Task Technology Fit, the Social Technical Gap, and Social Networking Sites

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ABSTRACT

Social networking sites are a form of collaborative software used by millions of people worldwide. While important descriptive and exploratory studies of these sites have been conducted, there has been little discussion of how to relate information systems theory to the use of social networking sites. This research will combine two theoretical frameworks to assist in understanding the dynamics of these sites. Task technology fit theory is applied to analyze the task requirements of relationship development and match those requirements to technical features. The Social technical gap is also applied to discover the social requirements that evolve from the use of these sites, and determine how effectively these requirements can be supported in a socio-technical system with millions of members.

Keywords

Social networking sites, task technology fit, social technical gap

INTRODUCTION

The explosive growth of social networking sites is a compelling topic for both popular media and academic research. Social networking sites are systems that offer free accounts, with ways to display profile information, visualize connections to friends, and share digital media.

When a person uses a social networking site, all their activity takes place on networked computers, with little if any information saved to the client machine. Since everyone's profile is kept by the site, it is simple to find a friend – just do a search, and the site, using the information posted individually and pooled on networked computers, quickly delivers their picture and profile.

While the popularity of an individual site may vary, each of them supports a virtual world where each transaction is immediately captured and stored. These digital recordings, kept for an undefined time periods for undetermined uses, capture interactions that in offline settings leave no trace (Lessig, 1998). Exploring the implications of an always accessible, real time digitized social record is an important task for information systems researchers.

How do people use social networking sites?

The first popular social networking site, Friendster, has been described in (boyd, 2004, boyd, 2006, boyd and Heer, 2006, Donath and boyd, 2004). boyd et. al. describe how members create their profile with the intention of communicating news about themselves to others. Facebook, a social networking site that began with a focus on colleges and universities, but now includes high schools and other organizations, has been studied by (Acquisti and Gross, 2006, Lampe, Ellison, and Steinfield, 2007, Stutzman, 2006). These studies have collected profile information from Facebook through the use of a web crawler, and through surveys of members. They show that Facebook members reveal a lot of information about themselves, and are not very aware of privacy options or who can actually view their profile (Acquisti and Gross, 2006). The largest social networking site is MySpace, ranked sixth overall for web traffic globally, with over 46 million unique US visitors a month (QuantCast, 2007).

People use social networking sites to maintain existing relationships and develop new ones. A qualitative study found members increase their social productivity by re-establishing connections with lost friends, and viewing friends through their profile. People can "keep up" with little effort (Dwyer, 2007).

THEORETICAL FOUNDATIONS

In order to better understand the dynamics of these systems, two important research frameworks will be applied: Task Technology Fit (Goodhue and Thompson, 1995) and the Social Technical Gap (Ackerman, 2000).

Task Technology Fit is a theory that describes performance impacts of an information system. It defines fit as the degree to which a technology provides features that support the requirements of a task and the abilities of an individual (Goodhue and Thompson, 1995), p. 214. Fit, or goodness of fit, is a predictor of performance benefits from the use of information systems.

Goodhue provided empirical evidence to support of Task Technology Fit through surveys of users of database driven systems. Goodness of fit was measured by ability of users to find the "right data" (Goodhue and Thompson, 1995). While querying a database was typical of computer use in the mid 1990s, the internet age has greatly expanded the scope of computer supported tasks.
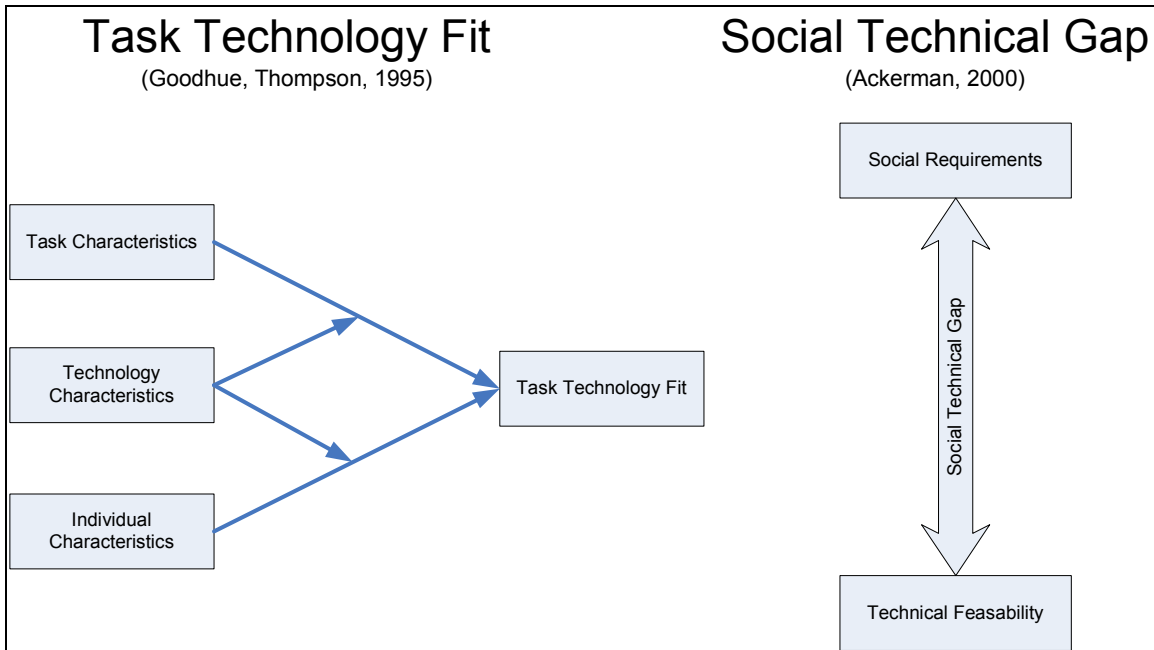

Figure 1: A model of the Task Technology Fit and the Social Technical Gap.

The Social Technical Gap is "the divide between what we know we *must* support socially and what we *can* support technically (Ackerman, 2000)." The relationship between Task Technology Fit and the Social Technical Gap is depicted in Figure 1. The Social Technical Gap can be conceived of as a specific instance of task technology fit. Social requirements are a sub-set of requirements that make up social tasks, such as communication, coordination, and cooperation. Therefore the Social Technical Gap describes the lack of fit between social requirements and technical solutions.

Task Technology Fit Theory evaluates the impact of information systems, in terms of improved performance. Moreover, since Task Technology Fit analyzes actual use (post implementation), it does not address requirements discovery, analysis and modeling.

On the other hand, the Social Technical Gap is very much concerned with design. The gap is caused by two factors. One is the difficulty in accurately capturing, describing, and modeling social requirements for constructs such as privacy, trust, and digital self presentation. In addition to the difficulty in creating a cognitive model for social requirements, it becomes quite complex to implement these requirements in a computing system.
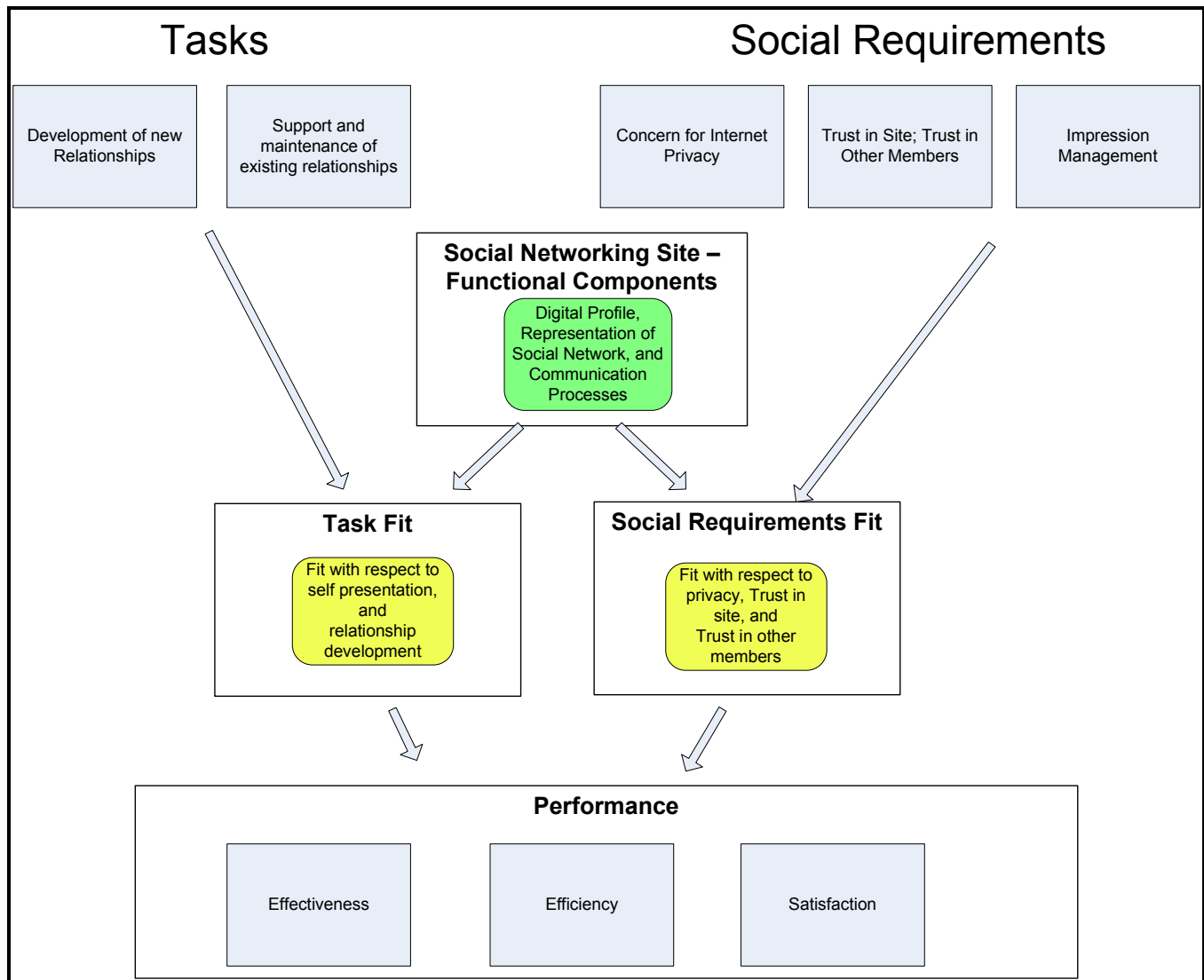
Figure 2: Research Model for analysis of social requirements and social networking sites.

RESEARCH MODEL

The model shown in Figure 2 builds on Task Technology Fit and the Social Technical Gap. Task technology fit theory argues that fit is a predictor of performance (Goodhue, Klein, and March, 2000). The social technical gap argues that systems have great difficult is delivering social requirements. If we connect the two, then this model suggests that task fit and social requirements fit are predictors of performance. The tasks in question are the development and maintenance of interpersonal relationships. The social requirements are concern for internet privacy, trust in the site and its members, and impression management.

Privacy is included as a social requirement because the widespread use of social networking sites to publish personal details has raised many privacy concerns (Acquisti and Gross, 2006, Barnes, 2006, Gross and Acquisti, 2005, Lampe et al., 2007, Stutzman, 2006).

Trust is included as a social requirement because it has been shown to be an important component of communication and collaboration (Coppola, Hiltz, and Rotter, 2004, Fukuyama, 1995, Jarvenpaa, Knoll, and Leidner, 1998, Lewis and Weigert, 1985, Mayer, Davis, and Schoorman, 1995).

Impression management refers to an internal motivation to present a positive impression to others (Goffman, 1959). It is included as a social requirement because it affects the methods people employ in order to "make a good impression," or control the impressions others form of them.

Functional components of social networking sites

Figure 2 displays the functions found in social networking sites that support the ability to develop and maintain social relationships. This functionality includes the ability to create a digital persona. This defines your identity within a social networking site. Social networking sites also provide ways to represent one's social network, usually through the display of pictures and some identifying information. The third functional unit is support for communication processes. This includes both private messages and public postings, sometimes called testimonials, that are placed on a person's profile.

Task Fit and Social Requirements Fit

This research will include the development of a task model for online social interaction. The components of this task model will include self presentation and the management of relationships. The fit between the functional components of a social networking site and the requirements of social tasks will be measured through a survey of members. Other research in task technology fit has indicated that users are able to accurately report degrees of fit, and that these perceptions are predictors of objective measures of performance (Goodhue et al., 2000).

A model will also need to be developed for the social requirements related to privacy, trust, and impression management. These dimensions will be developed from qualitative studies of use of social networking sites.

Performance

What is the meaning of the term performance within a social networking site? Since the main purpose of a social networking site is to develop and maintain social relationships, then performance relates to how effectively and efficiently these sites help with this task. Since the motivation for use is largely personal, then satisfaction is also a measure of performance since use is voluntary. People do not have to use these sites, so enjoyment is a measure of performance.

The importance of performance for members of social networking sites is supported by qualitative data collected from a Facebook-MySpace survey, conducted August-September 2006.

When asked "What do you like the most about using social networking software?", subjects responded in terms of the increase in their effectiveness and efficiency in developing and maintaining relationships.

Subjects described social networking sites as convenient: "It is so much more convenient to have all the information I want to share with friends in a centralized, organized information system. Compared to everyone having their own webpage, email/forum for talking, etc."

Subjects said the use of social networking sites helped them to save time, and be more efficient: "Saves me time" … "I can communicate with my friends quickly" … "I like the convenience of keeping track of your friends without having to call them all the time" … "Less effort than other forms of communication."

These remarks indicate that members of social networking sites do appreciate and consider effectiveness and efficiency when evaluating their use of these sites.

PILOT STUDIES THUS FAR

A qualitative study conducted in spring 2006 captured information about the use of social networking sites with respect to privacy, impression management, and the management of interpersonal relationships. The results of this study have been published in (Dwyer, 2007). Also in spring 2006 an online survey was administered to measure attitudes regarding privacy concern compared to use of social networking sites.

This was followed by an online survey conducted in August 2006 comparing members of Facebook and MySpace with regard to impression management, internet privacy concern, trust, and use of the site to develop and maintain relationships. This study found that Facebook members expressed greater trust in the site and revealed more information in their profile. Despite lower trust findings, members of MySpace were more likely to develop new relationships using the site (Dwyer, Hiltz, and Passerini, 2007). Another survey instrument has been developed to capture longitudinal attitudes regarding the use of social networking sites. This study has been administered and preliminary data analysis supports this research model.

CONCLUSION

An important contribution of this research will be the application of information systems theory to large popular sites that support social relationships. Another contribution is the development of task models for the components of online social interaction. In addition, this research will develop and test a fit construct for online social interactions, as well as the definition and measurement of performance for social networking sites. The goal of this research is to better understand the development of relationships in the online social environment.

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