

The Effects of Social and Technical Factors on User Satisfaction, Sense of Belonging and Knowledge Community Usage

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ABSTRACT

Knowledge communities allow individuals to share knowledge and collaborate with each other based on common interests. The authors apply socio-technical theory as the overarching theoretical framework to propose a research model which posits that both technical factors (system quality and information quality) and social factors (community governance and pro-sharing norms) collectively influence user satisfaction, sense of belonging, and knowledge community usage. Survey data collected from members of a computer programming knowledge community show that community governance is an important social factor which affects users' perceptions of information quality, system quality, and pro-sharing norms. These factors in turn provide a nurturing atmosphere which results in increased user satisfaction, sense of belonging, and community usage. The implications for research and practice are discussed.

Keywords: Community Governance, Information Quality, Knowledge Community, Pro-Sharing Norms, Sense of Belonging, Socio-Technical Theory, System Quality

INTRODUCTION

Knowledge management systems have been critiqued of not possessing all of the knowledge required within an organization's boundaries (Anand, Glick, & Manz, 2002). Increasingly,

individuals are benefiting from connections beyond their workplace for knowledge acquisition and exchange. The proliferation of computer-mediated communication has enabled individuals to overcome geographical and organizational barriers to conduct open discussions and collaborate with one another (Butler, 2001; Ridings & Gefen, 2004). Prior research has

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shown that online knowledge exchange helps create new knowledge (e.g., Wasko & Faraj, 2005) and knowledge sharing is essential for collaborative learning.

One of the most prevalently used tools for online learning is knowledge communities. We define a knowledge community as a Web-based community that allows individuals to learn and share knowledge based on common interests in a particular subject or knowledge domain (e.g., computer programming, accounting). Knowledge communities focus on a specific knowledge domain or subject area, whereas other types of online communities may be established for other purposes, such as socialization or e-commerce. In addition, knowledge community members engage in online collaboration and knowledge exchange anonymously through self-defined user names. Members rarely know the true identity of one another offline or associated with each other by organizational or professional ties. Knowledge communities rely exclusively on registered users as the primary source for knowledge and it is up to the users to keep the community active and updated. For example, *jtraining.com* is a knowledge community created for Java enthusiasts. It allows Java programmers of all levels to come together to learn from each other discuss the latest trends.

Recent research has recognized that successful knowledge sharing and collaborative learning endeavors require that the social aspects of knowledge creation, storage, and sharing be considered along with the technical aspects. Accordingly, knowledge communities are composed of not only technical system components, but also social components that include interactions related to knowledge exchange and the development of community culture. While there is a rich body of literature on online knowledge sharing and exchange (e.g., Phang, Kankanhalli, & Sabherwal, 2009; Wasko & Faraj, 2005), only a few studies have proposed research models that integrate both the technical and social aspects of a community (Lin, 2008; Lin & Lee, 2006). More research is needed to understand how technical and social

factors collectively cooperate with each other in a knowledge community context. Thus, we seek to answer the following research question: *how do technical and social factors collectively affect user satisfaction, sense of belonging, and knowledge community usage?* Therefore, our study focuses on the interrelationships among the social and technical factors, as well as their impact on satisfaction, sense of belonging, and usage.

In this research, we apply socio-technical theory as the overarching theoretical framework to propose a research model which posits that both technical factors (system quality and information quality) and social factors (community governance and pro-sharing norms) collectively influence user satisfaction, sense of belonging, and knowledge community usage. The remainder of the paper is organized as follows. We first introduce the theoretical background and discuss the social and technical factors used in the research model. Next, we propose the research model and present our hypotheses. We then describe the research methodology and discuss the results. We conclude with theoretical and practical implications, limitations, and suggestions for future research.

Theoretical Background

Socio-Technical Theory

Socio-Technical Theory (STT) proposes a need for fit between the technical and social subsystems of an organization, which together comprise the socio-technical system (Trist, 1981). The original STT included technology and tasks as components of the technical system, and organizational structure and people as key elements of the social system (Bostrom & Heinen, 1977). STT has been applied as a theoretical framework for virtual community design (Ponti, 2010) because it is widely recognized that online communities contain both technical and social components (He & Wei, 2009; Lin, 2008). Both usability (technical factors) and sociability (social factors) have

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