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# Games in the Mobile Internet: Understanding Contextual Play in Flickr and Facebook

*Frans Mäyrä*

## INTRODUCTION

The social and cultural phenomena related to Internet gaming have received their fair share of attention, particularly through numerous studies of massively multiplayer online role-playing games (MMORPGs). Also mobile games have their own research and developer communities, but the research work related to mobile games has so far been dominated by their technical and design challenges and researchers have not been particularly interested in their social aspects – in contrast to the numerous studies that have focused on mobile communication through text messages and other means (the recent *Handbook of Mobile Communication Studies* dedicates one out of its 32 chapters to mobile games and entertainment; see Katz & Acord 2008).

This chapter will approach contemporary developments in social and mobile gaming as an Internet phenomena. Looking back, there has been a noticeable difference between Western usage patterns of the Internet, mostly focused on the personal computer, and Japan, where mobile phone is the predominant access point to the Internet services. Recently also Western countries have been introduced with new generations of Internet-capable smartphones, including Apple iPhone, Nokia E and N-series, BlackBerry devices and others, which reportedly have already been associated with a noticeable upsurge in the mobile Internet usage, and some analysts have claimed that now finally “mobile internet has reached a critical mass”.<sup>1</sup> The relative share of mobile browsers in the Internet usage statistics nevertheless still remains in minority. Why then to focus on the mobile and playful interfaces into the Internet, and consider them from a social, Internet research and game studies perspective?

ITU, the International Telecommunication Union has reported that in late 2008 there were over four billion mobile phone subscriptions in the world, expecting five billion mark to be passed in 2010.<sup>2</sup> Mobile phone is the most widely available network-enabled terminal device, and one that plays a major role especially now when developing countries are starting to find their ways to the Internet. Personal and almost always available, a contemporary mobile phone can potentially foster developments of new user cultures, including ones involving casual creation and sharing of contents related to digital photography, Web (which here mostly means the popular culture of the Internet), music and games. The focus in this chapter is on integration of Internet usage and contents with contextual information. The character

of contextual information will be interpreted broadly, as including not only the physical use contexts but also the context provided by social networks. The studies of play and games will provide a particular perspective that helps to understand the main characteristics of this development: the playfully social character of mobile Internet use.

The phrases ‘contextual gaming’ or ‘contextual play’ have so far mostly meant experiments in game design that exploit various sensors and other technical sources of data, used for implementing location-aware games, games that rely on gesture or pattern-recognition, or game worlds that in one way or another reflect the real world, like mimicking its weather conditions or daily rhythms (for a summary, see Tester 2006). Far less experimentation has been dedicated to the development of games that rely on social contexts and information derived from social networking tools. Social motivations nevertheless will remain as a major force that influences how many people use or not use the information and communication technologies. All human contexts are socially determined contexts, as humans are fundamentally social beings. This does not mean that technology use or human behaviour itself would only be determined by social circumstances; rather, I subscribe to the view that human action is never completely determined, nor random – our interactions with and among human actors and technology-rich environments produces complex and deeply dialectical relationships (cf. Suchman 2007: 177). Since the emphasis on this chapter is on human agency rather than on detailed analysis of technologies that currently influence our ways of expressing it, ‘contextual play’ is primarily used in this paper to signify distributed and mediated playfulness; the focus is on playful behaviours that are rooted in, or that emerge from social relations and exchanges of information that are used to maintain and expand such networks of relationships. It is interesting to notice how contextual play gains specific meanings when the location and situation of participants is fluid – as is the case with contemporary online services which can be accessed in multiple ways. I will focus on few examples that illustrate this evolving field in the remainder of this paper. The selection of my brief case studies is based on ongoing work our game research laboratory has been carrying out in areas related to mobile and pervasive gaming, user- or player-created content, and online social games.<sup>3</sup> During the two years, from 2008 to 2010 when I worked with this study, both mobile and social media went through a period of rapid growth and change, as new services were released and new user cultures emerged, reorganising or displacing existing practices. Thus, this chapter is written also to illustrate a certain kind of transition period towards a more contextually aware and more playful understanding of mobile communications and online media in general.

There are several other, including more technically oriented approaches to ‘context’ in mobile internet studies that I will pass on here, including those that differentiate between environment context, personal context, task context, social context, spatio-temporal context, terminals context, etc. (Guarneri et. al. 2004: 14–15). I consider all these as varieties or aspects of the users’ social context. The main reason for such an approach into contextuality lies in the emphatically social character of cultural signification systems; every significant context, in this perspective, is in an important sense a socially determined or informed context.<sup>4</sup> At the same time, one should remain aware of the ways in which e.g. bodily data, or data derived from physical activities or environments are currently becoming accessible to digital consumer devices, and how this is redefining mobile Internet usage, and thus also playing a role

in the ongoing renegotiation of human agency. Much of the interesting potential for gaming and other uses of information and communication technologies at the moment are rooted in this increasingly tighter intertwining of the physical and digital realities, reflecting the deeper intertwining of the human and technological components of agency. Within this framework, the mobile Internet is being constructed as a particular kind of element within the social sphere of significance.

## PLAYFUL ONLINE PHOTO SHARING

I will next move on to introduce some examples that relate to the emerging field of contextual play in different ways. The examples have been selected on the basis of popularity and accessibility – no particular claims for artistic, technical or other cultural significance are made.

My first example is Flickr,<sup>5</sup> an online service that is used to share and comment on digital photos. The mobile applications of Flickr are rapidly expanding, which is mainly due to the increasing ubiquity of digital cameras and wired broadband connections or wireless hotspots that allow near-instantaneous uploading of photos as they are taken. Applications tapping into the potentials of camera phones continue to accelerate and develop the practices of online photo sharing into new forms. Also, new camera models have started to appear that have the Wi-Fi connection built into the camera, and there is already a product available that includes the wireless connectivity integrated into a memory card.<sup>6</sup>

Despite currently being owned by Yahoo!, Flickr was originally developed by a game design company, Ludicorp, and the service still retains many features that relate back to its gaming roots. Some of them are merely technical – e.g. the Flickr's \*.gme file extension that relates back to Ludicorp's original *The Game Neverending* project. Some are more subtle and based on certain design choices built into the service. According to the designers, *The Game Neverending* was intended to be a massively multiplayer web-based online game, where players would have been able to share in-game objects with others by dragging them into instant messenger (IM) windows. Flickr evolved from realisation that playful interaction around images could in itself be rewarding enough to become the basis for a successful online service.<sup>7</sup>

It is possible to differentiate the playful characteristics of Flickr further by employing concepts introduced by Roger Caillois (1958/2001). Caillois defined a continuum which takes place between two opposite modes of playing, the spontaneous *paidia* and rules-bound *ludus* (op. cit.: x, 27, 31). Gonzalo Frasca (2003: 229–230) has further articulated this difference by underlining how *ludus* is based on rules that define a winner or a loser, whereas *paidia* is engagement playful or game-like behaviour without such emphasis on competitive conflict.

As a social media service that is primarily aimed at sharing and discussing digital photos online, Flickr is obviously most strongly oriented towards *paidia* style of playful spontaneity. Simultaneously, it also carries within it features that make it open for *ludus* style of competitive play. To give some examples, there are currently (in May 2010) more than twelve thousand Flickr “groups” (discussion areas, alongside a “group pool” of photos shared by this group of Flickr members) that mention ‘game’

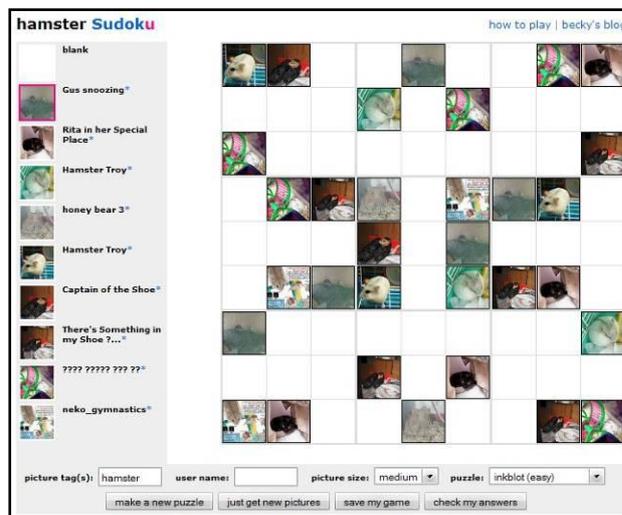
in its title or description text. (Almost fourteen thousand groups mention ‘play’.) Typically these are areas for having fun while playing around with photos, following some simple rules set up by the group’s founder or group’s administrators. The basic rule might for example be to post only photos with vibrant colours (as in the “Catchy Colors” group), and provide encouraging feedback by commenting photos that have succeeded well in fulfilling this goal. Within the group, new rules might then be improvised; e.g. a discussion thread may be started to play a simple tag, or “catch me if you can” style game that are popular in Flickr. In this manner of playful photo sharing, the idea is to match the previous photo through some feature such as shape or colour of one’s own photo, and then pass the challenge on to others.

In a digital environment, the quality of attention can also quickly become reinterpreted as a quantitative measurement – the number of comments users get to a photo remain as one of the main indicators of success in a social service such as Flickr. The service designers of Flickr have taken this one step further by introducing feature they call “interestingness”. This (currently patent-pending) algorithm is based on “the quantity of user-entered metadata concerning the media object, the number of users who have assigned metadata to the media object, access patterns related to the media object, and/or a lapse of time related to the media object”.<sup>8</sup> As the number of photos in Flickr exceeded four billion in 2009,<sup>9</sup> interestingness plays major part in the process of filtering out “the best photos” and featuring 500 of the top rated ones daily in the public “Explore” pages. The inquisitive users have done their best to track down which are the exact variables that Flickr uses to calculate the interestingness of photos, concluding that at least the following factors matter: 1) views of the photo, 2) number of comments on the photo, 3) tags applied to the photo, 4) Flickr discussion groups where the photo appears, 5) number of favourites (Flickr bookmarks) of the photo, and 6) how above behaviours measure in terms of time. Also, it is suspected that certain active users will have much more emphasis put on their comments and favourites than others when interestingness is being calculated. Flickr users are also familiar with certain individuals who try to “game the system” e.g. by posting their photos into large numbers of (possibly unrelated) groups. The Flickr developers have responded by tweaking the algorithm to devalue such photos automatically.<sup>10</sup> It should be noted that Flickr does not make claims of the highest rated photos being the “best photos” – supposedly even a technically or artistically sub-standard shot could rise to the Explore page, if it somehow manages to attract enough attention from the Flickr community. Manual interventions by the Flickr staff in the Explore selections are however also suspected by the Flickr users/gamers.<sup>11</sup>

It could be argued that “gaming the system” is a natural response to a social environment that encourages playful behaviours and then introduces a quantitative measurement system in middle of them. The absolute metrics derived from how users’ photos measure up in the interestingness scale can be used to distinguish “winners” from “losers” within the Flickr “gaming community”, and thus the quantitative measurement effectively invites more *ludus* style of competitive interaction within the context of playful photo sharing. There appears to be multiple ways – even conflicting ones – to play or game in Flickr, and heated discussions on the uses and abuses of the system continue in the discussion forums. The information researchers who have started to pay notice to the workings of Flickr have pointed out that the real significance of having a photo appear among the automatically top-ranked Explore photos is smaller than users themselves typically think. The images

actually get most of their attention through the direct contacts among Flickr users. This is based on a practice what has been called “social browsing”; the users look and find new pictures primarily by browsing through one’s friends’ photo feeds rather than by searching for photos from those who are unknown to them (Lerman & Jones 2006). This does not stop the competitively minded Flickr users from trying to tweak their odds in attempts to get their photos into the Explore category.

A number of dedicated gaming applications have also been developed that make use of the Flickr API (Application Programming Interface). Typically these are browser-based small games that rely on a combination of Flickr photos with some classic game format, and none of these game designs have been so far as popular as social play within the Flickr service itself. Some examples include the following:



**Figure 1: Flickr *Sudoku* with tag word ‘hamster’.**

My first example is called *Flickr Sudoku*.<sup>12</sup> This is a version of Sudoku that replaces numbers with images tagged with certain words from Flickr (see Figure 1, above). The aim is to fill the grid with system-generated images so that each column, row, and smaller three-by-three grid contains all nine different images. There are differently designed puzzles to choose from, and the player can herself type in keywords that are used to generate the token images from Flickr. Thus, Flickr is mostly used to provide visual flourish to the familiar game mechanics. No multiplayer mechanisms or other social gameplay are apparent in the implementation, but the photos themselves and their surprising combinations may provide a source of humour among the Flickr users.

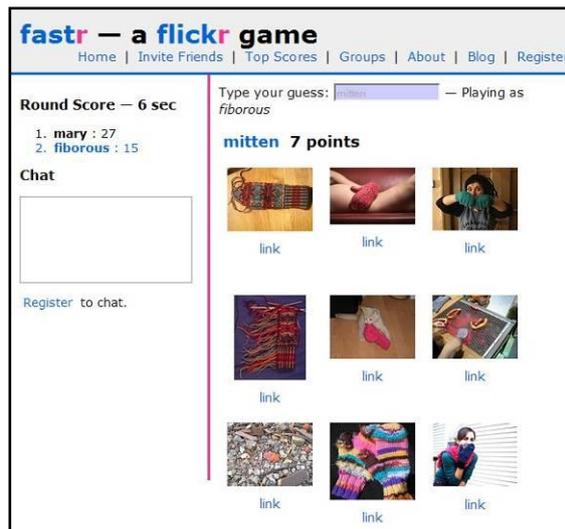


Figure 2: the *Fastr* game, with two players.

The second example drawn from among these user-created Flickr games is named *Fastr*.<sup>13</sup> This is a guessing game which displays ten images, one by one, and the player needs to type in suggestions of what might be the tag that all these pictures share (see Figure 2, above). A correct guess appears as a blue word and score is given, based on how fast the player was in guessing right. The full version of the game is multiplayer and allows chat exchanges among players. Relying on social interaction as well as on playful use of social metadata, this type of game has become relatively popular in the Web (see e.g. *ESP Game*<sup>14</sup> and *Guess-the-Google*<sup>15</sup>).



Figure 3: the *PhotoMunchrs* game.

As a final example I will introduce here game called *PhotoMunchrs*.<sup>16</sup> One use for games and the Flickr API has been application of them into information research and studies of search technology. *PhotoMunchrs* is a puzzle game that relies on *Pac-Man* style of navigation through a picture grid, guiding the player character into eating images based on the right tag words, while avoiding meeting the enemy (a red “Traggle” character) or eating “wrong photos” (see Figure 3, above). Munching seven correct photos moves the player up one level. The game has been designed as an

experiment in gathering visual relevance data. There is a hi-score list, but no actual multiplayer features.

It should be noted that the dedicated gaming applications are in clear minority within the broader field of playful Flickr applications. There are literally hundreds of different Flickr uploading tools, desktop applications, mobile phone applications, browser extensions and plug-ins for blogging software that are often categorized as “fun and games”, rather than as utility software. The discourse of dedication and passion for extended Flickr use also regularly shares the rhetorics of addiction with that often associated with games and gamers.<sup>17</sup>

As a showcase of contextual play, Flickr is able to provide mixed and diverse lessons. The divided results are no doubt partly due to the current, still rather early state of socially and spatially connected technology, but also to the ways in which the underlying technologies are currently adopted in user cultures.

The potential of this kind of playful and social media services in themselves appear promising. The individual Flickr photostreams trace the life and travels of active users in a manner that provides an intimate and detailed view into their daily lives. As the service automatically highlights the most recent photos from users’ Flickr contacts when one logs in to the service account, thereby providing a readily populated social context for interaction.

Yet, the mobile, contextual use of Flickr images appears limited, in part due to the laborious process of providing photos with geo-data (something about to change as GPS becomes more integrated in mobile photo devices). It is somewhat common among users to manually insert tags and descriptive texts to photos in order to create some spatial markers or coordinates. The main interface of Flickr as a service is nevertheless not organised to bring together users who are co-located or to encourage interactions that are based on mobile use situations. The *paidia* dimension of Flickr appears thus primarily contextualised through connections that form the social context to the practices of playful browsing (as analysed by Lerman & Jones 2006). Thematic or tag based playful exchanges are also common.

To a certain extent, contextual and spatial information is currently provided for playful uses through Flickr Places and Flickr World Map, which allow multiple ways of navigating, commenting and other forms of participation in geographically filtered photostreams. The ensuing rich environment of users, social networks, photos and their dynamic interconnections then provides material for that apparent minority whom are interested in engaging in more *ludus* style of goal-oriented or competitive gaming in Flickr. The social mini-games, such as *Fastr*, have their potential, but are still rather limited experiments in this realm.

## **PLAY IN NETWORKS**

My second example will focus on the contextual access and play in Facebook,<sup>18</sup> a popular social networking service, and certain related “social utilities”. The situation is somewhat comparable to that of Flickr, even if the services in themselves have been designed with clearly different goals in mind. Facebook has its origins as a social

networking service for university students – the founders originally designed the service while being students in Harvard.<sup>19</sup> In the web site usage metrics Facebook has challenged Google and Yahoo! as the most popular destination in the Internet, and the service has grown into one of the most popular websites in general, with its over 400 million active users in 2010.<sup>20</sup> Even if online sharing of photos is also in Facebook one of the most popular activities with staggering over two billion photos uploaded each month,<sup>21</sup> Facebook is much more diverse service, with several distinctly different classes of “apps” (applications utilizing the Facebook API) available.

The spatially contextualised origin of Facebook is still visible in the way most of its users are organised into “networks” that relate to their school, workplace or living area. Some analysts of Facebook user data have suggested that allowing users to search each other’s profiles for shared city, institution or job type may be an important way to create the “sense of connection” that, in its turn, facilitates interaction (Lampe, Ellison & Steinfield 2007). Similarly, Facebook has been connected with strengthening social capital e.g. by linking students to old school friends, and through this process contributing to their well-being (Ellison, Steinfield & Lampe 2007). Since 2007, Facebook has also been made available in various ways as a mobile service.<sup>22</sup> In August 2007 a dedicated iPhone application was provided as a touch-optimised mobile interface into Facebook for the Apple smartphone users, and Facebook applications for other popular smartphone brands soon followed.<sup>23</sup> All these different ways of access are designed to facilitate making of quick “status updates” in contexts that are realised away from the office desk, and the desktop PC.

Games applications are a visible part of the Facebook “ecosystem”. When approached as a playful or gaming environment, the Facebook experience is initially focused on acquiring “friends” to one’s contact list. The service has made this easy, by tracking existing social networks and suggesting new contacts. Yet, other social networking services display the number of one’s contacts more prominently than Facebook (see e.g. LinkedIn.<sup>24</sup>) Facebook is more focused on various ways of acting and sharing in the social environment that the service features and add-on applications allow for interacting with one’s online contacts. Particularly since Facebook opened their “Facebook Platform” (a set of application programming interfaces, APIs) in January 2007, the field has expanded and thousands of different Facebook applications have been created and made available through the service.<sup>25</sup> In distributing them, Facebook particularly initially relied on an aggressive viral model where each user was encouraged to send an install invitation to their own contacts. This mechanism, while related to the exponential popularity growth of the top applications, also led to phenomenon called “application spam” – of application invitations and notifications rising to such numbers that they were even blamed for drops in Facebook user numbers in early 2008; Facebook responded by providing users the ability to ‘block application’ and reporting to administration applications that are forcing its users to invite more friends.<sup>26</sup> The spread of Facebook applications such as games nevertheless continues to rely and experiment on different viral mechanisms built in as the core interaction or gameplay element.<sup>27</sup>

Facebook usage appears closely integrated with the daily media practices of its users; Ellison et al. (2007: 1144, 1153) refer to studies according to which the “typical user spends about 20 minutes a day on the site, and two-thirds of users log in at least once a day”, and their own findings among undergraduate students confirms this, adding

that their informants reported having between 150 and 200 friends listed on their profile.<sup>28</sup> The significance of social context and the intense socially interactive character of Facebook is further underlined by data published by O'Reilly, according to which the three most popular uses for Facebook applications are enhanced communication, social comparison, and playing a social game.<sup>29</sup> When approached from a game studies perspective, even the communication and comparison applications in Facebook appear distinctively game-like or playful. I will illustrate this by briefly highlighting a few typical Facebook applications.

For the purposes of this chapter, I made an informal sampling of the most popular Facebook applications, first in August 2008, using the 'Most Active Users' listing in Facebook Application Directory, then a year later in August 2009 using the data provided at Appdata.com website, which was then again accessed for a sample in May 2010.<sup>30</sup> In August 2008, the most popular application in the Facebook application directory was titled "Slide FunSpace (formerly FunWall)".<sup>31</sup> As a specimen of the early successful Facebook apps, Slide FunSpace had in August 2008 over 21 million monthly active users and was advertised having been used for sharing over six billion videos and other links. In the blogosphere of Autumn 2008, FunSpace and its main competitor, SuperWall were also among the most widely criticized applications, sometimes on the basis of their content, sometimes on grounds of being source of much "application spam". Much of the most actively shared content in FunSpace was either sexually oriented (see Figure 4 below), humorous, or both. Also the sharing of music videos and other media was at the top of the lists of FunSpace usage. I would argue that the principal function for "enhanced communication" application like FunSpace is similar to that of phatic communication – communication that is practiced for maintaining social relations, rather than for its information value. Phatic communication is sometimes considered as a practical synonym for social presence (Rourke, Garrison & Archer 1999). FunSpace is thus used to construct a shared, pleasantly sociable space among its users – as its name already suggests.



Figure 4: The most popular "posters" shared in FunSpace (Facebook.com, August 26, 2008.)

Games applications have got their fair share of visibility in Facebook. However, in August 2008, in the Facebook application directory majority of applications with most active users appeared to be something else rather than explicit game applications. Among the top 35 applications, five clearly present themselves as games: *Word Challenge* (#7), *Quizzes* (#15), *Tower Bloxx* (#16), *Crazy Taxi* (#27), and *Zombies* (#35). A number of other applications are included into the Games application directory, including *Pokey!* (“Adopt an adorable, interactive 3D puppy who lives on your profile, plays with you, carries bones to your friends, and gives you tons of love!”<sup>32</sup>), and *YoVille* (“YoVille is a world where you can buy new clothes for your player, purchase items for your apartment, go to work, and meet new friends”<sup>33</sup>). Rather than ‘games’ in the classic sense, these applications could be described as “software toys”, which is the concept game designer Will Wright and his company has decided to use about such popular creations of theirs as *SimCity* (Maxis, 1989) and *The Sims* (Maxis, 2000).<sup>34</sup>

What Facebook game applications contribute to the design space of classic board games or video games is their close integration within the shared social context of online service. *Word Challenge* allows easily inviting or challenging other users that are automatically drawn from the users’ Facebook friends lists. Another game, *Zombies* is a good example of a simple, “first generation” Facebook game application that does not provide much in terms of actual gameplay, but rewards by high rankings those users who actively distribute invitations to the game through “biting their friends”.<sup>35</sup> Active recruiters – who also act as viral agents spreading the game – will soon have impressive titles in their profile page, plus their own “army”. The improved power points can then be used in challenging other players to fights, which do not require any skilful gameplay but are rather automatically played out by the game system. Automated battles in themselves are nothing new, many strategy and some roleplaying games sort out battle outcomes this way. *Zombies*, *Vampires*, *Slayers* and similar first generation games are mostly remembered for their effective distribution mechanisms, which has also been one of the major sources of “application spam”, resulting to Facebook administration stepping in, and forbidding game applications from granting points from invites any more.<sup>36</sup> There has been some valid criticism from among gamers whether this style of ‘social game’ constitutes a proper game at all, being less more than a thinly disguised façade for a viral distribution and marketing application.

*Tower Bloxx* (developed by Digital Chocolate) is an example of a Facebook game that includes a more pronounced skill element; *Tower Bloxx* has originated as a mobile game that has later been converted into a Facebook application. Originally a single player game, in *Tower Bloxx* the player’s aim is to build as high and as stable building as possible by dropping building block on top of each other. In Facebook version the basic gameplay remains the same, but the game scores gained by one’s friends are integrated in the screen (see below, Figure 5). The dashed bars are a visible incentive to compete against the best scores gained by those in one’s social network. The role of social networking service is in this case to stand as an audience and also as a competitive setting for a single player experience.



**Figure 5: Tower Bloxx screenshot from Facebook.com.**

Sampling the Facebook application scene a year later in August 2009, the trendy character of these services had started to become clear. *Slide FunSpace* for example had already in a year lost much of its active user base, going down to the place 20 in the popularity charts. The most popular applications remained to be both social and playful, but now with a more focused twist: *Causes*<sup>37</sup> (23,5 million active monthly users in August 2009) attempted to avoid the feelings of frivolity by focusing on actions that contribute to positive, real world causes like environmental or health issues. The second most popular Facebook application in August 2009 was *LivingSocial* (23,2 million active monthly users), which facilitates sharing of information about books, movies, music albums and other such items of interest, thereby both promoting both such content as well as the taste and personality of the application user. The number of explicit game applications had increased within a year, as more developers had entered this market. Out of forty most popular applications in August 2009, 18 were categorised as games. The a growing trend among them were farming game applications, such as *FarmVille*, *Farm Town* and *Barn Buddy* (18, 15 and 5 million active monthly users, respectively)<sup>38</sup>.

In the sampling carried out in May 2010 the ruling application was *FarmVille*, the social farming game developed by Zynga. Even while the popularity of *FarmVille* had at this point already passed its highest peak (of more than 83 million users in April 2010), it remained still as the self-evidently most popular application in Facebook with its over 76 million monthly players. The sense of achievement and sociability come together in this kind of virtual farm-building and caring simulations, where it is possible to help one's Facebook friends to take care of their virtual plants and animals. In the August 2009 sample the most popular Facebook applications continued to include several that focus on playful communication and information sharing: *LivingSocial*, *Hug Me*, *Food Fling!*, *How Well Do You Know Me?*, *Give Hearts*, *Hugged* and others. In the sample of May 2010, social gaming had grown to take a more prominent share of Facebook application space: twenty-three applications out of top forty were categorised as games, while the emphasis in the communication tools and toys category had moved towards mobile applications, with *Facebook for*

*iPhone and Facebook for Blackberry Smartphones* applications rising high among the most popular applications.

Designed and programmed mostly on Flash, the game applications of Facebook run poorly or not at all within the browsers of contemporary mobile phones. The mobile use is however not restricted to handsets – the laptop computers have gained in popularity, and some analysts have claimed that laptop sales eclipsed those of desktop computers during 2008.<sup>39</sup> Thus the “mobile Internet user” is increasingly typically one that is using Wi-Fi, 3G or some other wireless network to get online from one’s laptop. One factor driving this is the ongoing societal and global development where work is becoming increasingly mobile and information based; e.g. already in year 2002, 45 % of Finnish workforce could be categorised as “mobile workers” (Gareis, Lischkis & Mentrup 2002, 54). This development will create new kind of challenges for staying in touch with one’s colleagues, as well as with family and friends. Even while working, one might not be in the office. Playing a session of *Tower Bloxx* while waiting for transfer on an airport might be yet another way of keeping oneself visible in the social map.

The evolution of “social games” in various platforms is very fast, and my observations appear to verify the industry claims of lifespan of an average Facebook game application being two or three months.<sup>40</sup> The most favourite Facebook games in 2009 had been designed to make much more comprehensive use of social contexts than a game published a year or two ago, and this trend continued in games that were popular in 2010. An example is *Mafia Wars* by Zynga, which exhibited powerful growth during spring and summer of 2009 (see below, Figure 6).<sup>41</sup> In this game, the social presence of other players is tightly interwoven with the theme and metaphor of playing a criminal who is part of a Mafia family. There are mutual in-game rewards gained from actively recruiting, exchanging and linking with players that are part of one’s Facebook friend network. Having a large Mafia family is an asset that makes a player more likely to succeed in battles that take place in the game, while crime themed status messages and recruiting invitations from one’s friends are securing the viral marketing and spread of application. The effective exploitation of such mechanisms helped to grow Zynga as the most successful social game company; the originality of game design was hardly the key factor: Zynga has been repeatedly accused of copying the competitors’ game concepts.<sup>42</sup> There has been also controversy regarding the unethical or clearly fraudulent advertisement schemes applied by Zynga and its partners.<sup>43</sup> Despite the controversy, Zynga has continued to grow and expand its range of offerings. Cross-platform game concepts are one element in this. For example, in addition to the browser application of *Mafia Wars*, Zynga has also released an iPhone version which has a more streamlined interface and simpler gameplay, and which implements also some sound effects. However, a symptom of proprietary social media networks, at the time of writing, it is still impossible to link the *Mafia Wars* account from the Facebook game application to that of the iPhone version. Looking at the potentials of social, networked and mobile game forms, there is thus a clear need for open identity and application programming interface standards that would generate more extensive social visibility and value for the playful activities, regardless of the technology used for communicating with one’s friends.

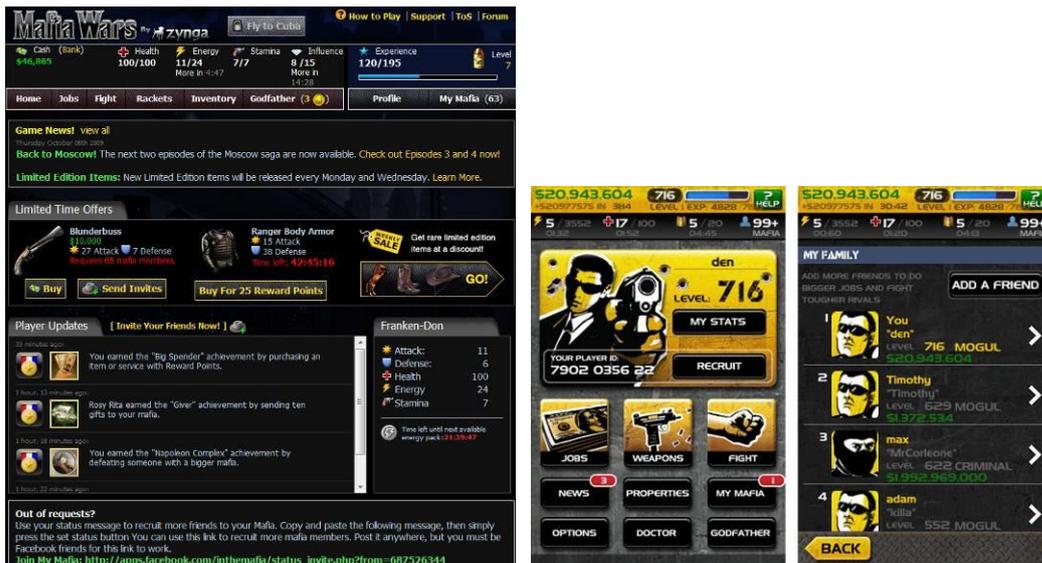


Figure 6: Mafia Wars in Facebook and at iPhone.

Two core applications or functionalities which Facebook supports for mobile phone use are status updates and photo uploads. Both of these serve communicative purposes that are important for travelling users: the regular status updates and a stream of camera-phone photos helps in keeping in touch with the people in one's social network. For example, sampling at the status update stream from my own friends for a few random days, I can find a mixed collection of messages, some related to their ongoing work, some to personal matters or feelings, some joking or ambiguous in style. Some carry little mobile phone icons next to them, marking them as having been posted from the mobile interface. One person appears to be away from the office on a work matter, another one has posted his status updates from a hospital bed. Announcements about events taking place within some virtual game world are dispersed in the feed among links and discussions that relate to media contents, professional events and changes in the relationships between users that I know, and some that are unknown. Play, work and other areas of social life appear as irrevocably tangled up together.

Even while Facebook games or other rich media Internet contents are still predominantly accessed through a browser of personal computer, the 'laptop-based mobility' and the mobile Internet accessible through handsets is gaining more prominence. It appears that the borderline between playful and communicational practices in the PC-centric Internet and in the mobile phone cultures is becoming thinner. Still in 2003, when Eija-Liisa Kasesniemi studied the second generation GSM phone cultures in Finland, her informants could make a clear distinction between what kind of communicational affordances are related to personal computers in contrast to mobile phones:

*Researcher:* If you had to give up either SMS or email, which one would you drop?

*Kati* [a 14-year-old informant]: Probably email since the computer is so, I mean you can't carry it with you and things like that. [...]

*Researcher:* Is IRC more fun than sending SMS?

*Kati:* Mm, there's the thing that you can only do it in one place, sitting in front of your monitor. You can send SMS pretty much anywhere.

(Kasesniemi 2003: 23.)

Today, in 2010, this kind of distinctions appear to be dissolving, as email is increasingly also accessed with mobile phones. As the mobile broadband connections become more common, they facilitate the use of instant messenger applications in phones as well as in laptop computers, whereby the role of “application specific use context” does not remain the same any more. The mobile users of services like Facebook or Flickr are already blurring this division line. Also several micro-blogging services have been created, most popular of them Twitter, which is accessible from personal computers and mobile phones, as well. Playfulness and gaming impulse has permeated also this communicational space, and there exists several games that are implemented for Twitter, most of them simple trivia or mathematical competitions that are easy to participate by sending answers via Tweet replies.<sup>44</sup> What remains important, however, in all of these different messaging applications, is the social context: after logging into the service, the same network of contacts and friends is available, irrespective of the device or technology used for getting online and into the communicational space.



**Figure 7: The web interface and the iPhone application version of Facebook (2009).**

Adam N. Joinson (2008) has studied Facebook users’ key motivations for accessing the service, and “keeping in touch” was mentioned as the most important one; the other key motivations were also people-oriented – desire to go “virtual people-watching” (social surveillance), re-acquire lost contacts, and just the general need to communicate. The mobile access into Facebook is one particular way the contact with one’s social network can be extended and maintained, and a use mode with rich potential for playful interactions with different location and situation specific elements. The stream of photos and status updates from mobile users forms one thread in the mediated acts that together contribute to one’s social presence (see above, Figure 7). Again, we can find multiple ways in how ‘play’ and ‘games’ figure in these hybrid, cross-platform exchanges. The development of how location information has got implemented into Facebook is illustrative of the same motivations. At the time of this writing in 2010, Facebook is still to integrate location information directly into their core functions like status updates, but there are several third-party applications

that integrate with Facebook and have already started to move the service towards this direction. One of the most interesting ones from the contextual play perspective is called *Foursquare* (see below, Figure 8).



**Figure 8: Three different views from the *Foursquare* iPhone application: the primary check-in view, tips area and the *Foursquare* badges (2010).**

*Foursquare* is a location-based social service that is built around a ludic core – by “checking-in” various locations you visit, you can become recognized as the “Mayor” of that particular place. The users earn points from their *Foursquare* activity, and can progress in game’s hierarchy by gaining badges like “Newbie”, “Adventurer” or “Superstar”. The game supports links to other social services, making it possible to release news from every check-in, badge or mayor status change to one’s Facebook or Twitter friends. Many of the places *Foursquare* recognises are shops, restaurants or other commercial establishments and it is easy to see the commercial potential of social network application that is operating on such information. Unsurprisingly, the game application also includes an “add tip / to do” functionality: the users can leave their tips on what food to order in a certain restaurant, for example. The venues on their part can decide to provide discount and prizes to the customers who are loyally checking in at their location. The boundary between a social game and a playful marketing application effectively dissolves in *Foursquare*. The value of gameplay, socially shared ludic information and the motivation of applying “virtual surveillance” into one’s social network start here to come together with blatant consumerism in a manner that also evokes certain questions and concerns that will be discussed below, in conclusions.

One of the key elements in most dictionary definitions of ‘play’ is the free and pleasurable character of playful activities. In an article, Anne McClard and Ken Anderson (2008) have paid attention to the dynamic and social character of identity construction that takes place in Facebook: rather than focusing on setting up one’s “profile” as a static page, as in some other services, the application-based nature of Facebook allows a representation of identity that is fluid. “One’s ‘image’ is created by what one does, who one does it with and how it is done; it is constantly in flux”, they write. “On Facebook life is a game”, they claim, and continue:

Although participants can open chat windows or belong to special interest groups of a more serious nature, the daily drivers of Facebook exchanges are games and quizzes. As technology

mediates more and more of our social exchanges, the forms of our interaction change. Gaming – light, breezy and fun interactions with friends near and far – keeps ties alive without being burdensome.

(Op cit.: 12.)

The role of games in a social networking service like Facebook should not be exaggerated – not everyone is using such applications, while they still remain interested in what their friends, co-workers and family are doing. Yet, the role contextual play is not only restricted to how many people are engaged in gameplay. As I have argued elsewhere (Stenros, Montola & Mäyrä 2007), on the one hand there is a visible trend of increasing *ludus* in contemporary society – meaning here both the increasingly visible playful attitude and adoption of game-like practices e.g. in media, notably in phenomena like the reality television and game shows that are dominating today's broadcast media. On the other hand, it is important to recognize that there still also exists some “serious” media contents that relate to those areas of human life that are not primarily playful. The effects of pervasive playful contexts are difficult to block, however. While not even the life of dedicated Facebook users is only play and games, it certainly is valid to say more generally that the *paidia* style of playful, social interaction is dominating much of what is going on in this service. It is a character of Facebook as media that even the most serious themes of discussion are contextualised in an environment that is saturated by an endless stream of media, games and news related items, thereby becoming part of playfully eclectic tapestry.

Considering the different ways of engaging with Facebook, it might even be that the *ludus* impulse of (competitive, rule-bound) gameplay goes against the impulse to participate in the more freeform, playful exchanges taking place through status updates, photo comments, and the various “poking”, “hugging”, “kissing” or “gift giving” activities that are displayed in Facebook user's profiles and application “walls”. In his above mentioned analysis of Facebook users, Adam N. Joinson (2008) notes: “Interestingly, an increased score on the content gratification scale was negatively related to the number of ‘friends’ reported to be linked to one's profile.” Thus, the interest in dedicated gaming applications does not appear necessarily to go together with the social interests in Facebook. A dedicated Facebook gamer might even set up several accounts or user profiles just for the need of having ‘alts’ (alternative gaming accounts) in order to optimize strategies of gaming success, rather than for any personal interest in “friends” that are listed as contacts in such a profile.<sup>45</sup> Here we appear to have a case where emphatically social *paidia* is differentiated from *ludus* that is not focused on social networks to a similar degree. However, more research would be required before drawing any more far-reaching conclusions on this.

## TOWARDS CONCLUSIONS

In this chapter I have taken a quick look at the rapidly changing landscape of mobile Internet usage and playful behaviours in online social networking services. As “mobile Internet” is no longer synonymous with dedicated mobile phone services, the character of ‘mobility’ itself is undergoing transformations. The combination of social networking with playful, or game-like uses and behaviours emerges as an important contemporary form of online communication, mixing and muddling up the boundaries between work and play, as well as leisure and utilitarian interests. While still a few

years back it was typical to focus on various operator-provided utility services like online banking or news services while discussing the mobile Internet, today's landscape appears much more centred on users themselves. Perhaps the much searched-after "killer app" for mobile Internet is finally found – the other people.

Mobile Internet also increasingly appears to be a hybrid one. This is hybridity in terms of technologies, as laptop computers, handheld PC devices and smartphones are utilised in an *ad hoc* manner, making use of whatever network and interface is available. Hybridity is also social, as the users are enrolling to various online services and locate different subsets of contacts in each of them. In the ensuing melange of contacts and communication, the social spheres of colleagues, personal friends and family are starting to intertwine in an increasingly complex manner. Finally this hybridity is also existential, as the physical presence (or absence) is augmented by various "photo streams", "status updates" and other online acts and representations that together constitute the contemporary presence of an individual in a social context.

It is also easy to criticize the ongoing development. As soon as there is a network-enabled device in most pockets as well as in schoolbags or briefcases, the possibility of "logging in" might soon be substituted by a social obligation to do so. For some active Internet user demographics such a situation appears to be already their living reality. The privacy concerns aside, the constant compulsion to "update oneself" in the online social sphere might also be a symptom of some underlying frailty in the contemporary society. The bipolar tension between the Net and the self, as discussed in the context of growing stress on patterns of social communication by Manuel Castells (2000: 3) provides one interpretative direction. Management of the various threads that constitute one's identity in a network era is becoming more and more laborious. One's extended social networks are also busily producing a never-ending stream of contextual information that is in danger of becoming yet another form of "infoglut". That our lexicon now includes concepts like "invite spam" or "application overload" tells that it already might have become one.

Drawing upon Michel Foucault, Gilles Deleuze (1998) has written about the "society of control", where the confinement of space and time, which was typical to the disciplinary societies in the eighteenth and nineteenth centuries, has been replaced by new forms of internalised, economical, and ultra-rapid forms of "free-floating control". It is not clear at this point yet what the exact role of mobile and social, contextually enabled applications and services will be when approached from this perspective. The connections these systems allow are always dual: they liberate to explore and express, and are therefore potentially empowering. On the other hand, the constant contact with social networking services is also enabling new, unceasing techniques of control. The examples of commercial contextual play services such as *Foursquare* discussed above hint towards a future, where rather than being deprived by our privacy by some shadowy 'Big Brother', we end up disclosing details from our private life voluntarily, in exchange of perceived commercial and social benefits. My overall conclusions at this point are, nevertheless, predominantly positive. It is inspiring to see the ways in which various "communication tools" or "social utilities" are being repurposed by their users to become playing fields. There is certain Dadaist or anarchist – and certainly also infantile – pleasure involved in following how one's colleagues throw sheep at each other, or buy and sell each other as pets. The participation in freely flowing energies of play can, nevertheless, also easily turn into

compulsions of connection. In this view, contextual play is currently a loaded field, strained between multiple possible directions of future evolution.

### Notes

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<<http://www.iabuk.net/en/1/newmobileinternetresearch110808.mxs>>. J. D. O'Grady (2008) 'Google; AT&T shocked by iPhone usage', ZDNet, 15 February, 2008. Online. Available HTTP: <<http://blogs.zdnet.com/Apple/?p=1316>>. (Accessed 4 August, 2009.)

<sup>2</sup> ITU (2009) *Measuring the Information Society: The ICT Development Index*. Geneva: International Telecommunication Union. Online. Available HTTP: <[http://www.itu.int/ITU-D/ict/publications/idi/2009/material/IDI2009\\_w5.pdf](http://www.itu.int/ITU-D/ict/publications/idi/2009/material/IDI2009_w5.pdf)> (accessed 4 August, 2009). ITU (2010) 'ITU Sees 5 Billion Mobile Subscriptions Globally in 2010', ITU Newsroom. Geneva: International Telecommunication Union. Online. Available HTTP: <[http://www.itu.int/net/pressoffice/press\\_releases/2010/06.aspx](http://www.itu.int/net/pressoffice/press_releases/2010/06.aspx)> (accessed 6 May, 2010).

<sup>3</sup> Relevant research projects include Mogame – The Wireless Gaming Solutions of the Future (2003–2004), Mobile Content Communities (MC2; 2003–2005), Integrated Project on Pervasive Gaming (IPerG; 2004–2008), Transformation of Digital Play (TDP; 2008–2010).

<sup>4</sup> Anthony Giddens has summarised work of psychologists such as Erik Eriksson and D. W. Winnicott on the evolution of "basic trust" and points out how, from a sociological and philosophical perspective, these links to other people are "connected in an essential way to the interpersonal organisation of time and space" (Giddens 1991, 38). My approach is based on earlier published work (e.g. Ermi & Mäyrä 2005 and Mäyrä 2007; 2008).

<sup>5</sup> See the Flickr website. Online. Available HTTP: <<http://www.flickr.com>> (accessed 22 August, 2008).

<sup>6</sup> See the Eye.fi website. Online. Available HTTP: <<http://www.eyefi.fi>> (accessed 22 August, 2008).

<sup>7</sup> See J. J. Garrett (2005) 'An Interview with Flickr's Eric Costello', *Adaptive Path*, August 4, 2005. Online. Available HTTP: <<http://www.adaptivepath.com/ideas/essays/archives/000519.php>> (accessed 15 August, 2008).

<sup>8</sup> D. S. Butterfield et al. (2006) 'US Patent Application 20060242139: Interestingness ranking of media objects'. Online. Available HTTP: <<http://appft1.uspto.gov/netacgi/nph->

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Parser?Sect1=PTO1&Sect2=HITOFF&d=PG01&p=1&u=/netahml/PTO/srchnum.html&r=1&f=G&l=50&s1=%2220060242139%22.PGNR.&OS=DN/20060242139&RS=DN/20060242139> (accessed 18 August, 2008).

<sup>9</sup> Official Flickr Blog, '4,000,000,000', 12 October, 2009. Online. Available HTTP: <<http://blog.flickr.net/2009/10/12/4000000000/>> (accessed 11 May, 2010).

<sup>10</sup> W. Hein, blog note 'Deconstructing Flickr's "Interestingness!"' Online. Available HTTP: <<http://wes2.wordpress.com/2006/05/12/deconstructing-flickrs-interestingness>> (accessed 18 August, 2008).

<sup>11</sup> The interestingness criteria have been discussed in online how-to-guides that collect tips for optimizing one's chances of success in Flickr; see e.g. 'What It Takes to Get Your Photo on the Flickr Explore Page', *PhotoPreneur.com*. Online. Available HTTP: <<http://blogs.photopreneur.com/what-it-takes-to-get-your-photo-on-the-flickr-explore-page>> (accessed 6 May, 2010).

<sup>12</sup> 'Flickr Sudoku', *Becky's Web*. Online. Available HTTP: <<http://www.beckysweb.co.uk/sudoku/flickrsudoku.asp>> (accessed 18 August, 2008).

<sup>13</sup> "Fastr – A Flickr Game", *RandomChaos.com*. Online. Available HTTP: <<http://randomchaos.com/games/fastr/>> (accessed 18 August, 2008).

<sup>14</sup> G. Robinson, 'Guess the Google', Online. Available HTTP: <<http://grant.robinson.name/projects/guess-the-google/>> (accessed August 18, 2008).

<sup>15</sup> 'ESP Game', *Gwap.com*, School of Computer Science, Carnegie Mellon University. Online. Available HTTP: <<http://www.gwap.com/gwap/gamesPreview/espgame/>> (accessed 4 August, 2009).

<sup>16</sup> P. Fox, 'PhotoMunchrs'. Online. Available HTTP: <<http://imagine-it.org/flickr/PhotoMunchrs.html>> (accessed 18 August, 2008).

<sup>17</sup> See e.g. S. P. Aune, 'Flickr Toolbox – 100+ Tools for Flickr Addicts', *Mashable.com*, August 4, 2007. Online. Available HTTP: <<http://mashable.com/2007/08/04/flickr-toolbox/>> (accessed 4 August, 2008).

<sup>18</sup> See the Facebook website. Online. Available HTTP: <<http://www.facebook.com>> (accessed 4 August, 2009).

<sup>19</sup> See 'Company Timeline' in the Facebook website. Online. Available HTTP: <<http://www.facebook.com/press/info.php?execbios=#/press/info.php?timeline>> (accessed 4 August, 2009).

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<sup>20</sup> See the factsheet and statistics pages available at the Facebook website. Online. Available HTTP: <<http://www.facebook.com/press/info.php?statistics>> and <<http://www.facebook.com/press/info.php?factsheet>> (accessed 7 May, 2010). In May 2010, the website analytics firm Hitwise reported Facebook as the most visited website in the US, followed by Google and Yahoo (Yahoo mail and Yahoo main site). Online. Available HTTP: <<http://www.hitwise.com/us/datacenter/main/dashboard-10133.html>> (accessed 7 May, 2010).

<sup>21</sup> See the Facebook statistics page (the reference above). Also: D. Beaver (2007) 'Facebook Photos Infrastructure'. A blog note. Online. Available HTTP: <<http://blog.facebook.com/blog.php?post=2406207130>> (accessed 4 August, 2009). The article 'Internet 2009 in Numbers' by Pingdom website reported the monthly photo upload number as 2,5 billion. Online. Available HTTP: <<http://royal.pingdom.com/2010/01/22/internet-2009-in-numbers/>> (accessed 7 May, 2010).

<sup>22</sup> See Facebook Mobile web page. Online. Available HTTP: <<http://www.facebook.com/apps/application.php?id=2915120374&b>>. See also M. Slee (2007) 'Facebook Your Phone'. A Facebook note, 10 January, 2007. Online. Available HTTP: <<http://blog.facebook.com/blog.php?post=2228532130>>. (Accessed 4 August, 2009.) Rather than a single application, "Facebook mobile" comprises of ability to upload photos and notes directly from one's mobile phone to the service, and the of the special interface at <<http://m.facebook.com>> that is customised for small-screen browser use.

<sup>23</sup> See the blog post 'Facebook for iPhone is Here' by Joe Hewitt, posted 15 August 2007. Online. Available HTTP: <<http://blog.facebook.com/blog.php?post=5353402130>> (accessed 7 May, 2010).

<sup>24</sup> See the LinkedIn website. Online. Available HTTP: <<http://www.linkedin.com>> (accessed 4 August, 2009).

<sup>25</sup> A. Ustinova, 'Developers compete at Facebook conference', *San Francisco Chronicle*, June 23, 2007. Online. Available HTTP: <<http://www.sfgate.com/cgi-bin/article.cgi?f=/c/a/2008/07/23/BU7C11TAES.DTL>> (accessed 4 August, 2009).

<sup>26</sup> D. Parrack, 'Facebook use drops – Could application spam be the cause?' *Blorge*, February 21, 2008. Online. Available HTTP: <<http://tech.blorge.com/Structure:%20/2008/02/21/facebook-use-drops-could-application-spam-be-the-cause>> (accessed 4 August, 2009). *Time* has also discussed the phenomenon, under the heading of "application overload"; see: A. Hamilton, 'Suffering From

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<sup>27</sup> See Aki Järvinen’s blog post ‘The Near Future of Viral Design in Social Games’ in Gamasutra, posted 7 April, 2010. Online. Available HTTP:

<[http://www.gamasutra.com/blogs/AkiJarvinen/20100407/4577/The\\_Near\\_Future\\_of\\_Viral\\_Design\\_in\\_Social\\_Games.php](http://www.gamasutra.com/blogs/AkiJarvinen/20100407/4577/The_Near_Future_of_Viral_Design_in_Social_Games.php)> (accessed 7 May, 2010).

<sup>28</sup> Different sources give somewhat varying estimates for the average time investment of a Facebook user. The official Facebook statistics page reports in May 2010 that “Average user has 130 friends” and that “People spend over 500 billion minutes per month on Facebook”. Facebook statistics page. Online. Available HTTP: <<http://www.facebook.com/press/info.php?statistics>> (accessed 7 May, 2010). That would roughly translate into 37 minutes per user in a 30-day month. The analytics company Nielsen released figures in February 2010 that estimated an average Facebook user to spend more than seven hours per month in Facebook. This overshadows time spent in any other monitored online service, but on the other hand translates to only 14 minutes per day. See Ben Parr, ‘Facebook Is the Web’s Ultimate Timesink’, posted February 16, 2010. Online. Available HTTP:

<<http://mashable.com/2010/02/16/facebook-nielsen-stats/>> (accessed 7 May, 2010). The preciseness of such time usage evaluations should be taken with a grain of salt.

<sup>29</sup> S. D. Farnham, ‘The Facebook Application Ecosystem: Why Some Thrive, and Most Don’t’, O’Reilly Media webcast, May 13, 2008. Online. Available HTTP:

<<http://www.oreillynet.com/pub/e/968>> (accessed 4 August, 2009).

<sup>30</sup> The ‘Most Active Users’ listing in Facebook Application Directory. Online. Available HTTP:

<<http://www.new.facebook.com/apps/>> (accessed 27 August, 2008). This source has been later replaced by ‘Featured by Facebook’ listing that does not provide the same information. Application user popularity analyses for August 2009 have thus been based on data provided at Appdata website. Online. Available HTTP: <<http://www.appdata.com>> (accessed 4 August, 2009, and again 10 May, 2010).

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- <sup>31</sup> Facebook Application Directory. Online. Available HTTP: <<http://www.new.facebook.com/apps/>> (accessed 4 August, 2009). Slide FunSpace web page. Online. Available HTTP: <<http://www.facebook.com/apps/application.php?id=2378983609>> (accessed 4 August, 2009).
- <sup>32</sup> FooPets web page. Online. Available HTTP: <<http://www.facebook.com/apps/application.php?id=10062052582>> (accessed 4 August, 2009).
- <sup>33</sup> YoVille web page. Online. Available HTTP: <<http://www.facebook.com/apps/application.php?id=21526880407>> (accessed 4 August, 2009).
- <sup>34</sup> The 'software toy' concept was publicised by Maxis *Software Toys Catalog*; quoted in T. Friedman, 'Making Sense of Software: Computer Games and Interactive Textuality', updated version. Online. Available HTTP: <<http://www.duke.edu/~tlove/simcity.htm>> (accessed 4 August, 2009).
- <sup>35</sup> Zombies web page. Online. Available HTTP: <<http://www.facebook.com/apps/application.php?id=2341504841>> (accessed 4 August, 2009).
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- <sup>38</sup> *FarmVille*, *Farm Town* and *Barn Buddy* web pages. Online. Available HTTP: <<http://apps.facebook.com/apps/application.php?id=102452128776>>, <<http://apps.facebook.com/apps/application.php?id=56748925791>>, <<http://apps.facebook.com/apps/application.php?id=60884004973>> (accessed 7 August, 2009).
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- <sup>43</sup> See: Michael Arrington, 'Scamville: The Social Gaming Ecosystem Of Hell', TechCrunch, October 31, 2009. Online. Available HTTP: <<http://techcrunch.com/2009/10/31/scamville-the-social-gaming-ecosystem-of-hell/>> (accessed 10 May, 2010).
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- <sup>45</sup> We have found anecdotal evidence of such practices while interviewing Facebook users in the research projects carried out in University of Tampere Game Research Lab. It is however hard to establish how common or rare such 'hardcore' gaming practices are among Facebook gamers.

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