INTRODUCTION AND BACKGROUND

One of the emerging themes in recent organization theory and strategic management research has been the central role that knowledge plays in organizational performance. Grant (2001), for example, looks at the advantages of a knowledge-based perspective in organization theory, focusing on knowledge as the critical resource in the production of goods and services. Similarly, Teece (2001) notes an “increasing recognition that the competitive advantage of firms depends on their ability to create, transfer, utilize and protect difficult to imitate knowledge assets” (p. 125). Nonaka, Toyama, and Konno (2001) claim that continuously creating knowledge is the reason for a firm’s existence, noting widespread acceptance of the view that the ability to create and utilize knowledge is the most important source of a firm’s sustainable competitive advantage. More recently, Simsek (2003), taking a knowledge-based view of the firm, has argued that firms with superior knowledge systems are better able to identify, take advantage of, and create information asymmetries in their competitive environments. Simsek’s study found that knowledge-based capabilities were associated with more entrepreneurial activity, which was in turn related to higher levels of firm performance.

Interest in how knowledge affects organizational performance has also turned to a consideration of the role communities of practice play in increasing the knowledge-based capabilities of organizations. Brown and Duguid (2001), exploring contradictions associated with the tendency for knowledge to leak across organizational boundaries, focus on practice as the key to understanding the communities that connect professionals in their shared development of knowledge. They note:

...what individuals learn always and inevitably reflects the social context in which they learn it and in which they put it into practice. When learning a job is at issue, this context usually includes the firm as a whole, immediate colleagues, and the relevant discipline or profession (as well as idiosyncratic external social forces bearing on each individual). (p. 200)

It is in this social context that communal practice develops with those who are involved in the common pursuit of a profession or endeavor developing new knowledge and insights that are then shared among the members of the community. Regarding the organization as a “community of communities of practice”, Brown and Duguid (1991, 2001, p. 203) suggest that it is in communities of practice that much of an organization’s knowledge creation takes place. An organization’s knowledge base extends beyond its boundaries, drawing on the knowledge of the communities of practice in which its members are involved. Brown and Duguid see the innovative capacity of an organization arising from its ability to coordinate the development and sharing of knowledge as its various communities of practice cooperate in carrying out value chain activities.

The learning required to become an experienced practitioner is not passive; it requires active participation in the community of practice in which the work is embedded (Argote, McEvily & Reagans, 2003). The success of these communities is largely determined by the willingness of its members to actively participate in knowledge generation and sharing (Ardichvili, Page & Wentling, 2003). Recent studies have focused on identifying conditions that either encourage or inhibit the knowledge creation
and sharing activities that lie at the heart of a community of practice (e.g., Ardichvili et al., 2003; Argote et al., 2003; Bieber et al., 2002; Griffith, Sawyer & Neale, 2003; Kling & Courtright, 2003; Lee & Choi, 2003; Schlager & Fusco, 2003; Schwen & Hara, 2003). Among the factors commonly cited are organizational culture, norms, rewards, incentives, and technological support.

The purpose of this study was to examine the extent to which professionals engage in knowledge creation and sharing activities and to see whether supportive norms and access to information technology are associated with higher levels of activity. This was done by developing and testing a model relating the extent to which knowledge creation and sharing activities are performed in organizational settings, the extent to which these activities are supported by information technology, and the existence of norms that encourage information technology use. The study was designed to apply to a variety of organizational settings, including for-profit and non-profit organizations.

**ORGANIZATIONAL CONDITIONS INFLUENCING KNOWLEDGE CREATION AND SHARING**

Technological, cultural, and structural infrastructures have been identified as significant contextual elements that characterize and influence the environment in which knowledge management processes are embedded (Gold, Malhotra & Segars, 2001; Grover & Davenport, 2001). Each of these elements is expected to have an effect on the extent to which knowledge creation and sharing activities are carried out within the organization. These are very similar to the organizational factors identified in Leavitt’s (1965) model of organizational change, which has been used in several studies of system development success and risk (e.g., Heeks, 2002; Lyytinen, Mathiassen & Ropponen, 1998; Van Offenbeek & Koopman, 1996). Leavitt identifies four factors that must be aligned to bring about change: technology, people, structure, and task. In Leavitt’s model, the people factor focuses on attitudes and motivations that encourage the people in the organization to embrace a proposed change. These attitudes would include cultural factors like norms. The infrastructures identified by Gold et al. (2001) fit under three of Leavitt’s factors: technology, people, and structure. As noted in Lyytinen et al. (1988), Leavitt’s model proposes that these factors are interrelated and must be reasonably congruent in order for the organization to function well. Part of the challenge of introducing organizational change is to identify a pattern of organizational factors that is congruent with the proposed change and then develop a transition plan that will minimize the risks associated with its implementation.

Technological infrastructure includes access to a comprehensive information and communication system that supports knowledge management activities (Gold et al., 2001). Teece (2001) notes that a “combination of IT and co-aligned organizational processes can significantly enhance learning and competitive advantage” (p. 130). Access to relevant information technology and higher levels of technology use would be expected to contribute to a higher level of knowledge management activity within the organization. Markus (2001) notes that knowledge reuse depends in part on the availability of information technology and repositories of knowledge. Wenger and Snyder (2000) see information technology as a vital part of the infrastructure that enables organizations to cultivate communities of practice. Studies of efforts to foster their development have found that the most effective approach has been to use information technology as a tool to strengthen and support already existing communities formed using traditional means of interaction (Kling & Courtright, 2003; Schlager & Fusco, 2003; Schwen & Hara, 2003). The development of virtual communities of practice—whether purely virtual or hybrids that have both traditional and virtual components—relies on information technology as an essential enabler (Bieber et al., 2002; Griffith et al., 2003; Lee & Choi, 2003).

Cultural infrastructure, which includes corporate vision and values, is also expected to have a significant effect on knowledge management activity (Gold et al., 2001). Norms promoting knowledge creation and sharing, including norms of reciprocity, are expected to affect the extent of knowledge creation and transfer (Alavi & Leidner, 2001; Argote et al., 2003; Markus, 2001) and to contribute to the development of vibrant communities of practice (Ardichvili et al., 2003). Active participation in virtual commu-
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