

# LUT Explorer - a Pervasive Adventure

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## Abstract

Location based gaming and gamified applications are hugely popular, thanks to services such as Foursquare [1] and Shadow Cities [2]. These games require more physical effort than traditional video games. In this study we explore the possibility of adding game elements in the form of achievements and narrative contextual information. The aim is to add value to a pervasive real life game and motivate players to keep playing. For this purpose we created a QR-Hunt game called LUT Explorer around the premises of Lappeenranta University of Technology (LUT). The goal of the study is to find out whether players can be *easily* motivated to play or to get extra value out of the real world game by adding features traditionally related to only video games.

LUT Explorer game consists of three main components that make up the system. These are a scannable QR code, a mobile device owned by the player and the server which contains all the processing logic required in the game.

The game is played by scanning QR codes found at the university. This opens a browser in the device and gives more details and instructions for playing the game. In addition, the checkpoint gives a clue of the next location which the player is instructed to find. The clues in the game can vary from X marks the spot in the floorplan!to an image taken from a certain location or a riddle that once solved leads to the next place. The game continues until the player reaches the final location.

The players in LUT Explorer are evenly divided into four different player groups so that each group experience different game play. The groups differ from each other based on the features the player undergoes in the game. Players in group one, regular players, receive no digital rewards in the game. They only see information of progressing (or not) in the game and a clue to the next checkpoint.

Group two players, achievement players, get information of completed achievements throughout the game. For example player who completes the route the fastest is awarded with Fastest overall time-award or a player who actively explores the premises and scans incorrect QR code would receive Super Explorer.

Group three consists of players who are rewarded at every checkpoint with interesting context information about the location they are at. For example, a QR-code that is located next to an office inhabited by a professor known for his rock band, gives the player a possibility to watch a music video of the band in question on Youtube.

Group four is a mix of groups two and three: Players are awarded with both achievements and context information.

The data acquired from the game is collected in two different ways. First, we examine player data from the LUT Explorer. The collected data contains information of visited checkpoints, amount of achievements gained, how many players finished the game and the time it took to move from one location to another. As the players were divided into four different groups, the differences between these group are evaluated on a numerical manner. Secondly, a shorter mini-hunt version of the game was created to be used in an open house day at the Lappeenranta University of Technology. The aim was to collect qualitative player experience data by carrying out a small questionnaire to the participating players. The questionnaire answers are evaluated to better understand player behavior and experience when playing the game of LUT Explorer.

In the presentation we show the results of the mini-hunt and the differences between player groups. Additionally we present the questionnaire results on how the players experienced LUT

Explorer. We draw conclusion whether the digital rewards motivate players of this pervasive game and qualitative data on how the players experienced it.

**Index Terms:** Motivation, Pervasive games, Achievements.

#### REFERENCES

- [1] Foursquare, <http://www.foursquare.com> [cited on 15.09.2012] *Foursquare*.
- [2] Shadow Cities, <http://www.shadowcities.com> [cited on 15.09.2012] *Grey Area Ltd*.