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Simple, cheap and quick

Three urban games for common
mobile phones



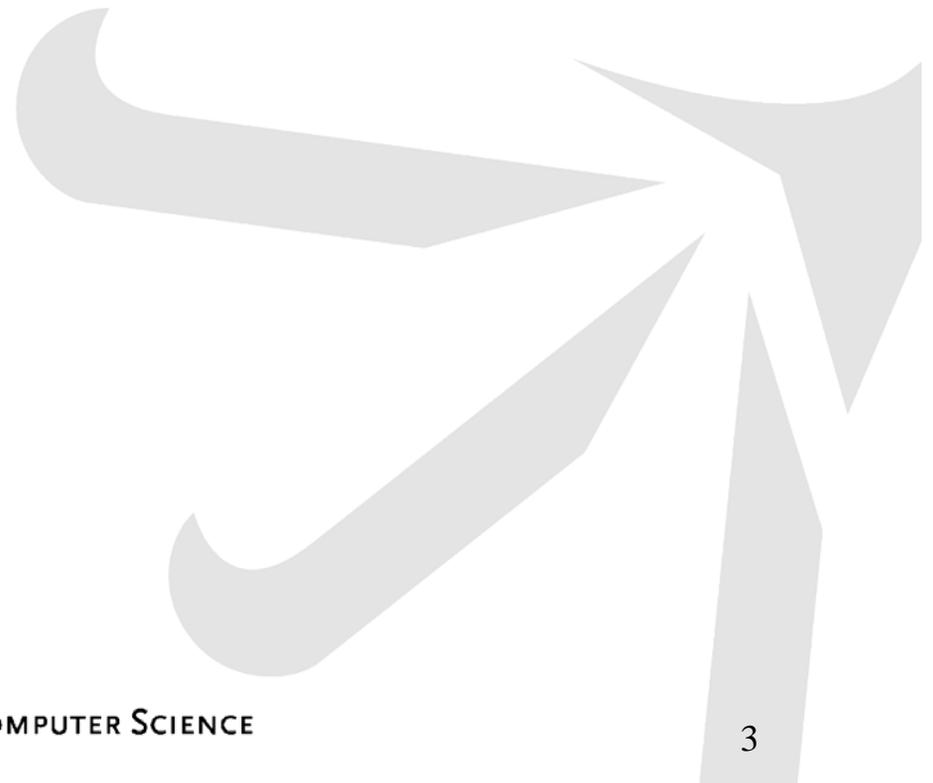
Games everywhere

What is playing like as an activity?

Playing extended

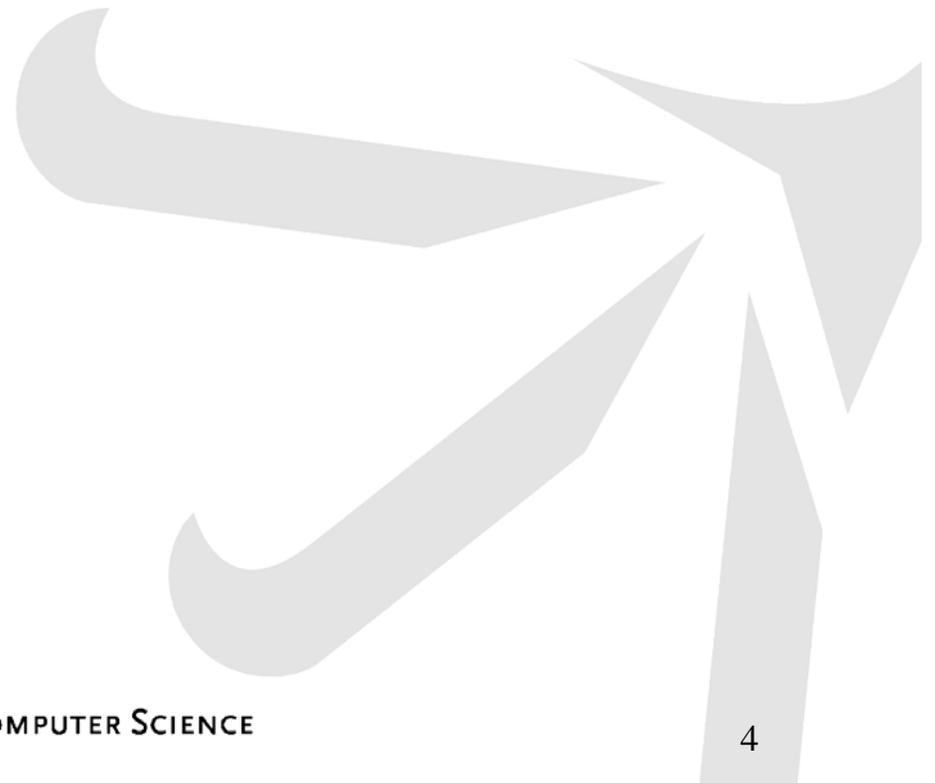
Our experiments

New directions



Homo Ludens by Huizinga 1938

Play is playful, not serious, voluntary action that is distinct from everyday life in terms of time, space and people. A game occurs in a magic circle of certain place, certain time with certain people.



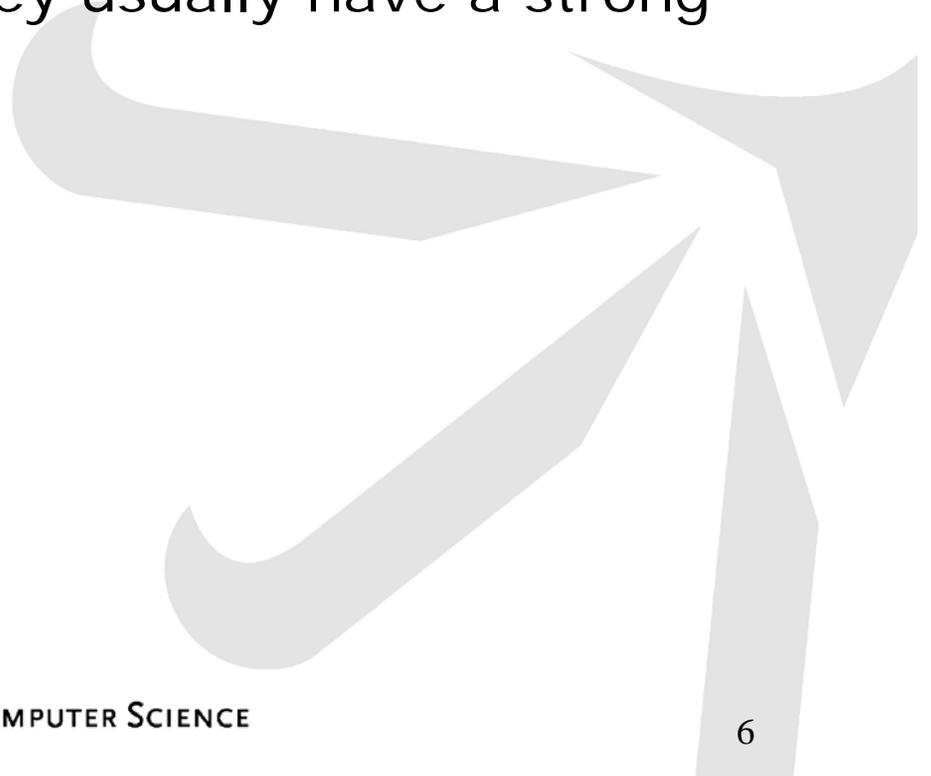
What makes a game a game

- *Rules must be followed*
- *The end result changes but can be defined*
- *The end results have differing positive and negative values*
- *The player makes an effort to influence the end result*
- *The player is committed to get a favourable end result. Winner is happy, loser is unhappy.*
- *The consequences of the end result can be negotiated. The same game can be played with or without consequences in real life.*

Jesper Juul 2005

Playing extended

Location based gaming and pervasive gaming are novel forms of digital game entertainment. They take into account the physical characteristics of the real world as well as the computer-maintained virtual game environment. Also, they usually have a strong social aspect.



Transmediality

Inputs and outputs between a player and the game system can occur on multiple different media.
This emphasizes the role of the player as an interpreter of information from various sources

Walther 2005

Pervasive games

Huizinga's magic circle of certain place, certain time with certain people

->

Montola et al: Pervasive game is a game that extends beyond this circle socially, spatially or temporally

We tried to break the magic circle

- Temporal expansion
 - expanding the game experience to be **part of everyday life**, not just a separate activity.
- Spatial expansion
 - if the playing occurs when the players are mobile, their **location** could be used as a factor in the game state at any given point of time. Likewise, the game moves can be made dependent of physically visiting certain physical locations.
- Social expansion
 - Free participation
 - Mobile phones -> a multi-player network game
 - Trans-mediality

Settling for more modest goals

For both developing and playing

Simple

Cheap

Quick

What

- Background work September 2005 – June 2006
- All work, no play -> let's build our own urban game over the summer -> the Devera team
- Janne a board game enthusiast
- Joonas kept repeating those odd words *pervasive games*
- Eija sought to break the player image
- Turku Science Park people became Very Interested

Design principles

We developed three location based games for mobile phones.

The overall design principles for this project were:

- (1) design for device platform with wide penetration;
- (2) create an architecture that supports different types of games and services, scalability; and
- (3) aim for cost efficiency and quick application development.

Device platform

By designing applications for a device platform with a large user base, the applications are more likely to spread out and gain popularity. With the large user base, a multiplayer game gets a bigger social factor. Further, the threshold to try the game or other application is significantly lower if it does not require the purchase of a new device.

Basic architecture

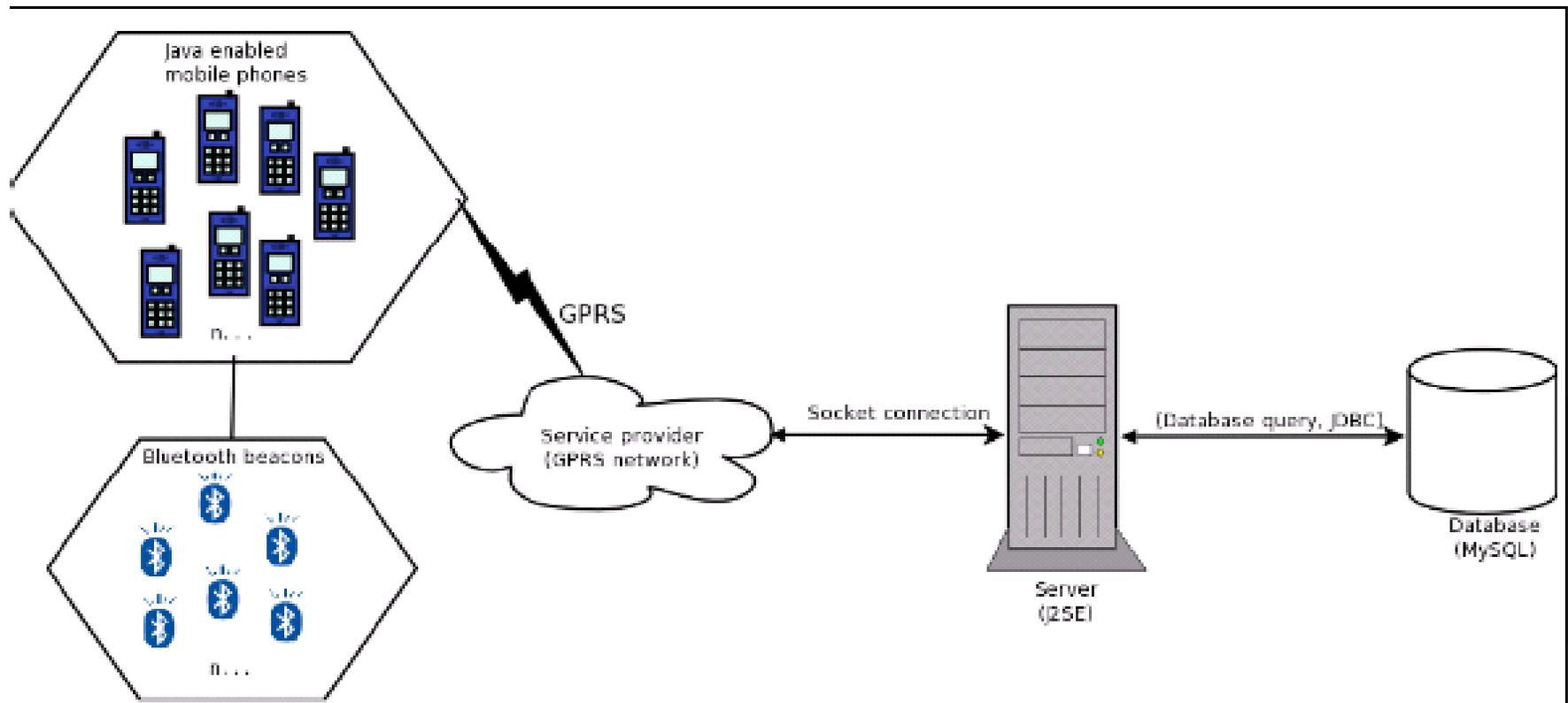
From the beginning, we saw it necessary to design a basic architecture that would suite different types of location based game models and other services, offering different kinds of experiences. Although the main idea was to design a model for a persistent multiplayer game, we found room also for solo gaming and event-based one-time experiences.

The hardware infrastructure followed the principle of cost efficiency, consisting of standard mobile phones and battery powered Bluetooth beacons. Since the data transferred during the game play was mainly textual, the network rates were not a problem.

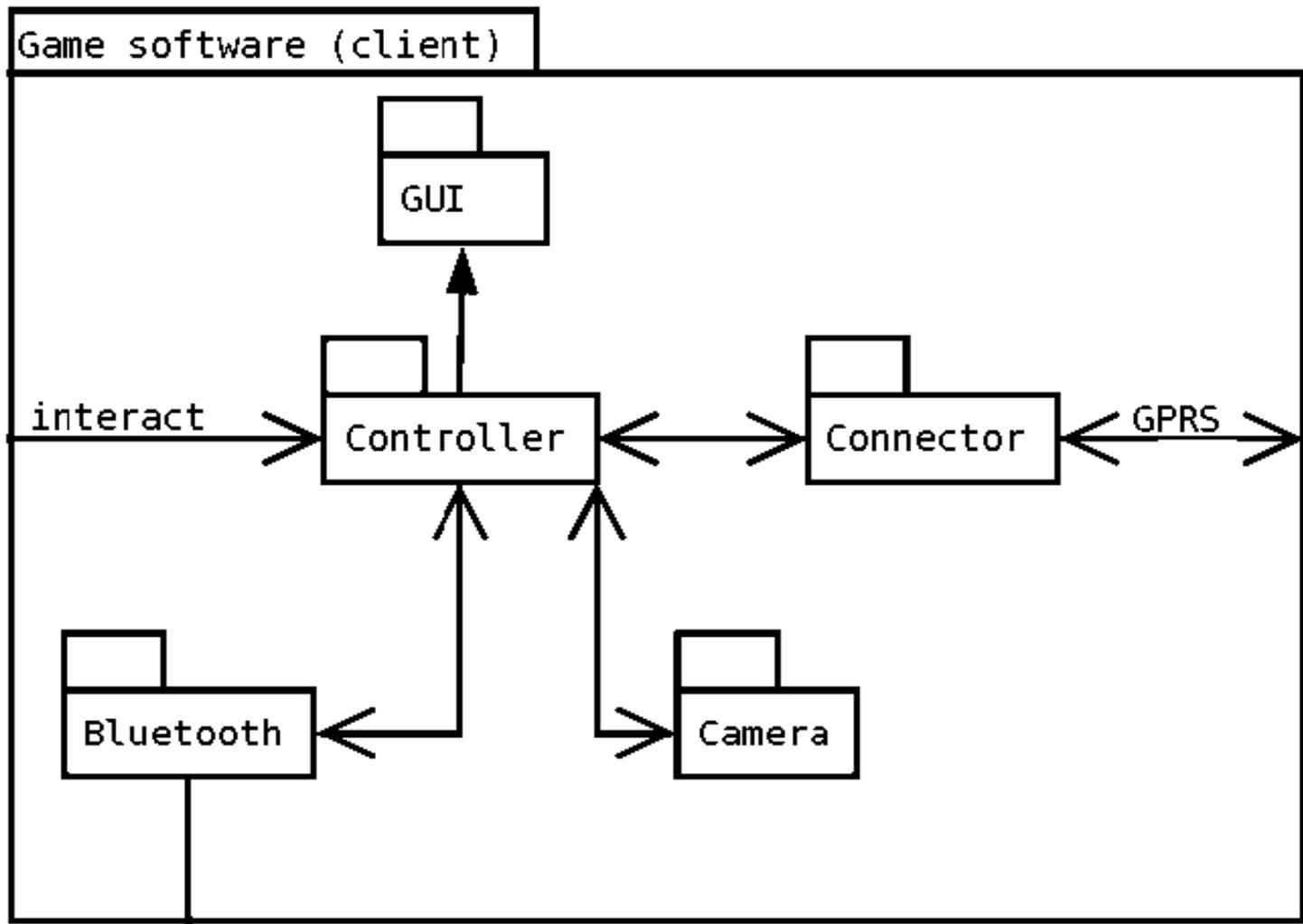
Development

The project team had previous experience in J2ME programming, so beginning with it was the obvious choice. We also wanted to harness the players own imagination in the game play experience. No expensive 3D modelling was implemented, and the users were provided mainly with textual information.

Overall system architecture



Client application architecture



Bluetooth beacons

A standard USN bluetooth adopter

Wired up to a custom-made external power adopter for stand-alone operation

The beacons need to be activated by connecting them to a PC and then unplug

Battery lifetime, environmental conditions, ...

The Turku Game

Help the famous detective Jussi Vares:
During the Turku Arts' Night, a murder
has taken place. A well known
performance artist was murdered while
on stage. *Who did it?*

Deeper immersion in the game was reached when the game story and virtual events were tied to ongoing live events.

Even if playing the game was for some players the main activity, they ended up to places and events they otherwise would not have found. So, in addition to the gameness, the game worked as a guide to the evening.

The players were chosen in order of enrolment. Most players had seen the newspaper ad or heard about the game from their friends.

The 17 players were both male (9) and female (8), and aged from 16 to 35.

In the collected feedback, the players showed overall interest to this type of gaming. They also found this particular game exiting, and many said it gave an interesting new view to gaming. None of them had played similar games before. Two had played traditional LARP (Live Action Role Play) games, also in city surroundings.

The players got a printed map, where the game starting points – the murder scene and the current location of some key witnesses – were marked.

The organizers guided them how to receive a first hint and to get the hang of how to solve the murder mystery.

Then, the players started the adventure at their own pace. Most of the players played in pairs or small groups and only a few players played alone.

At the game hot spots, players got hints that helped them to build a big picture of the mystery, and to find new hot spots with new hints. Two of the 15 hot spots of the game were carried by actual persons.

If they dead-ended in the game, they had a phone number for “private detective Vares” who would help them out.

He was also helping in technical issues that were expected since the game was a prototype. During the game, “Vares” received about a dozen calls. Half of them were about game situations, the other half technical issues.

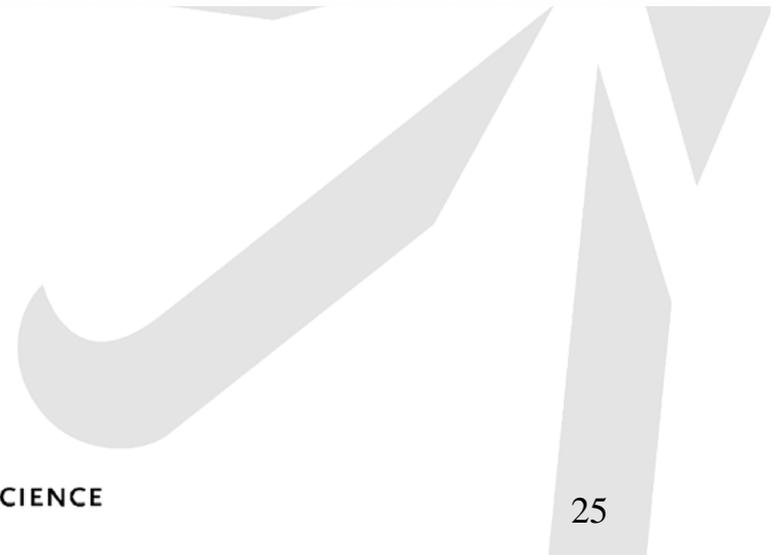
It was still a prototype...

In a few cases, the players were frustrated while they knew they were at right position, but the hotspot was not detected in the timeframe they expected. Some players were more sensitive to latencies in the system, while some others took it calmly and had a drink near the place they knew was a hotspot.

In one game location, the Bluetooth beacon had been removed by the Arts Night staff, because some person (not a player) had mistaken it for a bomb! In another case, the Bluetooth dongle was unplugged from the power supply, thus it stopped working. These incidents caused some players to dead-end in the game.



conquer the quarter



The 10 players were participants of the game festival and therefore quick to get the idea. The players were supposed to “conquer” game corners, ie bluetooth beacons, invest in them and maintain their investment.

The game begun with a briefing, where players were provided with a game device (a mobile phone) and a paper map with the 15 game corners marked.

Similar information was also in electronic format available through the user interface of the game application, but due to the small screen size and bright sunlight, the paper map was found to be more comfortable.

The players were divided into three groups. The fast-paced game got its culmination right after half the time was spent: the green team had lost all of its corners and most of the game credits. From that on, the blue and red teams were to fight for the domination of the Quarter.

Possible new directions

Location based applications

Social software

Non-digital media

New styles of games

- Iranian news agencies reported in July [the capture of 14 squirrels](#) equipped with espionage systems along their border equipped with GPS, cameras and listening devices

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References

- Huizinga, J. (1938). *Homo Ludens*. Basel.
- Capra, M., Radenkovic, M., Beford, S. Opperman, L., Drozd, A. & Flintham, M. (2005). The Multimedia Challenges Raised by Pervasive Games. *MM'05*, November 6-11, Singapore: ACM. 89-95.
- Juul, J. (2005). *Half Real: video games between real rules and fictional worlds*. Cambridge: MIT Press.
- Magerkurth, C., Engelke, T., & Memisoglu, M. (2004). Augmenting the Virtual Domain with Physical and Social Elements: Towards a Paradigm Shift in Computer Entertainment Technology. *ACM Transactions on Computers in Entertainment*, 2(4), Article 5b.
- Montola, M., Waern, A., & Nieuwdorp, E. (2006). Domain of Pervasive Gaming. Deliverable D5.3B. Integrated Project on Pervasive Gaming. January 2006. Retrieved 14.3.2006 from <http://www.iperg.org>
- Nilsen, T., Linton, S., Looser, J. (2004). Motivations for Augmented Reality Gaming. New Zealand Game Design Conference, 26.-29. June, Dunedin, New Zealand.
- Rashid, O., Mullins, I., Coulton, P., & Edwards, R. (2006). Extending Cyberspace: location based Games using Cellular Phones. *ACM Transactions on Computers in Entertainment*, 4(1), Article 3C.
- Walther, B. (2005). Atomic Actions – Molecular Experience: Theory of Pervasive Gaming, *ACM Transactions on Computers in Entertainment*, 3(2), Article 4B.