

## **MAPS AND LOCATION IN SOCIAL NETWORKS: A PARADOX BETWEEN "WANTED AND NOT WANTED**

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### **ABSTRACT**

With the growth of social networks on the World Wide Web/Internet in the past ten-years, functionalities have been added to meet user communities needs. Like any type of Internet based community, social networks are increasingly competing to attract as many users as possible. Based on the theme of social networks, connecting members outside of the aspatial Internet can be a major advantage over competing social networks. While other themed social network see privacy of place as a community member's right. The theme of the social network leads to the community understanding that connection in the social network is either digital/aspatial only or connection digitally and physically. When looking at these social networks the role of maps and location data is an example of user needs. User communities have both wanted and forbidden this type of functionality on some social networks. Social networks that allow for both digital and physical connection have either worked as an open or closed social network. In the open social network anybody is allowed to join the community and in most cases has a user controlled level of place privacy. In the closed social network community members are approved to some degree of other and users can control their level of place privacy. This research looks at a sample of social networks and examines how this paradox of spatial connection and spatial disconnection is handled and structured. Data was encoded for each social network on its theme, open/closed, place privacy, and use of maps and location information. The results of this survey has provided data to formulate a framework for how maps and location information are incorporated in social networks in relationship to wants and not wanted aspects of the community the social network serves. For the open social networks, the role of location and maps is appears to be increase as a functionality but the users community is limiting it with place privacy choices. For closed social networks the aspect of maps and location information is split. Some of these social network want facilitate physical connection between members while other strictly forbid this action as a community standard. With this resulting framework as a guideline, a set of research and development targets have been identified.

### **BACKGROUND AND OBJECTIVES**

One of the important aspects of the Internet and its role in shaping humanity has been the development of spatial independent communities. These communities started to form long before the World Wide Web (WWW) protocol. The term virtual community developed by Rheingold is one of the many terms that address this aspect of community in the Internet space (Rheingold 2000). Rheingold documents his path into the virtual community starting in 1985 using the Whole Earth 'Lectronic Link (WELL) system. From WELL numerous other technologies have developed and passed by the way or are moving to their zeniths.

- PLATO (Programmed Logic for Automated Teaching Operations)
- Usenet
- Instant Relay Chat (IRC)
- Multi-User Dungeons (MUDS)
- Bulletin-board Systems (BBS)
- Chat Rooms
- MailingList
- E-Journals
- GeoCities
- Virtual Worlds (Second Life, Meez, The Sims)
- Computer Games (World of WarCraft, Medal of Honor)
- Console Systems (Wii, Xbox Live)
- Social Networks (Myspace, Twitter, Tumblr, Facebook)

From the development of virtual communities a puzzling aspect has emerged. Is there a place for real world location in the virtual community? If one just looks at some of the latest world events such as government unrest in Tunisia, Egypt and Yemen one sees that virtual communities play an important role in organizing and demonstrating civil unrest.

The infiltration of real world focused technologies into the latest virtual communities has enticed many new users into the virtual community world. The ability to link to people from past real world spatial communities gives many virtual community members a context that is worthwhile and comfortable to them. Connecting to old school friends from long ago, now spatially removed from one other, is just one example of the crossover of real world and virtual spatial communities. Yet there are many virtual communities where the choice to involve real world is discouraged or even frowned upon to the point it can lead to removal from the virtual community.

The question in this research is whether all virtual communities are embracing real world locations and mapping technologies and if so how do they deal with issues of society acceptance and personal privacy? Does the knowledge from mapping and location-based services, theories, and concepts translate into today's virtual communities or are there other outside factors that have a role in bridging the virtual and real world?

In order to understand these issues one must consider many aspects of the virtual community and its place in the real world. Golsteijn and van den Hoven, (2011) examine books and how real world book club or reading circles could be moved into a virtual community. Although this is the opposite direction for this research, their research provides many insights to consider. The first and most important consideration is that even though books are a private matter, many people want to express their view and opinion or have questions answered about the books they have read. Golsteijn and van den Hoven (2011) noted that in Holland, the real world place for social communities about books, the library, was declining yet the social desire to communicate was still growing. The role of community still exists within many readers. The widely popular book series 39 Clues (Riordan 2008) has worked directly with this issue by integrating reading, game play and a discussion community. The book series' website allows community members to interact with the story, solve questions and even win prizes ([http://www.scholastic.com/kids/39clues/?lnkid=stacks/nav/b\\_and\\_a/titles/39clues](http://www.scholastic.com/kids/39clues/?lnkid=stacks/nav/b_and_a/titles/39clues))

If real world communities are moving into the virtual community space and vice-versa, then the boundaries of acceptance and interaction are getting blurred. Diamantaki, Rizopoulou, Charitos and Tsianos (2011) examined multiuser location-based games as a case study for creating a theoretical and methodological framework for designing a social interaction based location-based game. They argued that based on the concept of "embodiment" put forth by Dourish (2001) that context and society is a combined idea. This embodiment concept considers content and culture not as opposing factors, but more as branches along the same theoretical tree. By accepting this point of view one cannot look at society and context as bivariate parameters for categorizing both real world and virtual communities that use maps and location-based technologies.

With the concept of embodiment defining one complex aspect of community memberships, a second view of privacy must also be considered. Raento and Oulasvirta (2011) extend the view of embodiment to consider the issue of privacy. In their research they look at stages of privacy and its relationship with embodiment in community. They see embodiment modified and included in the context of self-presentation and social awareness. Raento and Oulasvirta (2011) start from the ubiquitous computing framework of Palen and Dourish (2003). They note that the issue of privacy within the framework actually comes from Altman's privacy theory (Altman, Vinsel and Brown 1981) where the concepts of dynamic and dialectic form the central idea of privacy of individuals. The dynamic nature of privacy has a context control that changes rapidly. As people move through society and community, their actions and place change their needs for self-privacy. A simple way to view dynamic privacy is one's external privacy. The concept of dialectic from Altman et al (1981) is internal, the reaction to one's sense of autonomy, social acceptance and social impression. In this context the internal and external aspect of privacy is an ongoing negotiation between these factors. In the community context the negotiation of one's privacy is built into the interaction itself and all members of the interaction must process the level of privacy as the interaction continues.

Goffman (1967) uses the term "face-work" to surmise this act of negotiation of privacy in social interactions. When a person shows certain parts of his or her nature to others it is done within a social acceptance context. If the social situation is professional in nature one may not show more private interests or views. And many times the face-work has an aspect of plausible deniability (Aoki and Woodruff 2005). This allows one to redefine themselves by the action of denial. Most of the time this denial is framed in a misunderstanding or misinterpretations of questions or statements. Allowing people to slowly or step by step reveal private matters or "self-disclosure" (Berg and Derlega 1987). Goffman (found in Leary and Kowalski 1990) places self-disclosure as one aspect of self-presentation. Self-presentation is a process within the impression management.

Based on these issues of privacy and embodiment, the use of maps and location-based within social networks or virtual communities can be studied. How these communities deal with these issues has social context that changes from culture to culture. This research will begin to look at the integration of location in social communities in the network space.

### **APPROACH AND METHODS**

This research examined a sample of current virtual communities. From each virtual community data was collected on the use of real world location and mapping within the virtual community. The virtual communities sample consists of both socially undefined communities and theme based social groups. The data collected examines the issues of privacy, embodiment and impression management. The data will be qualitatively analyzed to see if the pattern of technology integration is sensitive to issues of social acceptance, and self-disclosure.

### **RESULTS**

In this ongoing research the following virtual communities were selected.

- Twitter
- Facebook
- Tumblr
- Second Life
- Whrrl
- Foursquare
- Grindr
- MapMyRide

\*see site list for URL address of each virtual community

The selected virtual communities are widespread based on theme and technology. All of them are considered social media with an aspect of virtual community and real world crossover. There are hundreds of other social media application/Web Apps/Apps available and all completely diverse based on language, culture, community and location. A set of capabilities were selected and then it was determined if this social media tool had them.

- Map
- Current Location (CL)
- Community Location (CoL)
- Broadcast Location (BL)
- Tracking Map (T-Map)
- Credentialing
  - o Age (C – A)
  - o Community Member (C –M)
  - o Community Ties (C –T)
- Community Filtering (C – F)
- Community Specific Theme (CST)
- API for Social Media Integration (API)

At the time of this data collection the eight selected virtual communities were examined. For each of the eight virtual communities eleven aspects of location, mapping and community self-presentation was collected (note these functions are constantly changing).

Table 1: Data Collected about Virtual Communities

Virtual Communities	Map	CL	CoL	BL	T-Map	C - A	C - M	C - T	C - T	CST	API
Twitter	N	Y	N	Y	N	N	N	N	N	N	Y
Facebook	N	N	N	N	N	N	N	N	N	N	Y
Tumblr	N	N	N	N	N	N	N	N	N	N	Y
Second Life	N	N	N	N	N	Y	N	N	N	N	N
Whrrl	Y	Y	Y	Y	Y	N	N	N	Y	N	Y
FourSquare	Y	Y	Y	Y	Y	N	N	N	Y	N	Y
Grindr	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	N
MapMyRide	Y	Y	Y	Y	Y	N	N	N	N	Y	N

This data shows a vastly different approach to bridging real world location and maps to the virtual communities. These different virtual communities will be grouped for discussion purposes. Group 1 consists of Twitter, Facebook and Tumblr. Group 1 is similar in many respects. Most of the real world links to location and maps is done through secondary applications through their APIs. Twitter does allow you to post the location of your tweets. O'Brien and Field (2010) discuss how to mine that information into an external application. The Group 1 virtual communities are self-forming, they have no central theme and sub communities develop independently. The choice to cross over to real world locations is up to the user of the virtual communities. The second group consists of only Second Life. This is the most real world disconnected group, since Second Life is built on a metaverse (Snow 1980). Community members see no need to explicitly link to the real world in terms of location and maps. Within Second Life many community members will disclose openly or privately their real world locations. Many members disclose based on a time zone since it is the hardest aspect to separate one's virtual community from their real life. Group 3 is the mobile device group. In the mobile group are Whrrl, Foursquare and Grindr. The communities are tools that are designed to specifically advance mobile device Global Positioning System components and IP mapping. These communities are looking to place members in the real world, specifically for membership gain. Group 4 has only the MapMyRide community. This group is the most focused on real world group facilitation. This community is focused on bicycling and running. It uses maps and locations more than other groups.

### CONCLUSIONS AND FUTURE PLANS

From this search many of the virtual communities are working to cross over to the real world in many unique and different ways. Whether it is showing bicycling training rides or the location of your favorite café, some of these virtual communities are looking to connect people not in only a digital experience but a real world sense. The concept of embodiment within the community for some has both a virtual and physical sense.

The next step in the research is to look more closely at the user's sense of location. In the social media like Twitter, Facebook and Tumblr, is the community looking to see their presence as an augmentation of real life? Is the difference in platform cores effecting the integration of location and maps? These questions remain unanswered and may be better put up for debate.

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