. However, unlike in *LBP*, no real effort is made to integrate the editor to the game modes, and therefore for the most players the editor remains a curiosity.

first user-created map for Epic's *Unreal Tournament 3* on PlayStation 3. Rein, known for his flamboyant rhetoric, described this as "the first bold step in a new era".[25] At the time of writing, over two years after Epic's announcement, *Ut3mod.com*, the central website dedicated for PS3 mods, hosts a variety of content ranging from different kinds of maps and game types to player-designed character models, weapons and vehicles. One should, however, pay attention to the fact that the relatively complex tools used for *UT3* mod-making are still PC-based. In this respect, the means of production and the means of consumption are becoming differentiated. This is worth noticing, as traditionally the very machine running the software has also been used to modify games. Furthermore, there is no in-game menu for downloading modifications, but the players need to scour dedicated websites to find the player-made projects.[26] Altogether, while the level of innovation embedded in the *UT3* mods is relatively high, there are still significant obstacles with accessibility.

The same seems to apply to another FPS game that lets its players to create their own content. *Halo 3* (2007), a part of the praised *Halo* series, is developed by Bungie exclusively for the Xbox 360 console. The game includes a built-in map-tweaking utility called *Forge*. The editor allows players to open up any standard *Halo 3* map and add elements from a variety of categories. The maps created in *Forge* can be further optimised with the extensive gametype customisation options available in *Halo 3*. While the editor is available in-game, the players interested in downloading player-made maps need to direct their browsers to *bungie.net*. Again, the access to maps is not as straightforward as one would hope, as getting a custom map to your game requires finding it from the website, signing in with a *Windows Live* ID and linking it to your *Xbox Live* Gamertag. While experienced FPS players may not find this too demanding, the procedure does not lend itself well to other games or inexperienced players.

Alongside with the FPS tradition, more "casual" examples of customized console content have started to emerge. The PS3 version of the trivia game *Buzz* includes 5000 trivia questions on the disc and further quiz packs can be downloaded via *PlayStation Network*. In addition to this, players can create their own questions at *Mybuzzquiz.com* and share them with the community. The player-made questionnaires can be downloaded straight into the in-game menu for free. At the time of writing, more than 200 000 player-made quizzes are available for PS3 players. While the text editor for making *Buzz* questionnaires is easy and quick to use, players still need a web browser to access the editor.

So far, none of these examples has provided a cycle that can be experienced entirely on console. In every case either the development of playable content or its distribution is still tied to a networked PC environment. Thus, while *LBP* is surely not the first console game with official support for player-created content, the combination of an easy-to-use editor operated with the console controller and an in-game distribution scheme is pretty unique.[27]

The game as a platform and a service

In an interview conducted after the launch of the game, the *LBP* producer Siobhan Reddy stated that Media Molecule considers the game primarily a platform.[28] This statement can be understood in two different ways. First of all, the platform metaphor can be utilized to emphasize the importance of the game's customizable nature. The game provides not only a narrative world designed for players to explore but as discussed, it also serves as a platform for the creative prospects of the players. Secondly, the "game as platform" rhetoric refers to Media Molecule's approach to season *LBP* experience with content familiar from other PlayStation 3 exclusives. The first major level pack made available through *PlayStation Store* included levels inspired by the *Metal Gear Solid* franchise. Media Molecule's collaboration with Konami also resulted in a *MGS Premium Costume Pack* that allowed players to dress their Sackboys as Solid Snake and other characters from the *MGS* world. So far the list of downloadable packs includes content for example from the following games: *God of War*, *Heavenly Sword*, *InFamous*, *Killzone 2*, *LocoRoco*, *MotorStorm*, *Patapon* and *Resistance 2*.[29] Thus, Media Molecule and Sony openly use *LBP* as a marketing platform. Integrating all these games, most of them exclusively developed for Sony's consoles, with the touching and witty *LBP* universe provides a new kind of appeal even to the more hardcore titles. As some of the downloadable packs update the features available in the Create mode, the branded content increasingly finds it way even to the levels designed by players.

As the examples above indicate, designing the game as an updatable platform opens up room for various kinds of extensions. As a consequence, *LBP* hosts side by side professionally produced branded content, and projects created by players.[30] Thus, the role of players is at least twofold: on one hand they are celebrated as skillful producers, and on the other hand they become addressed as an audience for Sony's marketing purposes. As the political economists have decades ago shown, the audience is often the main commodity produced by commercial media. In other words, an important function of the media product – in our case the console game – is to assemble a group of people to whom advertisers can sell more products. Furthermore, with the advent of real-time information networks the role of users is getting increasingly diversified. As van Dijck (2008, 47) points out in relation to popular user-generated-content platforms like *YouTube*, the users operate both as content producers and data producers. Besides uploading their videos to the service, users at the same time provide all kinds of information concerning their behavior and profile for the platform owners and metadata aggregators. The networked console operates somewhat similarly, providing the console manufacturer with a continuous flow of data about players. This data, ranging from buying habits to play preferences, can further be used to monitor the players and for example to personalize the marketing messages.

According to Jeremy Rifkin (2005), many companies have for some time now been actively moving away from products as fixed items and these days rely entirely on "platforms" that are open for all sorts of upgrades and value-added services. An interview with the Media Molecule co-founder Alex Evans reveals that at Media

[28] "LittleBigPlanet: the future"
http://videogames.yahoo.com/news-1263292

[29] For more, see *Wikipedia*
http://en.wikipedia.org/wiki/
List_of_LittleBigPlanet_downloadable_content_packs

[30] The situation bears some resemblance to the PC game industry, in which the game engines are used to run the player-created modifications and at the same time licensed for commercial projects.

[31] "LittleBigPlanet:
it's a 'service' as much as a game"
http://www.gamesindustry.biz/articles/
littlebigplanet-it-s-a-service-as-much-as-a-game

Molecule, *LBP* is considered "as much as a 'service' as it is a video-game title".[31] There are, once again, several ways to interpret this statement. First of all, console game expansions are becoming increasingly prevalent, particularly due to the proprietary online services. As discussed, *PlayStation Store* has provided *LBP*-related additional content since the launch of the game. In this respect, the economic model is moving from a single payment towards an incremental or cyclical payment and the consumer is encouraged to be in frequent contact with the seller. Then again, business-wise the objective behind the flow of upgrades and add-ons is not only to create some additional revenue but perhaps even more importantly to create a long-term service relationship with the customer (Stenros & Sotamaa 2009).

Over one million levels later

It was clear from the beginning of this study that a title so dramatically dependent on the player's contributions could not be analyzed before a significant number of levels had been generated. In February 2010, some 16 months after the launch of the game, Sony announced that there were over 2 million levels designed by the players of *LBP*. I guess it is safe to say that at this point the variety of player projects allows us to sketch a more multi-sited perspective on the game. First of all, it is interesting to observe that Media Molecule has given up the strict focus on in-game features. The developer has provided a browser-based blueprint maker tool to facilitate the design process. This gives a hint that creating levels is not exactly child's play but requires serious effort and pre-planning. The extensive quantity of player-made levels also makes it increasingly difficult to find and select fitting levels. Related to this, the company representatives have talked about a launch of a web-based portal that would help players to find other creators' contributions and to advertise their own levels.[32]

[32] "Web-based level-sharing portal coming to LittleBigPlanet"
http://www.1up.com/do/newsStory?cId=3174332

While the players on average seem to appreciate the dedication of Media Molecule, the first year of the symbiosis has not been entirely without controversies. Not surprisingly, a central source of friction have been third-party copyrights. A number of levels that have infringed on copyrighted intellectual property have been canned. The hesitancy to take any risks with the content is most probably largely up to the platform holder Sony, as already the delay in the launch of the title suggests.[33] The players who have spent hours with their creations have openly expressed their dissatisfaction especially concerning the way the levels have been cut without prior notice or any explanation. Much of the criticism coming from players has been over the lack of clearly defined criteria for what will cause a level to be deleted. Sony has promised to make these definitions clearer but also recommended players to steer clear of providing levels with inappropriate content or content that infringes on existing copyrights.[34]

[33] The game was originally intended for a mid-to-late October release but a problem involving a licensed song in the game's soundtrack caused a last-minute delay in the worldwide release. Sony recalled all copies sent to retailers after audio samples from the Muslim religious text *Qur'an* were discovered in soundtrack of the game, see:
http://www.gamasutra.com/
php-bin/news_index.php?story=20708

[34] "LittleBigPlanet levels getting axed"
http://www.escapistmagazine.com/news/view/
87394-LittleBigPlanet-Levels-Getting-Axed

LBP nicely illustrates Lev Manovich's (2001, 258) idea of how in the case of new media it is often hard to establish the boundary between production tools and media objects. For their part, Katie Salen and Eric Zimmerman (2004) use the term "transformative play" to describe players' ability to appropriate playgrounds, to innovate new tactics and to change the rules of the game. Transfor-

mative play is "a special case of play that occurs when the free movement of play alters the more rigid structure in which it takes shape" (ibid., 321). As discussed throughout this article, *LBP* very effectively builds this transformative play into its design. At the same time *LBP* forces us to ask what exactly qualifies as transformative play. As level editing and object making becomes a part of the intended use of the software, the subversive dimension of these actions becomes questioned. Obviously players can still oppose the "correct" use of the software. There are intentionally boring or practically impossible levels. Quite a few of the published levels are also unfinished or include major inconsistencies. Furthermore, instead of creating levels for other players to enjoy, players can use them for their personal purposes that I will discuss in detail a little later. In any case, the player production associated with *LBP* is not so much about hacking or reverse engineering the software but rather it is anticipated use of the gaming software. Adam Arvidsson and Kjetil Sandvik (2007, 102) suggest that in the case of digital games, agency and freedom may no more be taken as sources of resistance against the cultural industries, as agency has become a pre-programmed feature of the corporate media environment in which subjectification occurs. While I agree that cultural studies need to "abandon the habit of equating agency and freedom with resistance and critique" (ibid.), I see no need for overtly pessimistic or gloomy conclusions.

While allowing players to create their own content is never entirely without controversies, the benefits for the developer are pretty clear. The continuous flow of new *LBP* levels obviously improves the replay value of the game and at the same time extends the potential shelf-life of the title. Following the argumentation of Arvidsson and Sandvik, one might be tempted to argue that Media Molecule's attempt to capitalize on transformative play is solely about incorporation – about corporate power "squeezing" the fruits of game culture into its reserves. This would, however, be an unnecessary oversimplification. As John Banks (2005) suggests, players are often well aware of the practices designed for exploiting their labor. As the co-operative relations between players and developers evolve, some players become experienced practitioners capable of negotiating more favorable terms for their works. Already before the launch of the game, Media Molecule representatives admitted that they were looking forward to recruiting some of the best designers of the player community. A year after the launch they reported that a new level designer coming from the player community had been hired. Already before this, Media Molecule had hired the team behind one fan-site to build and run the official *LBP* community site.[35] In addition, the *Game of the Year* edition of the game was shipped with 18 player-created levels. Furthermore, even though Media Molecule and Sony have been relatively silent about the future of *LBP*, speculations indicate that the best player-created levels could became liable to charge at some point.[36] If the critical mass of players grows into an appropriate scale, a micro-payment-based model could actually provide a basis for a mutually beneficial relationship between player-creators and the developer.

All in all, it is clear that the monetary compensations relate to a very small minority of players. This also reminds us of the fact that the availability of tools and distribution channels does not automa-

[35] "LittleBigPlanet.com relaunches as a community site" http://www.mediamolecule.com/2009/11/18/littlebigplanet-com-relaunches-as-a-community-site/

[36] "User-created content in LittleBigPlanet could pay" http://www.1up.com/do/newsStory?cId=3168914

tically turn all players into producers. In this respect, it may be useful to distinguish between different levels of participation. Following a popular rule of thumb we can assume that a relatively little group of players has the skill and inclination to produce the levels of high complexity. Much larger group of players spends some time with the editor and may come up with at least one small-scale project. Then there are players who do not create levels of their own but actively follow the scene and spend time on playing, evaluating and rating the levels created by other players. Finally, there is a large population of players who occasionally download and play a player-created level or two.

If we intend to understand the significance of player production to the player experience, all the different positions need to be taken into account. On one hand, it is apparent that participation does not equal active contribution (van Dijck 2008, 44). On the other hand, the experience of large player populations is without doubt affected by the results of voluntary level-designers. In their article on co-creation, Banks and Humphreys (2008, 402) argue that "the unpaid labour of the user-producers, (for example the player-creators in computer games), wields its own form of power". While this power may be different to that wielded by professional developers, this agency should not be underestimated.

To further examine the powers exercised by the players, I will in the following move on to consider the entirely new uses *LBP* players create for the game.

Producing new uses for games

If we take a closer look at the variety of player-made *LBP* levels, quite a collection of projects is revealed. The atmosphere and style of the levels ranges from frisky and perky to spooky and gloomy. Some of the vehicle rides, ramps and roller coasters provide quite an adrenaline rush. At the same time the more puzzle-like levels force players to stop and ponder their moves. Alongside with the obstacle courses similar to the official levels, the players can also choose to play, for example, a quiz or a pinball. Similar to the official downloadable content, many levels seek inspiration from other games and popular media. Remakes of classic platform games seem to be popular, but influences from a wide variety of other games – *Halo, Mirror's Edge, ICO* and *Tetris*, to mention but a few – can be found as well.

As if this was not enough, some player levels also include unique objects that shift the purpose of the game into something completely different. Different kinds of music-related levels form one of the visible trends among the community. Some players have created relatively complex machines that replicate the principles of a phonograph or a barrel organ. In addition, complete levels can be used for reproducing known musical pieces. The editor allows players to place triggers that activate individual sounds when the player reaches a certain point in the level. If the player meets the consecutive triggers in the right pace the sounds constitute a recognizable melody. The examples range from game theme songs to Guns N' Roses.

The most popular player levels that have been downloaded and played hundreds of thousands of times are counterbalanced by a

flock of levels that have much more subtle and mundane motivations behind them. Many players have figured out that the levels can be used to pass on personal messages like wishing happy birthday or merry Christmas. On these occasions the game takes a communicative function and the intended audience can consists of only a few people. Related to the many uses of digital games, Ian Bogost (2008) has made an insightful comparison between today's computer culture and the emergence of affordable and easy-to-use cameras in the turn of the 20th century. If taking photographs was still in the late 19th century expensive and required professional expertise, the introduction of Kodak Brownie camera changed the scene significantly. The camera was relatively cheap and no dark room was needed for developing photos. Making photography widely viable also produced a new kind of picture, the snapshot. A snapshot can be described as a photograph that is shot spontaneously to capture memorable moments of everyday life. As Bogost (ibid.) formulates: "snapshots value ease of capture and personal value of photographs over artistic or social value".

Now, if we turn our attention to the *LBP* levels discussed above, interestingly similar motivations can be found behind them. One more example of a level that may not be played by many but surely has significance to its creator is a level titled "Love and Marriage". According to a *YouTube* entry, the designer used the level to propose his girlfriend.[37] The level actually requires the player to answer the question "will you marry me" to proceed to the end of the level. The successful snapshot levels, primarily designed for audiences of one or two or ten, include personal things that have a particular significance for their players. As Bogost (ibid.) argues, the outcome of this work is not important because it generates quality games. Instead, these levels are important because they hold meaning for their designers and their kin. In this respect, one should remember that while most of the *LBP* levels may not qualify as high quality games in a traditional sense, they can still be good games for their designers and their carefully chosen players.

One term the academic literature has recently coined to explain the dynamics of game cultures is "gaming capital". The term is a reworking of Bourdieu's "cultural capital" and refers to being knowledgeable and having opinions about games-related things and sharing this information with others interested in games (Consalvo 2007). The advantage of "gaming capital" is that the concept offers a way to examine the range of player activities together. The ways of gaining gaming capital are not limited to playing games but the games-related productive activities that are appreciated in a player's social circle can as well become sources of gaming capital (Sotamaa 2009).

Traditionally the "console gaming capital" has mostly been gained by playing and by being knowledgeable about games. In the case of *LBP*, however, gaining this flexible currency is obviously not limited to mere playing but the productive inclinations can as well accumulate one's gaming capital. In fact, in relation to *LBP*, the playing itself may not even be the primary route for accumulating gaming capital. The cuddly and somewhat wacky style of the game does not in the first place invite the most hardcore player population. A look at the community websites confirms that it is not the skilled players but the imaginative levels that are celebrated. It is

[37] http://www.youtube.com/watch?v=Mf2iGG9uTZY

also worth recognizing that the developer's post-launch player support is very clearly focused on players' productive activities.

The reward systems recently introduced to various gaming platforms make gaming capital quantifiable and visible in new ways. *LBP* design follows the PlayStation 3 trophy system by rewarding players from a variety of achievements in the game. In general, developers often use the rewards to extend the replay value of the game. Rewards can also be used to direct the attention of players to particular features of the game. Similar to many other games, *LBP* awards both basic level completion and various more exceptional stunts. Added to that, a variety of trophies require the player to create (customize the character, create a character, create a level etc.) and share (publish a level, tag, rate and comment other players' levels etc.). Thus, while in most PS3 games the trophies are connected to particular in-game tasks, in the case of *LBP* even the trophies actively encourage players to familiarize themselves with the different levels of participation.

Interestingly, the *LBP* trophies also provide a basis for inventive and somewhat transformative player designs. Earning the trophies is not limited to the original levels, and therefore in some cases the player-created levels can significantly ease the achievement of the relatively difficult trophies. For example, the trophies that require the player to travel very fast (Incredible speed trophy) or to travel very high (Incredible height trophy) can be earned in seconds with the help of player-designed rocket engines. One could say that the "trophy-heavy" levels that guarantee the player a list of trophies in a few seconds actually form a genre of their own within the player creations. Based on the discussion forums, the players interestingly disagree whether these levels should be seen as elegant exploits of the PS3 achievement system or as resources used only by the cheapest cheaters. Whatever the case, these examples highlight how the creations of players can in a very concrete way play with and redefine the dynamics of the system imposed by the industry.[38]

Conclusion

Based on the observations made in this article, there are reasons to argue that the recent developments in the console market have turned the latest generation consoles into an increasingly inviting platform for different forms of player production. It is, however, worth noticing that the new options available for players do not automatically make all of them active participants, but instead a variety of different roles can be identified. Alongside the small group of *LBP* players who dedicate a lot of time and energy on designing levels, there is a variety of players who season their experience with playing, rating, commenting and examining those levels. All these roles are important for the community but represent significantly different experiences. It seems that the basic motivations and community dynamics remain relatively similar to those familiar from PC game modding. For the especially skilled player-developers the game provides an inviting platform to showcase their talent, earn fame and even potential recruitment. For the majority of players, the level editor is still more of a software toy that allows them to create small-scale experiments and instant social fun.

[38] This is particularly interesting, as we remember that for example the *XNA* games on Xbox 360 do not support achievements (the *Xbox LIVE* reward system) at all.

If we now return to the argument of Jonathan Zittrain concerning the "tethered" nature of the game console, the result is somewhat twofold. In the first glance the "freedom" and "democracy" promised for players seem rather limited. The new openings are obviously not available for every development studio, as they require very close co-operation with the platform holder. For players, the chance to create something unique includes a set of trade-offs. Even the most innovative player-made games remain available only to those who can gain access to a PS3 console and a copy of *LBP*. At the same time, all the player activities produce information that can be collected, stored and further utilized by the platform holder. While the potential for transformation and controversy is obviously not entirely erased, the room for altering the rigid structure defined by the platform manufacturers seems somewhat limited. At the same time, while examples like *LBP* do not allow radical reprogramming of the console environment, they can open up more subtle ways of repurposing the console. As discussed, the player-created levels can, for example, turn the game into a channel of intimate communication or question the reward systems designed to direct the player behavior. In this respect, Zittrain's categorical division between "generative" and "tethered" seems a bit too rigid. More nuanced and less dichotomic models are needed if we want to further understand the complexities shaping co-creative relations in the future console design space.

The people who purchase *LBP Game of the Year Edition*, released in autumn 2009, are invited to test the online beta of a game titled *ModNation Racers*. This PS3 exclusive kart racing game uses the very same three word slogan familiar from *LBP*. In this respect, there are good reasons to believe that in the following years the console gamers are more often invited not only to play but also to create and to share. At the same time, as I have tried to show in this article, it is important to see behind the celebratory ethos trumpeted by the console manufacturers and to pay attention to the ways in which the player agency is negotiated in the different phases of the console game lifecycle.

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Chapter 4
by Tero Karppi

Internet Connections: Rethinking the Video Game Console Experience

Ian Bogost (2009) has recently suggested that we should think of games from the viewpoint of the platform. This, as proposed by Seth Giddings (2005), means thinking about them as instances of technoculture. What kind of technological agencies are at play when we play a game? How do these technological agencies affect the video game console experience? These are questions of both theory and practice. Following the platform study of games, I will elaborate on what happens to games and game experience when the Internet becomes a part of video game consoles. I am interested in thinking machines as dynamic systems that interact with different kinds of actors, and the new structures, entities, and forms that emerge from these interactions.

Historically video game consoles have been relatively closed systems. They have been based on two physical connections, or cables: one entering the power socket and the other the TV-screen. A third connection came with Xbox and PS2. They both established a connection to the Internet. However, it was not until the 7th generation of the console (Xbox 360, PS3, Wii) that this connection to the Internet and its possibilities became relevant from the perspective of the games and the experience created by the console and the games. I would argue that these possibilities are linked with what Jaakko Stenros and Olli Sotamaa (2009) have called as the rise of service paradigm in games: "The popularity of game franchises, sequels, expansion packs and episodes highlights that the products sold need not be self-sustained games." From the services point of view, games have reached a limit where the content or the magic circle of the game world is challenged by different kinds of platform-dependent services around it.

In the following I will try see what kind of philosophical concepts emerge when we think of games and services from the point of view of a platform. I will use as an example Microsoft's video game console Xbox 360 and its *Xbox LIVE* concept, which has been a forerunner in Internet-related services. A starting point, from my point of view, is the way the Internet is encompassed within its environment. Unlike in the competing 7th-generation consoles, the Internet is not brought to Xbox 360 in its obvious representation. There is no web browser in the console. This, however, does not mean that the Internet is absent or irrelevant to the Xbox 360. On the contrary, the Internet is a ubiquitous part of the console: it is constantly present in the services of *Xbox LIVE* taking the form of marketplace, multiplayer games and updates, for example. I would say it is present but not represented. The lack of a browser merely means that the Internet does not have a representable identity in Xbox 360, but it functions as a part of the video game console environment in many ways.

In fact, the question about the connection to the Internet and the Xbox 360 is much wider than just a question about representation. It is the Internet, the non-human actor that makes the Xbox live. To understand the new console experience, we need to elaborate on this point. As Mark Weiser has stated,

> The most profound technologies are those that disappear. They weave themselves into the fabric of everyday life until they are indistinguishable from it. (Weiser 1991.)

Xbox LIVE

Basically the Internet in Xbox 360 is called *Xbox LIVE*. To be more precise, *Xbox LIVE* is an online multiplayer gaming and digital media delivery service created and operated by Microsoft. In their marketing jargon for American customers, Microsoft emphasize the role of the *Xbox LIVE* in relation to the playing experience with Xbox 360.

> Xbox LIVE is evolving entertainment, in the way we watch, the way we play, the way we come together for fun. Find the perfect game with a free trial of hundreds of titles from the largest library available. Extend the fun of your favorites with Game Add-ons like new songs, levels and characters then invite friends all over the world to connect, cheer and play along. Plus, with thousands of HD movies and TV episodes to watch instantly from Netflix, movie night flickers to life at the press of a button.
>
> http://www.xbox.com/en-US/live/joinlive.htm

What does the concept of *live* mean in this context? There seems to be a live access to digital downloads and a way to have live social connections with friends via the *Xbox LIVE*. We could say that *live* here refers quite directly to a basic understanding of live media events or live acts, such as live broadcasting in television, live acting in theater or live concerts. Hence *live* in the context of marketing means real-time and immediate access to the content and services of the console environment.

I however suggest a different approach to the concept of *Xbox LIVE*. What happens if we take *Xbox LIVE* quite literally? What if we say that the Xbox 360 lives? In the following I will argue that in many ways, Xbox 360 resembles a self-organizing system which functions in ways that resemble the life of a living organism. As Randall D. Beer argues, it often seems that

> life is defined in such a way as to make organisms look complex. To many biologists, life is either a long list of phenomenological properties (e.g., the ability to reproduce and evolve) or a long list of physical components (e.g., DNA). (Beer 2004, 310.)

However, you cannot create life by mixing arbitrary pieces of DNA together, and sterilizing a stud does not take its life. Following the writings of Maturana and Varela, Beer instead suggests that life can be seen as an "organizational homeostasis":

> a specific organization of physical processes that has as its principal product the maintenance of its own organization.

Humberto Maturana and Francisco Varela (1980) call this organizational homeostasis as the autopoietic or self-organizing system. A typical example of an autopoietic system is the biological cell. The cell is made of various biochemical components, such as nucleic acids and proteins, and is organized into bounded structures, such as the cell nucleus, various organelles, the cell membrane and cy-

toskeleton. These structures, based on flow of molecules and energy, produce the components which, in turn, continue to maintain the organized bounded structure that gives rise to these components. Thus, a self-producing system has a certain type of organization and structure. Organization means features that are characteristic for the entity, whereas the structure changes in time through different kinds of interactions. These interactions can be both internal and related to the environment which the entity occupies. (Hayles 1999.)

Now, can we apply this self-organization model into Xbox 360? First we can say that it does have a structure and an organization. The structure of the Xbox 360 is the combination of its hardware and software, and it may change. But throughout the life-cycle of the console, the organization remains the same: that which is characteristic of the 7th-generation video game console. Second, we can say that through automated services Xbox 360 aims to maintain its organization. This is also in line with Stenros and Sotamaa's (2009) model of player services, where the maintenance of the playing environment, the platform, can be seen as an essential part of the service paradigm, as the environment is the ground which on the one hand makes the playing possible and on the other hand constraints it.

In practice, these automated services mainly refer to updating the software. Basically when there is an update available, the player does not need to do anything besides accepting the changes, as the console takes care of everything else. Often accepting the changes can be conceived as a formality, because if the player wants to use her console to access *Xbox LIVE*, it must first be updated. If you don't update, you cannot connect your Xbox 360 to the *Xbox LIVE* and you will not be able to play games that have a network feature. Hence, the console could as well do the updating without asking any confirmation from the player.

Not only is the player unable to control the updating process, she is as much unable to influence the changes to the structure of the video game console. The operating system accesses the network by itself, searches the update packages and installs them. The player can only wait while the machine does its trick. She does not know what the updates do. It is the machine itself that interacts with the updates. Updates keep the system alive, i.e. connected to the network. Hence, I would argue that the maintenance of its own organization, surviving, is as big a key feature in the game culture than in biology and life science.

An argument against Xbox 360 being an autopoietic system could be the one given by Maturana (1978) against the 1st wave of cybernetics: Xbox 360 cannot reproduce its own components. This is, however, only partially true. It is true that the material components – the CPU, the memory units etc. – cannot be reproduced by the console itself. As Friedrich Kittler (1997, 159–161) has told us, we do not have a direct contact with the hardware. The hardware is hidden and made almost impossible to access directly. This does not, however, mean that we cannot access the hardware. There is a graphic user interface that comes in between the user and the machine as systems of operation (Kittler 1995). This software not only affects on the ways the player uses the video game console, but also how the hardware functions. Following Laurie N. Taylor (2007,

235), I suggest that platform studies cannot distinguish between the hardware and the software so strictly. Thus, the hardware may not be reproducible by itself, but the functions of that hardware through software can. At least software is a component of self-organization and production.

Games

What is a game then, in relation to the self-organizing platform of Xbox 360? For Maturana & Varela (1980), an autopoietic system is always embedded in an environment. This embeddedness can be seen as structural coupling. For example, to survive humans have to breathe air and drink water. In a similar way, games are coupled with video game consoles. Through this relation, platforms – as Ian Bogost (2009) says – are an indisputable part of games. If we think games as detached from the platform on which they are played, we miss something essential. This view is not as deterministic as it seems. I am not saying that it is the platform that determines what the games are, but we need to consider the platform as a multiplicity holding different kinds of technological potentialities that the games can use in their own structure.

To start out with an example, let us consider *Halo 3* (by Bungie Studios & Microsoft Game Studios, 2007), a first-person shooter made exclusively for Xbox 360. If we apply the magic-circle approach of game studies, we can consider the narration, rules and the game world *Halo 3* establishes.[39] The game world is interactive. There is the story of the cyborg called Master Chief. Master Chief interacts with other actors of the game violently or non-violently. The player can walk in any given direction and use different kinds of objects in the game world. The idea of magic circle is in this case used "to emphasize the importance of a distinct boundary between games and ordinary life" (Sotamaa 2009). It is the game world and the actions taken there which the magic-circle approach is interested in. The magic circle sets up a frame for the game and cuts it off from the surrounding world: the game creates a new world or reality which is "defined by the rules of the game and inhabited by players" (Salen & Zimmerman 2003). Every time a player starts to play a game, she transfers from the ordinary world to the game world.

The service paradigm, however, breaks the magic circle, because it extends the game outside the game-world limits. If we think of the *Halo 3* in relation to the Xbox 360, we immediately notice that the dichotomy between the real world and the game world does not fit in the picture. *Xbox LIVE*, the Internet according to Microsoft, is a technology *Halo 3* uses in multiple ways. There are many features that can be accessed only via *Xbox LIVE*. First, in addition to a single-player game, *Halo 3* has a multi-player game, which – I would argue – is an even more important part of *Halo 3* than the single-player game, because it extends the life-span of the game. Now, there are various features connected to the multi-player game. For example, if the player has a *Xbox LIVE* gold membership, the game searches for suitable opponents based on players' experience points, and also registers all wins and losses. There are three different matchmaking categories which the players are able to use: ranking, social and hardcore. Secondly, the player can

[39] There are different kinds of views of a magic-circle approach in game studies. Here I refer to the one proposed by Katie Salen & Eric Zimmerman (2003).

download different kinds of add-ons, such as map packs for the game. Bungie also offers software with which players can create content to the game. And finally, there are various software updates in order to clear bugs and improve the way the system functions.

This openness in the structure of the game follows a larger trend in digital culture: the shift from products to services, and especially understanding the software as services. Transforming products into software leads into creation of materials that go beyond the limits of a single game. For example, in addition to the game add-ons, the player is able to load *Halo 3* themes, avatar items, videos and pictures. The *Avatar Marketplace* in Xbox 360 was launched in August 2009 and it introduced "branded apparel from your favorite fashion labels and Xbox 360 games".[40] Moreover, avatar items became linked with achievements. An in-game accomplishment may now result in the avatar obtaining new gears. The normative concept of magic circle is torn down at least when the characters and fictional products leave the game world and infiltrate the console environment. From the view of the platform and the service paradigm, there seems to be nothing like an end product. *Halo 3* is constantly modified. Hence instead of being of *Halo 3* we should be interested in its becoming: "the replacement of static conceptions of things through the creation of dynamic conceptions of processes in continual transition" (Grosz 2004). When a video game console experience is thought from the perspective of connecting the Xbox 360 to the Internet, it becomes clear that we need to consider games in terms of "*movement* between that which has emerged and the conditions of possibility" (Rossiter 2006, 178).

Coda

What do we gain from looking at systems like Xbox 360 as living entities? For me it means understanding how the system works outside the regular technical vocabulary. For example Félix Guattari (1995, 33–34) stresses that we must not consider a machine as a technical machine, since even the most compact and material definition of a machine as something that has been made points to the necessity of expanding the limits of a machine to the assemblage that has lead to its creation (creator, economy, production etc.). Machines are more than the technical parts that comprise them. One way to benefit from this view is to understand how the life is controlled in digital environments. In his famous essay on control societies, Gilles Deleuze has proposed that due to new technology we have moved from disciplinary societies to control societies. Deleuze says that disciplinary societies mold individuals, while control societies modulate individuals. Without going too deeply into this, following William Bogard (2009) we can say that the difference between mold and modulation is that the former is rigid enclosure, whereas the latter is a fluid format – one that changes with the content to be formatted. For Bogard, modulation is like editing the parameters of music as it plays.

The concept of modulation describes the phenomena I have tried to sketch: the *Xbox LIVE* related services, such as updates for the operating system, the add-ons for games, the *Avatar Marketplace*, and marketplace in Xbox 360 in general. Both the games and the

console itself are platforms for modulation. There is no rigid closure. David Savat (2009) has shown how the control in modulation is very subtle. Control is not about creating an object that can be controlled but, for example, anticipating the behavior of the users and reacting to that beforehand. This is why there is no web browser in Xbox 360: the content of the Internet pages cannot be controlled. A web browser would allow access to, for example, pornographic web sites, which do not fit into Microsoft's image of family entertainment.

This form of control extends to the whole construct of the *Xbox LIVE* experience. The distributed games and content, such as updates, are if not made then at least approved by Microsoft. Modifying the console with parts or software is not approved by Microsoft results in being denied the access to *Xbox LIVE*. The control is actually so subtle that it often presents itself in the form of choice. There is, however, one choice that the player cannot make if she wants to keep the console functional, that is, if she wants to access all the services that are becoming more and more important in game culture. That choice is to not connect Xbox 360 to the *Xbox LIVE*. Choosing not to connect, if I am right when arguing about the Internet being the heart and soul of the new console experience, basically means decapitating the console, taking its life.

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Chapter 5
by Tero Karppi & Olli Sotamaa

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Methodological Observations From Behind the Decks

While it is possible to sketch a lengthy history for academic interest in games, a wider ambition to critically discuss the methodological approaches particular to game studies has emerged only during the past decade. This methodological turn is deeply connected to digital games and the growing understanding of their value as cultural objects. A grounding argument for the early methods of game studies has often been that the methodology to study games should rise from gameplay itself. This argument aims to emphasize the importance of game studies as an independent discipline but also the role of games as a techno-cultural phenomenon that cannot be reduced to other forms of media or social structures.

In this chapter we will focus on playing research as a method and the larger methodology behind it. Like many other game scholars before us, we acknowledge the importance of multidisciplinary (Mäyrä 2008b, Bryce & Rutter 2006). In fact, our earlier work on digital games is profoundly inspired by approaches that acknowledge the importance of multiple methods and "montage" (Saukko 2003) or "bricolage" (Fornäs 1995; Hills 2005) of theories. In this respect, turning our focus towards play can be seen as an attempt to better situate the method of playing research among other forms of scholarly inquiry. We argue that the particular practices of playing research are tightly connected to the way in which we understand games in general. In this respect it is worthwhile to ask how the domain of playing research is demarcated and whether the boundaries between playing research and non-playing research are as clear-cut as sometimes thought. Our study is inspired by grounded theory approach in the sense the theoretical contributions raise from the data in the process of conducting research. Previous theories are used as a template with which the empirical results are compared. The central methodological contributions of the chapter are concluded by discussing the idea of assemblage in relation to the practices of playing research.

Our examination takes Espen Aarseth's (2003) article about "playing research" as a starting point. This seminal article defines some of the approaches and skills a game researcher is supposed to master. For us the article represents both a source of inspiration and a target of criticism. Aarseth himself acknowledges that his method of playing research is an outline and invites researchers to develop it further. What we intend to show is that while Aarseth's method of playing research is adequate, we need a better elaboration on the methodology of playing research. This means that while the idea of playing research is relatively simple (playing the game as a method as Aarseth proposes) the way playing research is altogether conducted (theoretical perspective and the practical method as a methodology) needs to be reconfigured.

[41] *DJ Hero* (by FreeStyleGames & Activision) was released in October 2009. It is usually contextualized in the genre of rhythm-and-music games, such as *Guitar Hero*. The basic game package consists of a turntable-controller and game software. The *Renegade Edition* of the game has a hardshell turntable carrying case that doubles as a stand. While the controller is called turntable, it actually resembles both a mixer and turntable. There is a fixed vinyl record on the turntable, while the mixer includes a crossfader and effects dial, to mention a few. Actions in the game are controlled by pushing buttons, adjusting knobs and scratching with the turntable. The idea of the game is to follow actions indexed in the audiovisual presentations of different songs, or rather mashups — mixes that are combined of two or more songs by real DJs.

Since Aarseth's approach is empirical rather than theoretical, an explicit case-based example of playing research is in order. We will analyze Activision's music-and-rhythm game *DJ Hero* (2009).[41] Following Aarseth's (2003, 6) suggestions, this particular game is chosen because of its potential not only to confirm our views, but also to refute them. We believe that *DJ Hero* represents contemporary video games in more than one way. Firstly, it is a game that is made for multiple platforms (Xbox 360, Wii, Playstation 3). Secondly, it represents the genre of music-and-rhythm games, which have been extremely popular since the first *Guitar Hero*. Thirdly, it uses the Internet in various ways from multiplayer games to downloadable content. Finally, it connects to a wider popular cultural context. In other words, the game is built around different layers that interact with each other. It is the game as a layered entity that brings to the fore the core questions and conceptualizations of our research. What are the limits of a game? What will be qualified as playing? What is playing research and how is it positioned in the field of game studies?

Playing research

It is clear that a variety of academic perspectives and different methodologies can be employed to approach games. For example, the recent game studies textbooks (see Mäyrä 2008a, Egenfeldt-Nielsen, Smith & Tosca 2008) introduce a wide range of viewpoints and practical methods. What the methodological reviews have in common is that they always at some point remind us that the researcher should spend some time playing the games. Playing seems to form a particular method of its own but detailed overviews of how "academic playing" is conducted are difficult to find. To get beyond the loose references to "analytical play", we turn to Espen Aarseth's idea of "playing research". According to Aarseth, there are many valid ways of acquiring knowledge of games, but the central method is playing the game ourselves. For Aarseth, the game needs to be experienced by playing. If not, the research is in danger of misunderstanding the logic, functions and mechanisms of the game. He continues as follows:

> unlike studies of films and literature, merely observing the action will not put us in the role of the audience. When others play, what takes place on the screen is only partly representative of what the player experiences. (Aarseth 2003, 2—3.)

In fact, what Aarseth is claiming here is that whichever method we choose, we have to play the game ourselves in order to understand it. Thus, playing the game is not only a method but also a prerequisite of doing game studies (Consalvo & Dutton 2006). Altogether, here we have an imperative for game studies methodology: *play the game*.

As a research method, playing the game is however a lot more complicated than what it at first glance seems, since it graves for a methodological description of *how the player researcher should play*. Interestingly Aarseth has not so much to say about how we should be playing but on the contrary he describes how we should *not* play. For example, cheating is strictly forbidden when doing playing research: the *cheater* does not respect the game and is not able to keep "the flavor of the game" intact. (Aarseth 2003, 2—3.) To emphasize his point, Aarseth introduces an example how cheat-

ing has hindered him from understanding the essential parts of *Morrowind*. Somewhat paradoxically, Aarseth's judgmental attitude towards cheating seems to suggest that there actually is one particular way the player researcher needs to play. The model-player position is not something defined by the method but instead built inside the game itself.

This train of thought is continued later in Aarseth's (2007) work where the model player is enunciated as the implied player. Inspired by the literary theory of Wolfgang Iser, Aarseth (ibid., 132) addresses the implied player "as a role made by the game, a set of expectations that the player must fulfill for the game to 'exercise its effect'". The basic assertion of an implied player is that there is a ready-made player profile in the structure of the game: the goals and rules, game mechanisms and game interface support the behavior of this implied player. Aarseth seems to suggest that it is exactly this implied player whose role the player researcher must adopt. In its pure form, playing research respects the game and takes it as a learning process. The player may use different strategies and techniques to achieve the goals but these need to be inside the boundaries of the implied player.

Aarseth's notion of implied player and cheating is reflected on his proposition of three dimensions that characterize games and may be used guiding the research: gameplay, game-structure and game-world. *Game-structure* for Aarseth (2003, 2) consists of the rules of the game, including the simulation rules, *game-world* includes, e.g. fictional content, topology or level design and textures of the game, and *gameplay* involves players' actions, strategies and motives. While Aarseth recognizes that since a game is a process there can be no game without players playing, he still highlights the role of game-structure (rules of the game) as a prerequisite of gameplay and game-world. This leads to understanding and analyzing both gameplay and game-world "within the parameters of the stronger or weaker *game-structure*" (Lammes 2007, 26).

What we are able to see here is Aarseth building limits for games as a research subject. For him the processuality of games happens within fixed limits. In the end it is the rule system that grounds the experience of playing and makes it stable. While Aarseth (2003, 3) thinks that these dimensions could be analyzed using a matrix of traditional disciplines (i.e. gameplay is a matter of sociology, computer science would discuss the rule system, and the game-world is the subject of aesthetic studies), Lammes (2007, 26) suggests that a more consistent line of methodology has the category of gameplay as its main starting point while also acknowledging the other two categories.

Now to sum this up, Aarseth's methodology for playing research is based on three poles. First there is a clear prerequisite that the game researched must be played. This is of course given also in the name of the method. The second prerequisite considers the role of the player: there is a certain way the player researcher needs to play and this is defined by the game-structure. Following these two prerequisites, Aarseth's (2003, 5.) claim is that "to show that we understand a game, all we have to do is to play it well".

Playing research in practice

Playing research in practice starts by playing the game and analyzing what the player does. Aarseth (2003, 5) describes playing research as a learning process: the player researcher enters into a hermeneutic loop of the game where the feedback is given instantly during the player's progress in the game. The game is divided into different learning stages and the player's performance provides material for the research. Our playing research starts from *DJ Hero's* basic tutorial level, which the player needs to accomplish. The tutorial is a compulsory stage of the game and it basically introduces every element of the game from the control logic to the system of value (i.e. the purpose and objectives of the game). Before we can start playing, the game controller needs to be set up. This also involves setting up the stand and adjusting it to a certain height. This, as we find out, is the first lesson of the tutorial. "First up you gotta make sure that the turntable-controller is in a place that works for you", the narrator tells us. Images of three different ways to position the controller are shown. The first two images represent the player in a traditional posture: the player is sitting comfortably on the sofa with the controller on his lap (1) or on a table (2). The third (3) picture, however, shows the player standing behind the controller.

Figure 1. Three suggestions on how the player can position herself with the turntable-controller.

While the first two images represent the player as an immobile figure mainly enjoying the game on the couch, the third image shows the player as a DJ in motion cheering up the crowd behind the decks. This is how we choose to play.

As we go forward, the tutorial introduces basic game mechanics that are built around three functions of the turntable-controller: taps, scratching and the crossfader slider. Each of the functions is taught in the basic tutorial lesson that starts in the same way. A representation of a part of a vinyl appears on the screen. There are three color streams going along the tracks. "Now each of the color streams represents a different music source. Those colors match the colored buttons on your turntable", the narrator explains. Controlling the streams means pressing the button on the turntable at the right time. The right time is indicated by the hit zone in the bottom end of the virtual vinyl. When the player presses the matching button on the turntable, a sequence of music on that track is played. Thus, playing music is basically mixing different
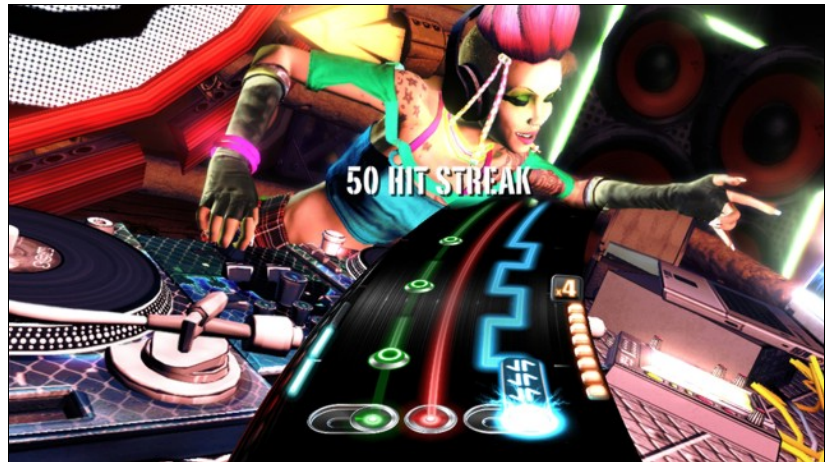
kinds of tracks with breaks, effects, hits or melodies together, as in real turntablism.

The third lesson of the tutorial is about scratches. Scratches are played using the turntable and the three buttons on it. Again the player needs to press the matching button on the turntable when the button on the stream reaches the hit zone. While playing taps is relatively easy because we are familiar with it from other rhythm games, scratching proves to be a bit more difficult. It does not feel intuitive to push the button downwards and move the vinyl at the same time. Also the movement of the hand back and forth is something we have not gotten used to in games.

The next lesson is about the crossfader. The use of the crossfader in the game is quite literally to keep the player on right track. It has three positions: left, right and center. In the screen the points where the crossfader should be used are indicated with a movement of the stream track to the left or to the right. According to these movements on the screen, the player must also move the crossfader. Anticipating difficulties the narrator explicates: "This ain't like modern trigonometry or calculus. This gotta be cool." The use of the crossfader is what we find the most difficult. It is difficult to know the current position of the crossfader without looking at the controller. Second, the crossfader slides easily from the left to the right, and it is hard to know when it is in the middle. We can conclude that there is something new in the controller scheme. Actually, slowly learning to master the controller is the major source of enjoyment in the early phases of the game.

From the logic of control we move to system of value taught in the fifth lesson. The performance of the player is evaluated with a system of stars. The player can get a maximum of five stars from every mash-up in the mix. Basically the player needs to play well enough to unlock new setlists. The Basic Tutorial phase ends with a challenge by the narrator: "Come on DJ, show me that you got what it takes." The tutorial is over and it is time to play for real. We find out that most of the content is yet to be unlocked.

The first stage of the learning process is over and we advance straight to the first mix. We both participated collectively in the tutorial part but as the first beats of the mix start, it becomes obvious that only one of us can play at a time. Tero gets to start and soon realizes that while during the tutorial it was easy to assimilate the workings of the turntable-controller as long as the functions

were separated from each other, mixing the functions together during play is a whole new game.

> *Olli:* So what's your first impression?
>
> *Tero:* Mmm...
>
> *Olli:* What are you saying?
>
> *Tero (pauses the game):* What were you saying?

It seems that playing the game takes a lot of concentration. A lot depends on the sensomotoric reflexes and the hand-eye coordination. The player tries to move hands as fast as possible on the controller adjusting the crossfader, scratching and trying to hit the right buttons. Playing is clearly a bodily process: soon we are sweating from the armpits. After we manage to "play" each of the mixes on the first setlist through, the first achievement, "Graduation", is unlocked. We continue playing different setlists loving the mashups ranging from Marvin Gaye's "I Heard It Through The Grapevine" vs. David Bowie's "Let's Dance" to Vanilla Ice's "Ice Ice Baby" vs. MC Hammer's "U Can't Touch This". The further we advance in the game the more setlists are unlocked. This seems to be what the game is all about: mastering the control logic and playing music. After the tutorials, the player is left on her own. There is no frame story, no lengthy cut scenes or complex dialogue trees to carry the game further. The player plays setlists in order to achieve stars and achievements and unlock new setlists, characters, arenas or additional gear for the game characters. And that is it.

Playing the game as a main starting point has lead into interesting results. Instead of getting answers, it seems we are opposed to questions and problems in three levels: the game, the player and the context. The first question concerns the limits of the game. Aarseth is quite plainly saying that gameplay happens in a gameworld within the rules of the game. This however is immediately questioned in the very first lesson of the *DJ Hero* basic tutorial, as we as players are asked to set up the turntable-controller. Finding the right position for the turntable-controller is not something that happens inside the gameworld (at least in the sense Aarseth seems to understand it) but it rather takes place on a sofa or at a table. Furthermore, there are no strict rules for the correct position – "whatever works for you", says the narrator.

The second question concerns the role of the implied player. There are two of us playing, and already during the tutorial phase it becomes obvious that we have different styles of playing and throwing oneself into the game.

> *Olli:* Is it OK if I try that set once more? If I get that tricky part right I'm pretty sure the next setlist is unlocked.
>
> *Tero (browses the menu):* Whatever. You can actually activate all the setlists with a push of a button under the cheats section.
>
> *Olli:* Oh, is that a built-in feature?
>
> *Tero:* Indeed, you just need to insert a simple code and that's it. You can also do some other nice tricks like change the color scheme etc.

As we observe at some point, in the case of *DJ Hero*, cheats are a built-in part of the game-structure. There are good reasons to argue even in a larger scale that cheats are not only something created by players, but they are actually an essential part of the game

product (cf. Consalvo 2007, 61–62). This poses a question for us as researchers: are we as researchers now obliged to cheat? If we exclude the cheats, will we miss something? Interestingly, it seems to be the game itself that contradicts the purity of playing research.

Thirdly, there is something peculiar about the audiovisual representation of the game that does not meet the player's eye. While a lot of things are happening on the screen, the player researcher does not have time to analyze anything thoroughly outside the immediate hints needed to succeed in the game. Simply put, we are glued to following the color streams and trying to match them by vigorously pressing and moving the buttons. Still, reducing it to those sequences would not make justice to our experience. While the game makes very little effort to contextualize the player activities (at least after the tutorial), we still feel like DJs. This is mostly up to our ability to connect the activities to the larger cultural context. When we play DJ Hero, we constantly play with objects that are part of DJ culture. The remixes have been made by real DJs. The turntable-controller simulates an actual turntable. Along with fictional characters, we can play with real DJ characters, such as Grandmaster Flash. We would argue that the process of meaning-making in the game relates strongly to such cultural knowledge that cannot be gained purely inside the clearly defined gameworld. It is the sampling between the game and culture that produces the back story for the game. This linkage is very difficult to open with playing research that does not exceed the limits of the immediate interaction between the game and the player.

Beyond playing research

Paul D. Miller, also known as DJ Spooky, has aptly said:

> best DJs are griots, and whether their stories are conscious or unconscious, narratives are implicit in the sampling idea. Every story leads to another story to another story to another story. (Miller 2004, 21.)

It is "the sampling idea" in whole that we think Aarseth's notion of playing research mostly misses. It seems that Aaseth's formulation of playing research is too bound up to the strict definitions and inabilities to seize a context that is outside the physical relation between the player and the game (software and hardware). From this stance we will in the following present three critiques against the traditional understanding of playing research.

Our first point of critique is this: *Aarseth's model of playing research understands games, gameplay and gameworld as relatively fixed entities*. Even though Aarseth accurately defines the game as a process, he does not take this conceptualization far enough. He proposes that "game is a process rather than an object" and because of this definition "there can be no game without the players playing". This leads him to conclude that since "games are about controlling and exploring a spatial representation [...] the game must take place inside a clearly defined gameworld" (Aarseth 2004, 2). This, however, seems an inadequate understanding of a game as a process. To clarify the point, we need to take a step backwards to where we started our research process: in order to play we needed to download updates for the game and the console. How do the updates fit in the picture of a "clearly defined gameworld"? Are they a part of the game or are they something that needs to be ex-

cluded from the playing research? The same applies to downloadable content: downloading "David Guetta Mix Pack 01" adds three new tracks to *DJ Hero*. Although the concrete changes may be small, it is clear that after the updates the game is not the same anymore. So which version of the game should we actually study?

The second critique emanates from the first but discusses the role of the player: *there are different ways of playing and different kinds of players*. This critique is targeted against Aarseth's moral stance for cheating and also for his evaluative stance which at least implicitly claims that the researcher also needs to be a good player. Obviously, we are not alone here. Especially Julian Kücklich (2007, 13) has elaborated on the link between the cheater and the researcher. According to Kücklich, cheating should not be seen only as means to an end but also as a tool to gain insight into games and their mechanisms. In our case, cheating as a methodological tool is interesting for at least in three levels. First, as discussed, cheat codes are built inside the code of the game. Second, there are external cheat programs and cheat objects such as modifications that transform the game. Third, a variety of strategy guides and walkthroughs for the game exist. Why should the researcher be interested in these aspects? The first answer is related to the first critique: to show that the game is far from a fixed item. The second answer affirms this from a different angle. Cheats indicate that "playing" is also far from a rigid concept. Rather, there seems to be a variety of different understandings of the character and limits of this activity.

The third critique of playing research is connected to the cultural context of *DJ Hero*. As discussed earlier, the narrative of *DJ Hero* is very deeply "implicit in the sampling idea". In other words, in order to make sense of the gameworld we need to turn our focus to the connections between the gameworld and the surrounding culture. Hence, the third critique towards playing research evolves around the themes of situatedness and reflexivity (cf. Lammes 2007, 27). To put this bluntly, when a researcher examines material by playing, her position is always culturally infected. This results in understanding the objectivity of research as partial objectivity where the results emerge in a certain context. The player researcher is further affected by the technologies, practices and softwares she is involved with (Taylor 2009, 336). Indeed this also goes for the game.

Here we can follow Donna Haraway (1988, 592–593), who has criticized the tendency in science to reduce everything into "a resource of appropriation". Understanding the world as a resource degrades the role of the world as an actor and overemphasizes the role of the researcher as the producer of knowledge. Understanding the research material as an actor rather than an object affirms the role of the material as a cultural product and situates it into a wider context. In this sense the game itself is a part of the process of producing knowledge. As well as situating the player, we need to situate the game. Thus, the argument of our third critique is that *the researcher cannot exclude the cultural context of the game but quite the opposite, the cultural context should be articulated in the research process*. What follows is the understanding of *DJ Hero* in the context of both DJ culture and the genre of music-and-rhythm games that implicitly give the game its particular character.

Rewind – back to playing

We continue from the observations made during the tutorial and start playing again. This time the focus is on the larger contextual frames that make our activities as players meaningful. These days practically everyone has an intuitive idea of what a DJ does, but the details of the art of DJing are not as widely recognized. In his meticulous reading of DJ culture, Poschardt (1998) points out that the basic techniques of DJing emerge from novel innovations among the pioneers of the art. As *DJ Hero* aims to simulate the experience of a disc jockey, in the following we will focus on examining how these basic techniques are incorporated in digital play.

As explained earlier, the controller scheme imitates the operations of a turntable and a crossfader. One of the basic challenges posed to the player is to master the art of scratching. Basic scratching requires the player to move the vinyl continuously back and forth with one hand and a successfully performed scratch produces a distinctive scratching sound familiar from hip hop music. The history of scratching as a basic DJ technique can be tracked back a few decades. It is not a coincidence that the tutorial section of the game is narrated by the DJ legend Grandmaster Flash, also known as Joseph Saddler. He is widely appreciated as the inventor of modern DJing and often credited for various innovations – including scratching – that for the first time made the turntable become an instrument.[42] Thus the player is in capable hands, so to speak.

The basic scratch technique included in the game is also known as "baby scratch" because it does not involve the use of a crossfader. In real turntablism most of the scratches are made with the help of a crossfader that is used to select what is played and when. What we witness here is a simulation at work: a set of operations is replaced with a less complex system that retains some of the characteristics of the original (Frasca 2001). As Klevjer (2002) felicitously puts it, a game functions by establishing "a characteristic analogy between the player-machine-relation and the player-world-relation". While the ease of scratching may upset some of the DJing enthusiasts, most of the players, us included, find the task enjoyable and challenging enough.

Another classic technique introduced by Grandmaster Flash and other pioneers of DJing is the one of back spinning. In this maneuver, the vinyl is manually forced to spin backward in order to rewind the sound to a previous point in the musical piece. In the club environment the DJ uses rewinding to replay a particularly popular song or some parts of it.[43] In the game, the rewind feature is activated by spinning the vinyl platter 360 degrees. Successfully implemented, this takes the player a few phrases back and lets her replay a selected section of the song. Rewind is often activated to hit a particularly tricky section in order to amass a maximum amount of points. Once again, the complex skill of back spinning is reduced into a more easily adoptable task. The player does not need to worry about finding the exact right place in the vinyl but a simple spin of the platter is enough to do the trick.

As the aforementioned examples indicate, the game succeeds in mapping some of the basic DJ techniques in an intuitive and satisfying way.

[42] It is of course impossible to trace these innovations to one person or historical moment but Flash was one of the pioneers and introduced various techniques for a wider audience.

[43] A similar technique based on having two identical copies of the same song was already in use in the Jamaican sound systems.

Tero: So do you feel like a DJ when you play the game?

Olli: Sort of... I guess. I like doing tricks I could only dream of with my real turntable. At the same time I miss the opportunity of hand picking the music and seeing the effects of the chosen set in others.

While the most popular rhythm games like *Guitar Hero*, *Rock Band* or *SingStar* are based on licensed hit tunes, the musical selection of *DJ Hero* consists of an entirely fresh playlist of mash-ups. Mash-up refers to a tradition of musical tunes created by blending two or more songs together. The 93 exclusive mash-up remixes are created by well-known DJs specifically for the game. Some of the tunes are really excellent, and the effort put on making the score needs to be appreciated. Once incorporated into the game, the radical potential invested in remixing is, unfortunately, mostly missed. As players, we are not really allowed to toy around with the music but basically end up recreating the existing compositions. Similar to other recent rhythm games, the music-making is almost entirely tabulated by the game (Svec 2008).

The implementation of sampling, another central DJ technique, highlights the game's pretty conservative commitment to pre-existing music. In the case of DJ culture, sampling refers to the act of taking a snippet of music and using it in an entirely new context. Normally the samples are loaded in the sampler and during a DJ set they are activated by pushing the effect buttons. In *DJ Hero*, the player can select between a few pre-programmed samples, but the benefits of using samples are somewhat unclear. In addition, the player cannot record or download her own samples, and therefore the effects turn repetitive and annoying relatively soon.

Altogether, instead of freely experimenting – in other words, playing – with the cultural materials, we are asked to faithfully follow the remixes created by others. This does not mean that playing in itself is not entertaining or challenging. The association with DJ culture has apparently set our expectations a little too high. Anyways, the situation encourages us to dig a little deeper. Why are we not allowed to become sovereign *DJ Heroes* with our own remixes?

First of all, it would obviously be foolish to ask the game to replicate all the nuances of the real world activities. It is important to make the game approachable and to adjust the learning curve so that a variety of players can pick up the game and quickly see their advancements. Learning the real-world DJ tricks can very well be compared to mastering any musical instrument. In this respect, anyone who has once listened to a novice violin player, understands what a blessing it is that the *DJ Hero* players do not have a free hand in executing their ideas.

Nevertheless, the reasons for the very particular way of simulating the DJ's relation to music should not be reduced to the players' abilities. The ability to freely remix musical sources would immediately activate the issue of intellectual property. Most of the creative investments of the players would most probably fall under the category of a derivative work and they would be subject to the copyrights of the original work's copyright holder. Under the current copyright laws, no game developer or publisher would be able to clear the copyrights to the productions of players. In the past years, the foundation of the present copyright regime has been questioned from a variety of perspectives. With the emergence of new forms of digital media production and social media, cultural

materials become increasingly "amenable to modification, remix, and circulation through online networks" (Lange & Ito 2010, 247). Lessig (2008), one of the most vocal proponents of "remix culture", describes a society which allows and encourages derivative works as a desirable ideal. Following this line of thought we can see that *DJ Hero*, inspired by the pioneering sampling techniques of hip hop culture, is thematically a keen protagonist of remix culture. At the same time the actual operations available for the player remain conformable to the conservative interpretation of the copyright. In this respect the game functions as a good example of how the larger economic issues can have very straightforward effects on the in-game settings.

The issues discussed above are crystallized in the game controller. Because two turntables would immediately refer to an opportunity to choose and mix between different musical sources, the player of the game is equipped with only one turntable. The second noticeable difference between an actual turntable and the turntable controller of the *DJ Hero* game is due to its relation to the tradition of rhythm games: the vinyl has buttons on it. While parting from playing with actual vinyl records, the three colored button protocol refers to other rhythm games while giving it a variation of its own. In games such as *Guitar Hero* and *Rock Band,* all the instruments have similar colour-coded buttons. Basically they are used to produce melody, harmony and rhythm. This is managed in guitars without cords, frets or sounds, implicating a system of playing music that is indebted to the common instruments but not reduced to them (Arsenault 2008). Now, in this sense the turntable works in a similar way. In fact the buttons refer to different music sources and thus the vinyl on the screen and the vinyl on the turntable actually represent the multiplicity of vinyls, effect machines and other sources connected to the mixer. The music streams may be songs, drum breaks, effects or some other short sequences of music. While the vinyl on the turntable does not rotate automatically, the vinyl on the screen with the color streams does.[44]

Days have passed and we have mainly trained our skills in solitude. Once we meet again, Tero wants to show off a little and chooses one of the most difficult sets to play. While Tero masters his way through the set, Olli watches lazily from the couch.

> *Olli:* Some of those animations were actually pretty cool.
>
> *Tero:* Which animations?
>
> *Olli:* Well... the ones showing the club environment and the audience.
>
> *Tero:* You know what? I have no idea. My eyes were on the streams all through the set.

A few important implications rise from this simple observation concerning the player's perception. First of all, this partly accidental notice shows how the combination of playing and observing can help us to recognize things that may otherwise be missed. Already Aarseth (2003, 7) accentuates that as many sources and methods as possible should be utilized in gathering data about games. The objective of using different methods and data sets should, however, not be limited to that of triangulation, but the combinations of

[44] Another feature that connects *DJ Hero* tightly to other recent rhythm games is called Euphoria. This power is collected by completing specific phrases without any mistake. Euphoria is very similar to Star Power employed in the *Guitar Hero* series, and once successfully collected the power can be released to double the player's current point multiplier.

methods can also be used to produce entirely new findings (Saukko 2003).

Secondly, our discussion reveals something intriguing about the player cognition. The moving color streams seem to require so uninterrupted attention that many other things happening on the screen are entirely missed by the player. One way to interpret this, bearing in mind the lack of a career mode or other grand narrative, is that *DJ Hero* represents a sort of return to the early rhythm games like *Beatmania* (1997) or *Frequency* (2001). The player is so effectively sucked to the world of blinking lights, spinning platters and bumping rhythm that everything else seems to have little more than an ornamental value. A conclusion that can be drawn is that the slick animations are not actually designed for the player, but rather to an audience. This further accentuates the difference between *DJ Hero* and other recent rhythm games. Games like *Rock Band* and *Guitar Hero* build strongly on the social aspects of play, whereas *DJ Hero* supports a much more solitary experience. While the game supports multiplayer modes (DJ vs DJ and DJ vs Guitar), even the co-operative mode leads to relatively minimal engagement between players.

The examples examined above indicate how playing research evidently needs to exceed the limits of gameworld and normative gameplay. The game does not only create a world of its own but it is in many ways connected to the traditions directed by real world culture and economics. If these relations have a significant influence on the player's experience, how could we leave them aside when carrying out a multiperspectival playing research project?

Playing with assemblages

Our modification of playing research has shown how we need to go beyond the fixed concepts of gameplay, game-world and game-structure proposed by Aarseth, in order to understand the larger contextual frame of making meaning in the game. Now we will push this still a bit further and also towards what could be a conceptual framework for future studies. As we mentioned in the previous section, *DJ Hero* misses the radical potential of remixing, since it does not actually allow players to do remixes themselves. Players are bound to follow pre-established patterns and only play the readymade mixes. While the software may be relatively closed and based on repetition of the same, a way to experiment with the materials of the game can be found.

As probably most players, we had some difficulties in finding the center position for the crossfader slider. As a result, we started browsing through fan sites and discussion forums in order to find hints and tips to improve our skills. What we soon run up to were guides to modify the turntable-controller. And indeed not only remixing songs but also modifying turntables has been a part of the DJ culture (Poschardt 1998, 359). Following a similar tendency in the culture of digital play (Sotamaa 2009, 91–93), *DJ Hero's* turntable has also been exposed to modifications. For example, Mennie360's mod, posted on many discussion forums, promises an "ultra easy" solution for the crossfader slider problem. Basically Mennie360's mod instructs us to place two big-radius rubber bands around the turntable controller and fix their position with two-

Figure 3. Auto-centering crossfader slider with rubber bands.

[45] The background of the concept is in the philosophy of Gilles Deleuze & Félix Guattari but also in actor-network theory and art studies.

sided tape. The crossfader slider is left between the two rubber bands, which should cause the slider to bounce back to the center position after it has been used. It probably makes no sense to say that with the rubber bands *DJ Hero* is a whole new game, but definitely the simple act of good-old-MacGyverism has changed something.

Modding the *DJ Hero* brings us to the question of assemblages.[45] That is, what are the components and their relation in games and playing research. This we feel is a question that has been implicitly present along the way. T. L. Taylor's article (2009) makes an important opening by introducing the concept of assemblage to game researchers and discussing its relevance in relation to the study of games. According to Taylor (ibid., 332), we can use assemblage to understand how different actors construct the event of playing. The interaction of the player and the software is merely one of the relations that are involved in the event. For Taylor there are co-extensive actors, such as systems, technologies, players, bodies, communities and legal structures, in addition to concepts and practices interacting in the event of playing. Basically what we have already done in the previous chapters is that we have analyzed different kinds of components that are involved in the playing research of *DJ Hero* game. That is, we have taken the game as an assemblage. To open up the concept a bit more we, however, want to use the modded *DJ Hero* game as a new assemblage and break it in parts.

Starting up simple, every assemblage has components and the components are in relation to each other. In the modded *DJ Hero,* we have a turntable controller and the game software on one side and the modification done with tape and rubber band on the other. This is the assemblage we are now interested in. According to Manuel DeLanda (2006, 10), its parts are linked by "relations of exteriority". This means that each of the parts may be detached and made a component of another assemblage. The relation does not constitute the identity for the parts. We can easily remove the rubber bands from the controller and use them for something else, e.g. holding our papers together. This is yet another assemblage where the rubber band is a component.

Assemblages "are characterized along two dimensions" (ibid., 18). The first dimension covers the different roles of the component. These roles vary from purely material to purely expressive and everything in the between. The rubber band is in a material interaction with the turntable controller. Quite simply it is tightened around the turntable controller. But it truly becomes expressive when its capacities to interact with other entities are taken into use in the process of playing. The rubber band's flexibility and ca-

pacity to bounce back to status quo make it possible to automate the movements of the crossfader slider, which have so far depended on the movements of the player's hand. In this sense, assemblage is not only an aggregation of components and their properties but an actual exercise of the capacities (ibid, 11).

Now the question is why should a researcher be interested in assemblages? Why is the rubber-band-modded *DJ Hero* interesting? Does it not spoil the original playing experience? The one that is so important to Aarseth? The rubber band is relevant because it is contingently obligatory. It is not logically necessary or even practically necessary component of the gameplay or the gameworld but it shows how entities considered by Aarseth as sources of non-play analysis suddenly become a relevant part of the game. This is connected to the second dimension that characterizes assemblages.

> A second dimension characterizes processes in which these components are involved: processes which stabilize or destabilize the identity of the assemblage (Delanda 2006, 18).

These processes are called territorialization and reterritorialization.

Territorialization needs to be understood both literally and figuratively. Aarseth's theory of playing research only counts for the former. Taken literally territorialization means taking place, building boundaries for something. This may be a room, a building, a state or a continent. For Aarseth a game sets a gameworld. That is for him a territory with fixed boundaries, and playing research should not exceed these boundaries. The territory in rhythm games is a bit more complex than in many other game types. There is on the one hand the territorial expression of the software: that is the gameworld visible for the player on the television screen. But on the other hand, due to the performative nature, the act of using the controller can also be seen as a part of the gameworld. Hence, the territory of *DJ Hero* includes both the actual spatial location of the player and the game presented on the TV screen. Figuratively speaking, territorialization also refers to processes that are non-spatial and increase the internal homogeneity of an assemblage. DeLanda's examples here are sorting processes in which certain people are excluded from a group based on racial reasons. Thus, the inner homogeneity of the group increases making the territory more strictly bounded, not only due to external restrictions but internal homogenization processes too. Internal homogeneity in *DJ Hero* is built by rules of the game, discourses of the tutorial and synchronizing the sounds with actions of the player, to name a few. It is indeed this internal homogeneity Aarseth wants to affirm by excluding cheats from playing research.

While cheats pose a moral dilemma for Aarseth, he claims that there are also certain related elements in games that could be used in research while not fitting in his rigid mold of playing research. Mods, reviews, walkthroughs, playtesting reports and previous knowledge of the genre fall into this category, and they are seen as sources of non-playing analysis. They merely support the research, which is founded on hands-on playing experience. What we want to call into question is the exclusion of these from playing research and negating them as properties of non-playing. Kücklich's (2007, 358) notion that research-wise, cheats should not only be seen as a

means to an end but also as experiential tools for research stems, as well as for other "non-playing" sources. In fact, one could question what makes them something that could be defined under the category of non-playing? As Kücklich (2007, 362) continues, there has been cheating as long as there has been rules of a game. Moreover, as the example of *DJ Hero* shows, cheats are not something external to games but they are often built inside the game code itself by the developers. Furthermore, during a playing session, players are known to constantly shift their attention between interacting with the game, surfing the web for related information, answering instant messages and other mundane activities (Consalvo 2007; Pargman & Jakobsson 2006). It is increasingly difficult to draw the line between playing and non-playing, as all these activities may take part in our gameplay experience.

The misconception of excluding mods, cheats, walkthroughs or reviews from the playing research is based on not considering the games as an assemblage and more thoroughly missing what DeLanda (2006, 13) calls deterritorialization, the founding process of the dynamics of an assemblage. In contrast to territorialization, the processes of deterritorialization destabilize spatial boundaries or increase internal heterogeneity. Now the point is, we should not understand deterritorialization as something negative, something that breaks the illusion of coherent gameworld and spoils the experience of playing. Nor is it something that is outside the gameplay. In fact many of the games today use deterritorialization as one of their primary processes, as they reach towards the Internet for multiplayer games, downloadable content or software updates. Indeed, even our quest for finding mods from the Internet should be understood as a process of deterritorialization and thus a relevant part of our playing research.

Moving from the rubber band modification towards the larger scale, it should be concluded that defining something as an assemblage is a very flexible categorization. In T. L. Taylor's words:

> Games, and their play, are constituted by the interrelations between (to name just a few) technological systems and software (including the imagined player embedded in them), the material world (including our bodies at the keyboard), the online space of the game (if any), game genre, and its histories, the social worlds that infuse the game and situate us outside of it, the emergent practices of communities, our interior lives, personal histories, and aesthetic experience, institutional structures that shape the game and our activity as players, legal structures, and indeed the broader culture around us with its conceptual frames and tropes. (Taylor 2009, 332.)

While the components of an assemblage cover almost everything from material parts to cultural context, it should not be prejudged as a world-embracing theory. Rather, as Taylor also emphasizes, here the point of considering something as an assemblage is not to create categories or try to force the object into a taxonomy of its components. The main idea is not to distinguish the components but quite on the contrary, to see how they play together: what are the interrelations between different components from technological systems to psychophysical beings and from social connections to digital networks, to name a few. Taking assemblages seriously within playing research allows us to simultaneously consider games as singular entities with unique operational principles, and complex systems with connections to wider socio-cultural contexts. Further, while games are considered singular and unique, this does not

mean that they are stable or fixed. Digital play is a process that changes over time, and playing research needs to respect this change by interacting with it.

Coda

In the past few decades the figure of a disk jockey has become an inseparable part of the popular cultural landscape. What once emerged from the margins has now been commoditized and taken as the hero of mainstream music culture. As the global business around digital play is growing, the same thing seems to be happening to the player. Indeed, DJs today seem to have a lot in common with players of digital games. Over the decades the role of the DJ has changed from a solitary voice in the radio into a social entertainer of live audiences in clubs and events. Similarly, with the advent of music-and-rhythm games, digital play has been brought into the living rooms and social gatherings, and this time the hero is the player. We suggest that it is important for game studies to acknowledge these developments. And what would be a better way to study this transformation of games and players than playing research?

We started our playing research following Aarseth's claim that all we need to do in order to research the game is to play well. We tried our best to play long and well, but over time we realized that mere playing left quite a few questions unanswered. We hope that our extensions to the practice of playing research will allow a more multifaceted discussion of the role of the player in the era of remix culture. With the focus on assemblages, playing research becomes a practice of connecting different actors and seeing what they do when they interact. For those interested in knowing whether we think that playing research is a necessary methodology for the study of games, we would probably say yes. What should be kept in mind is that playing research will most probably not bring solutions to all your questions, and we are not implying that it should. What our example has shown is that playing research can be effectively used to test preliminary hypotheses and to highlight further questions and problems. Since every solution presupposes a problem, playing research is at least a relevant method for any study of games.

Figuratively speaking, player researcher is situated somewhere between the player and the DJ. For us, playing research is about sampling different layers or components of the assemblage together and simultaneously becoming "configured by these technologies and practices" (Taylor 2009, 336). The player researcher is like "an acrobat drifting through the topologies of codes, glyphs and signs that make up the everyday life" (Miller 2004, 88). In this sense, playing research is about creating a mix, "ruthless logic of selection you have to go through to simply to create a sense of order" (ibid., 81). Altogether, while putting the emphasis on playing, playing research should be open to the constantly changing socio-cultural context fluctuating around digital play.

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Chapter 6
by Olli Sotamaa

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Achievement Unlocked: Rethinking Gaming Capital

Game achievements have recently hit the gaming world by storm. Suddenly playing is not only about tackling the challenges posed by the game but for many players it is as much about earning different badges, trophies and accolades that indicate your progress and accomplishments. Currently all newly released Xbox 360 and PS3 titles are required to support the console manufacturer's achievement systems, and both *Xbox LIVE* Gamerscore and *Playstation Network* Trophies are enthusiastically collected by players. Achievements are, however, not limited to game consoles, but PC gamers have as well been trained to achievements. Not only do game services ranging from Valve's content delivery system *Steam* to browser-based flash game sites like *Kongregate* have achievements, but even single games ranging from *World of Warcraft* and *Club Penguin* to the Facebook game *Mafia Wars* have lately introduced achievement systems of their own.

Game achievements are particularly interesting from a cultural perspective, because they seem to arouse strong emotions. Some players, called both "over-achievers" and "badge junkies", become so obsessed about gaining achievements that they no more care about any other objectives in the game. Others could not care less and complain how achievements distract attention from the actual game. This chapter analyses the rationale behind game achievements and connects the phenomenon to the surrounding game cultural frame. While, as for example Henning (2008) argues, play motivations can up to some point help us to understand the different stands on achievements, a larger perspective is needed in order to further explain the uses of game achievements.

The alternative starting points I will here introduce consist of the theories of collecting and the idea of *gaming capital*. The desire to accumulate game achievements has its connections to the activity of collecting. It is, however, somewhat questionable how well the collection can be defined in the case of current game achievements. In this respect, the history and theories concerning collecting and collections can help us perceive the shortcomings of current achievement systems. Gaming capital can be used to explain the inner dynamics of player cultures and their relation to the game industry. This dynamic currency that is gained for example by being knowledgeable and having opinions about games-related things and sharing this information with others interested in games. The chapter introduces and reformulates the idea of gaming capital and uses it to show how the effects that achievements are having on the culture of gaming may be more profound than we might first think. Furthermore, the chapter aims not only to dissect analytically what achievements are, but also to provide ideas for diversifying the current scope of game achievements.

What are game achievements anyway?

Game achievements can be seen as secondary reward systems for digital games. They offer optional sub-goals for players who can then earn rewards that are visible to them and often to other players too. (Montola et al. 2009.) As Järvinen (2009) points out, achievements are seldom tightly tied to the fiction of the game, and therefore they can provide alternative meanings for the player actions. Some achievements are unlocked just by advancing in the game while others may significantly alter the rational behind the game and require extensive investments from players. Often developers award players for completing certain parts of the game or for completing particularly difficult tasks. Other times gaining achievements is more up to luck or related to one's willingness to complete relatively absurd tasks.[46]

It is clear that the idea of game achievements is not entirely novel. Most of the games are built on achieving things, and various sports events, for example, include different kinds of certificates. Particular achievement systems can also be identified among popular sports events. *Tour de France*, probably the most well-known annual bicycle race, awards the leader of the general classification with a yellow shirt (*maillot jaune*). The race lasts three weeks, and the racer wearing the yellow jersey can change several times during the race. While the yellow shirt is obviously a hard-sought achievement, it has other functions as well, as it allows other contenders and the audience to easily identify the leader. *Tour de France* also applies the side game aspect, as alongside the overall competition there are three side games with other distinguished shirts: a green jersey is awarded to the leader of the sprint cup, a white jersey with red dots is worn by the best contender in mountain stages, and a white jersey is handed to the best young rider. In addition to this, different sports achievements are also paraded after and outside the particular races or tournaments. Many European football teams have small stars on their shirts next to the team crest. The exact significance of these stars varies a bit, but usually they signify the number of titles the team has achieved in the particular tournament. Similarly, ice hockey players who have won the Stanley Cup (NHL championship) during their career are allowed to wear a distinguished Stanley Cup ring.

Within digital games as well, the idea of achieving something and presenting one's achievements to others goes back quite a long way (Henning 2008). One of the important steps in the development was the introduction of high scores. To my knowledge, the first game to present a high score was *Sea Wolf* (1976). Points and comparing them with other players became important, as the games on coin-op arcade machines could seldom be completed. On the home consoles comparing and verifying scores was more difficult, as the gaming situation was less public. According to Henning (2008) this led to a culture of taking photos of the TV screens presenting the record scores or other crucial in-game moments.

It did not take very long for the game industry to tap into this development. Henning lists quite a few companies that created innovative ways for those who were able to verify they had gained some notable achievements. For example, Nintendo Power gave away T-shirts and stickers for players' high score photos, and Acti-

[46] For more about achievement categories, see Montola et al. 2009.

vision created a standardized achievement system for their entire library of published games. Activision awarded players with game specific sew-on patches if they could verify that they had achieved particular pre-defined in-game objectives. While some of the current game achievements may be as difficult to reach as their early counterparts, the introduction of automated achievement systems and online profiles has made it much easier to verify and illustrate one's expertise to the global gaming community. In the following, I will examine the particularity of current game achievements and the motivations behind them.

Player motivations and game achievements

In order to explore why achievements actually intrigue players, we will at first need to take a look at different play motivations. In his oft-cited player typology Richard Bartle (1996) identified four different player types: *achievers*, *explorers*, *killers* and *socializers*.[47] At first glance, one could assume that achievements attract particularly achievers. According to Bartle, achievers focus on points-gathering and rising in levels while everything else remains ultimately subservient to this. One sub-branch of this behaviour is *completionism*, which refers to players who want to perform all possible tasks available in the game. It is obvious that game achievements serve the purposes of achievers and completionists, as they allow them to establish practical sub-goals and to measure their progress (Montola et al. 2009). It, however, seems that achievements are not only about achieving in the Bartlean sense. Often achievements also make players *explore* the game world and visit places they otherwise would not bother to. Especially in shooter games, many achievements are connected either to the number of *kills* or the "quality" of kills. In multi-player games certain *social skills* are necessary, as particular achievements cannot be gained without communicating with other players and coordinating tasks together.

From the developer perspective, achievements are important as they can keep players engaged and make them come back to the game (Irwin 2009). The increasing replay value provides extended play time, and players get more value for the money spent (Montola et al. 2009). On some occasions, achievements themselves can encourage completely new play styles and motivate players to change their orientation. As Irwin (2009) points out: "Achievements can also act like traffic cops, directing players toward new features they might not otherwise experience." Probably the most often used example of an achievement that forces the player to completely rethink her strategy comes from the XBLA game *Geometry Wars: Retro Evolved*. This stylized top-down 2D shooter provides a hectic experience with impressive visuals and requires the player to react viscerally to the action. In the basic play mode the player shoots her way through a constantly increasing number of enemies. However, if the player wants to earn the Pacifist achievement she must spend 60 seconds on the enclosed grid without firing her guns even once. This changes the dynamics of the game completely, and the player needs to come up with a completely new game plan.[48]

[47] Several other categorizations, some of them far more elaborate than Bartle's, have been introduced in the past few years. Bartle's basic typology, however, serves my purposes well, as the main focus of this paper is not on play motivations but explicitly on providing perspectives that go beyond them.

[48] Interestingly, the sequel of the game, *Geometry Wars: Retro Evolved 2* (2008), has a complete play mode – Pacifist – inspired by this particular achievement.

The range of achievements is, however, not limited to how they motivate solitary players. As mentioned, in multi-player games gaining achievements often requires playing against other players or cooperating with them. For example the Facebook game *Mafia Wars* has an achievement titled My Little Friend that is earned by gifting a relatively powerful weapon (an M16A1 assault rifle) to a novice player (anyone under level 10). The achievement introduces the gifting mechanic of the game and provides a nice way to welcome the new player to your mafia. The decision may not, however, be entirely simple, as owning the weapon yourself may also benefit you in the game. Achievements that challenge players to alter their goals can also cause friction between players. This happens, for example, in team-based games in which the conflicting interests − when some players in the team want to win the round, but others want to gain an achievement − can significantly affect and harm the experience.

As the historical examples discussed in the previous section already show, game achievements are strongly tied to the social aspects of play. They tap into the competitive elements of game cultures by providing new levels of competition. Achievements also work to make the scope and scale of player activities visible. In this respect they can both entail bragging rights and operate as building blocks of one's player identity. I will come back to this issue after a while, but before that I will take a look at how achievements relate to collections and collecting. Collecting is a common human activity that has in the past decades been of interest to many scholars. In the following I will move on to examine how the theories of collecting can contribute to the study of game achievements and possibly reveal some of the shortages of current achievement systems.

Collecting and game achievements

Several interesting connections between play and collecting can be found. The origins of both the activities can be traced back to the early days of humankind (or even further if we agree that animals can also play and collect). Many contemporary games utilize collection and set-making as a central game mechanic. Examples are easy to come up with, be it board games (*Ticket to Ride*), card games (*Funny Families*), collectible card games (*Magic the Gathering*) or digital games (*Pokemon*). Furthermore, game collections, memorabilia and retrogaming are important factors in the lives of large gamer populations. If we now take a look at the academic studies of collecting, we perceive that such concepts as *addiction* or *flow*, often used in the context of games, importantly figure as well in the theories of collecting (Belk et al. 1991; Carey 2008; Pöyhtäri 1996). This gives a further hint that the activities of playing and collecting may have more in common than we normally notice.[49]

[49] While this article does not allow me to examine the relation of game studies and theories of collecting more thoroughly, the issue would definitely deserve more attention.

At this point, a working definition of *collecting* is in order. Belk et al. (1991) define collecting as follows:

> a form of acquisition and possession that is selective, active, and longitudinal. A necessary condition is that the objects, ideas, beings, or experiences derive larger meaning by their assemblage into a set. (Belk et al. 1991.)

They further distinguish collecting from other related activities, namely *accumulating*, *hoarding* and *investing*. Contrary to col-

lecting, accumulating lacks selectivity and the items associated with it lack unity and defy categorical description. Unlike collecting, hoarding focuses on utilitarian items in the expectation that they may be needed in the future. Finally, investing differs from collecting, as the sole purpose for acquisition and possession is to make profit.

If we now take a look at the collections of game achievements players actively increase, a few observations can be made. First of all, it is clear that there is a connection between current game achievements and the activity of collecting, but the connection may be more complex than it appears at first glance. Often the player's relation to achievements seems more suggestive of accumulating. For example, *Xbox LIVE* Gamerscore is in principle just a number similar to a high score. It gives an idea of how much time and energy the player has spent playing but it fails to tell very much about the qualitative aspects of one's playing habits. Achievements have their connections to hoarding and investing as well. While turning achievements into profit is far from straight forward, achievements are not entirely disconnected from capital. I will come back to this later on when discussing the idea of gaming capital in more detail.

In order to explain why people collect things, Belk et al. (1991) identify two basic motivations: *legitimization* and *self-extension*. Legitimization refers to society's willingness to approve or condone certain behavior. In this respect, collecting is about channeling one's materialistic desires into more meaningful pursuits. If hoarding is associated with possessiveness, greed or selfishness, collecting is often seen to be more about the yearning for knowledge and beauty.[50] Game achievements can serve a similar purpose, as they make the player's development visible and can therefore be used to justify the hours spent playing the game. Parkin (2009) suggests that simply watching a game score slowly increase can often "convince us that what we're doing is somehow worthwhile, perhaps even that we are somehow worthwhile". This brings us to the second cause of action, namely self-extension. According to Belk et al. (1991), gathering and controlling meaningful objects or experiences can work to gain one an improved sense of self. In this respect, it is not far-fetched to claim a connection between the desire to master the objects in collection and the intention to build and alter oneself. In many ways the collector's goal to complete a collection is symbolically about completing the self too. This forces us to take a closer look at the idea of *collection*.

Collection as a point of entry sheds further light to the motivations behind collecting. Pöyhtäri (1996, 12–13), argues that the collector uses the collection to demarcate a special area in the middle of a variety of objects. At the same time, the objects missing from the collection set the collector's remaining tasks. In this respect, the collection both defines the activity and is the objective of it. It is, however, somewhat questionable how well the player can define and select the collection in the case of game achievements. For example console game achievements are pre-defined and highly standardized by the platform holders. While many gamers may set their sites on completing all achievements designed for some particular game, it seems relatively difficult to become with a fresh thematic collection, for example. Often

[50] For example, collector events (antique fairs and auctions) or specialized magazines are popular ways of cultivating ones activities. It is also worth noticing that institutionalized collecting (museums, art collections etc.) is these days unanimously considered to be an invaluable part of our culture.

players cannot entirely delimit which achievements they collect, as some rare achievements cannot be acquired without first passing some easier challenges that accumulate the collection with less rare achievements. In addition to this, players often gain easier achievements without this being their intentionally chosen goal.

Game achievement systems applied by platform holders and service providers normally operate by making player behavior quantifiable. For example, in case of Xbox retail games, the total number of achievement points has to add up to 1000. This mandatory rule imposed by Microsoft makes possibly very different games comparable with each other. The number of achievement points can normally give a rough estimate of one's skill and investments. It is, however, clear that some games and some achievements are still more appreciated than others. A notorious example of cheaply gained achievements is the case of THQ's Xbox 360 game *Avatar: The Last Airbender – The Burning Death*. No achievement guide fails to mention this game, as all the 1000 points can be achieved in two minutes by pressing one button over and over again. In the other end of the spectrum we can found extremely laborious and rarely gained achievements, like the Little Rocket Man of *Half-Life 2: Episode Two*. This particular achievement is collected by carrying a garden gnome throughout the entire game and eventually sticking it into a rocket that takes the gnome to outer space. Obviously, any gamer who has spent several hours to achieve this otherwise entirely pointless achievement would like her profile to communicate this to other players. However, even after launching a new user interface a year ago, *Xbox LIVE* presents only a list of achievements by game but it does not allow the player to reorganize one's collection or to highlight particular (rare or otherwise significant) achievements. Online services like *Mygamercard.net* or *Raptr.com* allow players to fine-tune their profiles a bit more, but even they are obviously not designed with collectors and collections in mind.

In order to better understand the many functions of game achievements, I will in the following turn to the idea of gaming capital and further discuss what game achievements can reveal us about the dynamics of contemporary game cultures.

Gaming capital

Gaming capital, introduced by Consalvo (2007), is an attempt to understand how players relate to and interact with "games, information about games, the game industry, and other players". This highly flexible and contextual currency can be gained by being knowledgeable about games, and it can be exchanged with other players. Gaming capital highlights how gaming does not take place in a vacuum but gets its meaning in a larger game cultural frame. The concept further offers a way to examine the network of player activities together. The ways of gaining gaming capital are not limited to playing games but the games-related productive activities that are appreciated in the player's social circle can as well become sources of gaming capital (Sotamaa 2009).

Consalvo discusses gaming capital mostly as a reworking of Bourdieu's *cultural capital*. In the case of game achievements, this perspective may, however, be too limited. Therefore we need to fur-

ther examine the different forms of capital and their interrelationships. In their examination of gaming capital, Walsh & Apperley (2008) point out that Bourdieu actually describes four kinds of capital: cultural capital, symbolic capital, social capital, and economic capital. It is possible, even at the risk of oversimplification, to briefly explicate the different forms of capital in relation to game achievements.[51] Cultural capital consists of the knowledges, competencies and the dispositions of the individual; this is exactly the form of capital the game achievements communicate in the first place: what kind of games you play, how much time you spend playing and how skilled player you are. Symbolic capital refers to the institutionally recognized authority; in this context, players can, for example, evaluate the credibility of a game reviewer by checking the number of achievements she has acquired. Social capital is all about connections, about social relations and access to the cultural communities and networks; particular gaming communities can define their member requirements based on achievements, and the hunt for particular achievements can also define the social dynamics of player groups. Finally, economic capital consists of the resources and commodities that can be translated into money; while game achievements may not have a direct monetary value, they surely have their connections to market capital.

Game achievements may have a notable economical significance even before the player has earned her first trophy. The opportunity to accumulate one's gamerscore may be a big enough reason to buy a cross-platform game to one particular system instead of another (Parkin 2009). The economic aspects of game achievements are, however, obviously not limited to their capability of contributing to individual consumer choices. Malaby (2006) points out how players and other actors are able to transform or, in his words, *parlay* forms of capital in current online worlds. In these environments, social capital is no more only a resource for social action, but it can as well be used to cultivate economic capital. Thornton (1996) argues similarly that while subcultural capital may not automatically convert to economic capital, the members of the subculture and related cultural industries can find ways of benefiting financially of being "in the know".

Gaming capital is highly dependent on the so-called *paratexts* that emerge on and about games and become to importantly define the game cultural activities (Consalvo 2007). These games-related communications and artefacts can be either industrially produced (guidebooks, mod chips etc.) or created by players themselves (FAQs, walkthroughs etc.). In relation to game achievements, commercial entities have found it profitable to commodify elements of game culture (e.g. detailed knowledge of acquiring achievements) and sell them back to players as desirable forms of gaming capital (e.g. game strategy books and achievement guides). At the same time players themselves provide chargeable services for those who have no time or skill to earn the achievements. This is very similar to real-money trade of virtual items or "goldfarming" familiar from online worlds. Whenever you check out *Ebay*, you can find a list of game achievement auctions. Often service providers promise to start the work right away after the bidders have provided the account details. While platform holders have stopped some exploits and in some cases nullified individual players' achievement collec-

tions, there are always players for whom the temptation is irresistible. As one of the sellers crystallizes: "When I am done [...] you'll be able to play and show off to your friends your achievements and gamerscore."

Thornton (1996, 10–14) argues that traditionally subcultural capital is coded in the ways that it confers status only in the eyes of the beholder who is initiated into the particular subculture. While game achievements may still hold a somewhat subcultural status, they at the same time work to make gaming capital visible in concrete new ways. Game achievements make a player's investments and skill measurable in a new communicable way. As mentioned, this can help players when they define their personal goals. This is very similar to collecting, as collectors set certain goals and "set completion provides them with an easily identifiable and measurable way of obtaining those goals" (Carey 2008, 344). At the same time, game achievements make games comparable with each other by providing a common measuring rod. In this respect, game achievements can push the gaming experience beyond a single game and potentially build bridges between very different gameplay experiences.

The effects of game achievements are not limited to making forms of gaming capital quantifiable and more visible for players themselves, but achievements are also actively employed in amplifying the visibility of digital games in other domains. Currently there are several online services – such as *Mygamercard.net* and *Raptr.com* – that collect players' achievement points from different platforms and create a public player profile based on this information. Furthermore, different applications automatically embed players' latest achievements in their blog postings, Facebook statuses, Twitter tweets and other forms of digital communication. As game achievements push their way to these communication platforms that are not only reserved for active gamers they make one's playing hobby visible to non-gamers as well. It remains to be seen what are the long term consequences of this development, but tentatively it seems that achievements can for their part make game culture not only more visible but also more accessible and more acceptable.

Discussion

My brief overview suggests that game achievements can have a few notable effects on the dynamics of game cultures. Achievements build new levels for the game experience, as they invite players to such activities as metagaming and collection building. They also indicate a need to refocus our attention from individual games to larger ensembles of platforms and services. As discussed, game achievements can further extend the visibility of game cultural activities outside the domains reserved only for gamers.

Explicating the various roles achievements have within game cultures provides an opportunity to evaluate the quality of current achievement design and pinpoint potential new forms of accomplishments that can diversify the scope of achievement systems. Game achievements turn the intangible gaming capital into a measurable and communicable form. As Järvinen (2009) points out, this happens mostly by defining the achievements by quantitative

[52] PS3 game *LittleBigPlanet* provides an interesting take on the relation between player production and game achievements. The game allows its players to design and share levels of their own. Some of these levels exploit the PS3 trophy system by offering an easy and quick way to earn a list of trophies the player would most probably not earn from the pre-designed levels.

means the computational system can calculate and keep track of. This requirement significantly delimits the creative design of game achievements. Järvinen further ponders the potentials of more qualitative achievements that could, for example, "relate to a certain style of play, or to something recognized by peers". *World of Warcraft* has already introduced "out-game achievements" that may require the player to attend a fan convention, for example. While the idea of peer-acknowledged or created achievements has every now and then been mentioned, we have so far not seen too many concrete implementations.[52]

As I have tried to show, current game achievement systems do not very well fulfill the many pleasures associated with collecting. This is not only up to the design of individual achievements, but serious challenges can be directed towards the service design as well. Altogether, players obviously have various uses for achievements, but the current platforms and services succeed in supporting only some of them. More flexible services that would allow players to present their collections and player identities in creative ways could still significantly amplify the power of game achievements. The equation is, however, far from a simple one, as gaming capital is highly contextual and constantly changing its form and focus. As Consalvo (2007, 184) points out: "There's also a struggle here, as players, developers, and interested third parties try to define what gaming capital should be, and how players should best acquire it."

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TRANSFORMATIONS
IN BUSINESS AND DESIGN

Chapter 7
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Ten Questions for Games Businesses: Rethinking Customer Relationships

This chapter is a compact outcome of the research conducted in the *Games as Services* project in the Helsinki Institute for Information Technology. During the project we were engaged in multiple research activities: we developed prototypes, participated in survey development, worked with scenarios, and performed literature analysis. These research activities varied in terms of methodology, scope and outcome. In addition to the formal research activities, we were exposed to numerous game business related insights, conferences and expert observations during the project. We decided to synthesize both formal and informal findings into a list of ten questions for games businesses. We chose this kind of dissemination format because we believe that these questions would be an easy and effective way of transferring knowledge to a wider audience.

The core ideas presented here originate mainly from a study of game industry in the perspective of marketing sciences, and especially considering the service dominant logic. In addition, the chapter is influenced by theories and findings in management science in general, game studies and various media industry analyses.

The list of questions is inspired by the rapid and structurally significant changes taking place in the media domain in general and games business particularly. This change is an Internet-driven phenomena. Digital distribution, online gaming and social gaming are key manifestations of this transformation. Games are often considered as products. This is logical if we consider how traditional boxed video games appear on store shelfs and how people are used to buy these boxes. However, modern digital games almost always have some kind of an online component, which means that the thing that comes in the box is just a part of the total experience. Because of connectedness, it also makes sense to consider games through service metaphors.

The chapter is not a comprehensive list of game service related business topics. The goal of the chapter is to provoke new thinking and to function as a stimulus for game companies in order to perceive game development projects in alternative ways. It is common that managers in game business ask questions such as: What is our business model? Who is our primary target group? Which platforms are we targeting? These are important and fundamental questions, and the following ten questions apply only after there is some initial understanding on them. Then again, they might already define a sandbox for your game business, which can significantly limit its potential. In any case, we hope that these ten questions might help you break out of the sandbox you may be operating in, open up your thinking and figure out how you can do better game business by focusing more on customer relationships and creating good play experiences, instead of just delivering game products.

1. How can we sustain player relationship?

In the advent of new media landscape, independent of physical distribution, it is becoming evident that the value in games business is bound to the dynamics of the relationship between the game – or the game provider – and the player. Previously it has been important to attract players to buying the game. This has been the primary business logic and main monetizing activity. In the future, it will be more important to sustain the player relationship in order to gain higher aggregate benefits in a longer run: monetizing can take place along game playing and in multiple ways.

This kind of thinking is analogous to service dominant logic and the get-keep-grow model embraced by marketing science (Grönroos 2006). Whatever the model, the core message is that you can gain greater business benefits in a long-term customer relationship than by focusing on maximizing immediate gains. Most of the current game business success stories already follow this rule of monetizing in a long run: *World of Warcraft* utilizes subscription model, *Sims* is utilizing expansion sales, and Zynga is monetizing in Facebook with virtual assets and advertising schemes (Zynga 2009). These are examples of highly successful game companies, but long-term customer relation can as well be applied in small game companies.

Anyway, it is easy to believe that a long-term player relationship is beneficial for the business. It is much harder to implement a game system which can enable and embrace such a long relationship. A customer relationship based on games can be created in multiple ways. The following list describing the different types of services is adapted from Lovelock's (1983) work on service models:
– Is the nature of the service act tangible or intangible?
– Is the nature of delivery continuous or discrete; availability of service?
– What is the relationship between membership and service organization?
– Is there a contact person, and how much can she exercise judgment in meeting individual customer needs? How much can service be customized to individual users needs? Are there fluctuations in demand and supply?
– What is the nature of interaction: does the organization come to customers or vice versa, or is the service computer-mediated entirely?

We hope that this list provokes new ideas on how you can approach your game business as a service business. It is quite rare for game companies to have a human service interface. But for example Sulake is doing just that in *Habbo*, where human workers have a fundamental part in guaranteeing safety and new-user migration. Or perhaps you might want to utilize crowdsourcing for providing service interfaces. Creating artificial fluctuations in supply and demand might sound ridiculous, but it might actually create intense sessions and provide totally new type of social game experiences in your game. Overall, you can be very creative when organizing your customer relationship. The best option is that the relationship modes and your game logic go hand in hand. Your customer relationship is a part of the total game experience.

2. Are we a project organization?

If you search game management books in Amazon, the first result of the search is a book titled *Game Development Essentials: Game Project Management* (Novak & Height 2006). Similarly, an academic paper by Petrillo et al. (2009), which analyzes game development post mortems, ends up discussing items that are all somehow related to the project-based nature of game development. These examples show that the conception of game development as project-based business is deeply rooted. Then again, successful game titles, as those mentioned in the previous section, have required many more development hours after their release than before the release. In such a situation, the game development should not anymore be perceived only through project metaphors. Project-based approach is and can be useful, but it is equally important to look what else there is – to perceive game development through processes.

There was an interesting categorization of games presented by Mark Chen during a panel titled as "Mangle of Play" at the *Digital Media Literacy Conference 2010*. Chen said that there are two kinds of games: those that are developed once, end up in the sales bin two months after the release and become forgotten in a year, and then there are games that keep on growing and improving. This is of course quite a rough categorization, but it illustrates how success in games business often goes hand in hand with iterative development and long-term commitment to the game product.

Traditionally media – books, music and videos – have a launch date, after which the content stays the same. Then again, in software engineering there can be hundreds of updates for a system,[53] and practically each update is an integral and incremental part of the original product. In this sense, modern games resemble software engineering rather than traditional media. Updates are needed, and they are often incremental. The life-cycle of a game is not peaking only in release, as the game can continue selling for years and years.

Furthermore, managing and monetizing a customer relationship is demanding task, and if your business relies on long-term relationships, your processes should be aligned accordingly. A project-centric organization might have problems in adopting processes required to deliver high quality long-term customer relationship services. There is a long list of continuous tasks that game development companies need to manage: moderation, security fixes, new content creation, extensions, user help, forum maintenance, viral marketing campaigns, and user-generated content support and revision. Overall, the total effort required to maintain these tasks might exceed the efforts required to perform the initial game development. And in such a case your company is more a process driven service organization than project organization.

This is a fundamental structural change within any company. Each organization is unique. The service organization dynamics are cyclic, iterative, process-oriented and customer-centric. Project organizations have a deadline in mind.

[53] For example, there have been more than 1000 release versions of *Linux,* and probably a similar amount of *Office* updates.

3. Is the game really our core asset?

Traditional game companies are all about developing a game, and the quality of the games the company produces is the single most important parameter for determining the success of that company. According to business strategy literature, the purpose of a company is to create sustainable competitive advantage (Porter 1985), which can be achieved by utilizing one of the following strategies: cost leadership, differentiation or focusing. A company can develop sustainable competitive advantage by utilizing its core competencies and core assets. According to a resource-based view of business strategy, the non-core assets and processes should be optimized or out-sourced. If a company wants to be sustainable and successful, these things should be considered. Hence, according to business strategy, if you are developing games, you should ask whether you are a cost leader, produce clearly distinguishable games or focus some area that others are not focusing. If you cannot clearly explain how you are doing any of these, then you should look further. Perhaps your core competence is not in traditional game development, but rather in some support function for development or only in some part of the development process. In any case, you should focus on what you do best.

Usually a game company takes care of idea creation, concept development, the actual game development and game testing. In the case of a game company that manages also customer relationships, a new set of tasks is added to this list. Ultimately, we have a long list of processes, which all basically require a unique set of assets and employees in order for the business to perform in an optimal level. In such a case, it might be relevant to think that the game business could either refocus on managing a smaller part of the game cycle, or outsource some functions in order to concentrate on the core competencies. In addition to the actual game development there are numerous core competencies that game businesses can focus on: the utilization of existing customer relationships, customer relationship management and monetization, creative agility (creating new IP, evolving old IP), technological assets and skills, unique media assets, and partnership management.

Often a game company has a creative atmosphere and individuals in the company are focused on creating works of art. Maintaining creative atmosphere while focusing on some other competence than game development can be challenging, and restructuring should be performed keeping this thing in mind. New companies are emerging in game markets that take care of the horizontal parts of game development. This was clearly illustrated at the *Game Developers Conference 2010*, where practically all the contestants in the GameBeat "Who's Got Game" competition between start-up companies were something else than traditional game development companies.[54]

In case you decide to be a traditional development company, you should pay serious attention on how to outsource parts of your development, and with whom you should partner with. Developing a game from scratch using only in-house resources is probably not the optimal way to operate in today's games business.

[54] "GamesBeat@GDC Announces Startup Competition Finalists" http://www.gamasutra.com/php-bin/news_index.php?story=27471

4. Do we really need financing?

For most independent game developers the major bottleneck in realizing the game is securing the financing for the game. In a traditional development model, the pinnacle game titles – usually referred as AAA-titles – can have budgets reaching as high as 30 million euros, and even minor titles for PC and consoles usually have budgets of several millions of euros. Most of the independent developers really struggle acquiring funding, and traditionally the funding phase in game development may take years.

A game company focused on creating games that enable sustainable customer relationships might approach the financing in a different way. The cyclic and iterative nature of service business and the media landscape where a company can utilize several parallel monetizing mechanisms mean that the company may be able to generate some revenue early on during the development and bridge the financing gap.

Financing in games business is a doubled-edged sword. The distributor provides funding for the game development and secures enough time and resources for completion of the game development project. This is traditionally considered as a necessity for creating high quality games. At the same time the distributor takes some control in development, sets limits for the project management, takes care of the distribution, and eventually owns the customer relationships. Loosing customer relationships may mean that you loose you chances for sustainable competitive advantage.

Surviving in game development without financing is a hard task. There are some strategies for developing a game without initial funding: aim to launch with a core functionality only and for a specific customer group, create innovative incentives and compensation structures for employees, engage a pilot test player group already during the development phase to get early insights and potentially some early revenue, and form new types of distribution and financing partnerships.

Distributors are the primary financing organization for game development. However, modern game businesses focusing on strategies that can create long term customer relationships and continuous monetizing are potential targets for venture capital funding. In addition, many countries, territories, as well as public and art funds offer soft money for game development. Hence, you might come to the conclusion that developing the game without external financing is impossible. Still, utilizing strategies which minimize the financial requirements may turn out useful while negotiating for a better deal with a funding party, finding a new financing source and ensuring that the role and rights of managing customer relationships stay within the development company. The company organization and processes, customer relationship ownership and management, company core assets and financing structures are all integral and interconnected parts of a company's strategy. You need to have a comprehensive idea of all these aspects in order to formulate a solid novel game business plan which ensures that your company can achieve a sustainable competitive advantage.

5. What is the outcome of playing our game?

Conventionally, playing has been perceived as a leisurely activity, a counterpart for seriousness. Alternatively you can claim that, as any activity, every game has some outcomes. Exploring the range of outcomes that a game can produce might be helpful for a game company, because outcomes can be utilized efficiently in marketing and have significant impact on the long-term game playing experience. Ultimately they also help in building your customer relationships.

Serious gaming is a domain which is exploring the functional uses of games. Gaming has been utilized as an interaction mode for example in education (edugaming), exercising (exergaming), group work and simulation. Furthermore, research is showing how games can be used to decrease depression (Blanchard 2010), improve eyesight (Motluk 2009) or solve uncomputable problems (Dartnell 2008). According to Jenkins (2008), playing is actually one of the twelve key requirements of new media literacy. In addition, during the past few years some commercially successful games, such as *Wii Fit* and *Brain Training* by Nintendo, have shown that functional games can be significant business. However, the big potential of serious games is probably still untapped. For example, the organizers of the "Serious Games Summit" at the *Game Developers Conference 2010* were promoting developers and academics to take a more active approach on developing serious games, rather than just experimenting and analyzing.[55]

Then again, lately there has been quite a lot writing about negative outcomes of gaming in terms of game addiction and changes that games cause in players' psyche. Hence, some researchers believe that some games can cause severe addiction and distortion in gamers' perception and behavior.

In addition to the positive functional outcomes as well as the potential negative outcomes of gaming, there is a list of different social outcomes of playing. Whether it is quality time with family, dating situations, friends meeting after a long time, or a party in the office, games can be a good way to spring up the atmosphere and catalyze social interaction. It is common that game companies identify the core users and use cases for their games, but actually there is much finer granularity of different social situation that games can catalyst or facilitate.

Understanding the potential outcomes of your game can be very important. Negative outcomes should be eliminated. Figuring out various practical daily uses of your game, understanding the positive outcomes it can produce in real-world social circumstances and communicating those outcomes can result in a wider customer base and more committed customers. Building long-term customer relationships is linked to taking the social responsibility for the outcomes of your game.

[55] See, https://www.cmpevents.com/GD10/a.asp?option=C&V=11&SessID=10604

6. How is our game found from the media cloud?

Digital distribution has dramatically changed the way people access and use media (Ito 2010). The main characteristics of digital distribution are large selections of articles, high availability, zero marginal cost of distribution, piracy issues, and links between different media articles. In music industry the change has been the most dramatic. In 2010, digital music sales are expected to bypass physical media sales (Johnston 2009). For example, Spotify offers today more than 6 million digital songs. Similarly Amazon offers over 450 000 new books and more than 1.8 million out-of-copyright books (Amazon 2010). In games business the digital distribution is still a somewhat controversial issue (Martin 2009; Fahey 2010). Still, the online distribution channels, such as online console services, PC distribution networks and web-based gaming sites, already offer hundreds or thousands of games for players to choose from.[56] In the future the number of games in online distribution channels is expected to increase.

Making your game visible in media clouds is a new type of marketing challenge, which should already be tackled during the game idea development phase. The traditional way of marketing with paid advertisements is still a functional way to operate, but it is extremely expensive and therefore mainly available for big budget games. However, there are some other marketing mechanisms a game company can use for making their games more visible in media clouds. Word-of-mouth mechanisms will be explored in the next chapter (starting from page 95) by Huotari. Zynga utilizes game cross promotion effectively and has become the most successful social gaming company partially because of that (Kelly 2009). Game companies are actively creating new types of partnerships with non-game companies. Online distribution channels have a long list of free marketing communication items that companies could focus on: game name, game synopsis, website (forums), game videos, title picture, promotional freebies, press release, partnerships, WOM activation mechanisms, review lobbying, game contests, and playable game demos.[57] In particular, game demos have a paramount importance in initiating the word-of-mouth. Making a good game demo is not easy, because the demo needs to provide a deep game experience in order to be attractive, and usually this is not the same as the first two stages of the actual game (Sink 2008). In practice, game developers should allocate significant resources on designing good demos.

Overall, all these promotional elements should be considered as an integral part of the initial game idea and the concept development. If you want to focus on long-term customer relationships, practice iterative development and utilize new ways of financing. Probably you will also want to focus on game ideas which can efficiently utilize novel marketing mechanisms in the beginning of the game's life cycle. Experiences elicited from marketing messages are an important part of the total game experience.

[56] "There are 13,000 iPhone games now" http://www.joystiq.com/2009/07/08/there-are-13-000-iphone-games-now/

[57] Partially adapted from Thom (2009).

7. What is the link between our game and now?

Traditionally digital games are detached from the real world. Games are either fantasy or abstractions. Classic games, such as *Tetris* and *Pacman*, or many successful modern games, such as *World of Warcraft* and *LittleBigPlanet*, have no direct linkages to the real-world events. However, modern networked games can be linked to the real world events in many imaginative ways. For example, some sports games merge fantasy leagues with real-world results. In the future, it seems probable that the home spectator can consume sports events in real time through the game world and at the same time play against the real competitors.[58] The linkage between real-world events and sports games is obvious, but there are ways to integrate real-world events with most games. These linkages can be an unlimited resource for new game content, increase the uniqueness of each gaming moment, help form new partnerships, strengthen the customer relationship, and produce a more engaging game experience.

One example of how a game world can be linked with the real world is by utilizing context sensitivity. In practice, context sensitivity means that the game is somehow responsive to players situation or environment. The easiest way to make a game context sensitive is to take some easily acquired real-world signal, such as the outside temperature, and match it to a game element, such as background color. This kind of trick can give the game some extra utility and make the game play more immersive. On the other hand, the game can use sophisticated sensors, like those in smartphones, to make very elaborate measurements on the player context and behavior. The context sensitivity can be used for rather abstract and ambient effects, or it can become an explicit information or feedback source for the player. Pervasive gaming is a domain that is exploring experiences between life and play (Montola et al. 2009). Recently, location-based games, such as *Foursquare*,[59] have become popular, and it is probable that the popularity of pervasive and location-based games will continue to grow in the future.

In addition to technology, the content can also lead the game and reality integration. A game can, for example, have live hosts, or the content can be modeled based on real-world locations, localized on a city level and matched to real events. However, these strategies require continuous efforts and significant participation from the development organization. Producing real-world content is definitively a process-oriented task, and significant resources should be assigned to manage it. A more trivial way to connect games with real world is to embed some other media (music, videos) in the game. Then again, game localization and event hosting can be outsourced to the user community (crowdsourcing), but such a mechanism often requires active moderation from the provider organization. Overall, there are numerous ways to integrate games and real world. At the same time, it is still important that some games are producing escapist experiences and have nothing to do with real world.

[58] "Real time WRC gaming moves a step closer "
http://www.wrc.com/jsp/index.jsp?lnk=101&id=7028&desc=Real%20time%20WRC%20gaming%20moves%20a%20step%20closer

[59] http://foursquare.com/

8. How will our game be played in 15 years?

Up until the decline of movie studios in the 1950s and 1960s, the library value of a movie was considered zero in book-keeping accounts (Silver & McDonell 2007). Today movie library rights are a significant part of studio valuations and considered worth billions of euros. In music industry the value of classic titles, such as the Beatles catalogue, may be worth hundreds of millions of euros. Even classic game titles, such as *Space Invaders* and *Pac Man*, have significant library and brand value but as such, game libraries are not yet equally significant as the libraries in music and movies. But there is a good chance that this will change.

Video games are a relatively novel phenomenon. Still in the 1990s, video gaming was considered merely a hobby of teenage boys. Today, it is an activity widely performed by people of all ages and both genders. The expansion of gaming in terms of social phenomenon as well as business has been dramatic, and today digital games are a fundamental part of popular culture. The older generations want to revisit their childhood, and young generations want to know what it was like in the old days. These are circumstances when the old games are looked for and players seek to repeat a game experience that took place years ago.

Despite the glooming age of media clouds, it is highly probable that the game platforms and game services that we will be using in 15 years are different from the ones we are using today.[60] First of all, enabling old games on new platforms is a technical issue. The compatibility of old games on new platforms is not necessarily a trivial issue, but probably a manageable task. Usually a new platform can emulate old platforms fairly easily. Actually, it might be possible to upgrade the game experience, in a similar way to how old movies and recordings are upgraded to a crispier quality with digital technology. However, transforming the social components of game experience might be a trickier issue. Loosing the social components might significantly decrease the library value of a game. There are several different social items that can be preserved: user identification, avatar history and attributes, game play history, user generated content, and various game play recordings. On the other hand, saving all social data is also a privacy concern. Game developers need to find balance between what kind of components they want to preserve and how long time they can do that.

Overall, creating the procedures for storing and rediscovering old games is a complex design challenge, because the core usability of the game should not be compromised. It may also be challenging to discuss and agree on the rights for collecting the required data for long-term preservation of the social components of game experiences. Ultimately clever social data restoration procedures might produce a significant revenue, strengthen customer relationships and be a source for competitive advantages already on the short term.

[60] "The 10 year console lifecycle "
http://www.grayhouse.com/2008/03/22/the-10-year-console-lifecycle/

9. How to help people join our game community?

In practice, most games are incomprehensible for most of the people. Older people are absolutely astonished, and some even terrified, when they see young kids playing shooter games totally focused and immersed. It is hard to not be amazed while watching a skillful player playing games such as *Dance Dance Revolution* or *Guitar Hero*. The mastery of physical coordination needed is comparable to some of the masters in sports or arts. Visiting a virtual world or an online-multiplayer game for the first time can be a very awkward experience. People are communicating fast and in ways that are mostly incomprehensible, and it can be hard to find anything interesting that is happening in the game world. Overall, playing an online game usually requires specific media literacy skills.

Game usability testing and building tutorial stages is a common routine for game developers. However, focusing on designing the interface interaction in the game is not enough when we are developing games with long customer relationships and significant social components. What is needed is some guidance on how people can integrate and merge to the social systems of the game and learn the social norms in the game. The following strategies might help migrate players to the game community:

- a social interaction tutorial
- peer-support with incentives for older players to join
- word-of-mouth mechanisms
- dedicated first-timer support personnel
- specific game events for newcomers
- a possibility to be a lurker in the community
- recordings of interesting social activity and transparency.

Overall, designing social interaction and community dynamics is a task which cannot be completely controlled. When people join the community and spend time there, they start to feel partial ownership of the system, wanting to take control and join the decision making (Jenkins 2006). Then again, mechanisms for helping with the first-time experience must not compromise the long-term player experience. In an ideal case the first timers and experienced players are joined in such a way that benefits both groups. Reputation systems can be a good incentive structure for facilitating such behavior.

Furthermore, as pointed earlier, maintaining the customer relationship requires continuous efforts from the organization. A company should be able to react to the community's wishes and be even prepared to make changes in the game design to please the player community. All games, including those that do not have multiplayer aspects, should focus on developing the long-term customer relationship, and understand the problems of starting the game play, not only as a game design interaction challenge, but also as a social interaction challenge.

10. What is our game?

Defining the game is not an easy task. Ian Bogost (2009) discussed this topic in an interesting way in his *Digra 2009* keynote, which was titled "Game is a Mess". He pointed out the several perspectives on how the game definition can be approached. Expanding on Bogost's thinking, we have found out even more ways to approach the game definition. The following table lists three games and some of their definitions.

Space Invaders (1978, arcade)	Space Invaders (2007, online)	EVE Online (2003)
– probably C or Assembly codebase – code operated in a dedicated hardware – project in an organization – physical arcade device – game experince in arcade hall or other public place – coin-operated business – multiplayer co-located game experience – new game brand	– Flash code – code operated in a browser – coded by an anonymous individual – no physical medium – game experience accessible anywhere with mobile devices – advertisement-based business – no multiplay – re-use of existing brand	– coded with various development tools – client-server infrastructure – development project and massive support effort, with player-based game world government – home experience – community of people – additionally boxed game with subscription – massive multiplay – new evolving brand with transmedia components

Definition-wise these three games are very different, but on the other hand they are all space-related games with shooting as one of the core elements. The range of game definitions expands even wider if we consider various non-graphical games, location-based digital games, event-based games, role-playing, new online sports games, fantasy league games, just to name a few subgenres of gaming. In practice, the definition of game is quite unmanageable, or at least very complex, but this should not be a problem for businesses. The wide range of forms that a game can take should be considered as an opportunity. There are several ways to approach the computational architecture of a game. The game packaging, delivery, distribution and marketing can be implemented in multiple ways. The game experience can fulfill various gamer needs. A game can enable or be based on a wide range of social activities. Also, the monetizing and the business logic can be almost anything. Far and foremost, it is important to note that it is possible and often common to make a game which utilizes several parallel ways of doing – the same game can have parallel computational architectures, several complementary business models, and provide a range of experiences.

In the future, the range of definitions of what the game is will diverge even further. Our suggestion is that you seriously rethink the possibilities of your game through what kind of experiences it produces and how you can embrace your player relationship. Do not be bound to any single definition of the game or target group. Build your customer relationships based on your unique vision and that special experiences that only your game provides.

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Chapter 8
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Motivations for C2C Word-of-Mouth Communication During Online Service Use

Online services from newspaper websites to online auction and shopping websites and to massively multiplayer online games have widely integrated into their online services features that permit user-to-user communication during the use of the service. Examples of this sort of systems are discussion forums, user walls, chat rooms, comment postings and tell-a-friend systems. Some of these systems support communication from existing customers to other existing customers and some support also communication from existing customers to non-customers. In this article we refer to these systems as C2C communication features.

Word of mouth (WOM) can be defined as "all informal communications directed at other consumers about the ownership, usage, or characteristics of particular goods and services or their sellers" (Westbrook 1987, 261). Through C2C communication features, consumers may communicate about all sorts of things. Thus, these features are also possible channels for WOM. However, the scientific literature concerning the use of C2C channels for WOM, especially during service use, is practically nonexistent.

This article aims to contribute to the literature of service marketing and online WOM research. The goal is to shed light on the WOM processes that happen during online service use and, more precisely, on the motivations that precede WOM writing in this context. The article studies one online service that incorporates many C2C communication features. Subsequently, we refer to this site as *the gaming site*. By taking a holistic view on one single site, we hope to get a broader understanding of the interrelationship and of the distinct uses of different C2C channels. This understanding should hopefully help service providers in designing C2C communication features that better match their customers' needs. It is also interesting that main rival of the the case company does not have any C2C communication features on its site. Therefore, our study may help service providers in their differentiation strategies when it comes to C2C communication features.

The first goal of this study is to draw a holistic picture of the use of the C2C communication channels and their use on the gaming site. In addition we aim to answer the following research questions: Do users of the gaming site really use C2C communication features for eWOM communication? Do the motivations for eWOM taking place during service consumption differ from motivations for eWOM that takes place before or after service encounter? Do eWOM motivations differ if the publication platform of eWOM is maintained by the company that is being commented instead of an independent third party?

Literature review

WOM is considered to influence greatly consumers' purchase behavior (Brown & Reingen 1987) and it has been found to be especially important in the service context (Bansal & Voyer 2000, 166). Although WOM has been studied in service context by many researchers (e.g. Bansal & Voyer 2000; Mangold, Miller & Brockway 1999; Murray 1991), much of the existing research has been centered on customers' decision-making (Berndtson 2007, 6) and has seen WOM happening either before (pre-purchase WOM) or after (post-purchase WOM) purchase-making.

In this study, we approach marketing from the service-logic perspective, as defined by the Nordic School of Marketing Thought (Grönroos 2007, 4) or by Vargo & Lusch (2004). We argue that the process-nature of service, as described by Grönroos (1978), has not been adopted thoroughly in earlier studies when it comes to WOM communication instances and that most of the existing research has therefore been grounded in the transaction/exchange-based marketing paradigm.

The existing literature does not take into account WOM that takes place during the consumption or production of a service. This is presented in Figure 1. However, many services are consumed in such a way that the customers can interact with each other (Grönroos 1978), and in many online services, communication between customers during the consumption is an inherent part of the service. This is the case with *YouTube*, *Ebay* and *Amazon.com*, as well as the gaming site that serves as the case example in this article.

Figure 1. WOM research in the relationship marketing dynamics context (modified from Strandvik & Holmlund 2000, 16).
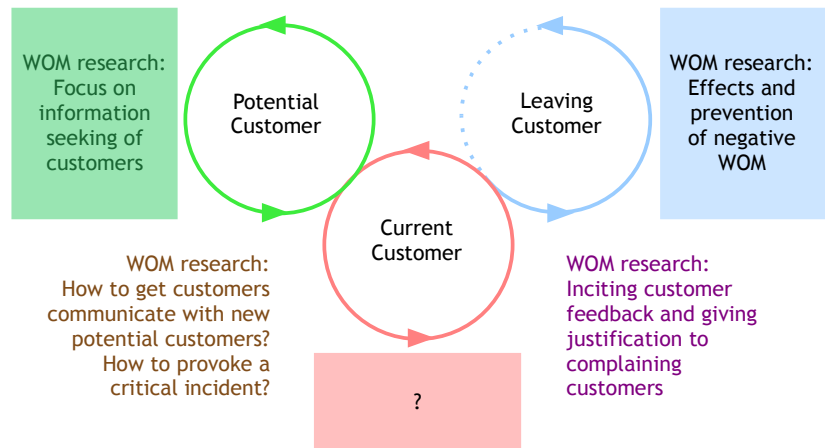
Today, many online services include features that enable word-of-mouth communication, and a growing number of online WOM or "viral" marketing campaigns are being launched. However, there is very little scientific literature about online WOM or electronic WOM (Nyilasy 2006, 179). Bickart and Schindler's (2001) study supports the assumption that online WOM – just like traditional WOM – is more persuasive than marketer-generated information.

Balasubramanian and Mahajan (2001) studied the economic leverage of virtual communities. They divided the utilities that the virtual communities offered to users in three categories: *focus-related utility*, *consumption utility*, and *approval utility*. Their work was elaborated by Hennig-Thurau et al. (2004), who investigated consumers' motivations for writing on consumer opinion platforms

on the Internet. The following eight motivations were given support: 1) self-enhancement, 2) advice seeking, 3) concern for other consumers, 4) helping the company, 5) social benefits, 6) venting negative feelings, 7) economic incentives, and 8) platform assistance. In a separate study Hennig-Thurau & Walsh (2004) also investigated motivations for reading about others' experiences on web-based opinion forums. The following motivations were given support: obtaining buying-related information (risk reduction & reduction of search time), learning to consume a product, social orientation through information, community membership, and remuneration.

In the research setting of Hennig-Thurau and his research team, WOM writings were published on forums run by independent third parties. In our study, we are interested in finding out the motivations for WOM communication change if the means for communication are provided by the company that is being commented. Hennig-Thurau's research also concentrated on WOM communication transmitted after the service interaction. We are interested in investigating WOM taking place during the service consumption.

Finally, Gruen (2006) investigated the effects of a specific form of eWOM communication, customer-to-customer know-how exchange, on the customer perceptions of value and customer loyalty intentions. The study suggested that customer know-how exchange impacts customer perceptions of product value and likelihood to recommend the product, but does not influence customer repurchase intentions. Interestingly, opportunity did not impact know-how exchange, whereas motivation and ability did have a significant effect. (Gruen 2006.)

Research setting

The research focused on one of the largest online gaming site in the Nordic countries. The site contains an ever-growing directory of free flash games that can be easily played on the site. The site users are offered an opportunity to sign up to the service. Alternatively users may use the site anonymously. The registered users can choose an avatar and a username and maintain their own profile page on the site and invite other registered users to be friends with them within the service.

The site contains many features that support C2C communication. In Table 1, each feature is presented briefly.

Table 1. C2C communication features on the gaming site

Feature	Description	Target group
Chat rooms	A service that enables real time textual discussion between multiple users. You can also invite other users to a private chat room.	Registered users only.
Discussion forums	Discussion threads on diverse topics, categorized according to themes.	All users are allowed to read the discussions but only registered users can participate.
Game comments	User assessments of the games available.	All users are allowed to read the comments but only registered users can add their own comments.
Tell-a-friend	A service for recommending a specific game to a friend. The recommendation can be sent as an email or a private message.	All users.
Private messages	A service for leaving private messages for other users that will be available on their profile pages.	Registered users only.
User walls	A service for public communication that is available on the profile page of each registered user.	The walls are visible to all users but only registered users can write on them.

Figure 2. An initial Illustration of the different features of the gaming site.
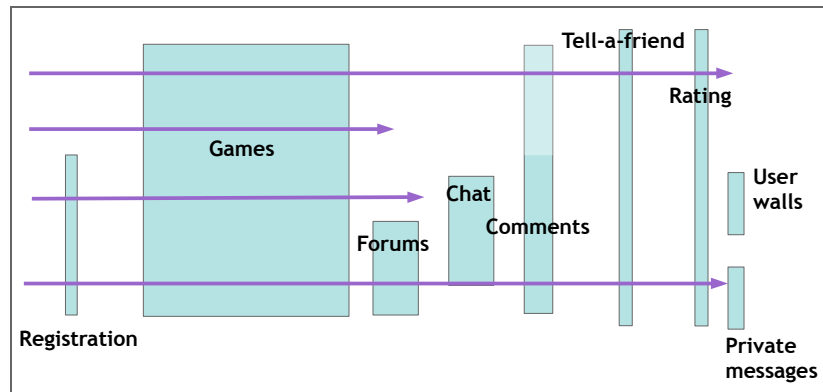

Figure 2 illustrates how we pictured the gaming site initially. Users enter the service from the left. They can either register at the site or use only the features available without registration. Private messages, tell-a-friend messages and private chat room sessions could not be accessed. Therefore, the data gathering focused on forums, public chat, user walls and interviews.

Methodology

The methodology used in the study was grounded theory (Strauss & Corbin 1998; Corbin & Strauss 2008). A qualitative approach was chosen because research into online WOM is very scarce and because many of the attributes of the research area are motivation-based. Grounded theory suits particularly well the research setting of this study, as it aims at constructing a theory from empiric data.

Data collection methods used in the study were multiple. Three semi-structured interviews were conducted among frequent site users. The interviewees were contacted first by the service provider, and the interviews were done over the telephone by the researcher. The interviews were recorded and then transcribed. The researcher also took notes during the interviews. Eight hours of participant observations were conducted in the chat room of the game site in five separate sessions over a period of two months. The researcher took field notes of the sessions, and the textual discussion threads of four of the sessions were saved as text files. Comment postings of 15 different games were collected. 16 comments of each game were collected, resulting to a base of 240 comments. Using theoretical sampling, four forum discussion threads were chosen and examined. The threads were of different length but the overall number of postings amounted to 171.

Thirty frequent-user profiles were randomly selected and the postings on their profile walls were collected. In addition, the researcher himself used the gaming site frequently in order to understand the logic of its use, and took notes of the conversations with the service provider's personnel. Data gathering and analysis were conducted partially at the same time. Thus, the analysis of data gathered during the early phases guided the subsequent data collection. Following the guidelines of grounded theory, data collection was pursued until a saturation point was reached and the researcher felt that further data would not have brought new knowledge. The interviews, however, made an exception: the researcher would have preferred to interview additional 2–3 users, but the service provider only managed to recruit three informants.

Analysis was conducted following Strauss and Corbin (1998) and Corbin and Strauss (2008). First, the data was open coded, then categories were created, and finally interrelationships between the different findings were drawn. Each C2C communication feature was analyzed separately and the results were compared in order to get a holistic view. The researcher used memos and diagrams throughout the analysis process. The analysis of interviews, comment postings and chat room discussions were analyzed in parallel. Because of the very large number of discussion forums, the analysis of the forum postings was set aside in the beginning.

The feature-specific open coding initially resulted a list of 124 concepts. After axial coding, the number of categories was reduced to 45. At this point, some forum discussion threads were selected using theoretical sampling technique (Corbin and Strauss 2008, 143). The theoretical sampling aimed to identify discussion topics or user behavior patterns that had not come up before. Special attention was given to issues that were relevant for WOM. The discussion threads were open coded and then compared with the list of categories. The final list of 5 main categories and 41 sub-categories is presented in Table 2.

The analysis was mainly conducted using text editing software and spreadsheet programs. *Atlas.ti* software was used during the last phases of the research.

Table 2.

Conditions for using the gaming site	Motivation for choosing the gaming site	Relationship with C2C communication features	Relationship with games	User–gaming-site relationship
– precondition – boredom – urge to play	– urge to play – urge to communicate	– addictive – self-expression – consolation – sharing joys and sorrows – pass time – company – identification – non-existent – information source	– addictive – side show – pass time – identification – language – terminology – smileys – discussion topics – site talk – improvement ideas – etiquette – banning	– game talk – achievements – advice seeking – tips – reviews – comparisons – spamming – personal talk – hobbies – romances – family – friends – small talk – friend requests – greetings

Results

In this section, we first present a holistic view of the service. Then we discuss the use of C2C communication features for WOM.

The excerpts taken from interviews, chats and forum discussions have been translated from Finnish.

Frequent user types

According to our data, the frequent users of the service seem to be constituted of three separate groups: *pure gamers*, *social gamers* and *chatters*. A brief description of each group is given below.

Pure gamers are users who are solely interested in playing games. They are not sharing their game experiences with anyone and are not interested in being in contact with other users. Although they use the site frequently, they don't register themselves, as registration does not offer them anything they would need.

Social gamers are mainly using the site for playing games. However, they like to discuss with other users about games: compare experiences, brag about their achievements and recommend games. Although they have registered to the service, they seldom participate in chat discussions or write anything on user walls. They stick to the game comments and game-related forum discussions.

Chatters are registered users for whom discussing with other users is at least as important as game playing. They collect friends within the service, participate actively to forum and chat room discussions and use occasionally user walls or private messages. Some of the chatters have found the site more or less by accident and consider discussions with other users the most important feature of the site.

Reasons to use the gaming site

Motivations for choosing the gaming site varied according to the user groups. Pure gamers (informants #2 and #3) reported that they just want to play games, whereas a chatter (respondent #1), reported that the possibility to discuss with people is important, and downplayed the importance of games in her usage.

— Excerpt from the interview with respondent #1 (chatter):

> Well, I think it's pretty revealing that for me it's not just a site where I can play. I visit really often the forums and the chat and so forth. [...]

> First I go and see if there are any new discussion in the forums and start to converse if there are. Otherwise I go to the chat and talk there with people. And finally when I leave the chat I may play a few games and that's it. [...]

— Excerpt from a forum posting by a chatter, in a discussion thread titled "What is the best place on the gaming site?":

> chat!!! !!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!

— Excerpt from the interview with respondent #2 (pure gamer):

> It's a site where you can play small games [...].

— Excerpt from the interview with respondent #3 (pure gamer):

> [when beginning a session] I search my favorite games and start to play them. I don't surf around the site otherwise. [...]

Preconditions for use

All the interviewed users reported that a precondition for using the service was boredom. This finding was backed up by the data gathered from chat discussions. Also, willingness to play games was mentioned.

— Excerpt from the chat:

> 13/03/2009 14:30:55 <user T> I'm feeling dull. ...

> 13/03/2009 14:31:24 <User G> so am I :!::!::!::!::!::!::!::!::!::!::!::!::!::<<<<<<

— Excerpt from the interview with respondent #1 (chatter):

> Well ... I found the site originally 'cause I was feeling dull and I wanted to play some games. Then I realized that hey! There's a lot of conversations going on in here. And so, I decided to register. [...]

— Excerpt from the interview with respondent #3 (pure gamer):

> [I use the site] during week days at work, when I'm feeling dull. [...]

— Excerpt from a forum posting by a chatter:

> [...] If I have nothing to do I'll be here. [...]

Relationship with C2C communication features vs. relationship with games

Relationship with the C2C communication features and games varied according to the user groups. For pure gamers, C2C features were completely indifferent, whereas for chatters, who considered the communication features more important, the games represented a sort of a sideshow. However, it was interesting to note that a similar addictive relationship seemed to form to games as well as to communication with others users, as the excerpts below show.

– Excerpt from the interview with respondent #1 (chatter):

> It just happens. If I've been cleaning up for example and then I decide to just check the site briefly. But suddenly, I realize that it's already eight o'clock and that I've spent an awful long time on the site. [...]

> When looking at achievements of others I often wonder how much time they've spent in playing the game in order to reach that level. [...]

– Excerpts from forum postings by two chatters, in a discussion thread titled "How often do you use the gaming site?":

> Normally 2–3 times per day, once after school and then in the evening.

> I use it around 3 times a day. In the morning, when I wake up and while I'm having my breakfast I read through the forums. When I return home in the afternoon I go directly to the Gaming site and I leave it open all day. Just before I go to bed I visit it one more time.

– Excerpt from the interview with respondent #2 (pure gamer):

> I use it sometimes at work, but very briefly. It's dangerous if you get hooked up in a game. [...]

> You get sort of hooked up in a game. But when I look now, for example, at this game I don't feel tempted. I have played this so much in the past. [...]
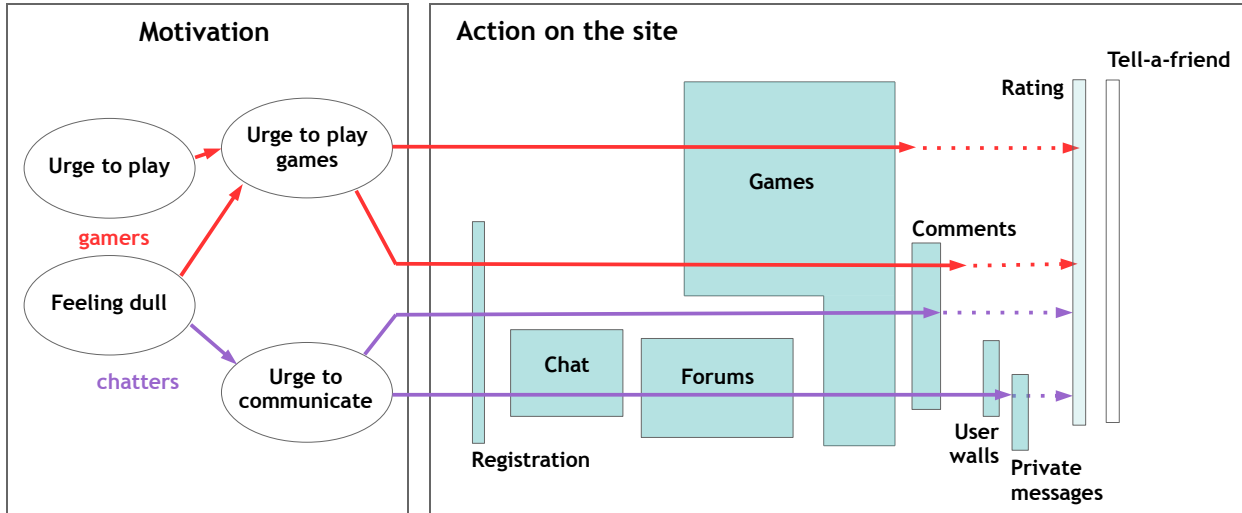
C2C communication content

The content of C2C communication that emerged from the data was classified in five categories: 1) *site talk*, 2) *game talk*, 3) *personal talk* 4) *small talk* and 5) *spamming*. *Site talk* was communication that concerned the gaming site in one way or another. It mainly consisted of improvement ideas, etiquette within the service, reclaims about bans that the administrators forced on some users, and expressions of the relationship that the users had with the gaming site. As regards *game talk*, it consisted of reporting or bragging about achievements in games (e.g. "I scored 355 245 points!"), of game reviews (e.g. "Best game ever!"), of questions asking for advice, and of tips concerning how to play. The largest category was *personal talk*, the topics ranging from heartaches to mental depression and from hobbies & friends to political views. *Small talk* consisted of communication habits that were considered polite behavior on the site, for example friend requests and greetings. Finally, the *spamming* category was an umbrella term for all pieces of communication that were considered inappropriate.

Some content areas were more prevalent in some C2C features than in others. For example, site talk and personal talk concentrated on forums and chat room discussions. Game talk was expressed mainly on game comments and specific discussion forums. Small talk could be found on user walls and chat room. Spamming was the only "content" type that could be found on all venues.

An overall picture of the motivations related to the use of the Gaming site

In order to achieve the first goal set for this study, we have tried, in Figure 3, to integrate the main aspects and correlations describing the use of the gaming site.

Figure 3. A tentative substantive theory of the motivations and use of the gaming site.

Use of C2C communication features for WOM communication

WOM communication instances occurred frequently in all C2C communication features that were studied. Unsurprisingly, game-related postings were dominant among game comments and in game-related discussion threads of the forum. Games were also discussed on the user walls and in the chat. Users commented games both positively and negatively, recommended games to each other, wanted to publish their achievements to other users and asked and gave advice on how to play games.

More surprising was the WOM activity concerning the site itself and its communication features. Users guided each other in the use of the site and invited users to the chat room or to participate in the discussion threads of the forum. It was evident that a sense of community had formed around the site and that users were affectively attached to the service.

However, these findings answer the first research question of this study. Frequent users use C2C communication features regularly for WOM communication.

eWOM motivations during service consumption

In Figure 4, the identified WOM writing motivation categories are examined in relation to eWOM writing motivation categories identified by Hennig-Thurau et al. (2004).

Figure 4.
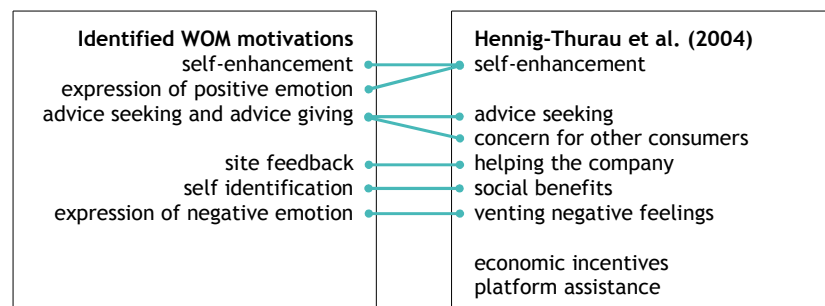
The WOM expressions found from the data were divided into six groups according to their assumed motivations. The groups are presented in Table 3 accompanied with examples. The table mentions also the C2C communication features that were used for each category of WOM motivation.

Table 3.

WOM MOTIVATION	EXAMPLES	C2C COMMUNICATION FEATURES
Self-enhancement	– "I reached level 6 and scored 23489" – "I got through all the levels"	– game comments – chat – forums
Advice seeking and advice giving	– "Does anyone know is there a new version of this game?" – "How can I get through level 3?" – "Does anyone wanna know how to pass where is the bridge?" – "On the forum, there is thread about Platform [a game] if anyone is interested…"	– forum discussions – chat – user walls
Site feedback	– "Admins could increase the number of different avatars" – "Admins should monitor the chat more frequently. There is too much swearing." – "Help, the forum isn't working!"	– forum discussions – chat – user walls
Self-identification	– "If Gaming site would close I would kill myself!" – "congratulations! You've been now for a year a user of the Gaming site." – "Hi X! Nice that you joined the Gaming site as I 'm here as well." – "Try out my favorite games =)"	– forum discussions – game comments – chat – user walls
Expression of positive emotion	– "Really the best game ever" – "I like this." – "platform racing 2 is a lol game Its worth a try"	– forum discussions – game comments – chat
Expression of negative emotion	– "Loading … still loading…" – "This game sucks!"	– forum discussions – game comments – chat

The findings partially answer the second research question of this study. Motivations for writing eWOM during service consumption seem to be similar to motivations for writing eWOM before or after the service encounter. However, due to the nature of the data that was available, only motivations concerning writing of eWOM could be studied. Motivations for reading eWOM in this type of context remain still unexplored.

eWOM motivations and the provider of the eWOM publication platform

The eWOM communication, as well as other communication that emerged from the data, conveyed a certain feeling of community. It is as if the frequent users would feel that just as the gaming site is their service of choice, the communication features are also "theirs". The communication is very informal in these communication features and many of the users are acquainted – at least virtually – to each other. This sense of community may have affected some WOM motivations categories, namely site feedback. This answers the third research question of this study.

In the data, no formal complaints or exhaustive testimonials of negative service experiences were discovered. This usually is the case on many independently held consumer opinion platforms. It seems that the relationship that the users hold with the administrators of the gaming site is less hierarchical than a standard customer–service-provider relationship. The administrators have their avatars in the game just like regular users, they are "friends" with many users within the service and they are very easy to approach. Complaints and suggestions for improvements to the service are

maybe therefore expressed in a subtler and more diplomatic way than they probably would be on a third-party provided arena. This very initial finding may have managerial implications, but generalizations cannot be based only on the material at hand.

Discussion

This study explored the use of C2C communication features on an online gaming site. The main focus was on the use of these features for eWOM communication. The results suggest that users actively engage in eWOM behavior with each other during service use. C2C communication increases the sense of community among users and some users consider the C2C communication opportunities the main asset of the service. The findings also suggest that motivations for eWOM that takes place during online service use are not significantly different from the WOM motivations that happen before or after service experience.

Testimonials of very negative service experiences that are common on discussion forums hosted by third parties seem to be rare on C2C communication channels maintained by service providers themselves. One reason for this can be that services which offer C2C communication channels also include various feedback channels. It may well be that users prefer these channels to the C2C channels when expressing their criticism. This could encourage managers of online services in creation and maintenance of both C2C and feedback channels. All these findings are preliminary and need to be reexamined in subsequent studies. Hopefully, they can, however, act as an inspiration for future hypotheses building.

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Chapter 9
by Annakaisa Kultima

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Casual Games and Expanded Game Experiences: Design Point of View

The central arguments of the chapter have been presented in the following two publications:

A. Kultima 2009. "Casual Game Design Values." In Proceedings of MindTrek Conference 2009, Tampere, Finland (58–65).

A. Kultima & J. Stenros 2010. "Designing Games for Everyone: the Expanded Game Experience Model." In Proceedings of FuturePlay 2010, Vancouver, Canada.

In this report, I will examine the phenomenon of casual games and the underlying transformation of digital play which the rise of this particular games industry is exposing. I will argue that instead of a genuinely new phenomenon, we are facing a change that can be more accurately characterized as "normalization of digital play". The expansion of the player basis as well as the instrumental and functional approaches on games are well in line with the transformations of other digital environments as well. As digital environments have become available for large populations and increasingly part of their everyday lives, the ways and means of use are becoming largely multifaceted and part of larger experiences.

In order to answer to the changes, I will provide a framework of casual games design values and model of Expanded Game Experiences (EGE). The broadening of the scope of game experiences requires a transformation in design approaches: transformation from gameplay-centric design into service design and consequently a shift of design values and framework of larger picture for the holistic design approach.

Since the first versions of the famous *Pong* in 1970s, videogames have in over three decades risen into multi-billion dollar industry. Within this time frame, the industry has experienced several different transformations and innovations (Adams 2007), including the latest breakthrough of mimetic interfaces with around 45 million sold Nintendo Wii console and massively multiplayer games, such as *World of Warcraft* with more than 11.5 million monthly subscribers. Within over thirty years digital games cultures have grown from adolescent male-oriented entertainment into diverse experiences and playful activities serving different functions. The average age of players has in the past years been constantly rising. At the same time, games are on their way to attract similarly heterogeneous audiences as TV shows and movies or even books.

Some of the recent visible trends include interesting transformations within the game cultures. One of the fastest growing industry branches, casual games industry, is increasing its market by 20 % a year. Games are developed for the mass market with varying business models and increasingly wide perspective on the experience itself. Different kinds of players are served with different products and possibilities for diverse activities around the games. Game environments are blending with other environments and social activity, becoming normal parts of everyday lives (see Pargman & Jacobsson 2006). It has become increasingly easy to pop in and out of games. At the same time, games are delivered directly to your home computer or played without installation in the browser.

Games can be small bites among other social activities, and these social activities increasingly take place in virtual environments. As other digital phenomena are becoming more accessible, accordingly games are also increasingly directed for large populations.

Casual games and transformation of design values

Casual games form a rapidly growing industry. In 2006, it was estimated that by 2008, the market would surpass $2 billion in the US alone (IGDA 2006). *Casual Games Market Report 2007*, published two years later in autumn 2008, states that casual games are in fact a $2.25 billion-per-year industry and that the market is growing at 20 % a year. The numbers of users are impressive and the demographical division is somewhat eye-opening: over 200 million people play casual games each month over the Internet. 48.3 % of them are men and 51.7 % are women. (CGA 2008.) It is furthermore estimated that by 2012, casual gaming on all platforms will account for over 46 % of the industry's total sales (R&M 2008).

The high numbers and the rapid evolution of the industry indicate an important phenomenon that should also evoke increasing academic interest. The interpretation and evaluation of the casual games statistics is complicated since the very notion of casual games is far from unambiguous. Depending on the point of view, casual games and its derivate terms can acquire quite different meanings and hence have an influence on which games or players are counted as *casual*.

In an earlier paper (Kuittinen et al. 2007) we examined the different issues around the casual games phenomenon and came up with five different meaning categories in connection with casual between different actors (see Figure 1). Casual was attached varyingly to the games themselves in the form of their common properties, to the players and their activities according to the demographic nature, game choices, behavioral patterns or even attitudes. The confusing and inconsistent use of terms and definitions seemed to lead to some biased reasoning. It was particularly difficult to separate the meanings of casual players and casual game players, as the data of one group was easily interpreted to entail some information of the other group. However, casual design does not force the playing style or attitudes of a player into casual:

Figure 1. Relations of the meanings of *casual* (Kuittinen et al. 2007).
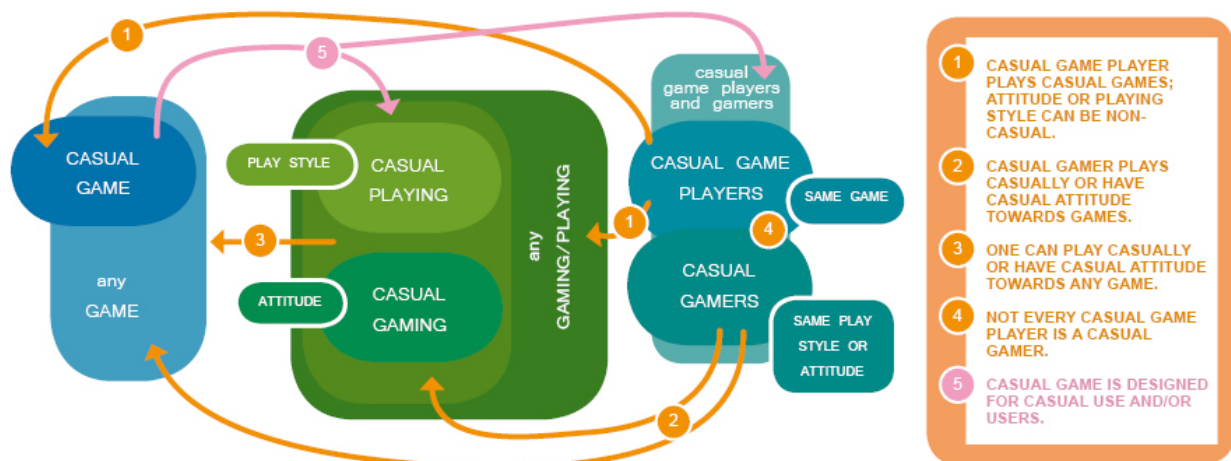
playing a casual game does not necessarily lead to casual playing. In this sense, by examining a group of players who play a game with a casual design, will not necessarily give us any information about the casual players.

We also found that the discussion around the casual games dealt with numerous other issues not limited to the observations of gameplay interaction. One of the persistent topics of the discussion was the issue of accessibility within the game experience. It was considered important from the casual point of view that the game product is physically and mentally reachable: easy to purchase and fast to adopt. (Kuittinen et al. 2007.)

New user groups and play expectations

The casual games phenomenon seems to point out intriguing transformations in the digital games cultures. There appears to be a growing need to talk about new player groups and about the different and varying ways among them to use, enjoy and think about games. One can easily accept a relatively narrow picture of the functions and pleasures attached to digital games, such as the enjoyment of highly immersive and challenging game experiences. Studying casual games phenomenon can broaden the spectrum of understanding of game experiences beyond these clichés. Casual games phenomenon emphasizes how games can also be secondary activities and work as instruments to different agendas, blended into the everyday lives of different people in different ways.

In short, the transformations can be divided into two different areas: entry of new and heterogenic user groups, and games as secondary activity and instrumental uses of games.

Entry of new and heterogenic user groups. Within the discussion of casual games, it is often pointed out that females, especially over 30-year-old women, enjoy playing the games in the casual games sites. The division between the sexes is more uniform than in most digital games, even to the point that paying customers are dominantly females (CGA 2008). However, we are not facing the rise of "women's games" but rather games with heterogeneous group of players with different backgrounds, skills and interests. Players may have different reasons for turning into casual games, which may include lack of game literacy, skills, time, money and interest.

Games as secondary activity and instrumental uses of games. Games are usually treated as a highly immersive and engaging activity. Often when compared to such activities as watching television, playing games is regarded as highly active. In general, there is no particular reason why digital games should always be in such a role. Sometimes games can provide a light interaction loop for secondary activity, such as what might happen in the gameplay of Microsoft's *Solitaire*. While playing the popular digitalized version of solitaire card game, players may be actively thinking other issues, such as daily social problems, work tasks, tomorrow's dinner plans, future projects or anything whatsoever as the gameplay does not require deep attention. The play session may be easily suspended if a phone call is received, the laundry is ready, water is boiling, the boss is entering the room, a colleague asks one to join her for lunch, or in whatever kind of a situation the player might be.

Games become secondary activities as the player is doing something else in parallel: thinking, eating, watching TV, talking on the phone, waiting for something and so on. The parallel activity may be prioritized, whilst player may be prioritizing games that will not require high attention or use of resources. On the other hand, secondary play may also mean that the gameplay is motivated from outside of the game itself. For example, one may play games only for their social functions or because of the mental exercise that they provide. The execution of the game story and fiction or other qualities may then become secondary and the outcome of the experience and their utility of the game session more important. One may be interested in using games for learning, losing weight, changing the mindset or perhaps even falling asleep. This may also provide an excuse for engaging in a playful activity, as an otherwise useless activity can be explained as connected to something vital.

The change of player groups and play habits can be seen to transform the field of digital games by broadening the consumer base and play environments. However, it can be argued that in general there is nothing strikingly new or surprising in this phenomenon. Games have been used for different functions throughout their history. If we take a look at the games outside the digital world, they have always been played by a variety of different people. Sports, children's games, tabletop games and card games are such a common part of our living environments that we might not even recognize their similarity to their video games and computer games counterparts.

The transformation of digital play, understood as widening of player groups and play habits, goes along with other transformations concerning digital environments. Digital and physical worlds are increasingly merging and many areas of everyday life, if not all, are ever more digitalized. Thus, I am arguing that the casual games phenomenon as a transformation of digital play is merely a "normalization of digital games cultures".

Changing the design approaches

The relationship between design and play behavior is not rigid by its nature. Putting certain elements in the game system does not always cause the same effects. Design can support different play activities, but it is much more difficult to trigger exact reactions or restrict certain play patterns. By its nature, design has no logical outcome and therefore no sequence of operations will guarantee a result. (Lawson 2006.)

The solutions in design involve value judgments and the nature of the process is prescriptive instead of descriptive. Designers aim to deal with questions of what might be, could be and should be, instead of what is and why it is so. In this sense, to design is to have an approach based on certain value assumptions and principles. (Lawson 2006.)

There are many different ways of supporting casual games related changes in games cultures. Some of the casual game design solutions may be aiming to solve only one part of the transformation, some may try to work with a larger area, and there might be several design solutions for one design problem. Hence there is more than one road to "casual design" and room for different kinds of casual games. What may be common to the solutions is the shift

in the design approach. As some of our current design approaches may be founded on the old assumptions of gamers and their play expectations, we should pay attention to the following issues: different affordances and user thresholds of play environments, and the significance of the context of the gameplay experience.

Catering to wider and heterogenic user groups requires attention to different affordances and user thresholds of play environments. As we are dealing with larger player domains, the motives and driving forces, skill levels and game literacy, access to game equipment and resources, and even world views and beliefs can be radically different among the players. What we provide and enable for the players should be rethought. The requirements of play should similarly be re-evaluated. Users make choices over whether they play at all, how much they invest in games in general, what they are willing to use their time for and what is necessary or a priority in their lives. There might be obstacles that they are not willing to overcome, which may include buying new equipment, using their time for learning something new, waiting for the product to be shipped, or even adjusting the environment. Therefore, lowering the thresholds of use may be critical in keeping the consumer interested. But this is not enough; some of the obstacles may be due to the lack of affordances. The play environment may not afford anything interesting, meaningful or useful for the player, or what is provided is not fitting to the norms, needs and situations of the users and thus appears irrelevant to the user. In this case the values of the design should be rethought.

The secondary nature of play increases the significance of the context of play. In designing casual products, there is a need to look beyond the gameplay and thereby design games as part of a larger experience field to support and serve the players on different steps of the experience. It is not enough to just put games "out there" with easy gameplay, instrumental play functions, mundane themes and general appeal. The adoption, preparations, use and management of game experiences should be supported in phases. The secondary nature of games makes playing even more vulnerable to the changing situations. (Juul 2008.) It may not be relevant to tailor games to suit a specific target group, but to suit changing situations and make it possible to blend games with the different contextual factors in various ways. To design casual game experiences is to design experiences in a larger experiential context.

In practice, a large number of different possible design solutions can be found in the midst of different opinions over casual games. They may not provide any definite definitions or recipes for archetypal products or services. It is, however, not an accident that casual games are touted as games with short play sessions, emphasizing certain genres, providing positive and "happy" game experiences, promoting mental exercise and other advantages (Maragos 2006), providing possibilities for inexpensive game experiences with safe themes and topics, generally familiar user interfaces, low immersion levels and so on. The changes in game cultures are already catered with various solutions.

Casual design values

As design is based on principles and certain approaches, instead of exact engineering of experiences, we are talking about value-based thinking. The changes in games cultures may force us to think again what is regarded as "good" in games. Changing the design approach may lead to a change in our values of design.

Design values can be made more explicit by looking at the different existing design solutions. Exposition of the design values can help us understand the real width and essence of the casual games phenomenon and to see possibilities for further design solutions and new innovations. Casual design solutions can be divided into four different value categories: *acceptability*, *accessibility*, *simplicity* and *flexibility*.

Acceptability of the contents of a game is important in the choosing process of game products, accessibility is important in the enabling process, whilst simplicity and flexibility of the design become relevant in the playing of the game and replay situations. The goals of casual design can be, for example, selecting themes and mechanics that appeal to a larger population and are accepted by the norms, emphasizing accessibility issues on the cognitive and physical levels, simplifying the game elements and concentrating on the flexibility of the user experience. By following these values of design, the secondary nature of playing games and the possible differences among the players can be supported.

Refining the design according to *acceptability* makes games suitable for larger groups. Digital games have been suffering from the image of adolescent, sometimes even deviant media. Media emphasis of games with excessive violence, explicit language, use of substances and destructive activities may push certain people away from games in general. Other popular game tropes, such as zombies and sci-fi worlds may also be uncomfortable of irrelevant for some players. Casual games provide spaces with safe and familiar topics, emphasizing positive mechanics, such as nurturing, building, collecting and collaboration instead of killing, destructing or surviving at the expense of others. Titles with violence and explicit language or sexually biased depictions do not fit in the world views or norms of a lot of people. Furthermore, providing immediate secondary utility for a game, such as mental exercise, learning or social interaction, may also enhance the general acceptability of the design and thus lower the threshold of adoption. The price of the product is also potentially relevant: if one spends only a small amount of money, or no money at all, the activity is less binding.

It is notable that acceptability, like many other design values, is relative by its nature. Norms differ according to the social environments and general appeal may also be varying. Thus, what is casual and harmless to one may be devious to others. There is no definite selection of casual themes and mechanics in this sense. Casual design becomes a selective set of design solutions.

Enhancing the *accessibility* of the games makes playing possible for people with varying limitations. The differences in the groups of potential players may include variation between skill levels and knowledge, resources such as time, money and attention, and other relevant factors. This forces us to look at the adoption phase of the games and promotes lowered thresholds according to the

smallest possible nominators. If some players can be expected to lack parts of common game literacy, such as crushing boxes in order to find relevant aids in the game, all basic elements should be explained or made as obvious as possible to keep the player interested. Some of the limitations are set by the players themselves. No matter how fine the design is, the player can be prepared to pay only certain amount of money for the experience, to use only particular time slot, to prefer not to learn anything new, and so on. The design of the game service and the game should target into lowering the access points by easing cognitive and physical requirements.

Simplifying the design enables lighter play experiences. Minimal elements and user interfaces make it easier to get into the game as fast as possible but also maintain lower cognitive exertion. If the game has more complex features, these can be gradually introduced and some of the activities, such as saving, can be automated or combined.

Flexibility in design enables the possibility for changing situations. As playing a game can be considered to be a secondary activity to something parallel such as traveling, eating, housework, an upcoming phone call and so on, game design needs to be increasingly flexible.

Analysis of existing game phenomena

In general, almost any simple, small or easy game can be recognized as casual game. The most recognizable casual games distributors, such as Popcap Games (with the successful puzzle title *Bejeweled*), Playfirst (with the popular light strategy game *Diner Dash*) and Big Fish Games (with the hidden picture game *Mystery Case Files*) are providing downloadable games with 60-minutes demos or online versions for trial. This format of casual games is better known as web-downloadables. Even though this format can be considered to be one of the dominant ones, various other established forms of casual game entertainment exist. For example, IGDA (2006) also recognizes web and community-based games, skill-gaming and advergaming as a part of the casual games space. They also list puzzles and card games as one of the most common casual genres. Also, such popular titles as *Tetris*, Microsoft's *Solitaire* and Nokia's *Snake* are often described as casual games. These three games can be explained as casual because of their simplicity and abstractness. The two latter games could also be included into the casual space because of their distribution model. Both *Solitaire* and *Snake* are preinstalled games and thus very easily available. Sometimes games with mimetic interfaces, such as Nintendos Wii products, are also discussed as a significant part of the casual games space. (Juul 2008.)

In Table 1 we can see that the acknowledged casual games categories and phenomena are "casual" in different ways. These are partial solutions to the casual games transformation, and manifest different casual games design solutions.

Table 1. Casual game categories and their values and design solutions.

Casual game category	Casual value(s)	Design solution(s)
Web-downloadables	Accessibility (physical), Simplicity, Acceptability	Digital distribution, simple game designs, "mundane" themes, standardized user interfaces, fast and convenient download.
Pre-installed games, bundled games	Accessibility (physical & mental)	Very low entry for play (no payment or installation is needed before playing).
Web-based games, browser games	Accessibility (physical), Simplicity	No need for installation, usually free gameplay.
Simple & easy games	Simplicity, Accessibility (mental)	Simple design and easy gameplay lowers the thresholds of adoption and use.
Minigames	Flexibility, Simplicity, Acceptability	Short games can be played in short play sessions, usually with simplified design, playing minigames does not label the player as a gamer.
Advergames	Accessibility (physical)	Advergames are delivered to the consumer as byproducts, webgames etc. and they do not require any any payment.
Skill-gaming	Acceptability, Flexibility, Simplicity	The game provides utility, usually with simple design.
Puzzles	Acceptability, Simplicity	Abstract themes do not potentially violate norms, usually with simple design.
Card games	Acceptability, Accessibility	Safe and familiar content, easy to adopt.
Games with mimetic interface	Accessibility (mental)	Familiar user interface (as in Wii Sports) helps non-gamers to enter the game experience without having to learn specific skills for playing digital games.

Shifting the casual to a higher abstraction level also exposes the "casuality" of other digital game categories and phenomena that are not normally seen as part of the casual games space. Relevant games and game phenomena and their corresponding casual features are tabulated in Table 2.

Table 2. Casuality in generic digital games.

Game-related category	Casual value(s)	Design solution(s)
Cheap games, low production games	Accessibility (material), Acceptability	Lowered price will lower threshold of adoption and make the investment more acceptable.
Old games	Accessibility (mental & material)	Familiar games that have already been played through provide light and inexpensive game experiences.
Cut-price games	Accessibility (material), Acceptability	Lowered price will lower the threshold of adoption and make the investment more acceptable.
Indie games	Accessibility (material), Flexibility	Usually cheaper price level, possibilities for games with different kinds of play values.
Non-violent games	Acceptability	Excluding potentially deviant content will make the game experience more comfortable to some players.
Serious games	Acceptability, Flexibility	Utility of a game provides lowered threshold of adoption and extra motive to play.
Simulations	Acceptability, Flexibility	Simulation games can be used as a tool.
Social games	Acceptability, Flexibility	Social interaction will provide extra motive for play and possibly support social pervasiveness.
Pervasive games	Flexibility	Support for secondary use, possible physical activities or other instrumental functions.
Sandbox games, toys	Flexibility	Users define their own play goals.
Family games	Acceptability	The content is screened.
Games as services, digital distribution	Accessibility (physical)	The threshold of purchase is lowered.
Game sequels	Accessibility (mental)	Familiar content.
Licensed games, tie-in games	Accessibility (material), Acceptability	Content is familiar outside the game world.
Episodic games	Accessibility (mental & material)	Games are sequels to each other and payed in smaller units.

Is everything casual?

With the help of this examination, it is easy to see that the casual phenomenon is much wider than usually perceived. Different manifestations and combinations of the casual design values can easily be explored and innovated even further. Even though there can be some casual design solutions in basically any game, this does not mean that every game is or should be casual. This emphasizes even further that casuality is not completely explained by certain properties of a game.

Some design values or specific design solutions are still better suited to serve hard-core and enthusiastic game experiences. Rich experiences with highly immersive and engaging games require time and devotion and can explore such deviant, terrifying or controversial topics as violence, horror, war, sexuality, politically flammable topics, absurdity or other-worldliness like fantasy or sci-fi.

Casual game design principles and solutions

Design of a game does not need to correspond completely to the casual design values in order to make the game acceptable for larger audience. In this sense, the game itself is not casual, as is not the player. An activity or the attitude towards games can, however, be casual and this can be supported with various different combinations of design solutions. The different design solutions may manifest certain design values. Design values can be split into various design principles and design solutions, forming a basis for possible heuristics for the design.

Acceptability

As digital games have become consumer products intended for wider audiences, the importance of the acceptability of the content has already been established. ESRB rating system categorizes games according to the content and the suitability in the form of age recommendations. However, the design principles of acceptability should not only cover screening of the content but also providing such contents that are largely accepted as positive activities or subjects.

The design principles and possible design solutions of acceptability can be listed as follows:
- content of the game fits the norms of players' social context
- avoiding offensive topics: the content is cleared of violence, sexuality, explicit language, religious topics and substance use
- using abstract topics and game mechanics such as puzzles
- using already accepted game designs, such as solitaires, chess, or football
- games are based thematically on topics with general appeal, such as sports, traveling, nature, gardening, cooking
- game endorses positive emotions and values
- using mechanics such as building, collecting, nurturing, exploration and collaboration instead of destruction, killing, fighting or survival
- investments on the game will not engage the player excessively or will provide a useful function outside the game

– reduced prices or other business models will lower the financial investments and engagement
– the game has instrumental functions, e.g. learning, mental exercise, measuring, loosing weight, social interaction or prizes.

Accessibility

The accessibility of a game is not limited to the cognitive aspects of the adoption of a game, but it also includes the availability of and access to a game product in the physical sense. The design principles and design solutions of accessibility are as follows:
– game is mentally or cognitively easy to access
– the topic is familiar from other context, such as movies or other media
– concise information, such as descriptive game title and pictures of gameplay
– simplified design
– acceptability issues
– game is physically or materially easy to access.
– digital distribution models
– bringing games to the environments that players use otherwise, for example games in social media or movie theaters
– pre-installation of games
– game demos and trials
– micropayments.

Simplicity

Related to the accessibility, particularly important design principles are to do with simplification and minimization. The design principles and design solutions of simplicity are as follows:
– the player's cognitive load is lowered by simplifying the design
– combined activities, e.g. same action works for every object
– one-button interfaces
– stripped-down number of game elements and rules
– automation, e.g. automatic save.

Flexibility

To support different players and their play expectations, certain limitations and priorities, the design principles should seek solutions for simple, but yet flexible design. The design principles and design solutions of flexibility are as follows:
– the game supports spatial, temporal and social pervasiveness
– the game can be paused, interrupted or left at any given time without loss in the gameplay
– the game can be played in different kinds of locations, such as in a moving vehicle or in bright daylight
– the player can be easily switched
– the game can be used to (many) different functions and with different intensity level
– possibilities for user-created content
– possibilities for instrumental functions
– players can direct their attention to something else at any given time, as in turn-based games
– players can play at their own pace
– error forgiveness
– players can make mistakes without severe punishments.

Model for Expanded Game Experience

As we have seen, the scale of the "casual revolution" (Juul 2008) is much wider that we may have been aware of and we probably have not even seen all of its potential yet. Even though the games themselves would not be categorized as casual, many games already manifest casual design solutions. The expansion of the player base and the evolution of the functions for games in the digital realm produce new design challenges. As discussed above, the shift in the games cultures indicates a need for a shift in design approaches.

The change in design values implicitly suggests that the transformation in design approaches concerns not only the gameplay design, but the larger context of the game-related experiences, namely the expanded game experience. In order to provide suitable services and support for different game experiences, a more holistic framework for design should be adopted. It is not enough to simply adapt new approaches to gameplay design only; we must look at the level of the overall experience, covering the different aspects of the whole experience from information retrieval all the way to the product disposal. Game service design becomes just as important, if not even more important, as the traditional game design, especially in the case of casual players.

In this section I will outline an overall design model for game experiences. The model fits not only to the traditional gameplay centric products that are targeted at the so called core gamers, but it also helps to understand how casual experiences need to be approached. The practical model presented in this report, the Expanded Game Experience (EGE) model, is relevant for the design, marketing and research of digital game experiences.

Consumer cycle meets experience design

Most game experience models concentrate on modeling the enjoyment of the gameplay or other factors in the gameplay session (Ermi & Mäyrä 2005; Perron 2006). On the other hand, there are models that depict the consumer cycle, modeling the order of different consumer activities and the corresponding industry operations. The separation of these two may lead into an overall picture, where the service and the products do not necessarily resonate on the level of the expanded game experience. For example, mobile games have long been touted as a part of casual games realm but at the same time the installation and accessibility issues have driven away most of the potential casual customers. There may not be any sense to cater certain kinds of gameplay experiences if the first thresholds of design are set up too high. If one has no time or skill needed for installing and figuring out the mobile games service, it does not help that the difficulty levels of the games are lowered or that the play sessions are shortened. The course of the design should be holistic all the way through the expanded game experience.

A lot of effort has been invested in lowering the adoption thresholds of casual games. This can be reached for example by providing easy to approach services, simple gameplay, and low prices. In order to outline or understand potential design issues within the casual games experiences it is, however, necessary to look beyond the gameplay itself. Digital distribution, for example, is a very important factor for casual game markets, even though some of the most

popular products are also sold as retail versions. In general it is clear that if the adoption and approach issues are not well designed, the consumers are lost very fast. The Expanded Game Experience model brings together the notions of consumer cycle and experience design.[61] This is especially relevant for the design of casual game experiences, but there is no reason why the model would not be useful for basically any kind of game (service) design – digital or non-digital alike.

Expanded Game Experience model

In the Expanded Game Experience model (see Figure 2), six unique activity sets are identified along with their corresponding transition steps. The model is conceived as cyclic: the user always enters at the same point, and can move from one state to the next until reaching the fifth state. After that she starts the cycle anew from the beginning. However, she can drop out at any time, thus moving to the sixth state.

In this model, the first state of the game experience is defined as *information retrieval*. This is the state where the user has not yet chosen games as her future activity. Users are exposed to games in various different ways. The invites can come from the media or from the social context. Game advertisements on television or other media, discussions with friends, news, game examples and peer experiences and almost anything game-related can get the user interested in playing. This state ends when the user crosses the threshold of *choosing to play*.

Figure 2. Game experiences born in the context of different game-related activities.

In the second state the user has decided to play, but she does not yet know which game she will engage in. This state is called *enabling*. As the interest in playing builds up, the user shifts to browsing different possible games. In this phase she is exposed to game reviews, suggestions from friends, game demos and so on. As something interesting enough has been encountered, the player may be willing to enable the game experience by buying the new hardware, setting up the environment, ordering the game or going to a game shop. This state ends when the user crosses the threshold of *choosing a game*.

The third state is the *preparation* of the gameplay. During this state all the activities that are needed to make gameplay possible are carried out. This may include the player installing the game, reading the instructions or playing the tutorial, creating an avatar, patching a game, setting up the board and pieces or, in multiplayer games, waiting for the other players to join her in the game. The state concludes when all the relevant preparations have been carried out and the player crosses the threshold of *choosing to start*. Note that this is also a choice: the player may choose to start once the game has been installed or she may choose to install all possible service packs and fixes, import numerous skins and other optional add-ons, or even create a mod herself, before choosing to start.

The fourth state is the one in which the traditional game design models concentrate, the state of *gameplay*. Once gameplay starts, the activities evolve according to the game that the player is playing. Gameplay ends when the player *chooses to quit*.

After the play session, the player may extend the experience by entering the *afterplay* state. In this state, the player reflects on the experience, either alone or as a part of a group. This may include discussing the experience with other players or peers, finding more information about the game, telling friends just how great or abysmal a game is and so forth. Afterplay can end in two ways: the player can *choose to replay* or she may – either through choice or thorough random happenstance – abandon the game (experience).

If abandonment is chosen consciously, the player exits the cycle and enters the sixth and final state, *disposal*. In this state the player can, for example, remove the installations, sell the cartridge or pass the board game to a younger sibling. It is possible that the player revisits the game experience later – if prompted by a retro craze, for example – but for the time being the active engagement with this game experience has ended. The activities may be interrupted at any given time and the experience can also dry up before the gameplay has even begun. While it is possible to lose the customer at any given time due to various accumulating thresholds, the most critical thresholds are built in the transition stages.

Obviously, the activity sets, decision points and transitions of activities may in real life have very blurry borderlines. In addition, experiences vary according to the games played, services used and the contexts of the player. While the user can bounce back and forth between the activities and regulate the intensity, the picture is far more complicated than the EGE model, or any other simplified framework, can depict. Some game experiences involve fewer preparations and enabling activities and some are played for a long time with no clear transitions in and out of the game. A single

player can also be engaged in numerous experience cycles at the same time as she anticipates upcoming games, has numerous games installed on her hard drive or on a shelf and can reflect on the differences between games. Cycles can last years (from announcement of a game to final disposal of a loved game) or be over in seconds (becoming exited about a game only to discover that playing it is impossible on the devices the user has access to).

User states, affordances and thresholds

Very few players actually fit into the user profiles drawn from the player data that we leave behind us. User motivations and driving forces, resources, contexts, beliefs and interpretations are in a constant state of flux. Players seek different things in games and different things from different games. Some games may get us excited and some relaxed, some we play because of the social interactions and some we do not play as they do not fit in our worldview. There are days when we are happy or sad, excited or tired, and the game experiences we seek change accordingly. In this sense, the context of the player and the player state is in constant flux (see Figure 3). The design should acknowledge the different states of the user, and services should be developed according to these changes by balancing between what is required from and provided for the player.

From the perspective of the player, there are requirements and restrictions that define the activity, as well as there are possible outcomes of the game experience. All of them are relevant in dif-

Figure 3. User states change according to the state of the game experience.

ferent parts of the experience. The activities of the player can be supported or restricted through the design. The design may afford certain functions as well as require actions and investments from the player in order to proceed along the experience path. On a deeper level of the EGE model (see Figure 4), some relevant user factors and design elements are acknowledged. Each activity state has corresponding user factors that form the user state. The context and worldview of the player create a background that affects the interpretation of the interaction with the service or the game. Current motives and driving forces affect the decisions that are needed in order to enable the activities. The user is able, at least up to a degree, to regulate some of her resources, such as attention level, money and time. Manipulating other resources, such as skill level and knowledge, may be beyond the reach of the user. The design of the game or the service should try to acknowledge, to have an influence on and to respond to the user state by threshold design and by providing affordances in order to maintain an enjoyable flow within the game experience.

The focal points of the design are the corresponding *thresholds* and *affordances* of the game experience environment. What is required from the player and what is provided to the player should be in balance with what the player can provide and what kind of experiences she is seeking from the environment. Affordances of the design are the properties in which the characteristics of the environment influence its function. (Lidwell et al. 2003.) In this model, affordances are further divided into *possibilities* and *receivables* at-

Figure 4. User state factors & affordances and thresholds of design.

Expanded Game Experience
User state variables, affordances & thresholds
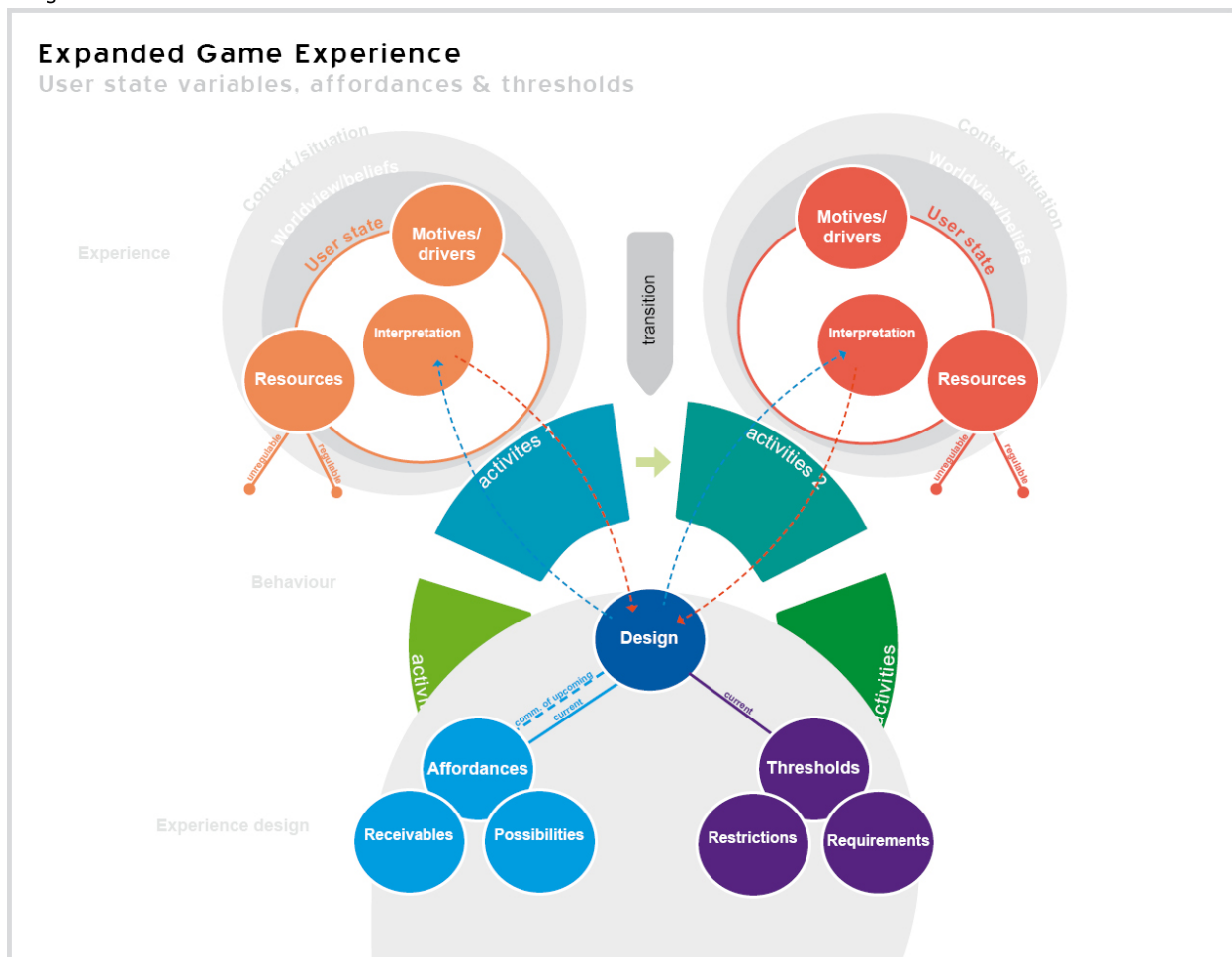
tached to actions. In each state of the experience the player may be informed of the upcoming affordances or the current potential of the design.

Affordance is a relationship between an agent and an object. According to Donald A. Norman's (1988) well-known definition, affordance refers to

> the perceived and actual properties of the thing, primarily those fundamental properties that determine just how the thing could possibly be used [...] A chair affords ("is for") support and, therefore, affords sitting.

Later Norman (2007) has revised his stance on affordances and stated that affordances are communication between a designer and a user. Thus the affordances of an item should be perceptible to the user. In the context of the EGE model, affordances are perceived as receivables and possibilities of the game or the service experience. They are conceived not only as what a user can do with a game, but also as what those possibilities mean for the user.

Thresholds of use are such properties of the environment that prohibit the player from carrying on the experience or promote unpleasant experiences that may result in aborting the activity. Thresholds consist mainly of the *requirements* and *restrictions* but the lack of affordances can also constitute a threshold. In this sense, if the activity is too demanding, limited or does not provide meaningful outcomes for the player, the resulting experience may be aborted or it can end negatively. It is noticeable that "meaningful" is highly user related. What is suitable, meaningful or relevant for some, may be pointless or unnecessary to other. Some players do not seek strong messages or emotionally evoking experiences from games, while for others games provide the highest peaks of their experiential spaces. Thresholds are also markers that the user needs to overcome. There are restrictions and requirements the player must be able to cope with as she navigates through an experience. Thresholds are about delayed pleasure, as they contain a promise of what is to come. Overcoming an obstacle imbues an experience with meaning ("this is not for everyone", "this must be complex as it is so difficult to set up"), and creates a sense of exclusivity ("grandpa wouldn't be able to install this"). For example, when designing game experiences for wide audiences, the focus is on lowering the thresholds as much as possible and concentrating on general appeal affordances that make games easy to access, fast to adopt and safe to play. In this way, the people with less time, attention, skills or resources can be drawn into the game experiences and kept there. On the other hand, some of the intense experiences may be designed to involve elevated thresholds, such as rare collectibles, wide variety of possibilities as well as affordances that widen the possibility space of a single game product.

Discussion

The Expanded Game Experience model helps in framing a design process in which different actors work on different aspects of the design. The EGE also helps to understand the wide variety of game-related experiences for the user, and thereby possibly rationalizes the overall design decisions. By analyzing existing game services and game products possible weak spots and conflicting design decisions can be spotted. This can further provide a basis for the de-

velopment of future services that provide increasingly enjoyable and fluent game experiences.

Furthermore, as we live in a culture in which more and more people play games, the EGE can help to understand how to design game experiences for those players who fall outside the so-called core gamer group.

Conclusions

As the digital world becomes a part of everyday life for a larger population, the variety of functions that games are fulfilling and the thresholds of use for digital games also become more versatile. The rise of casual game industries indicates transformation in games cultures that embodies this very same development. The direction of the change is not surprising, perhaps even trivial, since such variety of the use of games in physical world and the tradition of games already exists outside the digital world. In this sense, as I have argued above, the "casual revolution" is mere normalization of digital games cultures. This notion is descriptive, rather than normative. I do not wish to state whether the direction is preferable or not, but merely to give an observation of the transformation in a larger scale.

However, a change in current game design values and approaches needs to take place if one wishes to support such transformation. In three decades, we have already managed to build some pivotal premises for digital game design, even within its versatility. Such centralities are, for example, the notions of challenge, immersion, flow and meaningful actions as well as established themes, mechanics and other aspects of games in digital spaces. Why do games need to be highly challenging? Why do I need to devote my whole attention to the game and immerse into its world? Why do I need to feel the flow of the game experience? Are science fiction, war and fantasy really meaningful topics for everyone? What constitutes a good game?

We are used to examine games through the eyes of enthusiastic gamers and game fans. Some of the premises may lie in our implicit beliefs that we have acquired through our own game experiences. A wider understanding of game cultures also requires understanding of the context of the experiences and the complex dynamics between the design and the user throughout the whole experience cycle. Games can bring about different experiences and users may choose different games for completely different reasons. Even though the variety of design possibilities is endless, the direction of the design should embody somewhat coherent design values.

As we may possess vast tacit understanding of the values of hardcore game design and core game design, bringing out casual game experiences may be difficult without an explicit change in the design approaches. In this chapter I have presented four casual game design values: *acceptability*, *accessibility*, *simplicity* and *flexibility*. The available casual design solutions seem to follow these values, and new solutions may be easier to develop with the help of this explication. The casual game design values together with the Expanded Game Experience model are designed to help promote an expanded and more open perspective in game design in order to further innovate casual game products and services.

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Chapter 10
by Lassi Seppälä

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Use of Camera in Mobile Games and Playful Applications

The chapter summarizes the central findings of master's thesis by Lassi Seppälä, entitled Use of Camera in Mobile Games and Playful Applications (Helsinki University of Technology, 2009).

The mobile phone is becoming the most common computer platform for media creation, media sharing and gaming available for the consumers. While it could be argued that its potential has not fully been reached and that it is not as widely used as it could be, it offers many interesting features in one compact package. As camera has become a standard feature in mobile phones, new possibilities for visualizing personal communications and social interaction have emerged. Expressing emotions and joking are among the most common activities the mobile phone's camera is used for, especially, but not exclusively, among younger users (Mäkelä et al. 2000). This kind of user-originated playfulness with the camera and digital images taken with it is hinting in favor of using the camera and the photos in applications designed as playful activities or as full-blown games.

In the previous chapter, Annakaisa Kultima examined the phenomenon of casual games and the underlying transformation of digital play. Kultima states that the digital play is shifting from the adolescent male-oriented entertainment into more diverse experiences and playful activities serving other functions. This trend has been noticed on several platforms; e.g. PCs have web browser based games or small downloadables, consoles have *Xbox LIVE Arcade* and Wii's mimetic user interface. On the mobile platform, Apple's *iTunes App Store* has proven to be a success for games, many of which could be described as casual games.

Mobile gaming has had many characteristics of casual gaming since its beginning with Nokia's *Snake*. With the development of mobile phone technology, the game designs have started to resemble the traditional console and handheld console games, some of them appealing to the more hardcore players. However, the mobile games' role as quick time killers is still holding on. Easy accessibility, short play sessions and simple gameplay are among the key design features that seem to be associated with mobile gaming and are becoming more and more popular on other platforms with the "casual revolution" (Juul 2009) or "normalization of digital play", as Kultima describes it.

The mobile phone has many unique characteristics that other gaming platforms – even if mobile – can not offer. In addition to advantageous technical features, like wide-reaching wireless network connectivity and built-in camera, among the interesting characteristics are the phone's primary function as a device for social interaction and communication, and the availability of context information, e.g. location (Turpeinen, Sarvas & Herrera 2005). Together with the camera, these social features enable new kinds of game designs for mobile use.

The use of camera alone in games in certain ways makes use of the social nature of the mobile phone, bringing out the playful behavior. How can these features and special characteristics be utilized in a game or a playful application? Can the playfulness make an application more appealing for the user and make a tiresome task more interesting? Do the mobile phone's camera and pictures taken with it have enough potential to be used in games for more than just a curiosity?

Mobile game research

This chapter is a summary of a master's thesis that is resulting work from two research projects; a Tekes-funded[62] project *MoMUPE* (or "Network of Mobile Context-Aware Applications and Games"), which aimed at developing and productizing the open-source MUPE (*Multi-User Publishing Environment*) platform,[63] and *<täky>* (or "User generated metadata as meaning indicator and part of the user experience").

The *MUPE* platform, originally created in Nokia Research Center, can be used for rapid development of context-aware multi-user applications, games and services that can be run on any mobile phone with Java support. The *MoMUPE* project was a joint venture of Nokia, Lappeenranta University of Technology, Helsinki Institute for Information Technology (HIIT), Tampere University of Technology, and VTT. The project was carried out during the years 2006–2007. The thesis aims to continue and expand upon one of the themes of the *MoMUPE* project and also build on the work done in the *Mobile Content Communities* project at HIIT, e.g. *MAR Toolkit*, or *Mobile Augmented Reality Toolkit* (Kuikkaniemi et al. 2006). Finally, the writing of this chapter and a part of the related analysis related was done for the *Games as Services* project.

The purpose of the thesis is to study the possibilities of using the mobile phone's camera in mobile multiplayer games and playful social applications, as well as to define the key design features for mobile multiplayer camera games. The thesis examines how some game-like and playful elements can be utilized for functional applications or how to use games to help in functional tasks. This is done by using the word-guessing game concept presented in this study for a functional objective, i.e. metadata creation for mobile digital photos.

The report tries to answer the following research questions: What are playful camera applications? What are the key design features for (mobile multiplayer) camera games? Can camera gaming be applied to metadata creation for mobile photography?

Research method and scope

The research methods used in the thesis are literature review, brief case studies, game prototype development and focus group testing of the prototypes. The main objectives of the literature review are to map out the background of casual mobile gaming and the use of the camera in digital games, to identify the basic components and themes of what constitutes a game, and to inspect how these components could be utilized in more serious applications to enhance the user experience.

The thesis is built around the development process of a camera game prototype and thus, all game design and development related study is focused with that in mind. The game prototypes described in this study were originally designed as a part of a project aiming for developing the *MUPE* platform, thus the development of the prototypes was dependent of the development of the platform. Some features conceptualized for the games were impossible to implement at that stage, while others were added to the platform after they were deemed useful in games and applications, like the ones described in this study. The development of the games was carried out in close co-operation with the development team of the platform. After the development of the platform was stopped, the development of the game prototypes was dependent of the features available at that stage.

The games presented here are not finished products, but rather proof-of-concept prototypes for using the mobile phone's camera in games. The technology offered by modern mobile phones is advanced enough for this kind of games, but because of the unfinished development platform, the design and usability is not polished enough for a finished product. The full evaluation of commercial potential of these games and game concepts is not in the scope of this study, however the appeal of the game concepts on players was studied in the focus group tests.

The user experiments conducted as a part of the development are small-scale, simple tests mainly used for testing the game and the platform to find problems in the implementation, as well as examining users' reactions to and opinions on the game concepts. The users were interviewed face-to-face in a group discussion after playing the games. No in-depth questionnaires or other advanced techniques were used for evaluating the games.

Casual games

In recent years the digital gaming has been going through a noticeable change – games and gaming as a pastime have become more acceptable and more accessible. This has partly been driven by technical advancements allowing easier access to games via the Internet, the growing interest in casual games, and new user interfaces and input devices that encourage more enactive and social gameplay. Leading the change into a more casual gaming have been the popular game series like *Guitar Hero*, *SingStar*, and the Nintendo Wii console with its motion-detecting controller, Wii Remote.

The term "casual game" is usually associated with such features as simple and easy-to-learn gameplay and controls, easy accessibility, lack of immersion required by the game, and short play sessions. Typical examples regarded as casual games are *Solitaire*, *Tetris* and *Bejeweled*, but *SingStar*, *Guitar Hero* and the like are often considered as a part of the casual game phenomenon too. Casual games are digital games developed for the mass consumer, including those who would not normally regard themselves as "gamers" (CGA 2008). Casual games may also be described as games for everyone (IGDA 2006).

With a more in-depth look at casual games, it can be seen that "casuality" is not just a simple list of properties of a game, and that the casual-games phenomenon answers to a larger transforma-

tion in games culture (Paavilainen et al. 2009). New user groups and use cases have appeared. The division of sexes and the age distribution of gamers are changing. Especially, over 30-year-old women enjoy playing games on casual gaming websites, and in fact most of the paying customers on those sites are females (CGA 2008). At the same time, gaming as a secondary activity has become more common, e.g. playing while thinking other subjects, like work tasks or dinner plans, or socializing with friends either over the net or face-to-face (Paavilainen et al. 2009). As Kultima stated in the previous chapter, the digital world, including games, is becoming a part of everyday life, and games are starting to fulfill a variety of functions and they are becoming more acceptable and accessible.

In addition to casual gaming, casual and playful elements are emerging more and more in applications meant for a functional purpose. According to Barnett (1990), playfulness as a human trait constitutes of physical, social and cognitive spontaneity, manifest joy and sense of humor. In this chapter, the term "playful application" refers to applications that utilize game-like or other entertaining elements that are not necessarily required for achieving the end result the application is intended for.

The elements mentioned above can be as simple as little graphical gimmicks or actions the user can take, e.g. the poke feature in Facebook. It can even be a humorous error message when something goes wrong, like in Figure 1, or something else surprising and unexpected that makes the experience more memorable or more enjoyable. The function of playfulness in application design is to engage and captivate the user's attention, and involve the user more closely in the activity. However, the use of such elements should be carefully considered, as the effect can be the opposite, if the design and use of such elements is poor. One notorious example of a playful element is the Microsoft Office Assistant.
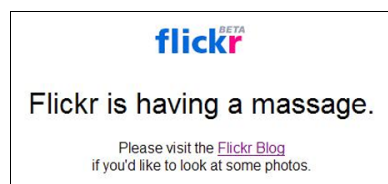
Serious games, functional games, useful games etc.; there are many terms to describe the games that aim to achieve a goal or goals other than just entertaining the participants or audience. The term "serious game" is sometimes used of educational games only, i.e. games that use pedagogy to infuse instructions into the gameplay experience, but still keep entertainment as the primary component. Similar games are used in health care, training, business management, and defense industry, for example. A recent example of a serious game aimed for consumer market is *Wii Fit* for Nintendo Wii – the combination of a balance board and video game for physical exercise.

As opposed to a playful application, a "serious game" can be defined as a game which primarily intends to entertain, but in addition aspires to some more serious goal. However, the border between playful applications and serious games is vague and the two do not necessarily need to be separated in definition. The common factor in both being a goal other than entertainment, however important or strong that goal is.

Casual mobile gaming industry

Casual games are regarded as a rapidly growing industry. The estimation for 2008 was that the market will surpass $2 billion in the US alone (IGDA 2006) and €9.2 billion (approx. $12 billion) world-

Figure 1. An example of playfulness in web design.

flickr BETA

Flickr is having a massage.

Please visit the Flickr Blog
if you'd like to look at some photos.

wide – approximately a third of the entire video game industry's revenue (R&M 2008). Looking further, the estimation is that by 2012 the casual gaming on all platforms will account for over 46 % of the industry's total sales. Figure 2 shows the estimated breakdown of the casual gaming market into different platforms in 2012.

Figure 2. Breakdown by segment of the casual gaming market in 2012 (R&M 2008).
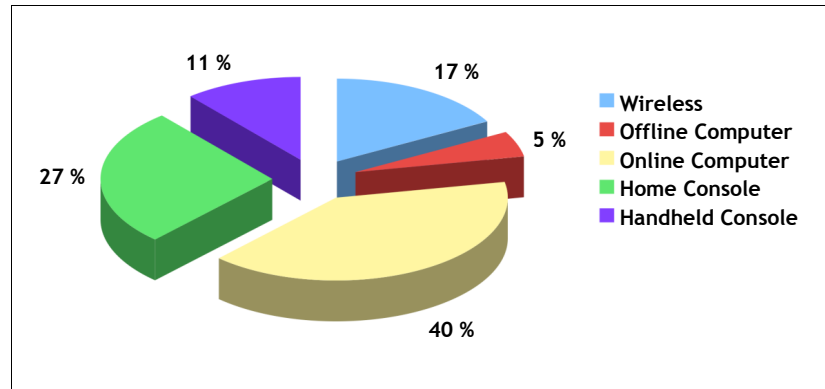
However, as the estimation above was made before the launch and success of Apple's *App Store* for iPhone and iPod Touch, the share of the wireless segment will probably be higher. Even more so since other mobile manufacturers are following Apple's lead and bringing out their own easily accessible applications stores. A year after its launch Apple reported over 10 000 games available for purchase or free download and has had over 13 000 game titles published during its first year. As a comparison, in 2005 the combined number of games offered by the five largest US carriers was 1 612 (IGDA 2005). Figure 3 shows the breakdown of the largest game categories in the *App Store*.

Figure 3. Breakdown by game category (only largest shown) of game titles published in *App Store* during its first year. (Moblix, retrieved 16 July 2009.) http://www.mobclix.com/
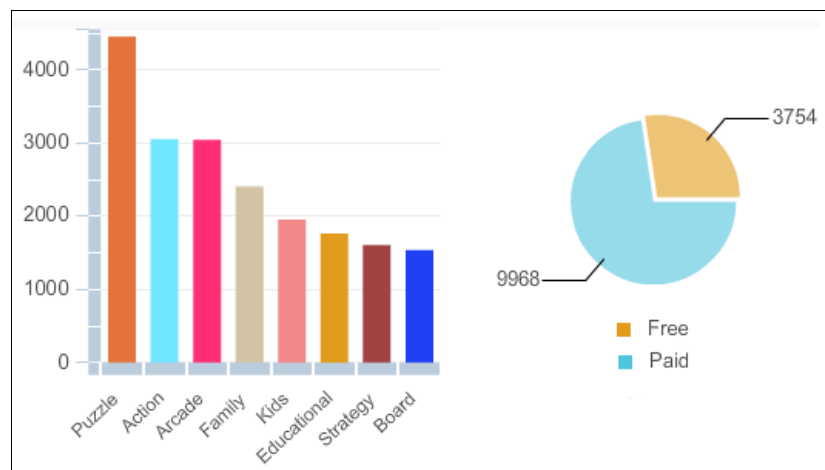
As Figure 3 shows, the puzzle game category, which is usually considered as casual gaming, is the category with the most titles in the *App Store*. The puzzle game category in general also holds the most revenue creating titles in mobile gaming – *Tetris* type of games having been the high performers in the charts (IGDA 2005).

Although the whole mobile gaming field is often considered casual gaming, the gameplay habits indicate that mobile games are not just for casual time killing. A study made in 2004 showed that mobile games are played longer than 10 minutes at a time and more than once a day. In addition, they are typically played at

home, despite most of the mobile gamers also owning a gaming console (IGDA 2005).

The business potential of casual mobile games seems to be high and with the new publishing models provided by *iTunes App Store* and *Nokia Ovi*, both the publishing and buying of game titles is easier, which makes the games even more accessible for the consumers. Also, the costs of mobile gaming are considerably lower than, for example, console gaming. Console games can cost as much as 10 times more than mobile games.

Games and playfulness

Casual games, serious games and playful applications can stretch the boundaries of what are commonly perceived as games and utility applications. In some cases a game can benefit from a more utility-like approach, like for example *EVE Online* with its charts and menus — definitely not an appealing approach for everyone, but serves well the game's themes of space travel, item production, trading and detailed space combat. On the other hand, an application with serious means can be more appealing with a little playfulness in its design.

Defining what games are is not a trivial task. The many forms of games and playing make creating a sensible and universal definition nearly impossible. Björk and Holopainen (2003) note that the dictionary definitions show an emphasis on an activity involving interaction, participants with conflicting goals, and formalized ways of achieving those goals, i.e. rules. In a similar note *Dictionary.com* adds a definition:

> a competitive activity involving skill, chance, or endurance on the part of two or more persons who play according to a set of rules, usually for their own amusement or for that of spectators.

However this definition does not take into account the single player aspect of digital games where one or more of the players can be replaced by an artificial intelligence programmed into the game. Doing this, however, changes the nature of the game as these "artificial players" do not necessarily play by the same rules as the human player.

The concept of rules as a whole is somewhat vague when discussing modern digital games, as in many cases the rules and decision-making algorithms and mechanics are not directly perceivable by the players. In addition the competition aspect changes its nature when human player is competing against the computer-controlled player. In some games it is also possible for the human players to play co-operatively against the computer-controlled player(s), i.e. working towards a common goal instead of having conflicting goals. The competition that the computer offers can also be something else than a "player", for example something more abstract, like time or laws of the physics — anything that gives the human players something to use their skills or knowledge against.

Costikyan (1994) defines game as follows:

> a form of art in which participants, termed players, make decisions in order to manage resources through game tokens in the pursuit of a goal.

According to the traditional definition of "game" the fundamental driving forces behind gaming seem to be succeeding in the tasks

laid out by the game and competing, whether it is against other players or against yourself, i.e. beating the scores of others or your own previous score. The game rules give the boundaries and make up a part of the challenge. Other appealing aspects of especially modern games are storytelling, exploration and discovery – themes that are predominant in other forms of entertainment, like literature, movies and television.

A classic definition of "play" can be found in *Homo Ludens* by Johan Huizinga (1955). He describes play as a free, non-profit and "not serious" activity outside of "ordinary" life, but at the same time something that absorbs the player intensely. Furthermore, regarding the non-seriousness of play, he also states:

> To our way of thinking, play is the direct opposite of seriousness. At first sight this opposition seems as irreducible to other categories as the play-concept itself. Examined more closely, however, the contrast between play and seriousness proves to be neither conclusive or fixed.

According to Huizinga, playfulness and seriousness do not exclude each other, and even though Huizinga also describes play being a non-profit activity, many modern day phenomena could be described as being playful, serious and profitable at the same time, as, for example, professional sports and fantasy sports games played for real money prizes.

As a rather grim example, one could argue that football hooliganism is both serious and playful, as it is something out of ordinary life and done for excitement and "fun" in an extreme sense of the word. The example of hooliganism also connects into another interesting characteristic of play suggested by Huizinga, i.e. the formation of social groupings, which is a major aspect of many online multiplayer games and successful Web 2.0 applications with playful features.

Playful applications take the concepts of fun, play and discovery, which are common in games, and merge them with serious, mundane, practical or functional tasks. As mentioned earlier, this can be as simple as a graphical gimmick in a user interface or, for example, the possibility to change the whole outlook of an application by "re-skinning" it. Often users themselves create playfulness when given tools that make it possible. For example, a tagging system can be considered playful if it brings out creative, entertaining and social behavior. In fact, the well-known photo sharing and tagging service *Flickr* was evolved from the tools created for a massively multiplayer online game titled *Game Never Ending* (Monnin 2009).

Play and playfulness are not passive qualities; they need interaction, exploration and imagination from the user and rely heavily on the users and their level of engagement. Users can be encouraged to create the playfulness themselves, like for example in Facebook and Second Life, where the services themselves do not provide much playfulness, but enable the users to create it themselves in various forms.

The game designs presented later in this study tap into users' creativity by using mundane everyday objects, i.e. digital photos, in a way that encourages and even forces the user to use his imagination. Mobile photography in itself has been noticed to inspire users to playful activities and interaction. Thus, a simple casual multiplayer game can be created by giving the players an interface

with some limiting boundaries and rules that they can use to compete against each other using photos taken with a mobile phone's camera. The users themselves create the content without any computer-controlled players. Furthermore, the basic game concept can be utilized for a more functional use, i.e. tagging of digital photos.

Camera in games and playful applications

Camera technology has been used in various forms and on different platforms of gaming in the past with varying success – but the breakthrough to mainstream is yet to be seen. This section gives some examples of games and playful applications that use camera as well as an introduction to the various ways of how to utilize camera in games.

Nintendo Duck Hunt and other similar light gun games are not commonly perceived as camera games, but the technology used for targeting is comparable to camera sensors. The light gun's sensor detects the change of light in rapidly flashing frames when the trigger is pulled while the gun is pointed at the screen. This way it can determine where on the screen the gun was pointed.

Sony EyeToy is a camera device for PlayStation 2 console. It has been succeeded by *PlayStation Eye* for the PlayStation 3. Eyetoy is amongst the most well known camera gaming devices. The games usually use player's movement as an input.

iSee, while not an actual game, makes it possible to interact with urban environment in a playful manner. It is a web-based application mapping the locations of closed-circuit television (CCTV) surveillance cameras in cities. Users can give a start and end point to find a route that avoids the cameras on the way, i.e. find the path of least surveillance. The act of actually using that route could be seen as playful, depending of the motives of the user, of course.

Mopix is a location-based mobile photo-sharing platform that lets users upload photos taken with their mobile phones to a system that shows them on public displays. It aims to take a playful approach to camera surveillance by exploring it as an agent of entertainment and remote interaction. People can interact with the photos by rating them and leaving comments when they view them on the public displays. (Chen 2008.)

Assassin is a mobile multiplayer camera game that uses the photos taken with a mobile phone's camera as the main form of player-to-player interaction. The goal of the game is to "assassinate" designated targets (other players) by taking photos of them without being noticed. The game is meant to be played in the background of other activities, for example during a working day. The photo taken of an assigned target is sent to the target player for judgment. Thus the game mechanic relies on players' honesty. Another option is to use peer review for judging the success of an attack. (Suomela, Räsänen & Koivisto 2006.)

MAR Toolkit (or *Mobile Augmented Reality Toolkit*) is an augmented reality toolset built on top of *MUPE*. The toolkit's *POT* (*Physical Object Tagger*) component provides a way to bring tagged objects from the real world into the virtual world by using the camera of the mobile phone to read 2D VisualCode tags. A game called *Mupeland Yard* demonstrates the use of the toolkit's func-

tionalities. The basic game-play is deprived from the board game *Scotland Yard*. *POT* is used to provide players information at game specific locations, e.g. clues at a crime scene. Capturing a criminal takes place if a detective arrives and reads a tag within few minutes after the criminal has activated it. (Kuikkaniemi et al. 2006.)

Mozzies was a game pre-installed on the Siemens SX-1 mobile phone. The game augmented video feed by superimposing mosquitoes on it. The player's task was to shoot down mosquitoes by moving the phone to aim. The camera's video feed was used to sense the motion of the camera.

Ghostwire is a ghost-hunting game in development for Nintendo DSi hand-held console, as well as various mobile phones. It augments the real world when viewed through the device's camera and screen by superimposing in-game ghosts onto the video feed.

In addition there are numerous games and playful applications that utilize a web camera in the browser based Adobe *Flash* environment or in downloadable software installed on a computer mostly in a similar manner as Sony *EyeToy*.

There are several ways of using the camera in games:

— As a sensor: image or video feed can be used to sense motion, which can be either the motion of something or someone moving in the video or the movement of the camera itself. Video feed can also be interpreted as an abstract signal that is used to represent something in the game, e.g. red color is the energy needed to cast a spell.
— To augment reality: a phone's display is as a view into the game world. The graphical user interface and game elements and objects are superimposed on the camera's video feed.
— To read barcodes or 2D-tags: tags can be used to represent game objects in the real world for a quick-and-dirty location based gaming, or they can be used to bring the real world objects into the game world.
— To take photos: photographs can be used as game elements or to verify that the player has completed a task, for example in treasure-hunt type of games. Photographs can also provide various kinds of contextual information about the user and his surroundings.

Why mobile camera games?

Camera has become one of the most used default feature of mobile phones. Mobile photos have opened a new way of communication – they enable creative, spontaneous and playful moments even between users who are separated by long distances. Mobile photography is a medium that by itself creates playfulness that is even further encouraged by allowing simple features, like commenting, rating and linking of the photos. Building games around this inherent playfulness is an interesting possibility.

With a camera phone the sharing of photos is almost instant – you can do it then and there using a cellular data connection. There is no need to wait until you get home and download the photos to your computer. This also allows fast two-way communication, as you can get comments about your images soon after uploading them to a photo sharing service or sending an MMS to your friend.

The nearly instant transferring and sharing of mobile photos enables the kind of interaction needed for casual multiplayer games

and playful applications. The instant interaction does not have to be directly between users, as long as the user has something interesting to do within the game or application and knows that his actions are seen by others and have an effect on them.

As presented above, there are many ways to use the camera in mobile games, but the most straightforward way, i.e. using photos, has not yet been utilized to its full potential. Photos and pictures have been used in non-digital gaming for a long time, for example in jigsaw puzzles, drawing games, like *Pictionary*, and in memory or concentration games where the objective is to find matching pairs of cards among the face-down cards laid down on the table.

With photo sharing websites like *Flickr*, the users have been allowed to use their creativity, and as a result many photo related games have surfaced. Some of them are external games that use the *Flickr* API to tap into the large collection of pictures. For example, see *Memry*, which is an online version of the classic memory game.[64] It uses either a randomly chosen tag or asks the user to give one with which it searches *Flickr* for pictures to be used in the game. Another example is *Fastr*, where multiple players compete by guessing the tags of the photos presented to them.[65]

In addition to the external games utilizing *Flickr*, there are games played within *Flickr* itself. Most of them are association type of games played in *Flickr* discussions, where users post pictures that are associated with the previous poster's picture, creating chains of associated pictures. These games usually have no winners and go on as long as the community of users finds interest in it. They are good examples of user-originated playfulness and user-generated content.

In addition to pure entertainment purposes, photo games can be used for more functional goals, for example metadata creation for images, learning and education, or advertising. A simple example of an educational photo game could be a game that challenges users to recognize objects, for example animals or plants, in images. With instant feedback of correct and incorrect answers, the user can learn while playing.

Photographs are something everyone is familiar with and the paradigms and interfaces of mobile photography are at least somewhat familiar to most users. Thus, using photographs in games and playful applications should provide the users a familiar environment, which encourages imaginative thinking and social fun.

Designing mobile multiplayer camera games

There are several important design features for designing a mobile multiplayer camera game that need to be taken into consideration. The most essential of these features are briefly dicussed below — some of them apply to all mobile multiplayer games, while others are specific to camera games.

Number of players. Is the game intended for a small group of players or is the number of players unlimited (in theory)? If the former, how are the games organized and game groups created? How does the server technology answer to the performance requirements of possibly having a high number of players connected simultaneously?

Synchronous or asynchronous. Is the game happening in real-time, with all the players connected and possibly interacting during

[64] http://www.pimpampum.net/memry/

[65] http://randomchaos.com/games/fastr/en/

the gameplay (synchronous), or can the players participate in the game without being connected simultaneously (asynchronous).

Persistence of the game world. Does the game world exist even when the player is not connected? In a persistent game world, the game goes on even if the player is not connected. In a multiplayer game the changes in the game world are usually created by other players, but the game can also progress by computer-generated events when the player is not connected.

Session length. How long on average does a single play session take? Does it take just a few minutes or several hours? This of course varies depending on the player, but it can have an impact on the other features of the game and affect the gameplay experience greatly. If needed, the session length can be limited by the game rules. In general, it is advisable to design multiplayer games so that the sessions last 15 minutes or less (Forum Nokia 2003).

Frequency of play. How often on average does a player connect to the game and play it? This can be several times a day or maybe just once a week. Some games only allow a certain number of moves in a specific time frame. This can balance the game between players who have different amount of time to spend with the game. Like session length, frequency of play is dependent on individual player, unless limited by the game.

Network performance. This is quite possibly the biggest bottleneck of mobile multiplayer games. The extra bandwidth provided by the latest mobile network technologies does not have a great impact on most games. The more important factor is latency, i.e. the amount of time it takes for a system to respond. In mobile networks it is not usually consistent enough for real-time multiplayer gaming. The games need to be optimized to send a minimal amount of information to communicate the game state and the players' actions. However, the latency of many wide area wireless networks is beyond the human tolerance of delay (~200 ms), which can render real-time mobile games unusable even when optimized. Latency can be dealt with by designing the game to avoid the problems or even by making latency a feature of the game. (Forum Nokia 2003.)

Interruptions and players dropping out. In multiplayer games, especially in those with long play sessions, it often happens that a player has to leave or is unintentionally dropped out of the game. Dropping out can be a result of poor wireless network coverage, or the game may be interrupted by an incoming phone call. Whatever the reason, the loss of one player should not disrupt the experience for the other players. In the worst case, one player dropping out can lead to the whole game being interrupted. The player's possible return to the game also needs to be considered. (Forum Nokia 2003.)

Target device(s) and platform(s). The device base for mobile gaming is vast and diverse. It is probably impossible to develop for all manufacturers of mobile phones in any profitable way. On the other hand, even for a single software platform like MIDP, a large variety of shapes, sizes, display resolutions and input methods are available. Thus, mobile developers must adapt the control methods and graphical user interfaces for their game so that they function effectively across many different hardware designs. A typical approach is to adopt the least-common denominator: the fewer controls, the better. Devices and platforms have their advantages and

disadvantages over each other, and these should be considered carefully when developing a camera game. (Powers 2006.)

User-generated content and challenges. In multiplayer games, players usually provide the challenge to each other, unless they are playing co-operatively against obstacles provided by the game. As players create their own opposition and content for the game, the game design does not have to supply it, possibly freeing up resources for other parts of the design. However, it is usually seen that the multiplayer feature by itself makes a game more complicated, in some cases too complicated for casual games. (Forum Nokia 2003; Paavilainen et al. 2009.)

Game balance. A multiplayer game is balanced if players feel that they all have an equal chance of winning (Forum Nokia 2003). Game balance (or the illusion of it) is a combination of design decisions and overcoming technology issues. For example, inconsistency in network performance among the players can give an advantage to some players. This is an issue especially in synchronous games. In the mobile gaming field different handsets can put players in unbalanced positions if the game design and user interface do not take this in to account. (Also, both session length and frequency of play can affect the perceived game balance.)

Communal and social aspects. The best multiplayer games encourage communication among players and help build strong connections among them (Forum Nokia 2003). A strong community and social connections keep players coming back to the game even if the game itself has started losing some of its appeal. Community and social aspects can be a part of the gameplay, like diplomacy and in-game communication, or it can be connected to external supporting activities, like chat rooms and web sites. Another interesting aspect are the social activities that happen because of the game in the real world, for example in case of pervasive location-based games where players move around in the real world.

Special characteristics of the mobile phone. A mobile phone is more than a gaming device and has many interesting features that can enhance the mobile gaming experience, making it something more than just another hand-held console. Location-based gaming and context-awareness have been buzzwords for some time now. Neither of them has really broken through into mainstream gaming yet. The game concept built around using one or more of the mobile phone's special characteristics has to be interesting and make good use of the features of the phone – not just add them for curiosity. Equipped with a camera, a mobile phone can give various kinds of contextual information, e.g. user's location, time of the day, weather, who the user is with, or what she is doing.

Photo resolution and quality. This is specific for games that use photos. The photo resolution used in the game has to be big enough for the photos to be clearly visible in even the highest resolution mobile phone displays. However the file size of the photo should not be too high, in order to cut down upload and download times and possible costs.

Privacy issues. The camera in a mobile phone enables an easy way to invade other people's privacy. This is, of course, ultimately in the hands of the user, but the game design should not encourage this kind of activity, and the users should be informed of possible sanctions in the case of misuse. Some kind of moderation is proba-

bly needed for any game that allows the players to create content by themselves.

Fun of photography. How to encourage photo taking and bring out the imagination of the players? Often, setting boundaries and making rules that limit the options players have, actually enables them to be more creative. Given too many options, the players might get overwhelmed. In-game examples and quick tutorials are also a good way to make the game more approachable.

Creating a camera game

This section describes the conceptualization, design and development of a camera game line. It goes through three development iterations, describing the designs and how they changed during the development process.

The development platform

As this work is partly related to the *MoMUPE* project, the choice of the development platform was obvious. However, in many cases choosing the development platform is not trivial and the decision depends on many factors, such as the device and user base that it can reach, the technical features it can offer, the ease of development and how well it can be used to make a polished product.

Game concept

The original concept behind the games described in the following chapters was thought up in the aftermath of a workshop session for the *MoMUPE* project. The aim of the *MoMUPE* workshop was to develop ideas for context-aware mobile games and applications. Using brainstorming and group-work techniques, numerous ideas for context-aware games were brought forth. Some of them used the mobile phone's camera to provide contextual information. However, none of these ideas were either possible to implement or deemed strong enough as a concept. The idea for combining aspects of *Pictionary* and the popular Finnish TV quiz show *Kymppitonni* came some time after the workshop.

In *Pictionary*, players try to guess specific words based on their teammates' drawings. The idea was to use the same kind of visual clue and guess-the-word mechanic, but instead of drawings, photos taken with a phone camera are used. A randomly chosen word is dealt to a player who then needs to represent the word using a photo taken with the inbuilt camera of her phone. The photo is presented to other players, who try to guess the word.

The concept avoids the problems set by technology, as the camera is used for its most basic function, i.e. taking photographs. This is a very casual approach to gaming, and the game is not targeted at the more hard-core gaming audience. Rather, it tries to build on the social interaction, e.g. joking, storytelling and other play-like activities, that can be seen around mobile snapshot photography. The concept also makes use of user created content: once the game is running, all challenges and content are created by the players. As there is no need for the developers to create content (other than examples), the game is self-sufficient.

Pictionary is a team-based game where the player who is drawing and the other players who are trying to guess the word, all have

the same objective: to find the correct answer. For a mobile multi-player game this kind of team-based approach could be problematic as it would require more players and increase the waiting times for the players in the other team(s). Moving away from the team-based approach, however, presents a problem for the gameplay: what is the objective for the player who is taking the picture?

The Finnish TV quiz show *Kymppitonni* uses a guess-the-word mechanic where the competitors take turns to make riddles. Each of the other players gets one chance to solve the riddle presented. They cannot hear each other's guesses, so they can not base their answers on the previous guesses.

The point scoring in *Kymppitonni* is based on the riddler getting points if at least one but not all of the other players manage to solve the riddle. The highest points are awarded if only one player finds the correct answer, and each additional correct answer beyond the first reduces the amount of points awarded. The players who find the correct answer are also awarded with the same amount of points. If either none or all of the players manage to solve the riddle, the riddler is given negative points. Thus, the objective is to get as few correct answers as possible while getting at least one.

The core concept for the camera game described in this report is a guess-the-word quiz game similar to *Kymppitonni* and *Pictionary*, but instead of verbal or drawn clues, visual clues taken with a phone's camera are used. The original point scoring system used in the first two iterations is based on the *Kymppitonni* system.

Gameplay scenario

The following is the original gameplay scenario written before the development of the first prototype. It describes some features that were not implemented in the prototype but were added later, and some that were not implemented at all, e.g. the SMS invitation, as the development platform did not support it at that stage.

Fred is hanging out at the mall spending his spare time when he gets an invitation SMS to a game of *KameraKymppitonni*. One of his friends has set up a game and is waiting for people to join. Another invited player joins, and two more wander in from the server. So, they have got a total of five players and the game is ready to begin.

Fred's turn is first. He gets the word "milkshake" from the game server. He now has 10 minutes (the time chosen when setting up the game) to take a photo to use as the clue for the word.

At first Fred thinks of going to the nearest burger restaurant and taking a picture of a milkshake, but it would be too obvious. Instead he runs to the nearest grocery store and takes a picture of his hand shaking a milk carton. It is a blurry picture, but he thinks it'll work. The picture is sent to the other players and Fred waits for their answers.

After 5 minutes (the max. time they chose for responding) the results are in. Three of the four other players got the correct answer. So, Fred and the three others get points, but not as many as Fred had hoped for.

Now it is some other player's turn and Fred is one of the players who try to guess the word. He thinks he now has time for a quick burger, but when he's at the counter paying for his burger, he gets a picture and has five minutes to come up with an answer. "Wow, that was fast", he thinks looking at the picture while carrying his food to the table. He quickly tries to figure out the clue in the picture. Finally he settles for an answer and sends it. It turns out that no-one got it right, and the player whose turn it was loses points.

The game goes on until a chosen condition is met – in this case they chose to play for three rounds – and the winner is the player with the most points.

During the development, the gameplay described in the scenario changed considerably. The first game we developed was called *KameraKymppitonni*, and its design followed the scenario. The second version was a session-based camera game called *CamQuiz*. Finally *CamQ* was developed based on the earlier prototypes. The basic concept of using photos to make quizzes stayed the same, but otherwise *CamQ* can be classified as a different game, as it was not session-based but persistent and asynchronous.

CamQ

In *CamQ*, there is only one game instance that keeps on "living" on the server, and all the players take part in the same game, the number of players being limited only by the capabilities of the platform and the server. This change was to address the issue of finding players for session-based games, handling players dropping out, and making the game more accessible by allowing players to play whenever they want. With the persistent multiplayer version, a player can login anytime to play, his playtime is not limited on either end and is not dependent of other players. The issue of players dropping from the game is solved, as no serious harm is done if a player is disconnected from the game – he can log back in and continue playing.

A player can now create as many quizzes as she wants. They are added into the quiz database for other players to answer. Each player is randomly given a quiz to answer. After answering a quiz she gets another one. The player does not have to answer the current quiz immediately; she can even leave the game and come back later with an answer.

Quizzes are now created by taking a photo and giving three alternative words to describe it (no random words from the server). An optional textual clue can also be given. When answering, the player is presented with the photo, the optional clue (if given), and the number of letters for each answer. He then gives 1–3 words (blank answers are allowed) and an optional comment about the quiz or message to the quiz creator or other players. The comments given can be viewed by the quiz creator any time or by other players after they have answered the quiz.

One of the major changes was in how points are given and how they are presented to the players. Since the game is technically never-ending, a traditional cumulative scoring system would have been unbalanced and favored those players who have been playing longer. Instead, the implemented scoring system requires a constant good performance from the player to stay high up in the High Score chart, as the points are calculated as averages from all the answers the player has given and all the quizzes he has created. Scores are displayed using a graphic representation similar to the network signal strength meter used in most mobile phones. The more bars the player has, the better his performance has been in the game.

The scoring works as follows:

– **Answer Score.** The score from answers is calculated as the ratio of correct answers to all answers you have given (empty answers are counted as answers). The more correct answers a player has compared to all answers he has given, the more bars he gets on his score.

- **Create Score.** The objective is to get 50 % of correct answers for each quiz word. Thus the players need to avoid both too easy and too difficult quizzes. The player gets more bars the closer he gets to 50 % on every word or every quiz.
- **Total Score.** The player needs to create at least one quiz and answer one to get his total score above zero (empty bars). The total score is calculated as the average of the scores from the answered and created quizzes.

Graphics and user interface were redone completely in co-operation with a professional graphics designer. An example of the user interface and graphics can be seen in Figure 4.

Photos taken by the players are uploaded in the 640×480 resolution and resized on the server for different client resolutions when needed. In the game, players first see a small preview image of the photo, but they can see it in full-screen size by clicking on it.

Figure 4. Screenshots from *CamQ.*
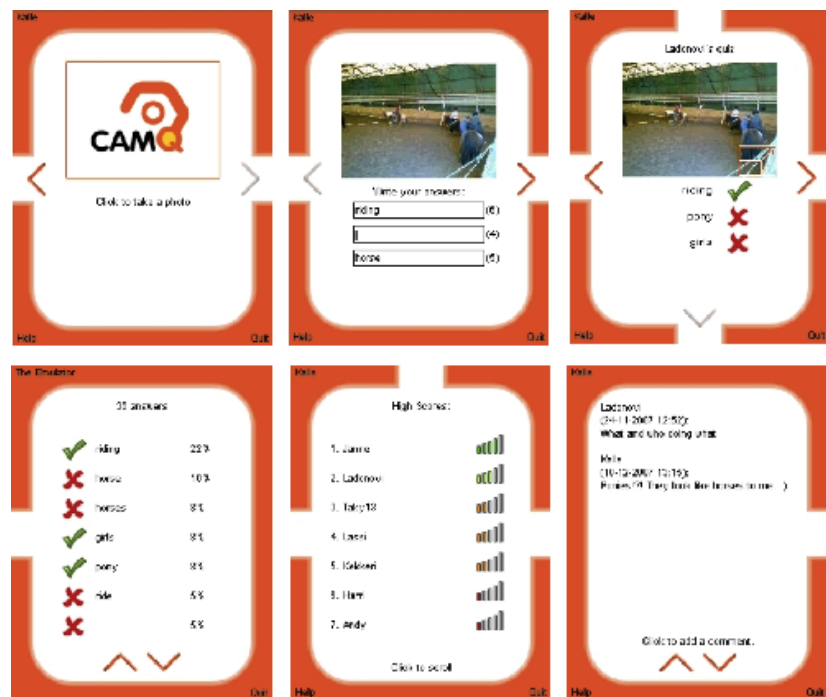
Game evaluation

The game was evaluated and tested in various ways and the experiences and feedback from the tests were taken into account during all the development iterations. This chapter describes the evaluation methods on the main iteration phases of the development process of the *CamQ* game line.

In-house testing and evaluation

The in-house testing, i.e. testing done by the people working in the project, started by prototyping the basic game concept with SMS and MMS messages with one person acting as a game master and running the game. This simple paper prototype pointed out some problems, most notably that the quizzes needed something more than only the photo to be solvable easily enough. This led to using the number of letters as a clue. The prototyping also helped in balancing the point scoring system.

The in-house testing continued throughout the development process to find problems in both the gameplay and the technical implementation.

Concept and gameplay evaluation using a working prototype

The first working prototype was used in a focus group session with outsiders playing the game. A group of 5 players played the game 3 times in a row. The playing was observed and the players were allowed and encouraged to comment on anything related to the game both during the play and afterwards during a freeform group interview session. The general opinion was that the concept of the game was good – they found the idea of using photos in a word guessing game fun and interesting.

The following is a summary of the notes and observations from the focus group session:

- The number of players: The game should be aimed and optimized for groups of 4–5 people. Originally there were max. 10 players. However, groups of 10 players are highly unrealistic. The platform and game need to be tested for tens or hundreds of players playing simultaneously in different game instances.
- Interaction mode: The advantages and disadvantages of persistent, session based, asynchronous and synchronous gameplay need to be examined in more detail. Waiting times in the prototype are too long.
- Functionalities: Chat is a definite advantage. Archiving the quizzes and answers for later use?
- Points: Points can be used to buy more clues? Some kind of gambling mechanism for the quiz creator? Bonus points for quick answers?
- Social aspects: Getting help from people not in game (friends, strangers) is an interesting social feature. Playing in the same physical location vs. playing away from each other creates different kinds of play experiences, both having interesting social aspects. Seeing other players' wrong (and funny) answers is an essential feature. Chat feature adds to the game and makes the waiting times more tolerable.
- Context awareness: Use of contextual information – location maybe?

After the findings in the focus group and in-house testing the game concept was taken in two different directions: first *CamQuiz* and then *CamQ*.

Final game evaluation

The final prototype, *CamQ*, was tested using two different approaches. The first was a test run of one week with five players. The objective was to evaluate the game's appeal to players. The test players were of the opinion that the game was "too simple", "not gamelike enough" and "hard to grasp". However, the players' impression of the game was likely affected by technical problems during the test period. According to the players, the game needs more "flashy" and appealing presentation to be more gamelike. This is an issue that is partly due to the restrictions of the *MUPE* development platform. One of the most problematic areas on the platform was taking photos, as the full camera controls that the players were used to were not available.

The players also commented on the game concept not being interesting enough, but when presented with the concept of the second iteration, i.e. synchronous session-based version, they showed more interest, especially for "party gaming" type of use. The third iteration of the game addresses many game design issues as well as some issues of more technical nature, but at the same time the game changed from a small-group oriented game to a game aimed at a larger community. The players also needed more content for the game, as starting with an empty server and only 5 players did not result into many quizzes being created. They found creating quizzes to be a difficult task and needed more examples – an issue that was anticipated, but was not addressed at this point to see the players' reactions.

The second test was an event-based game during a Nokia Spring Day event for Nokia Research Center's employees; the game was open for play over a weekend, but most of the playing was supposed to happen over a 7-hour time span on the day after the event. From the opening of the server until the end of the event, 67 players registered for the game. Their combined number of logins was 136. The players created 25 quizzes and submitted 297 answer words in 137 answer submissions, showing that the answering side of the game is clearly more approachable by first-time users. The test was done for technical testing and to gather some usage data. No user interviews were conducted.

To summarize, the most important finding was that the answering side of the game is clearly more approachable by first time users than the quiz creation. The essential difference in the tests, in addition to the different size of the test groups, was that in the second test the users were colleagues and at least somewhat familiar with each other. This probably led to a more relaxed and open attitude towards creating the quizzes and answering them – it was observed that the participants joked, displayed opinions and generally had a playful attitude. The kind of social interaction noticeable in the second test is similar to what is commonly noticed around mobile phone pictures and snapshot photography.

Conclusions

The purpose of the thesis described here was to study the possibilities of using the mobile phone's camera and the photographs taken with it in games and playful applications, and to identify the key design features of such games and applications. The empirical part of the work documented and analyzed the conceptualization, design, implementation and evaluation processes of proof-of-concept prototypes of a camera game and examined the possibility of using the game for creating metadata for digital photographs.

The literature review revealed interesting research going on in the area of casual and mobile games. As a young research field, it is still finding its way and trying to define the common paradigms and language. The industry of casual mobile games seems to be growing fast, signaling that there is indeed need for innovative research in the area.

Defining playfulness and playful applications, and on the other hand seriousness and serious games, is another interesting topic in games research and seems to have a lot in common with the re-

search of casual games. The ongoing transformation of digital play from the pastime of adolescent males into more openly embraced forms of gaming has certainly opened new possibilities for researchers and game developers.

There are several success stories driving the transformation, for example games like *Guitar Hero, Dance Dance Revolution, SingStar* and *Rock Band*, and on the other hand Nintendo Wii's enactive user interfaces. In addition to changing gaming to a more physical activity, they have made it more social by making the games an interesting group activity, for example in parties and social gatherings. Other driving forces are the numerous websites offering casual browser-based games and, of course, Facebook with its combination of casual games and social contacts.

The interest in using camera in various types of games is obvious in the games industry. However, using the actual photos taken with a camera is an area that has mostly been overlooked. Photography, especially mobile photography, has an inherent ability to invoke playfulness and spontaneous joy, which can be seen in many image sharing web services, blogs and forums.

Mobile camera phones offer a good platform for utilizing playfulness in applications and games. The mobile phone in itself has become a mobile entertainment platform, in addition to being a communications device. The game prototypes presented in this study use mundane objects, i.e. digital photographs, in a playful environment to bring out the creativity and fun that is often noticed in mobile photography. The final prototype, *CamQ*, could also be further developed into a playful application for metadata creation that makes it a less tedious task to come up with tags or keywords for mobile photographs. The experiment done for gathering data from the game showed that the words gathered for the images could indeed be used as keywords, using the frequency in which they appear as the indication of the quality of the keyword.

In the user experiments and tests conducted as a part of the development process of the prototypes, the basic concept of using photos in a guess-the-word type of games was generally viewed as interesting and fun. As a proof of concept the games were successful, but the game would need a more usable and attractive implementation to be interesting enough for the users. With modern technology, users expect high standards from the graphical presentation of games and from the user interface, even for simple casual games. Blocky graphics and choppy animations will turn away many players even if the concept of the game is interesting.

MUPE as the development platform is good for quick-and-dirty prototyping, but proved to be inadequate for creating an appealing and polished game product, because of the restrictions in building a graphical user interface and other technical issues resulting in instability and glitches. However, these problems were to be expected as the platform was in development at the time and the development was dropped before the game prototypes described here were finished. Some features conceptualized for the games were never fully implemented for the platform, while others were added to the platform after they were deemed useful in games and applications like the ones described in this study.

There are several important design features that need to be considered when developing a mobile multiplayer camera game. Most

of them are features that are essential for any mobile multiplayer game, such as whether the interaction between players is synchronous or asynchronous, or whether the game instance is persistent or only created for individual game sessions. The persistence of the game world and synchrony of play proved to be the most important design aspects for mobile games, as they affect many of the problems in mobile multiplayer games, but also have a huge impact on the gameplay experience, for example in a social sense.

There are other general design aspects to consider. How long are the play sessions and how often a player is assumed to play? How to handle interruptions and players dropping out of the game? What are the target devices and platforms, and how to approach the diverse characteristics of various mobile phone models?

There are also design questions regarding the use of camera and photos in mobile gaming. For example, how are the communal or social aspects implemented? Much of the playfulness in photography comes from these aspects. And how to encourage the players into creative thinking with photographs? How about the potential privacy issues in allowing users to create content for the game?

Plenty of games and playful activities around photographs can be found on the Internet. However, their commercial success is probably non-existent, as they have mostly been created by a user for users, or for research purposes. Even though the business around casual mobile gaming is growing, mobile games that use the camera have mostly been only curiosities among the more traditional games. Using photographs as the primary means of interaction in games has been even more rare, although the playfulness around photography seems to hint at a potentially viable gaming genre.

With the new touch-screen mobile phones, the kind of photo-quiz games presented in this study could benefit from more intuitive navigation and controls in the game, for example when browsing through quizzes. Developing a photo-quiz game for iPhone could be an interesting experiment, as the game would be accessible by many users. Another interesting topic for future work is a cross-platform implementation between the mobile phone and web, such as *Facebook*. The game could also be used for a playful tagging application for photos the users have already taken – the most frequent answer words becoming tags in *Facebook* or *Flickr*, for example.

The games concepts presented in this thesis could provide interesting future research if re-implemented on another development platform. Larger and more thorough user experiments could give data on users' preferred playing habits, e.g. regarding session lengths and frequencies of play, the social activity around photo gaming, or how players perceive the privacy issues when using photos in games.

As a conclusion, using photos taken with a mobile phone's camera in casual and social types of games, like the ones presented in this chapter, is an interesting and appealing concept. Mobile and cross-platform camera or photo gaming is an interesting topic worth looking into, considering all the buzz and playful activity around photo sharing and mobile photography. However, as in all game development, the game concept and implementation need to fuse together to make a finished product.

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