Visibility Within Mediated Networks: An Exploration of Contextual Factors

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Abstract
With the advent of location aware systems and friend of a friend social networking sites, the translation of personal context into mobile electronic formats is accelerating at warp speed. Applications often present this information with little nuance or subtlety. Are individuals readily willing to share their personal context? Is this a realistic or useful expectation?

This position paper focuses on the concept of visibility. We define this as the ability of an individual to manage access to their personal contextual data within a mediated network. How do individuals manage their visibility on instant messenger and friend of a friend networks? What contextual factors affect an individual's degree of visibility? How do visibility management issues impact the vitality of a social network? And finally, how will visibility management patterns translate to ubiquitous, location aware social networks?

Keywords
Social computing, awareness, friend of a friend networks, instant messaging, location aware systems

ACM Classification Keywords
H.4.3 Information Systems: Communications Applications

Introduction

With the escalating use of instant, mobile communications, our connections to people and places are quite dynamic. Friends, co-workers, and supervisors want to know: where are you now? what are you doing? how long before you come back? where will you be tomorrow?

Personal context information is embedded into a number of social networking and collaborative systems. The primary motivation is to build trust and social capital, and increase mutual knowledge between electronically connected collaborators [1]. However, we want to point out that the extent to which the data being collected and published is able to influence social capital and mutual knowledge is largely unknown.

Expectations of unfettered electronic persona are unnatural for several reasons. In face to face interactions within a co-located social group, personal social context is shared implicitly, with little effort [2]. Online this is not the case. Sharing must be explicit – making a calendar public, posting pictures, and so forth. In addition, online audiences are largely invisible. Information can spill from one social context to another, resulting in embarrassment or even more serious consequences [3].

This leads to an interesting tension between awareness (i.e. connectivity) and privacy. There are costs and benefits, for both the social network and the individual, to supporting awareness, or visibility, and enabling privacy. Therefore understanding the dynamics of the contextual factors that influence an individual's decision to be visible within a mediated network is critical.

The SmartCampus Project

This research is part of the Smart Campus project, a location aware community system under development at the New Jersey Institute of Technology (NJIT), supported by grants from the National Science Foundation [4]. The SmartCampus project, under the direction of Dr. Quentin Jones, Dr. Starr Roxanne Hiltz, and Dr. Symeon Papavassiliou, will create a test bed for mobile, context aware applications. Several hundred students, faculty, and staff will be connected using smart devices such as cell phones and PDAs.

This project will include Campus Explorer, providing map based "buddy tracking" enabled by the use of location aware devices by the participants. Individuals will create lists of "buddies," who agree to disclose their location information to trusted users. These lists will be used by Smart Campus to determine who can see you on a map, and vice versa, as long as they have their mobile device turned on.

Campus Mesh is a friend-of-friend system for social introductions and reminders triggered by location information. Social network functionality used in systems such as Friendster [3] and Facebook, will be applied to a location aware application.

How Will Individuals Manage Visibility Within SmartCampus?

The SmartCampus project is an opportunity to both implement and evaluate visibility management options. An initial series of about 50 semi-structured interviews conducted last fall with various members of the university community (i.e. faculty, staff, and students) indicate personal control over access to profile and

location data will be a critical component for building trust in the system.

Planned follow up interviews will identify patterns of visibility management individuals use for instant messenger and friend of a friend networks. The goal will be to identify visibility "templates" or generic types. For example, one type would manage the visibility of a faculty member during office hours, to include colleagues and current students. Discovering these types will allow individuals to quickly configure their visibility.

The structure of these visibility types will be further elaborated by obtaining feedback from focus groups, consisting of members of the university community. Once implemented, their overall use, effectiveness, and success will be measured through qualitative and quantitative methods.

Author's Background

Catherine Dwyer is a Lecturer in the Department of Information Systems at Pace University and PhD candidate in Information Systems at NJIT. She is the author of several textbooks, including Programming Games Using Visual Basic (Course Technology, 2001). Her research interests are in social computing and the use of low cost collaborative tools in multiple settings. Her paper "Low Cost Collaborative Tools For Virtual Collaboration" received a "Distinguished Writing" award at Isecon 2005.

Starr Roxanne Hiltz is Distinguished Professor, College of Computing Sciences, New Jersey Institute of Technology. Her currently funded research areas include pervasive information systems and asynchronous learning networks. One of her earliest books was the award-winning The Network Nation: Human Communication via Computer, co-authored with Murray Turoff (Addison Wesley, 1978); her most recent book, co-edited with Ricki Goldman, is Learning Together Online (Erlbaum, 2005). An Associate Editor of ACM Transactions on Human-Computer Interaction, she is currently interested in computer-supported collaboration in work (virtual teams), learning ("Virtual Classroom®") and social and community activities (mobile pervasive systems). For more information, see http://is.njit.edu/~hiltz or email her at Hiltz@njit.edu.

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