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**Portable Gaming in Japan:
Redefining Urban Play Space and Changing Gameplay**

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May 2010

Delivered to: Dr. Michal Daliot-Bull
125.3109 Contemporary Popular Japanese Culture

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Abstract

Japanese cities are characterized by high pedestrian traffic and public transportation use, and a dynamic street culture. During their everyday life, many people in Japan are carrying their portable gaming consoles or mobile phone devices while on the streets and public transportation. Some of these devices are having powerful graphic and computing processing capabilities, large storage, built-in wireless Internet connectivity and camera – features which together allow the introduction of high-resource consuming software applications that use image processing, location-based features, proximity and movement sensors. The video gaming industry and mobile phone service providers in Japan are leveraging this techno-cultural trend for introducing a new type of augmented reality in pervasive games. In these games, the playground is an imaginary graphic layer that is overlaid on and merges with the real urban space and players need to be on the move in order to play. This playing experience extends beyond traditional video gaming out into the real world, mixing and blurring real and virtual worlds, changing game space, gaming trends, gaming culture and gameplay.

This paradigm is explored in this paper through a review of industry-consumer techno-culture trajectory examples of portable consoles and mobile phone usage in Japan, and also, through a review of a few existing examples to augmented reality games played in Japan (mainly in Tokyo). The significance of this research is its aim to provide a wide perspective on how industry and consumers interact to create new modes of daily life, leisure and pastime, which can emerge into new forms of commercial implications that may have a vast impact on global economy, social trends and on the formation of new media ecosystems.

Introduction

In *Homo Ludens*, Huizinga (1955) referred to the term ‘magic circle’ as the form and function of playground, i.e. a bordered, isolated and well-marked place in which special rules of gaming apply. Huizinga further argues that the games are ‘temporary worlds within the ordinary world, dedicated to the performance of an act apart’ (Huizinga 1955: 10). Even the recent decade adaptation of Huizinga’s term to videogames by Salen and Zimmerman (2003: 95) still delimits the magic circle to where the game ‘takes place’ i.e., the screen. New mobile game technologies known as Augmented Reality or Pervasive Gaming that include games genres such as *hybrid reality games* and *location-based mobile games*, re-define the magic circle. In these games, the playground is an imaginary playful layer that is overlaid on and merges with the real urban space. Hybrid reality games do not have a primary play space as they take place simultaneously in different spaces (the real physical and the imaginary represented spaces). The definition of a new game space is one of the most essential and unique characteristics of hybrid reality games (De Souza e Silva 2008: 405).

Hybrid reality games and location-based mobile games are also defined by the need to use portable devices equipped with mobile technologies including location awareness and Internet connection, to coordinate players depending on their relative position to each other in physical space and by the need of players to move around for playing. De Souza e Silva argues that by creating this unique way of connecting players, and players to the play space, these games define a new logic of game space, which changes the perception of urban space and the daily mobility through the city. De Souza e Silva further adds another dimension of oscillation in hybrid reality games, which is articulated by ‘the relationship between serious life and playful spaces.’ (De Souza e Silva 2008: 405).

Fink (1974: 153) underlines the playful aspects of life and the inherent connection between game activities and serious life. This understanding is important for hybrid reality and location-based mobile games because they are also defined as *nagara* games, i.e., games that are played while performing other “serious” life activities, such as going to work or walking on the streets (Bell et al. 2006: 418). Thus, in an allegory to using Sony Walkman for what was conventionally conceived as a private act in a private space, i.e., listening to your favorite music but outdoors, in public spaces, blurring the boundaries between private and public worlds (Du Gay et al. 1997: 115) – using the portable gaming device for playing augmented reality games, increases the blurring of borders between play and real life because the device portability allows for playing while performing other daily routine and leisure

activities, such as commuting to work, going shopping or going to meet with friends. (De Souza e Silva 2008; Bell et al. 2006).

The process that is leading to the emergence of such a gameplay change is the core research of this paper. In essence, the significant question that is asked through this paper is how the interplay between portable gaming industry and consumers impact the technological trajectories of portable games evolution in Japan today, i.e., it inquires whether technologies available in portable gaming devices are changing the way people in Japan use these devices, and if so, how such changes influence games development (i.e., the gaming software industry), gameplay and play space in Japan. It will also explore how such changes emerge into new social trends, urban culture, and daily life fashions.

These research questions extend beyond a certain organization strategy or a certain consumer product. The research aims to provide a wider perspective on how industry and consumers interact to create new modes of daily life, leisure and pastime, which can emerge into new forms of commercial implications that may have a vast impact on global economy, social trends and on the formation of new media ecosystems.

Portable Gaming Consoles - Marketing Strategies

This chapter explores the case study of portable gaming consoles as influencing agents for the change in gameplay that was discussed in the *Introduction* chapter.

A Short History of Console Wars

In 2003, at the E3 Press Conference¹, Sony unveiled its PlayStation Portable (PSP) as ‘the Walkman of the 21st century’. By this announcement, Ken Kutaragi, then Sony CEO and the inventor of the PlayStation, introduced Sony's competitive product to the Nintendo's GameBoy Advance. The Sony PSP was designed to have more disk space, more connectivity capabilities than its rival product, wider LCD screen and video encoding capabilities allowing for full-length DVD-quality movies to be displayed. The PSP adopted multimedia functionality approach demonstrating Sony's position on cross-media convergence as a viable corporate marketing strategy. In contrast, for the marketing of the newer version of Nintendo's portable console, the Nintendo DS, convergence was considered as supplementary to the core functionality of its use as a gaming platform. Regular DVDs and CDs will not play on this Nintendo console and add-ons such as the Internet Browser needed to be purchased separately (Official U.S. Playstation Magazine 2003: 22, Chan 2008: 15).

These differences in corporate approaches for game platform design dictated price differences and penetration rates – the less convergent technologies product, the DS, was about half the price of the PSP, and sales of the former outperformed the latter in Japan. This convergence situation in the Japanese gaming context projects the current practices and future trajectories in the portable games market. It means that as long as Nintendo DS dominates the market and as long as non-converged and proprietary approach dominates this device – the emergence of pervasive gaming in Japan is an open question (Chan 2008: 15).

In the E3 of 2009, Sony has announced a cheaper mode of PSP - the PSP Go. Representing a new PSP ‘specifically designed for the digital lifestyle’ as Sony CEO Kaz Hirai was quoted; it was designed to be more than 50 percent lighter and 40 percent smaller than the original PSP. Sony also confirmed the significant storage size, as well as wireless and Bluetooth mobile phone connectivity for the PSP Go. At this event, Sony also confirmed that the price for the development toolkit on the PSP will be reduced by up to 80 percent. This announcement had signaled Sony's continues trend to open its PSP platform for game developers. The change in device size while still maintaining memory and graphic

¹ The Electronic Entertainment Expo - an annual tradeshow for the computer and video games industry.

capabilities, the wireless connectivity and openness to third-party developers - all while reducing device prices - may signal a catch-up approach by Sony. On the other hand, in accordance to the previously mentioned argument by Chan (2008: 15), that current industry approach to portable gaming is still conservative, the PSP gaming portfolio presented on that E3 conference was representing traditional games, and their only innovation was a better graphic design. (Gamasutra 2010).

To summarize, it appears that although their portable devices include technologies that allow for the introduction of hybrid reality and location-based mobile games, both Sony and Nintendo are still skeptic about augmented reality and pervasive gaming commercial potential, thus are reluctant to incorporate these gaming practices into their portable gaming consoles. On the other hand, I argue that a better case study for the portable gaming paradigm in this paper can be achieved by analyzing elements in mobile phone techno-culture trajectories. Mobile phone devices already have built in the mobile technologies mentioned earlier, and constantly go through processes of improving their graphic and computing processing power. Moreover, there are several cases of augmented reality games already played in Japan.

The following two chapters *Mobile Culture in Japan* and *Mobile Games in Japan* will present an alternative case study from the theoretical and practical perspectives. The chapter *Mobile Culture in Japan* will be exploring the possible impact of the highly developed Japanese mobile culture on the emergence of portable gaming trends in Japan, while the chapter *Mobile Games in Japan* will be a practical review of a few pervasive games played on mobile phones to empirically assess the theoretical arguments.

Mobile Culture in Japan

Japan as Leader of Mobile Technologies and Trends

Howard Rheingold's *Smart Mobs* (2002) - the book that brought mobile cultures to the attention of Western public, and describes mainly how geographically dispersed groups, connected only by mobile phones, text messaging and websites, can at a moment's notice act in concert - starts with a scene of young texters staring at their mobile phones as they navigate Shibuya crossing in Tokyo, apparently the site of the highest mobile phone density in the world (Ito 2004). In 2003, a BBC reporter in a piece titled "Japan signals mobile future" suggested: 'If you want to gaze into the crystal ball for mobile technology, Tokyo is most definitely the place to come to.' (Taylor 2003). These are just a few examples of how the fast evolution of mobile phones in Japan contributed to the global perception of Japan as pioneer of mobile phones future use and as an incubator of popular consumer trends that integrate portable technologies with urban socio-ecologies and fashions. I would argue that two major trajectories from this history of mobile phone evolution could be used as a potential reflection to the emergence of portable gaming:

1. Japan, as already globally recognized, is an incubator for mobile culture, evolving via interplay between the Japanese mobile phone carriers, consumers in urban environment, and technology (i.e., the device).
2. Mobile devices features and mobile phone services emerge as a result of urban culture trends.

On the other hand, in their research, that includes field studies about the reciprocity between the Japanese mobile phone industry and the development of mobile culture in Japanese life, Ito et al. (2005) provide fundamental insights about how mobile technologies developed into urban ecology and fashions in Japan, i.e., how technical forms evolved into social practices and cultural values, which may suggest a different approach for the above suggestion of portable gaming evolution in Japan. Ito doubts whether the Japanese technology and usage patterns of mobile phones are likely to replicate in other contexts and argues that this could be the case only when there are similarities in the overall techno-social interactions of the mobile media usage. Although Ito agrees that Japan represents a nation where the use of personal and portable gadgets is well integrated into its social and cultural life, and the mobile phone fits in this cultural ecology, she argues against an implicit technological determinism that drives cultural changes and proposes a model of natural relationship

between society, culture, and technology, i.e., that technologies materialize into daily life objects by particular cultures and social relationships, and in turn, these objects are incorporated into the social and cultural evolution of that society. (Ito 2004: 2)

In order to examine the similarities in techno-culture trajectories between current mobile uses and future portable gaming trends, there is a need for a close examination of the mobile phone culture evolution in Japan as proposed by Ito et al. (2005) and then to analyze its possible projection on portable gaming development. As a base assumption, as will be discussed in the following two sections, Ito suggests that the mobile phone in Japan has evolved from being a phone device used for receiving and initiating phone calls, mainly on the business context, to hold a personal space of intimacy and privacy for communication in a crowded and dense urban ecology. This sense of social surveillance in the crowded conditions of Japanese urban life, that had created the need for a communication device that is personal, private, and representing individual identity, may create tension when we get to examine portable gaming implications with a potential loss of anonymity, for example in the case of location-based mobile gaming (Chan 2008: 24). This tension will be further discussed in the section *Socio-Cultural Patterns of Mobile Gaming Usage* on page 15.

Mobile Phone Usage Patterns

Tokyo and Osaka are Japanese cities characterized by high pedestrian traffic and vibrant street culture as well as extensive public transportation use. This Japanese urban environment and lifestyle have definitely contributed to Japanese public preference of text based mobile communication over voice communication (Ito 2004: 5). For example, Tokyo's public transportation is highly regulated through signs, announcements and informal public customs. Phone rings, taking and initiation of mobile phone voice calls are not allowed in Tokyo's trains, subways and buses. Through their field research of phone usage in Tokyo's public transportation, Ito et al. (2005) has acknowledged that during travels, most passengers are frequently engaged in receiving and sending email, but rarely in voice calls. Furthermore, they have noticed that people taking voice calls on public transportation were hostilely stared at. In their interviews, people admitted they would not make and receive voice calls and are annoyed when others do that on trains. When reflecting these cultural patterns on portable game development, it may be that physical movement during playing on public transportation could be limited. Further discussion about gaming patterns will be discussed on the section *Socio-Cultural Patterns of Mobile Gaming Usage* on page 15.

‘Three P’ – Personal, Portable, Pedestrian

In their notably cited research work *Personal, Portable, Pedestrian: Mobile Phones in Japanese Life*, Ito et al. (2005) had identified three main cultural terms to represent mobile phone usage patterns among young people in Japan, that had dictated the mobile phone technological evolution. *Personal* is mainly referring to the need for privacy in the dense urban life. According to Ito, young people refrain from socializing in their homes and take their mobile phones outdoors to communicate with their friends and even when at home, they prefer to have their phone in ‘silent mode’ and text, for remaining in private from their families. *Portable* represents the device itself. *Keitai* is the Japanese word for the mobile device, and can be translated to ‘portable’ i.e., “something you carry with you”. For young people, the mobile phone is almost always with them, even in their houses, to make sure they are always available for communication (Ito et. al 2005). *Pedestrian* is referring to “nagara mobilism” coined by Fujimoto (Ito et al. 2005: 80), describing a core element of young people’s usage patterns. The Japanese word *nagara*, could be translated as “while doing something else” and is a term used to describe young people’s multi-tasking, i.e., the habit of using the mobile phone while walking or biking. In his discussion, Fujimoto relates to familiar scenes in urban Japan of kids texting while riding their bicycles or traveling in small groups to and from school while chatting, talking and typing into their phones. Nagara mobilism, as already mentioned in this paper, is a pivotal element in pervasive gaming evolution.

In Summary, there are two main lessons to learn from the mobile phone technological trajectories as has been discussed so far, the first one is the overall argument discussed and showcased by Ito and others (see the term SCOT coined by Pinch and Bijker, 1984)² that it is not the technology by itself that shapes human adaptation patterns, but rather a collection of characteristics that must be viewed in socio-cultural contexts. Secondly, in particular to the context of this research, the crowded urban life in Japanese cities, in conjunction with social norms, privacy preferences and daily life habits of young people, have contributed to the extensive use of text-based communication in Japan and the evolution of the mobile phone as a ‘three-P’ device. The chapter *Japanese Consumer Gaming Trends* on page 14 in this paper reviews how these conclusions impact portable gaming development in Japan.

² SCOT - Social Construction of Technology.

Mobile Games in Japan

There are a few examples for research on mobile gaming that has been conducted globally around hybrid reality gaming (Bell et al., 2006; Licoppe and Guillot, 2006; Licoppe and Inada, 2006) that aim to explore how mobility, co-location and play is converged in everyday life—forging questions around boundaries between digital and physical spaces and the commercial applications. Also, a new plethora of games are being introduced by mobile service operators such as KDDI, NTT DoCoMo and SoftBank with their newly introduced iPhone 3GS device. In this chapter a few examples to such games as experienced in Japan will be reviewed.

MOGI (Tokyo-Yokohama 2003-2007)

The 2006 research by Licoppe and Guillot provides an analysis of a techno-culture trajectory to a pervasive game design, influenced both by players' behavior and commercial factors. MOGI was commercialized by KDDI for their mobile service in April 2003.³ The principle of this game was to use the mobile phone device for collecting virtual objects at the right time of the day, by clicking on such objects' icons when they appeared to be close enough to the player in the on-screen map. Some were representing mundane objects, such as precious stones or fruits, and others were entirely virtual, such as minutes. MOGI's on-screen map also featured the other players when present in the physical cell, and players that were seen active on the on-screen map could also communicate via the text messaging.

It was a moderate success - without special advertising, an average of around 200 players were using the game every day. The game design was simplistic at first, and the designers had the ability to trace the user behavior, change the game design and analyze the impact on usage. Their obvious assumption was that the more intense players are engaged in the game, the more relevant its design. Additionally, such a trajectory was compelling commercially, as the service provider was keen to study which services can be charged for during the game and how the game design can promote them. As they realized that text messages were paid for, they changed the game design in such a way that as they play more, players are encouraged to send more text messages to each other. Another design change was influenced by the observed tendency of players to collect the same items a large number of times. This tendency was leveraged in the game design by the ability to trade or to be

³ Originally named *Nido*, MOGI was developed by Newtgames, a French startup.

otherwise rewarded.⁴ Trade meant players actively looked for information from other players, which involved a lot of text messages.

Wandering around Tokyo provided another design trajectory oriented towards mobility. The designers had spread objects to be collected allowing for pleasant "hunting-gathering" trips throughout the Tokyo area. Players would text on their locations to other players, to make them aware of their positions. Another feature of the game which the designers did not take into account and had a cultural impact that had dictated introduction of new design features in the game was the exposure of mobility patterns to other players. While this feature, when played among acquainted friends and colleagues was a source for enjoyment,⁵ for the 200 subscribers, however, the situation was different. For them, this could mean either the inconvenience of passers-by meeting face to face or even a more problematic situation - the possibility of surveillance by undesired strangers. This had led to some changes of geo-location visibility in the game: for each such on-screen encounter there was a need to ratify it as a proper encounter by text messaging. In addition, players were introduced with the ability to create their always-recognized 'buddy lists'. The game designers realized that engineering of the real-world 'meetings' is a key step in the interactional mobility design paradigm, as noted by Licoppe and Guillot:

Mobility patterns are not apprehended solely as a set of game-induced displacements, but as a public activity, of whom many known and unknown connected players might be aware through the game interfaces. It is an unavoidably social activity, in the sense that situations involving mutual awareness and recognition of others' position did elicit a lot of electronic talk. (Licoppe and Guillot 2006: 23)

CAN YOU SEE ME NOW? (Tokyo 2005)

Blast Theory, the London-based game creators describe "Can You See Me Now?" (CYSMN) as a chase game played simultaneously online and on the streets.⁶ During six days in February 2005, each day between 2pm – 5pm, twenty random online players, registered through Blast

⁴ For example, a special accumulation of objects could be rewarded with a free ringtone, or a jigsaw puzzle of a starlet pictures much loved by the Japanese, to be used as a mobile screen saver (Licoppe and Guillot, 2006).

⁵ About thirty KDDI employees had played together on the same office building, having opportunities to "meet" players at different floors on their mobile screens. They enjoyed these casual encounters, and at these occasions, the number of text messages increased beyond the designers' expectations. (Licoppe and Guillot, 2006).

⁶ "Can You See Me Now?" is a collaboration between Blast Theory and the Mixed Reality Lab, University of Nottingham. It was first played during a public festival in Sheffield, England in 2001.

Theory web site, physically sitting next to PC terminals connected to the Internet at the NTT ICC building in Shinjuku, were “dropped” at random locations in a 3D representation of Shibuya streets. They were “chased” across this 3D map by three professional Blast Theory performers (‘runners’) who were actually moving through the real city streets. The runners were equipped with a walkie-talkie, and a portable device with built-in GPS that showed a regular, 2D map of the players’ location. The virtual 3D map of the city was showing the position of all the online players, represented by avatars⁷. If a runner gets within five meters of the player’s avatar, a photo of the place is taken and the player’s game is over. The photos were later on uploaded to Blast Theory web site so players could look for them after the game.

The main objective of CYSMN was to engage and excite the online players by giving them a sense of the runners’ experience of the city, and of how their online actions could affect events on the streets. The players had to escape down the virtual streets, send messages and exchange tactics with other online players. An audio stream from Blast Theory’s walkie talkies lets players eavesdrop on the pursuers: sometimes cold, lost and tired on the real streets. (Blast Theory 2005, Flintham et al. 2003). On their web site, Blast Theory lists the levels of spatial perception changes in gameplay within CYSMN. First, is the presence perception blurred by the need of a virtual avatar to stay physically remote from a real chaser. Second, is the oscillation between the virtual and the real city that are sometimes the same and at other times diverge (e.g., real city traffic is not shown on the 3D map). Third, is bringing together geographically scattered players into the same virtual space, and finally, the photos taken by the runners of the empty space where each player was “caught” that were later uploaded to the game site, persist as a record of the events of each game. Each player is linked to this anonymous square of the cityscape.

Blast Theory also raises the backdrops of the emotional tenor of hybrid spaces in which virtual and real worlds overlap and privacy could be endangered. This backdrop will be further discussed in the section *Socio-Cultural Patterns of Mobile Gaming Usage* on page 15.

Crimsonfox – ‘Shibuya is Our Playfield!’ (Tokyo 2010)

In March 13th 2010, between 12pm - 7pm, 200 Crimsonfox players were gathered in Shibuya with their iPhones, for running around the city looking for hidden (physical) hints that will lead them to the real-world hideout of a “secret society called Moonlights”. For discovering the hints, players were using the *Shibuya Scanner* application that shows a camera overlay indicating the distances and directions to the closest hints by gathering GPS

⁷ Runners and players avatars were marked out through the use of different colors.

information and using the built-in iPhone compass (see figure 1).⁸ The hints were actually special graphics printed on a piece of paper and spread in many places around Shibuya. When such a hint was found, players needed to scan it with their iPhones. The scanner application would then verify the hint by superimposing a symbol over the scanned image on the iPhone camera, give away points for finding the right hint and then lead players to the next part of the game (see figure 2).⁹

The game designer's goal in creating the game as they testify in their dedicated English blog was to 'make the life more interesting, not to isolate the players from their real world'. Their aim was to engage players in search for places and thus introduce them to new shops or places they will not go otherwise. This game had a remarkable commercial impact. As the event took place during opening hours of shops, and as playing the game took one or two hours, players had time to enter and explore the places. In addition, anyone who has not been engaged in playing on the streets could follow "#crimsonfox" on Twitter. Through this communication, the designers could know that players enjoyed the game and that they actually went to the restaurants or shops during the game or even after the game. Their game was also promoted twice on that day through live broadcasting in a popular Japanese Web site "Nico-nico Namahousou". The first broadcast included a famous Japanese anime movie director as a



Figure 1: Shibuya Scanner Application



Figure 2: Scanning Hints

special guest, which his movie was debuted in Shibuya that day. So the broadcast was a

⁸ All the figures were taken from the Japanese version of the Crimsonfox project site.

⁹ Shibuya Scanner is an iPhone application developed by Koozyt, a Japanese technology start-up aims to 'bring the real and virtual worlds together, [...] develop business domains that can contribute to society by bringing about new lifestyles and values'. The event was organized by Ubiquitous Entertainment Inc. a Japanese firm developing a business platform for mobile games. The Crimsonfoxproject was supported in part by Japan's Ministry of Economy, Trade and Industry.

chance to both introduce the game and the movie. A total of 7000 viewers watched both programs.

This project is a powerful example how new media convergence transforms the way people perceive their social and physical environment and how this impacts the formation of mixed media ecosystems. The blend of augmented reality experience on mobile phones, used for commercial promotion of a film, shops and restaurants in the game area and itself being promoted on web sites via the use of social networking application such as Twitter and live webcasts is a far-fetched combination that well demonstrates this argument.

Japanese Consumer Gaming Trends

Popular Games

The game cases that were presented previously are cases of innovative attempts to commercialize pervasive games by game designers and mobile service providers. Collier, a mobile gaming industry analyst in Japan, however, claims that “[o]n the small screen: the brand is King. [B]randed games hugely outsell unbranded” (Collier 2003: 29). Chan classifies such branded mobile games mainly as ported arcade classics. For example, Namco, a renowned Japanese games publisher, has a broad catalogue of arcade classics, including the iconic Pac-Man games, currently used as their main penetration strategy into the mobile gaming market. Chan adds that this brand recognition is driven by factors such as nostalgia, revival of ‘retro’ fashion, or general knowledge of gaming culture. (Chan 2008: 18, Collier, 2003: 23). This means that the current approach to innovative pervasive games is still conservative in Japan. Even the portfolio of the 288 games introduced on the trendy Mobage-town (Mobile Game Town), that offers advanced services converging social networking (chat, blogs, and avatars), games and other information services, contains only the traditional, casual single and multiplayer games (Billich 2009: 25).¹⁰

This discussion actually complexes the original argument about augmented reality gaming, however, the next section will provide a different angle that may change the overall picture. In this section, the economy of mobile games in Japan will be introduced as means to support the previous argument that mobile games are indeed a good case study for the portable gaming paradigm as discussed in this paper.

Mobile Game Economy in Japan

In his market analysis of Japan’s mobile gaming, Burns (2006) describes the economic underlying principle that moves the mobile gaming ecosystem. Japanese mobile phone firms are using games to lure customers to their service as the competition grows. New regulations that make mobile phone numbers transportable between operators makes it even easier to switch, but ‘sticky’ services like games and special offers help protecting providers against churn. Japan's mobile operators offer low-cost games and flat-rate data fees to hook customers for the long term, and consumers respond accordingly. Burns quotes a Wireless World Forum

¹⁰ Mobage-town was launched in early 2006 by DeNa, a Japanese firm that develops mobile Social Network Service (SNS) gaming platform. Membership was free and just two years after launch it had eleven million subscribers (Serkan 2008).

report in which "[o]ver 70 percent of i-Mode users said that they played a mobile game more than once a week, and 38.4 percent play almost every day." Japanese mobile firms encourage game developers to produce a broad portfolio of games, by charging them a relatively small amount of revenue, around ten to twenty percent, for the game distribution. This leaves most of the revenues to the game developers that have the incentives to develop more games. In addition, mobile firms provide the necessary development tools and technical support that help game developers. As a result, there is a wide variety of free games available for download, attracting users, and helping keep the low prices of the games. Flat-rate mobile data also fosters the growth of multiplayer mobile games in Japan. Burns further quotes the report saying that flat-rate users are likely to play networked or multiplayer games that add a social dimension to mobile gaming, which gives consumers an incentive to become repeat consumers.

However, despite the availability of more sophisticated games, still, as mentioned in the previous section, the most popular games, played by 60 percent of mobile gamers are simple puzzle and quiz games like Sudoku or 'IQ games', inspired by the popularity of Nintendo's Brain Training titles for the DS, which was the third best selling game on any platform in Japan in 2005 (Burns 2006). I argue that this trend is soon subject to change and discuss why this change is likely to occur in the section *Smartphones in Japan* on page 16.

Socio-Cultural Patterns of Mobile Gaming Usage

Close observation of recent socio-cultural patterns of mobile gaming usage may further complex the original paradigm, so far frequently swinging between confirmation evidence to counter claims. Chan discusses the surprising results of a public survey about gaming in Japan conducted in April 2006 and published on the site *What Japan Thinks*, of which impressive amount of portable gamers – more than 90 percent of the respondents, at least a three-quarter of them on mobile phone devices and half said they use their game devices frequently – when asked about where they usually play with their portable machines – out of a sample of 3,285, and allowing for multiple answers, only 9.1 percent replied "Railway station or bus stop" and only 33.4 percent replied, "Riding train, bus, car, etc.," whereas 71.2 percent said, "In my room," and 39.7 percent said, "In another room at home." (Nicolson-Yasumoto 2006, Chan 2008: 23). As a possible explanation to these results, Chan offers the theory that relies on Ito's three-P, meaning that primarily, the small size and portability of the mobile phone enhances its status as an object intended for personal rather than communal or familial use, like a personal audio player such as the iPod or Walkman. In

addition, Chan discusses the difficulties in engaging the players' bodies in public spaces and the moral and emotional issues that are associated with this practice, emphasizing the importance of maintaining actual physical distance as well as retaining a clearly defined private space and personal security. (Chan 2008: 23-24)

Smartphones in Japan

A positive shift towards the assessment of the original paradigm may come from studying the emerging devices in the mobile market – the smartphones. A Bloomberg article quotes a recent report saying that the shipments of the iPhone in Japan captures 72 percent of the smartphone market. Furthermore, it is said that the iPhone has helped doubling-up the smartphone sales last fiscal year in Japan, on the account of the shrinking regular mobile phones sales. Softbank, the exclusive iPhone carrier in Japan, and its bigger rivals NTT DoCoMo and KDDI are expanding their smartphone product offering with handsets running Google's Android software to reinforce revenues from data services. NTT DoCoMo, Japan's largest mobile-phone operator, began selling its second Android model earlier this month and the second-biggest KDDI will introduce a Sharp-made smartphone in June this year. (Alpeyev and Eki 2010).

The smartphones promotion strategy heavily rely on the availability of advanced applications and games for these devices and the smartphone's operating system giants Google and Apple are intensively helping and fostering a growing community of applications developers, games designers and third-party appliance manufacturers for these devices. Thus, the discussed techno-culture trajectory could emerge out of the richness and variety of the applications and games that will be introduced on the smartphones. The crimsonfox project for the iPhone 3Gs device discussed on page 11 in this paper is one such techno-culture trajectory example.

Summary and Conclusions

The significance of techno-culture trajectories of portable gaming to teach us about the relations between cultural practices, gameplay and the perception of space is clearly demonstrated by contemporary augmented reality and pervasive games. Hybrid reality and location-based games demonstrate the pivotal role games play in understanding mobility. As mobility becomes a key indicator of culture practices and a symbol to post-modern urbanity, such games provide much insight. Furthermore, by using urban spaces as the game board, these games also challenge traditional definitions of gameplay as we look at the everyday city spaces as our playful spaces (De Souza e Silva and Hjorth 2009).

Hybrid reality and location-based games are mobile not because they are played on a portable device screen but because the player has to be moving in the physical space in order to play. Different from traditional physical games, such as sports games, which take place in limited, clearly encircled physical spaces, these games space is moving together with the players and is limited only by the availability of the game technology. That is, for playing these games players must carry with them the technologies required to play. These technologies are embedded in mobile devices, such as mobile phones, personal digital assistants (PDAs) or portable gaming consoles. Such technologies include location awareness and wireless Internet connectivity, which allow players to be in touch with other remote players and access digital information linked to the environment. They also include a digital camera and powerful graphic processing, to allow for displaying the imaginary playful layer that merges with the real urban space on the mobile screen device. This mobile user interface makes obsolete the need for a specific place to play the game (De Souza e Silva 2008).

In this paper, I argued that in addition to the unrestricted playspace and the blurred magic circle of gameplay, the participation in hybrid reality and location-based games also interacts the game with players' everyday life and thus blurs the borders between play and 'serious'. Such interaction presents new challenges for these games design, since the interface between game and 'normal' life have to be controlled (Montola 2005). I clearly demonstrated through examples of augmented reality in pervasive games played in Japan that some challenges of life/game interplay require careful social adaptability from games designers, which are crucial for the success of these games. Social adaptability is a very important characteristic of games that take place in social environments where players are likely to meet bystanders during their play, forego their anonymity and thus possibly jeopardize their personal security. In those cases where this is frequent, games will not be viable no matter

what technology or business model they are supported by, if they are unable to adapt to the social context (Licoppe and Guillot 2006, Eriksson 2005).

Mobile games are the major incentive for consumers to stick with their mobile carrier and attractive flat-rate business model for gaming in Japan encourages players to use more of their devices. These devices are becoming technologically powerful and adjusted for augmented reality and pervasive gaming. In parallel, the global software giants such as Apple and Google invest in fostering a community of game developers for their Smartphone platforms. These game designers are encouraged to develop alluring games using augmented reality to even further increase the usage of these devices. Such a techno-culture trajectory is a demonstration of how gameplay is transformed in augmented reality gaming in Japan and worldwide. My study has shown that the interplay between consumers, mobile phone carriers and game developers not only impacts the development of social trends, transforms urban culture and daily life, and engenders new paradigms of gameplay but it is also globally changing the mobile phone economy dynamism.

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