Designing Scalable Location Based Games that Encourage Emergent Behaviour

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ABSTRACT
In general location based games have failed to achieve wide scale adoption that many predicted and the only such game that can truly claim wide scale success is Geocaching. Arguably this is partially due to fact that the majority of these games draw their inspiration directly from video games rather than the way users engage with public spaces. The authors present the design rationale behind the development of a Location Based Game, Big Game Huntr that was created specifically with player engagement with space at its heart. Presented are the lessons learnt from transitioning this game from being event based to one in which global participation could be facilitated.

Keywords: Emergent Behaviour, Geocaching, Location Based Games, Mobile, User Generated Content

INTRODUCTION
Whilst games have always been at the vanguard of research in Location Based Services (LBS) (Benford, Magerkurth, & Ljungstrand, 2005; Rashid et al., 2006) their commercial counterparts have attained limited impact in the wider community and generally failed to achieve the critical mass of players required to support long-term use (Rashid et al., 2006). However some LBS’s such as Geocaching have succeeded in making a significant impact upon the wider public reaching an estimated 3-4 million users worldwide (Chavez, Schneider, & Powell, 2004; Rashid et al., 2006). Geocaching appeals to social groups, such as families, as it addresses a set of user motivations (O’Hara, 2008) that are particularly attractive such as: social walking; discovery and exploration of new locations, and combined creation and consumption. This contrasts to many Location Based Game’s (LBG’s) that have often sought inspiration from traditional video games based on action which has been converted to direct physical movement (Rashid et al., 2006).

Furthermore, the emphasis on action means that many LBG’s have created highly competitive game play based on physical prowess in

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movement and in many respects independent of the actual players’ specific location (Rashid et al., 2006), unlike Geocaching which tied to specific locations. This independence of location is often deliberate as it makes these games more scalable in the sense of being able to play it at any location. The downside of this is that it effectively removes one of the success factors of Geocaching, which is discovery and exploration of the specific location.

More recently game activities such as Foursquare [http://foursquare.com] and Gowalla [http://www.gowalla.com] try to connect games more closely to real world locations through players ‘checking in’ the locations they regularly visit as part of the game play. This checking in mechanism can be then relayed to the participant’s social network of ‘friends’ to generate social capital on Twitter and Facebook. Thus these games have a relatively simplistic game mechanic and their primary role would appear to serve as a means of informing their friends of their location which identifies them more closely to previous ‘Friend Finder’ services such as DodgeBall (Humphreys, 2007). As these games are based predominantly around the idea of social networking, which offer little gaming mechanics in the form of collecting badges, inevitably this offers little inspiration to families or groups who might use Geocaching as a means of engaging in highly social outdoor planned activities (Chavez, Schneider, & Powell, 2004; Kelly, 2006; O’Hara, 2008).

However, there is effectively no competitive element to Geocaching as it lacks the required characteristics that effectively would place it in the category of games (Salen & Zimmerman, 2003) and therefore we believe there is an opportunity for creating a LBG that builds upon the motivations seen in Geocaching that accommodates a competitive play element. To this end we have created Big Game Huntr, which can be regarded as a toolset for user generated location based games.

The premise of Big Game Huntr is to encourage emergent behaviour, by promoting self-expressed design and creation of events (Jegers & Wiberg, 2006) which can be shared within the community of registered players. The game premise requires participants to capture photographs of specified objects or actions to gain points and can be played either as a single group or amongst teams. Further the social capital generated within these games can also be fed into existing social networks such as Twitter and Facebook.

Recently (August, 2011) Groundspeak, the creators of Geocaching have introduced a modern day extension on what was traditionally known as a low-tech platform, ‘Geocaching Challenges’ involve players having to go somewhere and do something which could be singing a song in the middle of a busy area, or performing an action at certain desired locations and taking a photograph of this. The spin out challenge approach has been designed to complement existing Geocaching traditions of exploration and discovery and draws parallels with the concept proposed for Big Game Huntr.

Whilst early LBGs, such as “Uncle Roy, All Around You” and Blast Theory’s “Can You See Me Now?” [http://www.blasttheory.co.uk/bt/work_cysmn.html] highlighted the potential of such games, Big Game Huntr takes a different approach to location gaming. The premise of “Uncle Roy” is to explore and discover a physical object (in this case a human figure named “Uncle Roy”), as players are required to locate Uncle Roy in the quickest time possible. The game involves running and competing against other players, as players are allowed 60 minutes to encounter the figure, defined clues are provided to each player to assist in locating of Uncle Roy. Likewise “Can You See Me Now” requires players chase and capture each other in physical and virtual environments. Both LBG’s were developed from a research perspective, as fixed gaming areas were adopted thus limiting the extendibility of the game and limiting the scalability factor. This has also been a factor in many other fixed research LBG’s such as Pac-Manhattan [http://pacmanhattan.com], the initial Free All Monsters! Prototype (Coulton, Lund, & Wilson, 2010) and CitTag [http://cnn.open.ac.uk/projects/cititag/]. However for research LBG’s to be truly scalable commercial
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