CityExplorer - A Geogame Extending the Magic Circle

Sebastian Matyas, Christian Matyas, Christoph Schlieder and Peter Kiefer

Otto-Friedrich-Universität Bamberg, Laboratory for Semantic Information Processing, Chair of Computing in the Cultural Sciences, sebastian.matyas@uni-bamberg.de

1   Introduction

Huizinga [Hui71] identifies several formal characteristics which games share with magic rituals that are bound to a "magic circle". He states that games are explicitly defined by the space within which they take place, the time a game or play lasts, and the rules that are active during the game/play. Participants of a game must freely agree to these changes in their ordinary life to be part of the game or play. Further he says that no material interest is connected to it, no profit can be gained, and that these are unproductive human activities.

Pervasive games, respectively location-based mobile games, already break this traditional definition of a game by extending their game play geographically, temporally, and socially [Mon05]. For non-location-based games von Ahn and Dabbish [vAD04] show that games can produce goods that are valuable outside of the game itself too. Some authors state that pervasive games share this particular feature as well (e.g. [Mat07]), but no working game was proposed so far, although we know of numerous successful examples of non-gaming location-based applications that accomplish this task, e.g. [BCE07]. We explore this possibility to extend the magic circle with the presentation of use case studies conducted with the location-based mobile game CityExplorer. In our case, the good is constituted by semantic enhancements to geospatial data.

2   CityExplorer - Playful generation of valuable goods

CityExplorer was first introduced by Matyas [Mat07] as an theoretic game design example. We implemented it using the Geogames framework [SKM06]. This framework can be used to transfer any traditional board or card game into a location-based mobile game. The game play in CityExplorer was inspired by the award-winning board game Carcassonne, originally designed by Klaus-Jürgen Wrede. From the board game two features of its game rules are adopted in the location-based variant. (1) Game tokens can only be placed on predefined categories of game board locations (in Carcassonne: streets, cities, grassland, and churches) and (2) the positions of these locations on the game board are not known to the players in advance.

The main goal of CityExplorer is to seize the most of real-world locations in the game area by placing virtual markers to them. For reasons of fairness, the location categories are chosen freely by the players themselves before a game starts. Placing a marker means that a player takes a photo of an location or object of a valid category, categorizes it and tags it with an appropriate identifier. The photo is then georeferenced by the game software. All set markers are uploaded to a game server to realize asynchronous game play, i.e. players do not have to play the game at the same time. To battle cheating (and out of quality reasons) we implemented a community driven review process (see [GDB$^+$07]). For the full game rules see [1].

We conducted two use case studies so far, lasting seven and nine days. In total 10 participants took part in these games, four in the first and six in the second. The players were either laboratory stuff (three) or students of our university (four computer science and two cultural science students). In these two games our volunteers produced a total of 584 markers - 276 in the first and 308 in the second game. The results from a questionnaire and Q&A session after each game show that the core game element of collecting markers outdoors, i.e. producing valuable goods, is experienced as fun and entertaining (mean 4.5 with a standard deviation of 0.5 on a five-point Likert scale). Our future research will concentrate on the improvement of the online review process (fun factor of 2.9 with a standard deviation of 0.9) and consequently on how a certain quality level of the produced semantically enhanced geospatial data can be guaranteed. Furthermore, we will evaluate the easy portability of CityExplorer to other game areas with the help of the Keio University and the NEC C&C Innovation laboratories with a further use case study near Yokohama.

Literatur

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[1]$http://www.kinf.wiai.uni-bamberg.de/cityexplorer/$