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Fostering the determinants of knowledge sharing in professional virtual communities

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ABSTRACT

Professional virtual communities (PVCs), which are formed on the Internet, are expected to serve the needs of members for communication, information, and knowledge sharing. The executives of organizations should consider PVCs as a new innovation or knowledge pool since members share knowledge. However, many PVCs have failed due to members' low willingness to share knowledge with other members. Thus, there is a need to understand and foster the determinants of members' knowledge sharing behavior in PVCs. This study develops an integrated model designed to investigate and explain the relationships between contextual factors, personal perceptions of knowledge sharing, knowledge sharing behavior, and community loyalty. Empirical data was collected from three PVCs and tested using structural equation modeling (SEM) to verify the fit of the hypothetical model. The results show that trust significantly influences knowledge sharing self-efficacy, perceived relative advantage and perceived compatibility, which in turn positively affect knowledge sharing behavior. Furthermore, the study finds that the norm of reciprocity does not significantly affect knowledge sharing behavior. The results of the study can be used to identify the motivation underlying individuals' knowledge sharing behavior in PVCs. By investigating the impacts of contextual factors and personal perceptions on knowledge sharing behavior, the integrated model better explains behavior than other proposed models. This study might help executives of virtual communities and organizations to manage and promote these determinants of knowledge sharing to stimulate members' willingness to share knowledge and enhance their virtual community loyalty. As only little empirical research has been conducted on the impact of knowledge sharing self-efficacy, perceived relative advantage, and perceived compatibility on the individual's knowledge sharing behavior in PVCs, the empirical evidence reported here makes a valuable contribution in this highly important area.

1. Introduction

The internet has led to a proliferation of virtual communities (VCs) all over the world (Fernback, 1999; Hiltz & Wellman, 1997). Exchanging information and knowledge inside VCs has dramatically changed our lives. To be successful in today's competitive workplace, more and more individuals proactively take part in different kinds of VC, especially in professional VCs (PVCs) for knowledge workers that enable them to seek, collect, or even contribute knowledge to improve their capabilities, to absorb advanced insights, and to resolve problems at work. Many organizations have also recognized PVCs as valuable systems for knowledge management and have begun to support the development and growth of PVCs to meet their business needs and objectives (Gongla & Rizzuto, 2001). The executives of organizations should consider PVCs as a new innovation or knowledge pool since members share knowledge (Nambisan & Sawhney, 2007).

Over the past decade, a number of researchers have suggested that VCs (Preece, 2000; Rothaermel & Sugiyama, 2001) and knowledge sharing behaviors are influential to knowledge management success (Chowdhury, 2005; Kankanhalli, Tan, & Wei, 2005; Wasko & Faraj, 2005; Williams, 2001). This importance has led to the investigation of knowledge sharing in VCs by some scholars in an effort to determine what factors are significant to knowledge sharing and knowledge management success (Chiu, Hsu, & Wang, 2006; Hsu, Ju, Yen, & Chang, 2007; Koh & Kim, 2004; Wasko & Faraj, 2005). Most previous studies have focused on either contextual factors and knowledge sharing (Bock & Kim, 2002; Bock, Zmud, Kim, & Lee, 2005; Kankanhalli et al., 2005; Purvis, Sambamurthy, & Zmud, 2001; Wasko & Faraj, 2005) or on personal factors and knowledge sharing (Bock & Kim, 2002; Chiu et al., 2006; Hsu et al., 2007; Kankanhalli

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et al., 2005; Wasko & Faraj, 2005). In this study, we propose an integrated framework to develop a more comprehensive perspective of the relationships between contextual factors, personal perceptions of knowledge sharing, knowledge sharing behavior, and community loyalty, and bring it up-to-date with empirical data from three PVCs.

We investigate how the contextual factors (norm of reciprocity and trust) and personal perceptions of knowledge sharing (knowledge sharing self-efficacy, perceived relative advantage, and perceived compatibility) can influence PVC members' willingness to share knowledge with other members and their loyalty to their communities. To get a better understanding of knowledge sharing in PVCs, we examine the relationships between the following four pairs of concepts:

- Contextual factors and knowledge sharing behavior.
- Contextual factors and personal perceptions of knowledge sharing.
- Personal perceptions of knowledge sharing and knowledge sharing behavior.
- Knowledge sharing behavior and community loyalty.

We performed an on-line survey in three PVCs in Taiwan. The empirical data used in the study comprises 350 members, including IS (information science) engineers, programmers, managers, researchers, teachers, students, and other knowledge workers. The research model and hypothesized relationships are empirically tested using the structural equation modeling (SEM) approach, supported by LISREL 8.7 software.

Knowledge-based VCs or organizations need to increase the quality and quantity of new knowledge more rapidly to satisfy the expanding requirements of members. This research has been pursued to assist executives of VCs or organizations to solve some of the difficulties that occur in knowledge management (KM). A universally accepted definition of KM does not yet exist. Many definitions of KM have been proposed in the literature (Nonaka, 1991; Petrash, 1996; Wiig, 1997). Our comprehensive definition of KM is based on Corso, Martini, Paolucci, and Pellegrini (2003). KM in this context is the combination of management systems, organizational mechanisms, information, and communication technologies through which an organization fosters and focuses individual and group behaviors in terms of assimilation and generation, transfer and sharing, capitalization and reuse of knowledge, in tacit or explicit form, that is useful to the organization.

Even with the existence of information systems, knowledge sharing is a difficult challenge for organizations (Argote, Ingram, Levin, & Moreland, 2000; Bakker, Leenders, Garray, Kratzer, & Van Engelen, 2006; Szulanski, 1996). Researchers have noted that knowledge management often fails in fostering knowledge sharing efforts due to its neglect of the willingness of knowledge sharing and the knowledge required for successful knowledge sharing; the omission of important enhancing activities from their knowledge sharing mechanisms; and their often ineffective and inefficient performance of knowledge sharing tasks (Kankanhalli et al., 2005; Pfeffer & Sutton, 1999). In addition to these difficulties, the investigation of knowledge sharing relationships with "personal perceptions of knowledge sharing" such as knowledge sharing self-efficacy, perceived relative advantage, and perceived compatibility have not been closely scrutinized to ascertain members' involvement with and contribution to knowledge sharing in VCs. The influence of contextual factors and personal perceptions of knowledge sharing on knowledge sharing behavior and community loyalty is a critical area on which very few studies have been performed. We attempt to illuminate some of KM areas.

2. Theoretical background

2.1. Knowledge sharing and influencing factors

Knowledge sharing is the behavior of an individual dispersing his or her obtained knowledge and information to other colleagues within an organization (Ryu, Ho, & Han, 2003). Knowledge sharing involves a process of communication whereby two or more parties are involved in the transfer of knowledge. Hence, knowledge sharing is defined as a process of communication between two or more participants involving the provision and acquisition of knowledge (Usoro, Sharratt, Tsui, & Shekhar, 2007). Recently, researchers have highlighted the various factors that affect an individual's willingness to share knowledge, such as information and communication technologies, costs and benefits, incentive systems, extrinsic and intrinsic motivation, social capital, social and personal cognition, organization climate, and management championship (Alavi & Leidner 1999; Bock & Kim, 2002; Bock et al., 2005; Chiu et al., 2006; Hsu et al., 2007; Kankanhalli et al., 2005; Koh & Kim, 2004; Orlikowski 1996; Purvis et al., 2001; Wasko & Faraj, 2005). Therefore, we could presume that individuals' behavior for knowledge sharing is affected by the contextual factors and personal perceptions of the knowledge sharing in which they partake in. Social cognitive theory (SCT) (Bandura, 1982, 1986, 1997) is a widely accepted model for validating individual behavior (Compeau & Higgins, 1995). To investigate the knowledge sharing behavior in PVCs, we use SCT to conceptualize a research model for this study. In the SCT model, contextual factors, personal factors, and behavior act as interacting relationships (Wood & Bandura, 1989). This study focuses on the role of contextual factors and personal perceptions on individual behavior.

The norm of reciprocity and trust are treated as two major contextual factors influencing personal perceptions and a member's behavior. Knowledge sharing self-efficacy, perceived relative advantage, and compatibility are seen as predictors of personal factors since they are all considered as the main influences shaping users' behavior (Bandura, 1982, 1986, 1997; Igbaria & Iivari, 1995; Rogers, 2003; Sia, Teo, Tan, & Wei, 2004; Verhoef & Langerak, 2001).

2.2. Contextual factors

According to Davenport and Prusak's (1998) idea of a knowledge market, the norm of reciprocity and trust are two of the most significant factors that drive knowledge sharing. Prior research indicates that knowledge sharing in electronic networks is facilitated by a strong sense of reciprocity – favors given and received – along with a strong sense of fairness (Wasko & Faraj, 2000). Even though exchanges in electronic networks occur through weak ties between strangers, there is evidence of reciprocal supportiveness (Wellman & Gulia, 1999). The norm of reciprocity usually refers to a set of socially accepted rules regarding a transaction in which a party extending a resource to another party obligates the latter to return the favor (Wu et al., 2006), and has been highlighted as a benefit for individuals to engage in social exchange (Blau, 1964). A basic norm of reciprocity is a sense of mutual indebtedness, so that individuals usually reciprocate the benefits they receive from others, ensuring ongoing supportive exchanges (Shumaker & Brownell, 1984). Different from altruism, the norm of reciprocity represents a pattern of behavior where people respond to friendly or hostile actions with similar actions (Fehr & Gachter, 2000). This implies actions that are contingent on rewarding reactions from others and that cease when these expected reactions are not forthcoming (Blau, 1964). The norm of reciprocity can serve as a motivational mechanism for people to contribute to discretionary databases (Connolly & Thorn, 1990). Wasko and Faraj