Friend or Fiend: Prototyping for Social Cohesion

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ABSTRACT
Motivation – Communication technologies providing location-based and social applications may stimulate social cohesion and community building in deprived neighbourhoods. This study investigates the expertise required to develop mobile, social and context-sensitive applications.

Research approach – Advanced students in Media Technology were instructed to create a mobile, social and context-sensitive application using a concept and programming tools of their own choosing. The students' progress was observed and the results were assessed in terms of technical soundness and social success.

Findings/Design – This study shows that it is not necessary to rely on computer experts or social experts to successfully create applications to increase the social cohesion within communities.

Research limitations/Implications – This study was limited by allowing participants to use themselves and their friends as the target community instead of an external community which is different from themselves. The success of the social computing apps was not investigated with an external community, this remains to be done in a subsequent studies.

Originality/Value – The study concerns an applied study into the use of communication technologies for community building.

Take away message – The results of a programming exercise indicate that applied science students are very well able to develop mobile, social and context-sensitive applications.

Keywords
Prototyping, social inclusion, mobile applications, locative media.

INTRODUCTION
Emerging communication technologies are deeply embedded in community practices; they allow for being connected all the time. Location-based applications and mobile social software might be appropriate in stimulating social cohesion. First, to design social software requires meeting the needs and wishes of the community using user centred design methods (ISO, 1999). However, UCD design may not be sufficient (Steen, 2008); it is also necessary to design the communication facilities such that a community of practice evolves. In our view, this requires co-creation design approaches in which user-representatives from the community act as expert-members from the community (Sanders and Stappers, 2008).

CO-CREATING CONCEPTS FOR SOCIAL COHESION
In an earlier study within the theme ‘friend or fiend’ students practiced co-creation techniques with a socially deprived community of Coolhaven Island in Rotterdam. Concepts were developed that remove barriers between citizens by making use of geo-data (see: Marseille & Mulder, 2009). For example, the Drifter’s currency system refers to caring money to sponsor the homeless and needy with RFID chipped tokens that they can exchange for food and shelter. To stimulate social cohesion, the sponsors may trace their donations to see what happened with the money.

DEVELOPING THIS FOR SOCIAL COHESION
The earlier study focussed on how to create design concepts to improve social cohesion. In the present study, students worked on software development as part of a module about ubiquitous computing. The students all familiar with interactive websites, database connectivity and programming languages like C# and PHP but they were not (technical) information science students. We were interested to determine whether our students were able to develop such applications.

Developing for Social Computing
In this project, students were requested to organise themselves in project teams and to develop an application that is: mobile, social and context-sensitive. In addition, participants were required to follow the UCD approach (ISO, 1999) and to choose a software development methodology that fit the project. Secondly, a number of deliverables were required, including a demonstrator: a prototype, written in the target programming language(s), without the need to be fully functional, and demonstrating the workings of the main functions.

Two teams were created, each with six participants who cooperated for a number of hours each week over a period of six months. One team DiscoDevelopment designed and build a Twitter-like application WhereU@
on Windows Mobile and an HTC Diamond to assist people in planning where to go out using the comments that were left in a database by people who are already present at various places of entertainment. The comments could be uploaded and automatically tagged by the GPS coordinates of a mobile smart phone. Once uploaded, other users may use a mobile phone or some other pc to filter the messages and determine where to go for an enjoyable evening. This application was developed on the Windows Mobile 6.0 operating system, using Visual Studio 2008 with SDK Professional, and a .Net/MySQL database. The team used the Scrum software development method (Schwaber and Beedle, 2002) and wrote the application in C# and XHTML, CSS and PHP.

A second team CloudTaggers developed an Augmented Reality application on an iPhone 3GS platform, allowing people to leave messages for others in the clouds, or rather, at the GPS coordinates of the sender. Other people could see these messages as overlays on the screen when the iPhone was aimed at the clouds, and by zooming in and out, more or fewer messages could be seen. The messages were stored in a remote database and a SOAP interface, hence utilising HTTP and XML. The CloudTaggers developed the application for the iPhone on Apple laptops with the IPhone SDK and its associated language (Objective-C), tools and frames, and the DSDM software development methodology (Stapleton and Constable, 1997).

Results

Both teams were successful in developing their applications and both experienced that parts of the design specification could not be attained. The DiscoDevelopment team experienced problems in allowing newly created users to access the database. CloudTaggers also experienced some difficulties with SOAP which may be a bit cumbersome for simple message database operations. In addition, they failed to solve the problem of overlaying the iPhone screen while displaying the camera view with messages, thus resulting in a messaging system without the text clouds. In solving such problems, the degree of interest and previous experience in programming turned out as important factors. The projects resulted in a wide range of specifications and documents, including project plans, requirement specifications, persona’s, functional specifications, flow charts, user cases, architectural outlines, wireframes, screen designs and Flash prototypes. Most were motivated by the need to communicate within the team. A special role was assigned to the Flash prototypes which were not required as deliverables but each team choose to create one. The prototypes were especially useful in serving as specifications to the teams themselves to lay down the exact purpose of the project. Scrum and DSDM proved difficult to apply without guidance; both teams reported the tendency to fall-back into practicing hacking and all felt that only part of the methodology was useful. Particularly Scrum proved useful in stimulating participants to do one’s share. Overall, both team proved successful in developing the application as well as passing the course requirements.

DISCUSSION AND CONCLUSIONS

There are two main conclusions to be drawn from this study. First, much more than the previous generations of students and their teachers, present day students are much more experienced in the use of ICT and software tools for social purposes. In the ease with which the student teams developed concepts for new and innovative social applications indicates how important it is to be a participant rather than a distant observer of web 2.0. Secondly, even though the Media Technology students are not highly skilled technical experts, they were indeed able to develop mobile, social and context-sensitive applications in a relatively short time.

In subsequent projects in the 'friend or fiend' program, prototypes will be developed and tested at Coolhaven Island to investigate how and to what extend social media may contribute to social cohesion in the neighbourhood.

REFERENCES


