Building customer relationship through game mechanics in social games

Juho Hamari
Helsinki Institute for Information Technology HIIT
Finland

Aki Järvinen
Digital Chocolate, Inc.
Finland

Pre-print

ABSTRACT

This chapter examines mechanics of game design in social games that are used in building customer relationship. The developments in the game industry towards service orientation, and increased emphasis on social design, have resulted in overlap of game design and business design. This chapter examines the junction of these domains in contemporary social games, by studying how game design is used in pursuing business goals of the related business models.
Several virtual worlds and social games are examined with the support of secondary data provided by experts in the field. The identified mechanics are then categorised and analysed in the context of business model literature on customer relationship building.
The results provide several game mechanics that are located in the union of game design and business planning. Moreover, the results imply a new approach to game design in general by exemplifying how the traditional way of thinking about game design is no longer sufficient when the design of engaging mechanics needs to meet with business goals.

Keywords: Social games, online-games, customer relationship, game design, business model, virality, social networking service, Facebook

1. INTRODUCTION

Simple entertainment, such as quizzes and games, are a driving force in social networks in terms of business development. This becomes evident when taking a look at the most popular Facebook applications (see Appdata.com): games frequent the list. For example, in the beginning of February 2010, 7 out of 10 of the top applications in terms of daily users can be classified as games, and this has been the case consistently over the last two years.

The term 'social games' has become prevalent, and it is usually used for referring to game products on Facebook. Even if the term has been contested, with 'viral games' suggested as a more appropriate term, we will use 'social games' due to its widespread nature.

In terms of the games industry, social media analysts are predicting that social games are threatening the market of so-called casual games (popular downloadable games like Bejeweled and Peggle by PopCap Games, etc.). This prediction is based on social games' extensive virality, accessibility, and scalability (Mayer 2009).

As we will see, most of the revenues from social games come from the sales of virtual items that can be played with in the game. In 2009, the virtual goods business reportedly reached $1 billion in the US alone and the worldwide market size is ranging between $5-7 billion (EightPlusStar 2009). Analysts predict that worldwide social games revenues will reach $1.3 billion in 2010[1]. This shows that so-called social games are a significant business, which is developing and transforming rapidly and therefore warrants continuous study.

The empirical part of this study consists of examination of interaction mechanics used in service design of social games. Most of the studied games (Table 1) have been published and maintained on the social networking service Facebook, and they represent a sample from the ten most popular games in the network at the time of writing. In addition, we bring forward examples from games by the three market leader developers at the time of writing, Zynga, Playfish, and Crowdstar, which demonstrate interesting solutions in the context of the article. These mechanics are further mapped in relation to customer relationship stages, namely categorised under what customer relationship stage the mechanic attempts to progress.

Table 1: Social games referenced in this study

Title	Publisher, country	Type[2]
FarmVille	Zynga, US	Resource management and simulation
Café World	Zynga, US	Resource management and simulation
Petville	Zynga, US	Caretaking
Mafia Wars	Zynga, US	Social RPG
Happy Aquarium	Crowdstar, US	Caretaking
Happy Island	Crowdstar, US	Caretaking
Gangster City	Playfish, UK	Social RPG
Restaurant City	Playfish, UK	Resource management and simulation

[1] http://worldsinmotion.biz/social_network_games/

[2] See Smith & Hudson (2010) for social game type definitions. Even if these genre categorizations can be contested, they provide a starting point for our purposes.

Social games provide a prime case for studying customer relationship building in game businesses as the social game products heavily implement mechanics in game design itself that are targeted to driving customer relationship. This nature of social games is also one of the most significant reasons for social games adopting social networking services as platforms. They provide many of the essential viral capabilities in acquiring new users and for using players' contacts as part of the gameplay.

In the following chapter, literature on customer relationship building in general is examined, together with previous work on social online services. Business model conceptualisations will also be examined to find how customer relationship is currently taken into consideration. The third chapter describes several customer relationship building mechanics that developers of social online games use. The mechanics are further categorised under customer relationship stages defined by the customer relationship literature. The Conclusions summarise the chapters and points to potential future research directions.

2. BACKGROUND

2.1. Games on Social Platforms

Building customer relationships, especially in the case of marketing, is largely about persuasion, i.e. influencing the behaviour of individuals in ways that will win them over to consume the marketer's products and services. Therefore customers need to be motivated to yield to such persuasion. This is where games can employ their mechanics for engaging customers into continuous activity, motivated by both intrinsic psychological factors - the fun of playing the game - and extrinsic factors, such as material gain or reputation among peers. In the article, we will repeatedly come across this process under the terminology of customer relationship building: acquisition, retention, and monetisation will be bridged to game design concepts, such as game mechanics, as particular ways to play the games, and reward schedules that follow from completing the game's challenges.

In order to have a better understanding of how games in social networks build and maintain customer relationships, we need to backtrack to the general motivations of social network users. The question that arises concerns why networks such as Facebook or the photo sharing service Flickr themselves manage to acquire and retain their customers, even if they do not necessarily monetise them from the use of the network directly. Reviewing general findings on the use of social networks helps in this task.

Benkler (2006) has identified the following motivations for social media use: social connectedness, psychological well-being, gratification, and material gain. Peter Kollock (1999) has defined four motivations for contributing in online communities: reciprocity, reputation, increased sense of efficacy, and attachment to and need of a group. When these motivations are addressed in terms of playing games, the social aspects of play present a set of benefits that can be interpreted as increasing well-being and sense of efficacy. Play and games can be emotionally rewarding, and they allow players to take stylized yet concrete actions towards well-defined goals.

The game design premise developed from these findings is that games, with their mechanics of interaction, should tap into the more general motivations, and model their mechanics into something through which potential customers can express their motivations for using the network - or, perhaps more appropriately, *playing* around with it. This elaboration is a characterization that emphasizes the non-utilitarian aspects of time spent in social networks, such as Facebook or MySpace. Rao's (2008) research into the playfulness of Facebook use speaks for a similar premise.

To give practical examples of how social games facilitate expression of user motivations with their mechanics, let us look at the most popular Facebook game at the time of writing: FarmVille, which in the beginning of 2010 has over 80 million monthly players, of which 30 million play daily, enables one to

nurture a virtual farm with its animals, crops, and buildings. In the process, the game enables creating a personal take on what a virtual farm should look like. It also facilitates expressing that to fellow players through the social messaging functionalities that the network affords, such as posts to the news feed. If we reflect the example with Benkler's and Kollock's findings as presented above, then it is clear that this kind of playful activity speaks to motivations such as fostering one's reputation through individual progress in FarmVille, and being socially connected in the context of the game.

2.2. Virality

The network context has another important consequence: virality. It permeates both the acquisition and retention of social game players. Helm (2000) defines viral marketing, the use of virality for marketing purposes, in the following way:

"Viral marketing can be understood as a communication and distribution concept that relies on customers to transmit digital products via electronic mail to other potential customers in their social sphere and to animate these contacts to also transmit the products." (Helm 2000)

Subramani & Rajagopalan (2003) analyse factors of virality in online social networks and argue that two factors play a key role in defining a viral mechanism (Figure 1). First, whether the role of the influencer initiating the viral mechanism is active or passive. The second factor is the level of network externalities which translates into the benefits gained by the user from the increased amount of other users and degree of usage.

Subramani & Rajagopalan's framework divides into quadrants defining the resulting types of viral marketing depending on the recommender role and network externalities. 1) *Signalling use, group membership* quadrant includes scenarios where a product or service specific actions are overtaken by two users of the same service. In essence, all the player-player behaviour could, in this vein, be considered belonging to this category. 2) *Motivated evangelism* – consists of cases where existing users, aiming to achieve network benefits, attempt to actively persuade prospective users to adopt or buy the product. For example, in social games existing players invite new players to play to be able to use features requiring cooperation. 3) *Awareness creation, benefit signalling* – consists of otherwise similar cases than the *motivated evangelism*, except that the influencing party has no utilitarian interest in creating awareness of their purchase or experience with a service. In the context of social games, players generate Facebook status updates about what they have achieved in the game, and this has non-utilitarian benefits, such as social capital in the context of the game. 4) *Targeted recommendation* consists of cases where the influencer actively seeks to spread or recommend content or products to a certain selected set of prospective users or other existing users.

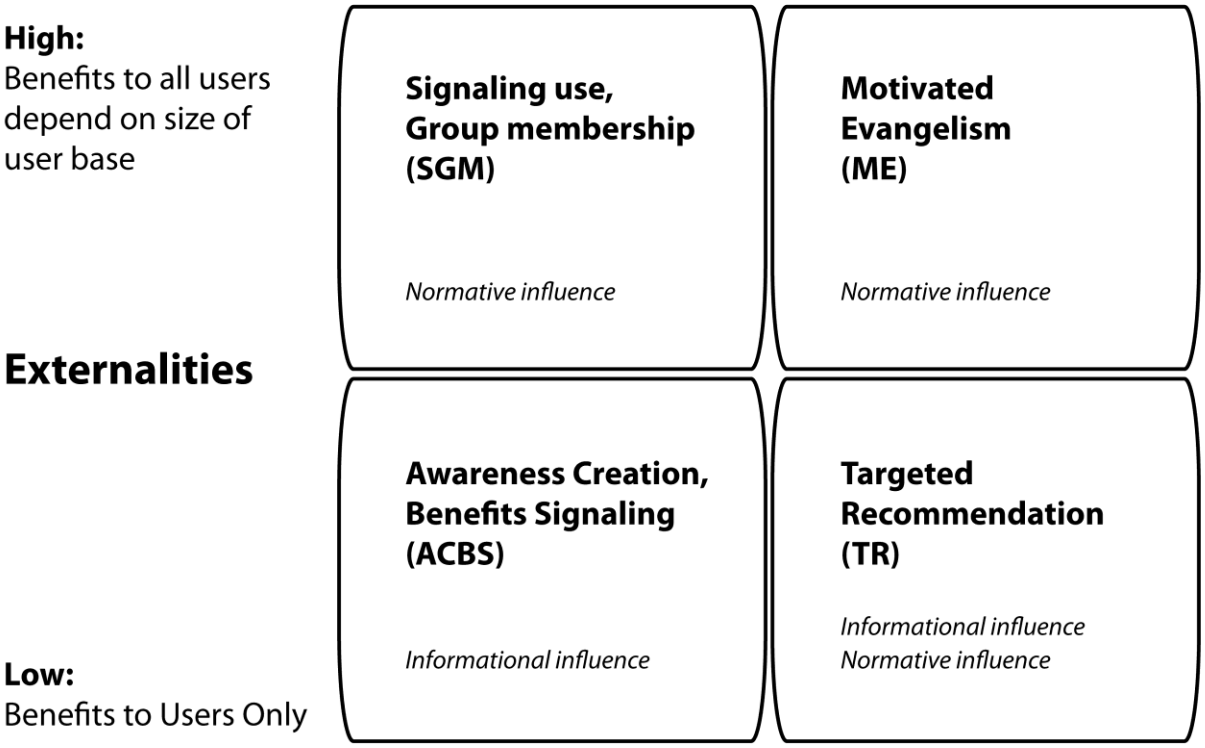

Figure 1: Framework for online viral marketing (Subramani & Rajagopalan 2003).

Viral marketing aims to persuading existing customers to acquire new customers. From the perspective of the marketer, the benefits are lower customer acquisition costs, as the existing customers do the marketer's work for them.

In social games, virality becomes apparent as the items and requests that are generated are based on a game event, and then posted by the player to the news feed that his/her friends see and can act upon. From the perspective of game design, the fact that the content and rhetoric of the viral messages are tied to events in the game means that the designer needs to take such marketing aspects into account - something that has not been the case in game development. On the other hand, this reduces the platform-specificity of the viral design: the product can be adapted for another social network in a way that keeps the core gameplay intact. We will discuss particular viral techniques further in the following sections.

2.3. Game Design

Game design literature has multiplied during the last ten years, and certain works have reached canonical status, e.g. Salen and Zimmermann's (2003) *Rules of Play*, where the authors define game "...as a system in which players engage in an artificial conflict, defined by rules, that result in a quantifiable outcome.". Schell (2008, xxiv) defines game design as a series of acts of 'deciding what a game should be'; Fullerton et al (2004, 2) also turn the discussion towards the game designer's role as someone who envisions what kind of an interactive experience a game should create, and proceeds to create the necessary designs, in the form of rules and procedures, that are necessary to start building the game that provides said experience.

Reflecting on these definitions, we use 'game design' in this paper to denote the process where rules, and game mechanics, as particular instances of rules, are created. We do not include content production, such

as creating the graphical assets that represent virtual items as game design. Rather, game design is the craft where the game designer documents which assets need to be created and how they need to relate to each other in order for the end product to function as a game. Thus, game design in a commercial setting is supposed to translate business models and requirements into the structure of the game.

We are, furthermore, discussing game design as the process of designing particular systems that facilitate play via computer software. However, our context is also one of online, social networks, which introduces both constraints and possibilities to the craft of game design. Joshua Porter's (2008) notion of 'social design' emphasises the aspects of social interaction in particular interaction and service design projects, and is of particular use here to understand how game design needs to expand to the social and service aspects of the network, or the other way around: the game design part of the entire design project has to be embedded as a subsystem into the larger system of the social media service.

This also means that the business design aspects embedded in service design need to be brought closer to the heart of social game design, and in the process, the boundaries of these two domains begin to blur. In practice, and in our terms, for example designing monetising aspects becomes relevant for game designers, as they need to identify how monetisation relates to the game mechanics, or to the overall game context. For example, if a particular virtual item that makes harvesting crops easier and/or more fun in a farming game is introduced to the game, the designer needs to solve how the player is able to access the item and with what cost in terms of game currencies. These kinds of design decisions need to align with the business model employed.

Designing the fun activity that constitutes playing the game, then, is an important part of the game designer's responsibilities. One of the tools for the designer to approach this is to design what is commonly known as game mechanics. According to game designer Amy Jo Kim, game mechanics are 'a collection of tools and systems that an interactive designer can use to make an experience more fun and compelling'. She mentions collecting and social exchanges as concrete examples of game mechanics. (Porter 2009). Game scholar Miguel Sicart defines game mechanics as 'methods invoked by agents, designed for interaction with the game state' (2008).

Building on these definitions, we define game mechanics with a scope that takes into account both what the player does and what the game, i.e. 'system', does in return: game mechanics are play patterns, which have two dimensions: The player dimension accounts for the 'verbs' with which the player can interact with other players and the game. The system dimension accounts for the procedures with which the game system acknowledges the interactions both between players and with the system.

An example of a verb is harvesting the crops in FarmVille by clicking on them. The system acknowledges this action by a procedure where it rewards the player with coins, i.e. the in-game currency. The fact that the player can send a message 'advertising' the reward to his/her network of friends is a particular procedure that networks like Facebook afford for game designers. As a consequence, virality is an inherent quality in the game mechanics of social games, and developers can deliberately design for it, with acquisition and retention as their business goal. A practical constraint for this are the policies of the social network where the game is embedded and distributed; Facebook is a prime example of introducing policies which prevent the developers creating aggressive viral features, e.g., giving players benefits in the game based on the number of friends they have invited to the game, etc. This is an example where the business and brand goals of the social network provider can clash with the business goals of the game developer who would want to maximize monetisation.

Game mechanics always have a direct relation to the goals of the game, i.e. they are either used for pursuing the goals, or the game as a system is using them for giving feedback to the player in relation to the goals. Thus they are also tied to the monetisation aspect, because usually the items or resources

players buy give them extra benefits in reaching a goal or a set of goals. Regardless if the goal is a self-imposed one that is concerned with the style of play (e.g. farming only certain crops or animals in FarmVille), or a goal imposed by the game (such as levelling up in order to unlock new resources), the players still use the verbs to pursue the goals, and FarmVille as a game system employs procedures to acknowledge the players' progress.

The play patterns described above are at the heart of what playing FarmVille is for its players. From the business point of view, players are customers for the game's developer. For Zynga and other social game developers, the play patterns are central focus points of metrics, i.e. they can be leveraged to identify how customers' status shifts between different states within the customer relationship model of acquisition, retention, and monetisation.

The above definition of game mechanics enables us also to identify and categorise the mechanics found in various games. In the categorisation, we aim to provide a dual perspective that would cover both customer relationship building and game design. In case of Facebook, the games chosen were among the ten most popular in the network during December 2009 and January 2010. This criterion does not directly testify for their success in terms of monetisation, but it arguably testifies for their success in acquisition and retention. We can presume that success in the first two steps of customer relationship building yields results in the final step, monetisation, as well (See e.g. Thomas 2001).

2.4. Customer Relationship

As indicated above there is a growing unifying area in game design and business model design. Therefore, we will examine customer relationship building in a business model context. With this approach we are able to illustrate how the mechanics of game design relate to business model design.

This section aims to pin down a conceptual framework for analysing customer relationship building game mechanics from a business model perspective and the instance level customer relationship goals of social online game operators. This section provides the business perspective for further discussion on the mechanisms implemented in social game design.

To provide further structure, we adopt a business model ontology by Osterwalder (2004) (Figure 2), which is among the most referenced business model frameworks. Furthermore, this ontology is well suited for the aims of this paper as it provides a suitable level of abstraction and presentation of the causal relationship of business model components.

The customer relationship component in a business model defines the essential relationship types that a firm attempts to maintain between the firm and the customer. The relationship component is located inside the customer interface pillar of a business model. (Osterwalder & Pigneur 2002, Osterwalder & Pigneur 2003; Osterwalder 2004.)

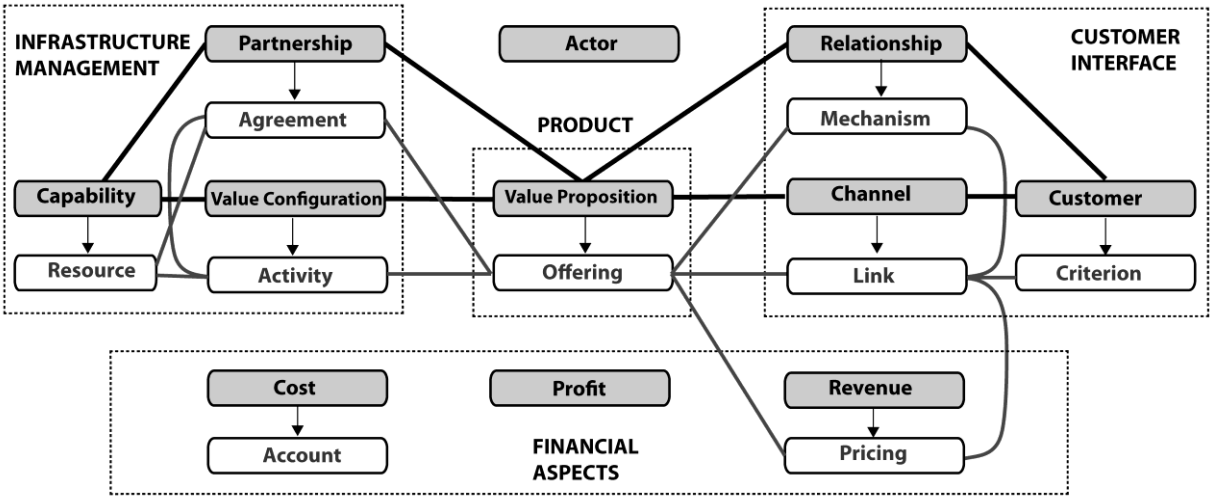

Figure 2: Business model ontology (Osterwalder 2004)

As hinted above, the modern online services have put considerable amount of attention on customer relationship, contrary to only measuring sales, because the business performance is heavily dependent on acquiring a large user base and maintaining the engagement. In the same vein, Cagnina & Poian (2009) suggest that conversion rate (acquisition) and participation rate (retention) as well as the user integration to value chain (user-generated content) are essential factors for virtual world business.

Social game and virtual world related industry discourse also reflects the same mindset and circulates around metrics pertaining to getting users, keeping them, and revenues. Developers commonly articulate business model goals through metrics similar to academic customer relationship terminology as Acquisition, Retention, and Monetisation (Chen 2009). CEO of Shanda (major Chinese MMO publisher) articulates it as Come-Stay-Pay.

In academic literature pertaining specifically to customer relationship, the relationship stages are generally divided into acquisition, retention and add-on selling/customer profitability (Blattberg & Deighton 1996; Blattberg et al. 2001; Thomas 2001; Reinarz et al. 2005).

"*Growing a business can therefore be framed as a matter of getting customers and keeping them so as to grow the value of the customer base […] to its fullest potential*." – (Blattberg & Deighton 1996)

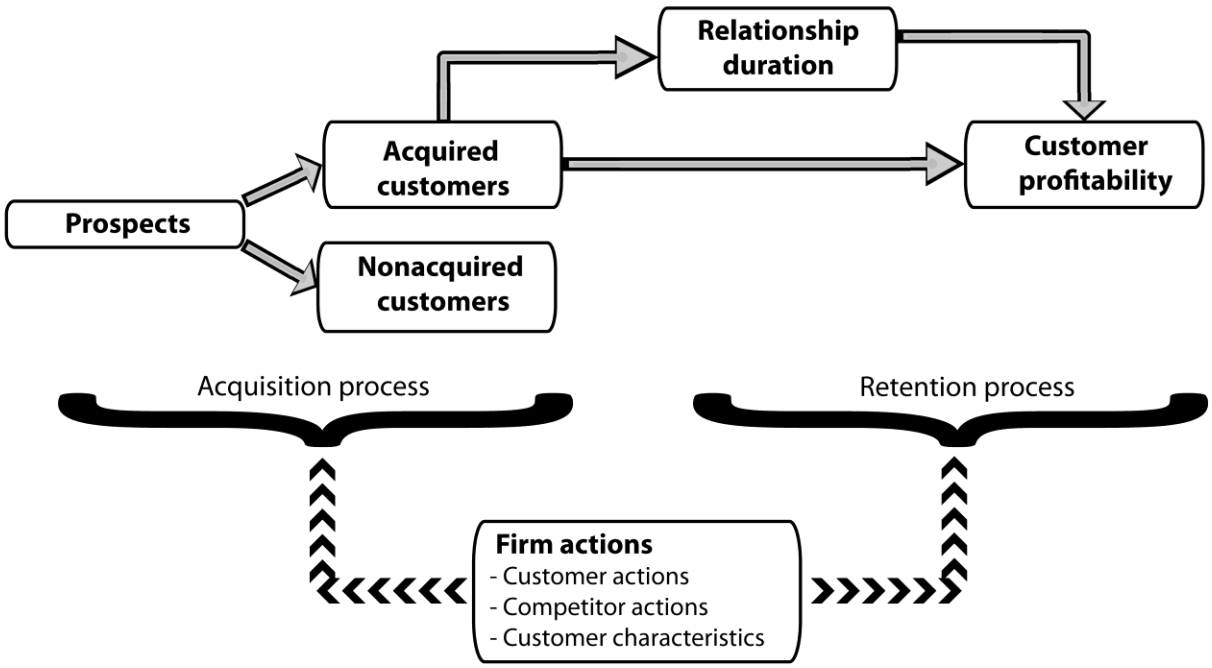

Figure 3: Linking Customer Acquisition, Relationship Duration, and Customer Profitability (Reinartz et al. 2005)

We can see, at least on a terminology level, a match between the industry and academic conceptualisations, and while it can be seen that this line of thinking has already been stressed in traditional industries, the nature of freemium/"free-to-play" business model puts an even more considerable amount of emphasis on user acquisition and retention as the revenue is only provided by some of the users that are sufficiently invested into the core service. Many of the papers addressing the acquisition and retention concentrate on analysing optimisation and balance of the stages (see e.g. Rust & Zaborik 1993; Blattber & Deighton 1996; Blattberg et al. 2001; Thomas 2001; Reinartz et al 2005). Further measurements of the relative importance of these stages will not be conducted in this study, but we will rely on the notion and further reasoning that all of these stages are crucially important for a well performing freemium business model.

According to Blattber et al. (1996) there are two ways to define acquisition of customers: 1) transaction perspective, which defines customer acquisition period ending in first purchase, and 2) process perspective, which defines acquisition spanning through first purchase and other non-purchase activities preceding a repeated purchase.

While the above definitions might well define acquisition in traditional industries, it might not be practical for modern freemium internet services, where the core service is free for customers or the whole service might be advertising based. In this case the user might not buy anything for their whole customer life time. How should the acquisition period then be defined? Is the customer acquired when she comes into the service or webpage for the first time, registers, sees the first ad, or buys the first virtual good? Ultimately it is the firm's decision to choose the most appropriate definition of what processes and activities they direct towards user acquisition. The acquisition process is dependent on service specific design choices and the degree of awareness that is appropriate for the service in question.

The analogous nature of online services and experience goods might help in defining acquisition for modern online service. Social games are persistent services and inherently have some of the same

attributes with experience goods (see e.g. Shapiro & Varian 1999) in that the user has to use the service before being able to form a valuation of it. Therefore a large amount of users tend to quit using the service soon after experimenting with it after registration. This situation can well be seen from the data by Siqi Chen (Serious Business) and David King (Lil Green Patch) (2009). In the data, the amount of users drop dramatically after users have gained a few first levels on their avatar, after which the amount of users retains a steady trend. In this vein, the service specific spot for transition from acquisition to retention could be defined at this bottleneck where users have had the opportunity to experiment with the service. Therefore it can be seen that the efforts for user retention start within this bottleneck. Furthermore, the mechanics for retention attempt to move the bottleneck further in the game-specific progression timeline of the user's avatar. In terms of game design, this means that the ultimate goal is to create engagement that is persistent, and evolves through additional game mechanics, goals, rewards, features, and other service aspects.

Blattberg et al. (2001) suggest a following definition for retention: "The customer continues to purchase the product or service over a specified time period." However, as social online services are continuous in nature, the retention might not be feasible to be perceived through continuous purchases, but as a function of customer lifetime and length of play sessions. In this point the customer relation stages defined in the academic literature in general differ from the ones articulated by virtual world operators. The academic literature defines the retention though purchases of the core product, whereas social online services define it through lifetime and intensity of the usage.

In the conceptualisation by Blattberg et al. (2001), the subsequent stage in add-on sales, i.e. selling complementary products to the core service. In the mode by Reinarz et al. (2005), acquisition and retention phases lead to customer profitability. The definition of Reinarz et al. (2005) then implies that there are no actual customer relationship mechanisms in place after acquiring and retaining customers.

Social online service industry experts perceive monetisation as the third stage. Business models of social games most commonly generate revenue via selling virtual goods, which is almost analogous to the add-on sales introduced by Blattberg & Deighton (1996) if we accept that the game is the core service and the virtual goods sold there are additional value added products.

The term monetisation is adopted here for its wide use in the virtual world, gaming industry discourse. While add-on selling might better present the situation where additional products (virtual goods) are sold to augment the experience of the virtual world, the term monetisation gives a more generalisable meaning to the sub-model as it can cover other means of monetisation as well, such as advertising.

Digital social online services have an ability to very cost-effectively measure all the activities of users from the start. As these virtual environments are highly structured, every action taken by users can be logged and a plethora of metrics becomes relevant in the constant effort of tuning the service fully, not only to reap revenue from users, but also to entice them to other beneficial behaviour. Metrics will be further discussed below.

2.5. Relationship Mechanisms

A relationship mechanism is a sub-component for the relationship element. It describes what functions the business model has for relationship building (Osterwalder 2004). Taking the relationship stages of acquisition, retention and monetisation, the mechanism component defines what functions are in place for supporting customer transition between relationship stages, from non-user to acquired user, from acquired user to active user, and from active user to buying user. In other words, the relationship mechanism component includes mechanisms that a firm puts in place to entice users to conduct beneficial behaviour towards building customer relationship or generating revenue.

The mechanisms are aimed at target customer segments based on strategically relevant selected criteria. The mechanism can also include or be tied to a value offering (a defined entity of value in the product or service) and the mechanism functions through a specified channel link, i.e. interaction point (Osterwalder & Pigneur 2003) (Figure 4).

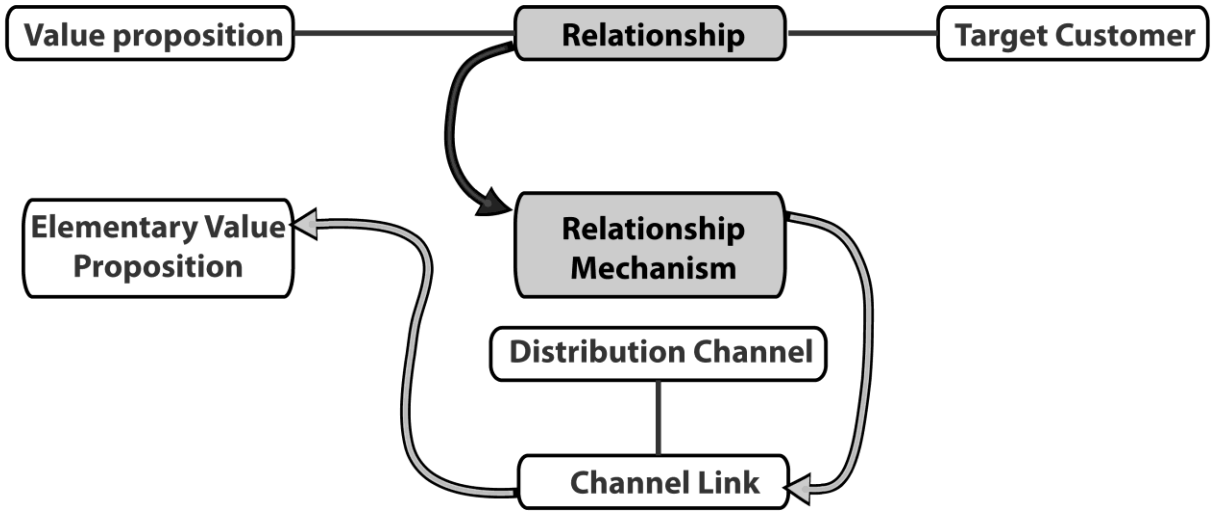

Figure 4: Relationship element (Osterwalder & Pigneur 2003)

In the context of this conception of relationship mechanism, an invitation from existing user to prospective users through a Facebook feed from the game could be broken down in the following manner:

CUSTOMER RELATIONSHIP GOAL: Acquisition
Mechanism: User-to-user invitation to the service
Customer criterion: Non-user (Facebook users with access to invitee's Facebook feed)
Channel link: Game to Facebook feed or message inbox
Elementary value proposition / offering: Attached gift (virtual good)

As seen in the above example, the relationship building mechanics in a business model can be defined through many business model components and with social online services. These components are further utilised in analysing and scoping the selection of relationship mechanism from social games. As we are examining mechanisms that are part of the game design of social games, the channel link in all the examined mechanism is tied to the game design itself, thus providing as a clear selection criterion.

3. CUSTOMER RELATIONSHIP BUILDING THROUGH GAME MECHANICS

3.1. Evolution in Customer Relationship Emphasis Within the Game Business

Before the games-as-services trend, game publishers put most emphasis on making sure games were marketable for retail sales. This did not, however, necessarily imply that games should be any better, only that the games would give an attractive impression to reach the customer relationship stage of acquisition, in other words to get the customer to buy the published games, because the revenue generation in most cases did not depend on further revenues from acquired customers.

The games-as-services approach and the subscription model however shifted the focus of game design and marketing pursuits respectively. These models are essentially different from the boxed game model in

that the revenue generation logic is based on the continuous use and consumption of the game service. Subsequently, game design required yet another shift from immediate attractiveness to long-term engagement. Perhaps the most blatantly obvious example of successful use of the subscription model is World of Warcraft.

These flat-fee models, retail and subscription, however suffered from their inability to monetise users that would have been willing to spend more than the required fee as well as those users that were not quite willing to spend the amount of the monthly fee. Thus the subscription model did not sufficiently monetise the hard-core segment or the casual segment (See Figure 5).

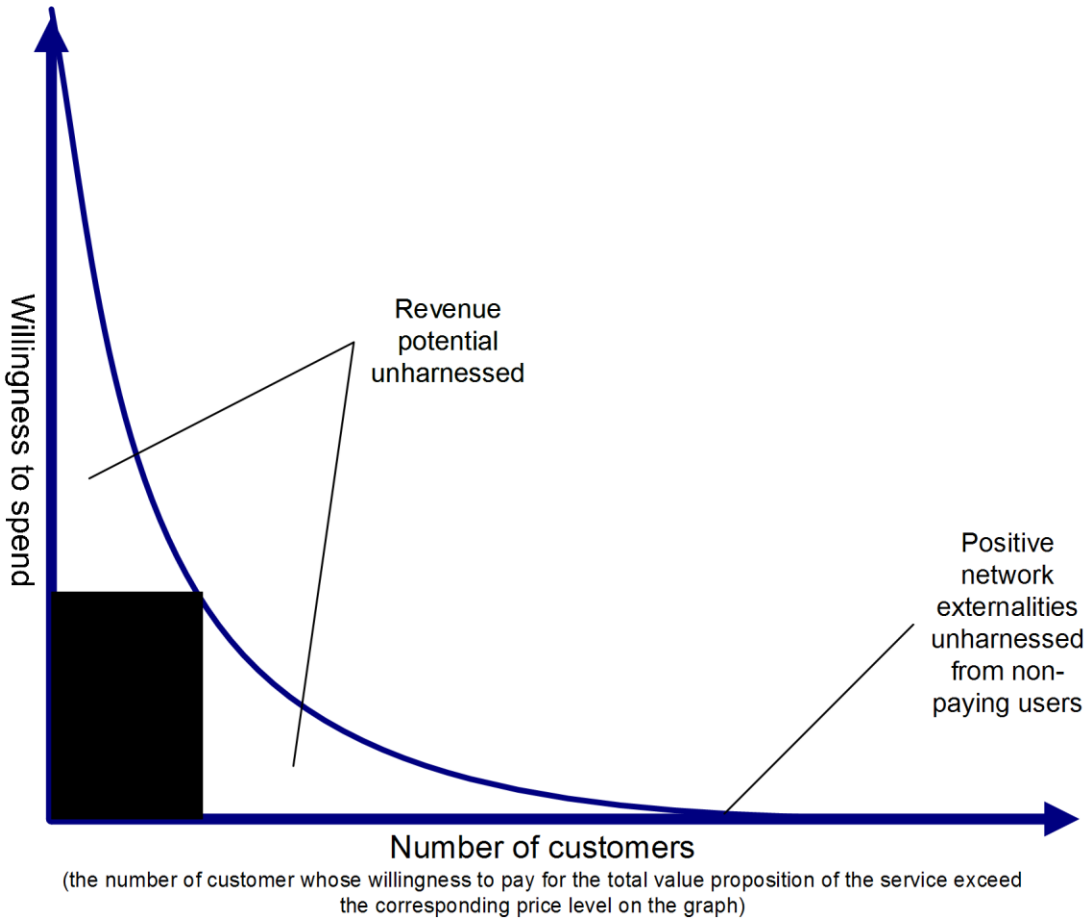

Figure 5: Subscription model

To combat these inabilities, game developers started increasingly adopting the "free-to-play" models and some of the operators who were operating subscription model-based games started converting their service into a free-to-play model with sales of virtual goods. These two aspects counter the above problems by making casual players able join games freely and on other hand meet the willingness-to-spend of the hard-core segment by offering virtual goods and complementary services. The free entry also provides increased positive network effects that add to the value of the service to all users. For these reasons, operators are increasingly applying the virtual goods sales revenue model in virtual worlds and MMOs as well as other online services.

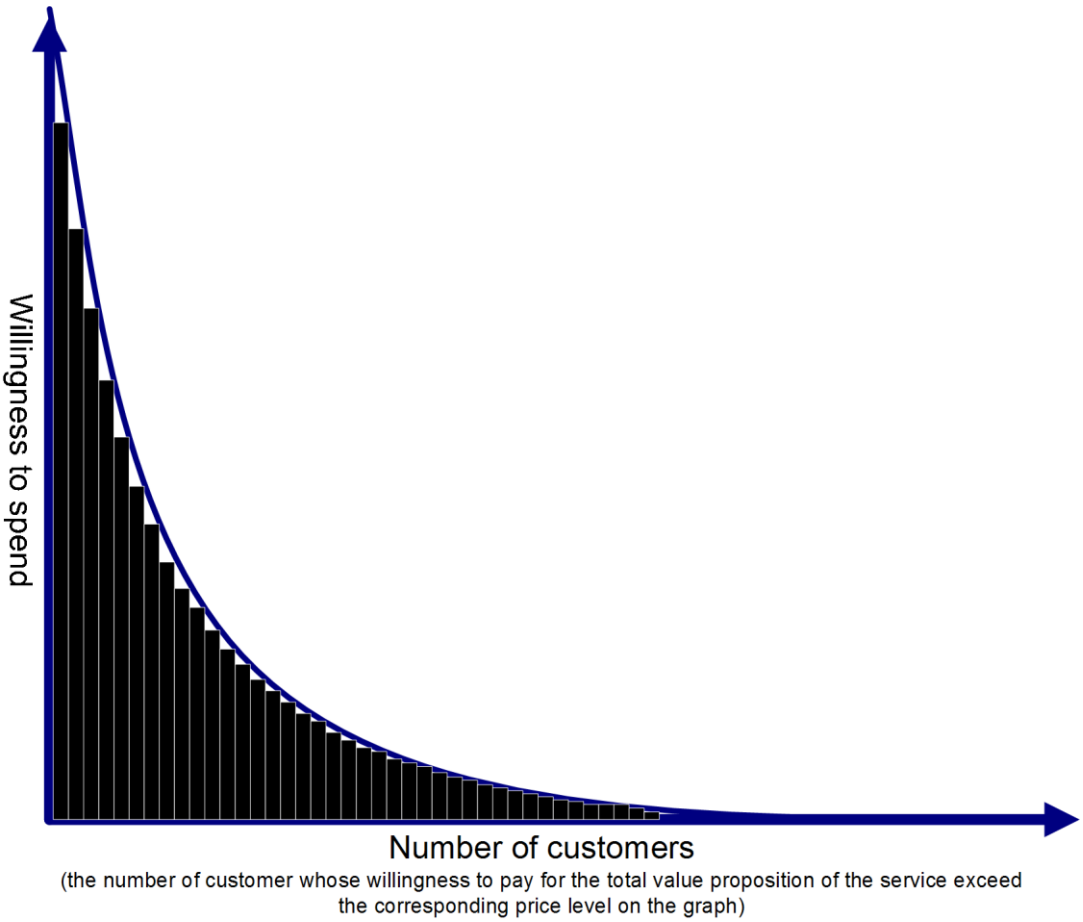

Figure 6. Microtransactions

In addition to these differences in revenue per user in virtual world business models in general, the social game businesses have adopted another pair of metrics concerning the number of active players. During the early phase when social games were emerging as a viable business, ca. 2007, the number of monthly active users (MAU) was regarded as the key metric. As the business has matured, the focus has shifted towards the profitable players, i.e. daily active users (DAU). The ratio between DAU and MAU has become a success benchmark in terms of retention, titled "the sticky factor" (von Coelln 2009). The most successful social games manage to achieve a sticky factor of over 15%, i.e. retain fifteen percent of the monthly users as daily users who actively play the game.

However, the most notable development between the relationship of the revenue models and design is the shift in game design paradigm. Whereas boxed games and subscription games do not require the game design to entice further payments beyond the flat-fee, the free-to-play games need to be designed to entice users to make additional purchases. Therefore, the marketing design has merged into the game design (Hamari & Lehdonvirta 2010). Furthermore, this development implies that the game design has become part of the business model (Hamari 2009). This further implies that with the rise of "games as services", free-to-play and virtual goods sales, the previously separate domains of design, business and game design now overlap (See Table 2). The social games can be perceived as the latest step in this continuum, combining elements of casual, social and virtual economy aspects of game design and additionally fully harnessing the price discriminating business logic. This setting makes the phenomena a compelling subject of study, both in the domains of business science and game studies.

Table 2: Business models and the shift in customer relationship building emphasis

Game type	Primary Revenue	Pricing	Design emphasis	Relationship emphasis
Boxed games	Retail	Single price	Attractiveness, lot of initial content	Acquisition
Game as continuous service	Subscriptions	Time-based pricing	Long term engagement	Retention
Free-to-play / Social games	Virtual good sales, in-game advertising	Mictrotransactions	Virality, incentivising game mechanics	Acquisition, retention, **monetisations**

As a summary, we can observe that the developments in business models of the game industry have resulted in a paradigm shift in game design. The free entry pricing requires excessive use of further monetisation methods built into the game design. The viability of the engaging game design in progressing business goals has been observed in other online services and therefore game design is increasingly diffusing into all sorts of services in aims to enhance acquisition and retention of users. Moreover, the diffusion of game design into service design can therefore be seen as a converging force between online services in general.

In the next section we discuss these game mechanics that are used for progressing business goals of services using social games as a case example.

3.2. Customer Relationship Mechanics in Social Games

If we expand the notion of game mechanics to the social value context of social games, then game mechanics can be seen as a particular subcategory of viral marketing techniques. They function as drivers for acquisition and retention in the context of play. However, playful experiences are not limited to games, and therefore game mechanics can be identified in other applications and services, where they serve the purpose of motivating and entertaining their users (Kim 2009; Hamari & Lehdonvirta 2010). However, this perspective runs the danger of losing the defining factor of game mechanics, i.e. that they are playful, engaging interactions, yet they are supposed to embody challenges. Game mechanics, therefore, both create friction – i.e. the game can't be won or conquered without a varying degree of struggle – and traction, i.e. the very challenge is the factor that keeps players coming back. This means that if game mechanics are to drive retention, they are required to produce an emotional effect that speaks to pleasure that people seek from play, competition, and overcoming challenges by reaching the explicit goals of the game (for more, see Järvinen 2008). Social games emphasise the social nature and context of these activities.

Emotion theorists state that emotions give us coping strategies with everyday situations (see, e.g., Frijda 1986), and therefore emotions, or predictions of them, might be the crucial factor in making a decision to keep on playing or inviting a friend to play. Fun through play can be seen as a cluster of positive emotions arising from playing with the game, and therefore fun is a motivation for returning to interact with the product, whether the primary purpose of the product is utilitarian or non-utilitarian. This is essentially a re-articulation of the notion of experience goods mentioned earlier.

In the following, we will identify a number of game mechanics that drive retention through fun. The findings are divided into three tables (3, 4 5) according to the customer relationship goals: acquisition, retention and monetisation. The mechanics will be described via the following attributes:

- Description
    - Game mechanic
    - The game the mechanic was found in
    - Description of mechanic from the player's perspective
    - Notes on the rhetoric used to persuade players to execute the mechanic
- Virality (only in acquisition)
    - Influencing party
    - Type of virality: (ACBS, TR, SGM, and/or ME as defined by *Subramani & Rajagopalan* (*2003*) earlier.)
- Relationship mechanism in business model terms
    - Value offering
    - Secondary customer relationship goal contribution

Table 3: Game mechanics for acquisition

Game Mechanic	Game	Description	Persuasive rhetoric	Influencer	Virality	Secondary goal
Gifts	All Facebook games	User gives a gift to non-user that only has a function in-game	Giver receives a reward, recipient receives a gift	User	ACBS, TR	-
Friends as neighbours	FarmVille	Neighbours provide a resource through co-op possibilities	Amass friends to maximise production	User	ME	R
Friends as hires	Restaurant City, Gangster City	Player can associate game characters to their friends, thus creating an emotional attachment to the game, and the hired friends are notified of this	Hire your friends to work for you	User	SGM	R
Call for action	FarmVille	Game generated calls to Facebook feed asking existing user's friends to tend to owners property	Help a friend	Service / User	ME	
Leveraging special occasions	PetVille	E.g. Valentine's day themed items	Remember your friend with the game-related item	User	TR	R, M
Free stuff	"free item day" in Maplestory Free Valentine's present in Petville	Free coins/ items/skills for limited time after registration	Especially with limited offers	Service		R,

As a summary, most of the acquisition mechanisms are of a viral nature facilitated by the service design. For individual players, many of the acquisition mechanics transform into retention mechanics, because executing them often becomes an integral part of playing the game continuously. In general, acquisition is not radically different from marketing techniques – the more particular aspect is due to the context of the online social network, and how the game developers try to leverage its inherent sociality and virality. Furthermore, the value offerings related to the mechanics can in most cases be derived from the benefits of virality as in positive network externalities.

Table 4: Game mechanics for retention

Mechanic	Game	Description	Persuasive rhetoric	Value offering	Secondary goal
Profile completion progression	Several social games	The profile completion itself is a mini-game that promises rewards	Typing or selecting all the profile information makes you eligible for a reward	Resulting sense of progression	A
Tutorial / first run scenarios	Café World, Fishville, various social games in Facebook	Guided sequence of steps in the beginning for new users. Perhaps including how to buy virtual goods.	Guiding the user to see the core value offerings of the service	Enhanced availability of the game	A, M

Reward continuous play	Gangster City	Coming back to play for a spell of, e.g. 5, days in succession yields an exclusive reward	Play each day for an exclusive benefits	Virtual currency, goods	-
Lose points by being logged off	FarmVille	Resources and property decays unless the player tends the them at defined intervals	Endowment effect: people are biased to "over"-value goods they already own over acquiring new ones	-	-
Encourage networking	All Facebook games	Completing tasks require help from a new acquaintance	The activity adds perceived value as the player's social network grown	Positive network externalities	-
Daily Bonus / Lottery	Mafia Wars, Café World, etc.	Every day the player returns to the game, a reward awaits	Come back tomorrow if you have better luck	Suspense, new virtual goods	-
Bookmarking	All Facebook game	Game can be bookmarked to Facebook home page	Bookmark so you remember to play each day	Enhanced availability of the game	-
Becoming a Fan	All Facebook agme	Game's promotional material appears in user's home page feed	Become a fan for news & updates	Information about the service	-

Retention-related game mechanics are first and foremost about securing a steady flow of rewards and resources in the game. This is often tied to specific rhythm designed into the games, e.g. a certain time it takes for crops to grow before they can be harvested in FarmVille. Most of the retention mechanics offer means for players to optimise this flow, which helps them to progress steadily and maintain their standing in the game in comparison to their friends. The most obvious difference to the acquisition mechanism is that the retention mechanisms do not leverage social behaviour of users as much, but the mechanisms are mostly set up in the game-related context of progression.

In addition, in early 2010, due to changes in Facebook's messaging channels and policies, a wealth of social game developers started to add so-called retention bars to their games. These user interface elements visualize different customer relationship mechanisms into a progress bar that can be likened to profile completion: once the player bookmarks the game at Facebook, the bar nudges forward, signalling that the player is one step closer to being a 'complete' customer. Besides bookmarking, the usual steps include subscribing to email updates, becoming a fan of the game, and allowing publishing all game activity into the user's Facebook news feed.

Table 5: Game mechanics for monetisation

Mechanism	Game	Description	Persuasive rhetoric	Secondary goal
Double-currency	Various Facebook games	Two virtual currencies can be used in the game to purchase items, upgrades, and other resources that help the player's progress. The first currency is dedicated to freemium play, whereas the second one is the currency used to buy exclusive items, resources, etc. Usually there is an exchange rate between the two. In terms of customer relationships, the first currency operates between acquisition and retention, whereas the latter one is often the primary way to monetise players.1		A

Virtual goods are priced in both currencies	Puzzle Pirates	Both currencies of double currency (see above) are required to buy goods	Entices money investing players to buy more virtual currency to be able to trade it for earned currency	R
Needs built into the game design	FarmVille	Elements of the game that are intentionally built to require complementary goods	Various	-
Stratified content	Almost all social games	The content and character progression are divided into levels	New levels introduce new needs that have to addressed via new goods	R
Decay	PetVille, Happy Aquarium	Obtained goods expire, degrade or are consumable	Entices players for repurchases	-
Scarcity	All	Unlike other digital goods, virtual good's supply can be managed either by controlling the amount of goods available for purchase or the difficult of the gameplay that yields goods	Scarcity promotes exclusiveness	R
Virtual currency	All	Virtual currencies act as a medium between real money and virtual goods	Medium's harness psychological biases, blurring the usage of real money	-
Collectibles	FarmVille	Collectibles provide meaningful goals for players	Collectibles promote "catch them all" mentality	R
Showing off	Almost all social games	Bragging about purchased or acquired virtual goods and service		R, (ACB virality)
Seasonal promotions	PetVille	Exclusive items that promote gifting in the context of a seasonal event and thus gain a double meaning both through the game and the event	Promote consumption culture (Christmas, Valentine's Day, Easter, Halloween, etc)	A, R
Artificial inconveniences	FarmVille	Some aspects of the game are intentionally designed inconvenient. This mechanism is generally directed towards aspects that do not directly seem to affect the player's status (such as friend list size, longer navigation paths, automated	Small inconvenient aspects of game entice buying enhancements that remove the inconveniences	-

Monetisation-related game mechanics are mostly tied to the dynamics of scarcity and challenges designed into the game. These can support customisation, i.e. giving the game a personal look, such as with one's farm in FarmVille or one's aquarium in Happy Aquarium. They also give access to exclusive features and resources in the game, which tie back into retention. The link of monetisation and game design, for example in the case of seasonal promotions, is intimate. The seasonal theme forces the designer to think how to introduce new game features and/or content to the game, or sales, without breaking the game's balance in terms of player progression, resources, and economy.

There are several more mechanics that social game developers use towards achieving the customer relationship goals. For example, social games use a variety of pricing mechanics, but they are not necessarily tied to the game mechanics, although a part of the service. Our perspective was to

examine mechanics that are inseparable from the game design and hence the mechanics that purely fall under marketing are abstracted from our study.

4. FUTURE RESEARCH DIRECTIONS

In this exploratory study it soon became apparent that most of the mechanisms for building customer relation through game design have a contribution to more than one customer relationship goal. This study did not however allow us to adopt a more taxonomical categorisation of the mechanics. Therefore, as a further study, we propose formulating a more systematic and taxonomic framework for the mechanisms used in game design. The study did, however, provide multiple potential perspectives for further analysis, including business model design, game design and viral marketing.

While game mechanics and virtual economy design patterns are increasingly discussed, quantitative measurements on their effectiveness are scarce. Thus, as a further study we suggest quantitatively measuring the impact of design patterns on, for example, buying behaviour. Implementation of two or more different parallel designs in cooperation with virtual world operators would significantly contribute towards reliable results. Based on such quantitative analysis, one could more rigorously model interrelationships of design patterns and their significance in driving customer relationship.

5. SUMMARY AND CONCLUSIONS

In this chapter we examined game mechanics that are tuned for building customer relationship in social games. Social games provided a prime set of examples for examining the type of service design that combines conventions from game and business domains.

The findings, presented in more detail in the previous section (Tables 3, 4 and 5), were categorised under customer relationship stages of acquisition, retention and monetisation. This conception of the customer relationship goals was justified via academic literature on customer relationship and business models. Furthermore, the industry discourse substantiates this conception by reflecting very analogous stages in their customer relationship definitions. However, several of the examined mechanics can be perceived to be driving more than one customer relationship goal. The categorisations, therefore, in terms of certain mechanics, is somewhat of a subjective step. The criterion of placing specific mechanic to certain category is based on the primary rhetoric behind the mechanic.

Today, online games are run as services, implying that the developers need to acquire new customers for a longer period of time and to retain the acquired user populace in addition to monetising via more intricate mechanics. This further implies that the game is iteratively and constantly developed not only to keep the game engaging but increasingly to reach the business goals (acquisition, retention and monetisation). For developers to be able to adjust the game towards these goals, they have to reflect the player's behaviour on new scales that fall under the business domain. The mechanics described in this chapter provide prime examples of the kinds of more accurate measurements that lay in the junction of game and business design.

Furthermore, this situation can be seen to be contributing in other directions as well. Social games and networks have demonstrated how such game mechanics and viral marketing techniques can create added engagement and add a context in which developers can create enticing mechanics for further monetisation.

REFERENCES

Benkler, Y. (2006) *The Wealth of Networks*. Yale University Press.

Blattberg, R. C., & Deighton, J. (1996). Manage Marketing by the Customer Equity Test. Harvard *Business Review* (July-August), 136-144.

Blattberg, R. C., Getz, G., & Thomas, J. S. (2001). *Customer Equity: Building and Managing Relationships As Valuable Assets*. Harvard Business School Press.

Cagnina, M. R., & Poian, M. (2009). Beyond e-business models: the road to virtual worlds. *Electronic Commerce Research*, 9(1-2), 49-75.

Frijda, N. H. (1986) *The Emotions*. Cambridge: Cambridge University Press.

Fullerton, T., Swain, C., & Hoffman, S. (2004) *Game Design Workshop. Designing, Prototyping, and Playtesting Games*. CMP Books.

Hamari, J. (2009). *Virtual goods sales: New requirements for business modelling*? Thesis. University of Jyväskylä.

Hamari, J., & Lehdonvirta, V. (2010). Game design as marketing: How game mechanics create demand for virtual goods. *International Journal of Business Science and Applied Management*. 5(1), 14-29.

Helm, S. (2000). Viral Marketing – Establishing Customer Relationships by "Word of Mouse". *Electronic markets* 10(3), 158-161.

Järvinen, A. (2008). *Games Without Frontiers: Theories and Methods for Game Studies and Design*. Doctoral Dissertation. University of Tampere: Tampere. http://acta.uta.fi/english/teos.php?id=11046

Kim, A. J. (2009). Fun in Functional: Google and Startup2Startup. *Musing of the social architect*. Retrieved from http://socialarchitect.typepad.com/musings/2009/02/fun-in-functional-google-and-startup2startup.html

King, D., & Chen, S. (2009). *Metrics for Social Games*. Retrieved February 18, 2010 from http://www.slideshare.net/justinsmith/metrics-for-social-games-by-david-king-and-siqi-chen.

Kollock, P. (1999). The Economies of Online Cooperation: gifts, and public goods in cyberspace. In Smith, M.A., Kollock, P. (Eds.), *Communities in Cyberspace*. Routledge, London, 220-239.

Mayer, A. (2009). Ten Reasons that Social Games May Eat the Casual Market. *Inside Social Games.* Retrieved February 18, 2010 from http://www.insidesocialgames.com/2009/02/10/ten-reasons-that-social-games-may-eat-the-casual-market/

Osterwalder, A., & Pigneur, Y. (2002). An e-Business Model Ontology for Modeling e-Business. In 15th Bled Electronic Commerce Conference, 17-19 June 2002 (75-91). Bled Slovenia.

Osterwalder, A., & Pigneur, Y. (2003). Modelling Customer Relationships in e-Business. *In 16th Bled Electronic Commerce Conference* 9-11 June 2003 (446-462). Bled, Slovenia.

Osterwalder, A. (2004). The Business Model Ontology - *A Proposition in a Design Science Approach.* Thesis, University of Lausanne.

Porter, J. (2008) *Designing for the Social Web*. New Riders.

Porter, J. (2009) Game Mechanics for Interaction Design: An Interview with Amy Jo Kim. Retrieved February 18, 2010 from http://bokardo.com/p/955

Rao, V. (2008). Facebook Applications and playful mood: the construction of Facebook as a "third place". In Proceedings of the 12th international conference on Entertainment and media in the ubiquitous *era (MindTrek '08)* (pp. 8-12). Tampere, Finland.

Reinartz, W., Jacquelyn, S., Thomas, S., & Kumar, V. (2005). Balancing Acquistion and Retention Resources to Maximize Customer Profitability. *Journal of Marketing, 69 (January 2005), 63-79.*

Rust, R. T., & Zaborik, A. J. (1993). Customer Satisfaction, Customer Retention, and Market Share. *Journal of Retailing*, 69(2), 193-215.

Salen, K., & Zimmerman, E. (2004.) *Rules of Play. Game Design Fundamentals*. MIT Press.

Schell, J. (2008). *The Art of Game Design: A Book of Lenses*. Morgan Kaufmann.

Shapiro, C., & Varian, H. R. (1999). *Information Rules*. Harvard Business School Press.

Sicart, M. (2008). Defining Game Mechanics. *Game Studies: The international Journal of Computer Game Research, 8*(2).

Smith, J., & Hudson, C. (2010). *Inside Virtual Goods*: The Future of Social Gaming 2010. Retrieved February 17, 2010 from http://www.insidevirtualgoods.com/future-social-gaming/

Subramani, M. R., & Rajagopalan, B. (2005). Knowledge-Sharing and Influce in Online Social Networks via Viral Marketing. *Communications of The ACM* 46(12), 300-307.

Thomas, J. S. (2001). A Methodology for Linking Customer Acquisition to Customer Retention. *Journal of Marketing Research*, 38(2), 262-268.

von Coelln, E. (2009) The Sticky Factor: Creating a Benchmark for Social Gaming Success. *Inside Social Games*. Retrieved February 18, 2010, from http://www.insidesocialgames.com/2009/10/27/the-sticky-factor-creating-a-benchmark-for-social-gaming-success/