Asobi City – Mixed and Blurred Boundaries between Real and Virtual Worlds in Japanese Cities

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This paper talks about the blending of urban spaces, advanced technologies and gaming in Japan. In particular, it discusses a unique playing experience that extends beyond traditional video gaming, called *Augmented Reality gaming*. It goes out into the real world and real daily life, mixing and blurring the boundaries between real and virtual worlds, emerging into a new concept of *Asobi City* - the city as a playground and daily urban life as gameplay.

In the last 3 years, I explored whether Augmented Reality gaming will be changing game space, gaming culture and gameplay in Japan.

Using studies about technology influence on public conduct in urban spaces in Japan and SCoT theories (Social Construction of Technology) dealing with industry-consumer techno-culture trajectories, I was able to shape a paradigm about how urban life in Japan will be changed via the availability and the accessibility of this new gaming experience. This paper demonstrates why and how.

I explored this paradigm through a review of mobile phone usage in Japan, and also, through a review of a few existing examples of augmented reality games played in Japan.

I aim to provide some perspective on how industry and consumers had interacted to create new modes of daily life, leisure and pastime in the crowded Japanese cities. Also, which of these developments can potentially emerge into new forms of social trends in urban spaces and has a potential influence on the formation of new media ecosystems.

What is Augmented Reality Gaming Experience

Let me start with defining gamespace and gameplay. In his 1955 *Homo Ludens*, Huizinga referred to the term 'magic circle' as the form and function of playground, referring to a bordered, isolated and well–marked place (i.e., gamespace) in which special rules of gaming apply (gameplay).

Huizinga further argued that the games are 'temporary worlds within the ordinary world, dedicated to the performance of an act apart'.[1] Even recent decade adaptation of Huizinga's term to videogames still delimits the magic circle to where the game 'takes place' referring to the screen.

[1] Huizinga, Johan. 1955 [orig. pub. 1938]. *Homo Ludens: A Study of the Play Element in Culture*. Boston: Beacon Press.

New mobile game technologies known as Augmented Reality that include games genres such as ***hybrid reality games*** and ***location–based mobile games***, re–define this magic circle.

In these games, the playground is an imaginary playful layer that is overlaid on and merges with the real urban space. Therefore 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. This definition of a new gamespace is one of the most essential and unique characteristics of AR games.

These games are also defined by the need to use portable devices equipped with mobile technologies that include 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 while they play. This also defines a new logic of gamespace since this unique way of connecting players, and players to the play space, changes the perception of urban space and the daily mobility through the city. It negates Huizinga definition of a 'bordered, isolated and well–marked place' as the gamespace starts and ends where the players are located anytime, and they can move anywhere and still continue to play.

Another dimension of oscillation in these games is articulated by 'the relationship between serious life and playful spaces.'[2] The playful aspects of life and the inherent connection between game activities and serious life are important for these games because they are also defined as *nagara games*. Nagara in Japanese is "while doing something else" so Nagara games are played while performing other "serious" life activities, such as going to work or walking on the streets.

Thus, using the portable gaming device to play augmented reality games increases the blurring of borders between play and real life. This is because the device portability allows you to play while performing other daily routine and leisure activities, such as commuting to work, going shopping or going to meet with friends. Gamplay is no longer 'a temporary world within the ordinary world, dedicated to the performance of an act apart'- it is the ordinary urban world and the gaming world mixed together.

[2] De Souza e Silva, Adriana. 2008. 'Hybrid Reality and Location-Based Gaming: Redefining Mobility and Game Spaces in Urban Environments.' Simulation Gaming 40: 404-424.

One good example to such an experience is presented in this image:

Figure 1: Shibuya Scanner Application

You can see that the real Shibuya crossing street as captured in the iPhone camera is covered with some virtual annotations that provide distance from that point to other real places and some more information. This image is a part of an Augmented Reality treasure-hunt style game played in Tokyo. It is referenced later in this paper.

Another good example is iButterfly (see video here: http://youtu.be/vEE6M0iW-Nw[3]) - a motion sensor, GPS and augmented reality coupon entertainment platform, which was initially developed as a mobile game for the iPhone by Dentsu Labs in 2010. Dentsu is the largest Advertising agency in Japan. Through this example you can possibly understand what new media ecosystems I am referring to.

iButterfly actually encourages players to go to real places in the city (Ginza, Harajuku, Shinjuku etc.) for a virtual butterfly hunt – these are virtual butterflies "scattered" all over the city in many cities in Japan and your role as a player is to find, capture these butterflies (with a certain motion gesture of the device) and add to your collection. You can then share them with other players who are your social network friends. Some of these butterflies actually come with a coupon (with discount for some goods). It is now integrated with social

[3] Accessed: 1 February 2014

networking apps such as Facebook and Google+ and it is available also on Android smartphones.

This game was played successfully in Japan in 2010 and since then, Dentsu is exploring its global potential. It is now available in other Asian countries - Indonesia, Malaysia, Singapore, Hong Kong, Philippines, Thailand, and in 2013 it was launched in India. For Dentsu, this coupon entertainment platform turned out to be more successful than the print coupons in newspapers.

Why Asobi City Can Take Effect in Japan

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 carry their portable gaming consoles or smartphones while on the streets and public transportation.

Some of these devices have powerful graphic and computing processing capabilities, Internet connectivity and camera – hardware features which together allow the introduction of software applications that use image processing, location–based features, proximity and movement sensors (such as required for iButterfly for example).

The video gaming industry and mobile network carriers in Japan are able to leverage this techno–cultural trend and introduce such new augmented reality games.

But there is even more than that.

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.'[4]

This is just an example 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.

Therefore, my theory relies on two major factors related to mobile phone evolution in Japan to reflect the potential emergence of portable AR gaming there:

[4] Taylor, Richard. 2003. 'Japan Signals Mobile Future.' *BBC News* (6 September). Available at: http://news.bbc.co.uk/2/hi/technology/3083712.stm (accessed 14 April 2010).

1. First one: Japan is an incubator for mobile culture that evolves via interplay between the Japanese mobile network carriers, consumers in urban environment, and technology.
2. Second: Mobile devices features and mobile phone services in Japan emerged as a result of culture trends in densely urban life.

Mobile Phone Techno–cultural Trajectories in Japan

So, will the Japanese metropolises become the ultimate *Asobi Cities*? Will their daily life or their way to work become a playground for Japanese citizens? and if so – how?

Tokyo and Osaka, for example, 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.

Take Tokyo as an example. Tokyo's public transportation is highly regulated through signs, announcements and informal public customs. Phone rings, answer or initiate voice calls on mobile phones are not allowed in Tokyo's trains, subways and buses.

A field research of phone usage in Tokyo's public transportation conducted by Ito and colleagues in 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 that were taking voice calls on public transportation were hostilely stared at. In their interviews, people admitted they would not make and receive calls and are annoyed when others do that on trains. This is still the case today.

When reflecting these cultural patterns on portable augmented reality game development, it may be that physical movement while trying to play on public transportation could be limited.

In their notably cited research work *Personal, Portable, Pedestrian: Mobile Phones in Japanese Life*, Ito and her colleagues 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 which were entitled "*The three-Ps*":[5]

Personal - the need for privacy in the dense urban life. Young Japanese 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, to remain in private from their families.

Portable - *Keitai* is the Japanese word for the mobile device, and can be translated to 'portable' - "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.

[5] Ito, Mizuko et al. 2005. Personal, Portable, Pedestrian: Mobile Phones in Japanese Life. Cambridge: MIT Press.

Pedestrian - refers to "nagara mobilism", describing a core element of young people's usage patterns. N*agara*, "while doing something else" is used to describe young people's multi–tasking. Familiar scenes in urban Japan are 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, is a pivotal element in this gaming evolution.

There are two main lessons to learn from this mobile phone techno–cultural trajectories in Japan.

The first one, as argued by Ito and others, is that the availability of technology by itself is insufficient to shape human adaptation patterns. Rather, for technology to have social impact, a collection of characteristics in socio–cultural contexts must be examined.

Secondly, in particular to the context of this observation, 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.

These two conclusions also impact portable augmented reality gaming development in Japan. In this context, *Pedestrian* and *Portable* may conflict with *Personal* and potentially hinder the development of such gaming industry.

However, to accommodate this impediment, creative solutions by game designers who actually utilize this conflict as an advantage will be demonstrated via game case studies.

AR Games Played in Japan

There are a few examples for research on mobile gaming that has been conducted globally around AR gaming 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 the large mobile service operators in Japan such as KDDI, NTT DoCoMo and SoftBank on their advanced smartphone portals. I will briefly touch two such gaming examples.

MOGI (Tokyo–Yokohama 2003–2007)

The first game is called MOGI, played in Tokyo and Yokohama between 2003 and 2007.

MOGI was commercialized by KDDI. The principle of this game was to use the mobile phone 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 represented 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. Additionally, KDDI was keen to study which services can be charged for during the game and how the game design can promote them. Design features were focused on encouraging paid texting between players on activities such as sharing or trading objects.

Wandering around Tokyo provided another design trajectory oriented towards mobility. The designers had spread objects to be collected on pleasant "hunting–gathering" trips throughout the Tokyo area. Players would text on their locations to other players, to make them aware of their positions. This is a fine example to the 'nagara–mobilism' (portrayed as *Pedestrian* in the 'three–Ps').

Another feature of the game which the designers did not take into account and had a cultural impact that required a re-design was the exposure of mobility patterns to other players. While this feature, when played among acquainted friends and colleagues was a source for enjoyment, 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. As already explained, one of the key elements in the evolution of mobile devices in Japan is privacy (defined as *'Personal'* of the three–Ps) and this key element had to be taken into account.

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.

The game designers realized that engineering of the real–world 'meetings' is a key step in the interactional mobility design paradigm. Apparently, this unavoidably social activity - situations involving mutual awareness and recognition of others' position drew a lot of electronic "talks", which was for the designers and for KDDI an advantage.

Crimsonfox – 'Shibuya is Our Playfield!' (Tokyo 2010)

"Shibuya is our Playfield!" is another such game. In March 13th 2010, between 12 to 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". To discover the hints, players were using the *Shibuya Scanner* – an application that shows camera overlay indicators of the distances and directions to the closest hints as signaled by GPS and the built–in iPhone compass (see Figure 1 in page 3).

The hints were actually real 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 to find the right hint and then lead players to the next part of the game.

The game designer's goal in creating the game as they testify in their 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 promoted twice on that day through a live broadcasting in a popular Japanese YouTube "Nico–nico". The first broadcast included a famous Japanese anime movie director as a special guest, which his movie was debuted in Shibuya that day. So the broadcast was a chance to both introduce the game and the movie. A total of 7000 viewers watched both programs.

The effect of this game demonstrates how portability modifies real life to create a new type of gameplay and play space that have social as well as commercial impact.

Through augmented reality experience, gamers changed their social patterns in two modes. First, entering restaurants and shops during the game was not perceived as an action toward a practical purpose (going to eat or shopping) but as a playful experience of imaginary exploration while being watched and followed by others. The latter phenomenon shares a similar social and emotional effect acquired through the popular entertainment genre of reality shows – 'a blending of reality and mass mediated experience that evokes life as a movie in which people play themselves'.[6]

The second effect was that this activity, although practically a real–time participation in a converged new media advertising campaign, which in some cases creates negative reaction and inconvenience to consumers was not perceived as such by the gamers.

They perceived this mobility experience as engaging and enjoyable, therefore, this game had essentially generated an effective consumer campaign.

Finally, this project is a powerful example how new media convergence transforms the way people perceive their social and physical environment within and outside the physical play space and how this impacts the formation of mixed media ecosystems.

[6] Randall, L. R., and S. L. Wood. 2005. Paradox and the Consumption of Authenticity through Reality Television. *Journal of Consumer Research* 32:284–296.

Summary and Conclusions

Can we say that in Japan, the pioneer nation of mobile trends, we can see a change of game space, gaming trends, gaming culture and gameplay through Augmented Reality gaming experience?

The demonstrated interplay between consumers, mobile phone carriers and game developers indeed impacts the development of social trends, transforms urban culture and daily life, and engenders new paradigms of gameplay. It can also globally change the mobile phone economy dynamism (and Dentsu's iButterfly case is one such example).

However, in addition to the unrestricted play space and the blurred magic circle of gameplay - the participation in augmented reality 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 designs, since the interface between the games and 'normal' life has to be controlled.

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 Japan, as mentioned, the portable devices are used mainly to preserve personal privacy in the dense urban areas and privacy is a huge concern for AR game design, in particular, the contact with strangers.

Another social issue – the code of conduct in Japanese public transportation may also limit the ability to play social games that require extensive motion or use of sounds.

There are more factors that need to be mentioned.

One of them is a study about preferences of Japanese **on where they prefer to play.** More than 90% of 3000 respondents, at least a three–quarter of them mobile phone users and half portable gaming console users said they use their devices frequently. But when asked about where they usually play with their portable devices - only 9.1% replied "Railway station or bus stop", only 33.4% replied "Riding train, bus, car, etc.," whereas 71.2% said, "In my room," and 39.7% said, "In another room at home." These are interesting and somewhat stumbling findings.

Another aspect is **what people like to play in Japan**. Casual games or endless sequels of highly branded games are the most popular gaming genres in Japan. The portfolio of mobile games even on the trendy Mobage–town portal that offers advanced services converging social networking, games and other information services, contains only the traditional, casual single and multiplayer games. None has AR features.

From the summary of all the findings above it is clear that the availability and the accessibility of AR technology alone are insufficient parameters to conclude about its possible usage in gaming. Moreover, even looking at techno-culture trends is insufficient.

However, commercial use for Augmented Reality services (such as the one introduced via iButterfly and Crimsonfox's games) may play a greater role in the context of blurring real and virtual worlds.

Another such a good example is a **Louis Vuittons Circus** shopping experience http://www.shifteast.com/louis-vuittons-ar-circus/[7], an Augmented Reality co-operation between Louis Vuitton Japan and KDDI's au mobile portal to attract digital users to the physical shop in a fun way. Through social networks (Facebook and Twitter) people got a code to receive a special ticket if they went to the shop. Positioning the ticket at the right place of the store shopping window and then using their smartphone camera to point it at the right place - they can see how an escaping Circus star, the elephant, returns to the shop. This campaign was extremely successful according to the organizers. It depicts a whole new citizen experience merging gaming in everyday life and it signals the emergence of a new media ecosystem in the *Asobi City*.

[7] Last accessed 12 February 2014