

Privacy's Role in Mobile Social Software for the Urban Community

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ABSTRACT

Sociologists have illustrated that desires for privacy often work against tendencies toward community creation and sustenance. Social technologies adapted to assisting people living in urban environments may be able to help resolve the conflicts in this relationship. Well-designed mobile device applications that help users to integrate well into urban environments have the potential to benefit communities while addressing participants' concerns regarding privacy.

INTRODUCTION

Over the past few decades, many have argued that neighborhood features such as eyes on the street, "public characters" and locales for ad-hoc public gathering create safe, vibrant, and cohesive environments for community members. Jane Jacobs based her career in large part on these ideas and discussed the surrounding issues in her seminal work, *The Death and Life of Great American Cities*. Urban architects and planners have widely accepted the basic tenets behind these ideas and have attempted to incorporate them into their work. Technology can serve complementary purposes in promoting community cohesiveness. New types of location-aware mobile social software (MoSoSo) applications allow people to develop both weak and strong relationships with others who live and work around them. However, location-aware MoSoSo applications bring with them the ability to keep track of community members and invite unwanted communications, a feature that often prompts anxieties about intrusions into privacy.

LOCATION-BASED MOBILE APPLICATIONS

Many of the current applications of location-based mobile technologies serve functions such as tracking a mobile workforce or tracking loved-ones such as a child or a senior relative. People tend to be scared of the idea of using tracking technologies because they fear the tools could also serve to invade their privacy. I argue that a combination of better application design and giving users enhanced control of application functions and features can mitigate the perceived invasions of privacy.

Currently Deployed Applications

Some widely deployed tracking technologies that spark concern include automatic toll collection systems for toll roads and transit system debit cards. These systems, as an ancillary effect of their primary purposes, afford those with

access the ability to track their users and, indeed, they have been used in the past by law enforcement organizations to track individuals. Recently journalists and academics have written a great deal about one of the most widely suggested applications of location-based mobile technology – location-based advertising. They envision a near-term future in which corporations and businesses knowing the locations of potential customers deluge innocent people walking down the street with advertisements related to their location. These applications worry people; they would rather not have large entities with powers out of their own control have access to such personal information as their travels. They are apprehensive about further intrusion into their "private lives" by corporations that they feel are solely seeking to make money from them.

Mobile Social Software

The field of MoSoSo is evolving quickly, with many new types of applications being developed and deployed. MoSoSo at its most basic level is any software that allows people to connect with others while mobile. This would encompass applications as varied as a simple, mobile voice-mail service and a mobile and location-aware buddy list such as AT&T Wireless's Find People Nearby service. Once location is integrated with the features of social software, that software becomes potentially more powerful as a way for people to meet while moving around physical space. Incorporating location-based features makes it easier to bring relationships created or nurtured in virtual communities to the physical world and vice versa. It also allows for developing relationships in the physical world that otherwise would not have formed. MoSoSo has the potential to lessen privacy issues since access to personal information can be limited to those within one's social network, but issues regarding invasiveness remain.

REMEDIES

In order to maximize the usefulness of MoSoSo, we must take steps to remedy the associated negative issues.

Surveillance Versus Location Awareness

When people refer to location-based applications, especially those that can be used by employers or law enforcement, they often use the word "surveillance" to describe the feature that locates people or physical assets. This word implies an invasion of privacy. While surveillance is one function of location-based applications, for social

applications, I suggest the term “location awareness” is often more appropriate. While the terms may be similar in definition, their connotations are quite different as are the purposes of obtaining the location information.

Both surveillance and location awareness applications keep track of where people are, but they differ in terms of how the tracking is carried out. In order to clarify how community knowledge of location can be possible without causing users to feel like they are under surveillance, I suggest the following core requirements of mobile applications that require location awareness in order to function usefully:

- the ability to turn off tracking lies primarily with the person being tracked,
- configuration of others’ access to one’s location information is performed easily and location information is available only to those who the person being tracked grants access, (and)
- when leaving tracking off, there is as little social stigma and suspicion attached to this choice as possible.

System Architecture

There are also remedies to privacy concerns about location information that stem from the design of system architecture. Services can be built that are based completely or partly on peer-to-peer models of application workflow. Instead of a central server tracking the location of a person, a community can use its own systems. Thus, the community itself retains the power to grant or deny access to the data collected to others via a central clearinghouse or commercial entity.

User Interface

A key to implementing systems in which the person being tracked retains control lies in the interface. It must be simple for the person being tracked to decide who has access to information about them at any given time. In order to accomplish this, visibility settings must not be buried within a preferences or configuration menu in the user’s application interface. They must be immediately available at any time.

For the person being tracked, it is often desirable that their friends or associates are aware of where they are, but it may not be desirable for them to be tracked on demand. A person can choose, for example, to give out their location at a specific time, but not allow others to check on their location whenever they like. This represents, not a difference in terms of technology, but a difference in terms of perceived – and actual – control; and perception is key when it comes to feelings of being watched.

Trust

Location awareness will carry with it some surveillance. In order to minimize the negative effects of surveillance, trust must be built between the various stakeholders involved with the systems in question. It must be clear to users of the system what data can be collected by the service providers, what can be done with the data and under what circumstances. It also must be clear to users what their

rights are in terms of the ability of governmental authorities, commercial entities or other people to gain access to, and use, the data collected.

Application - Socialight

I am one of the creators of Socialight, a project dedicated to building a mobile social software system that runs on top of an existing social network and provides a set of applications that aim to make social connections captured by computer networks more useful when mobile. We have tried to develop our applications with users’ privacy concerns in mind. Two tools currently being prototyped are called Sticky Shadows and Tap & Tickle.

Sticky Shadows are virtual multimedia sticky notes placed in physical space. Using a mobile phone, a user places a Sticky Shadow at their present location for people in their social network to retrieve when passing through that same space at a later time. These notes allow people to tell others about their location in a time-shifted manner. Thus others can learn about the person who left the note and the place where they left it without the ability to learn where that person is whenever they like.

The Tap & Tickle are ways to communicate with other people nearby through a mobile phone that are similar to the casual ways we communicate with others gesturally and physically. A Tap is a short vibration sent to another’s mobile phone. The Tickle is like a Tap, but with more control. A user can send a series of vibrations to another’s mobile phone in a pattern determined by the pattern with which a button on the sender’s phone is pressed. Tap & Tickle afford people near each other with a mode of communication that is less invasive than a phone call or even a text message.

AUTHOR BIOGRAPHY

Dan Melinger is a communications theorist and technologist. He has worked as a consultant to companies developing and implementing wireless data technologies and has experience in the production of radio and television. Dan holds a Master’s degree from the Interactive Telecommunications Program at New York University and a Bachelor’s degree in Communications from the Annenberg School at the University of Pennsylvania. He is a co-founder of Socialight. Dan’s latest research interests include exploring new consumption models for peer-to-peer distributed media.

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