

# Knowledge Transfer and Team Performance in Distributed Organizations

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## ABSTRACT

*The strategic significance of knowledge transfer to leverage team performance in geographically distributed organizations has been extensively studied. However, there is a dearth of scholarship about the interlacing dependencies between knowledge transfer, virtual collaboration, e-collaboration technologies and virtual team performance. This study explores the impact of virtual collaboration and e-collaboration technologies, mediated by knowledge transfer, on team performance in virtual environments. The authors report on the findings of multiple regressions and path analysis carried out on data collected from 219 key informants. The study found that virtual collaboration, e-collaboration technologies, and knowledge transfer differentially affect team performance. The authors propose a holistic framework which aligns virtual collaborative systems with business goals to advance the design and conceptualization of knowledge-based virtual teams.*

*Keywords:* Distributed Organizations, Knowledge Transfer, Social Impact Theory, Team Performance, Virtual Collaboration, Virtual Teams

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## INTRODUCTION

Given the complex nature of knowledge (Alavi & Leidner, 2001; Grant, 1996) and the temporal and spatial dispersion of team members in virtual teams (Cramton, 2001), it is clear that transferring knowledge electronically across a geographically dispersed work force may pose a number of challenges (Davenport & Prusak, 2000). Research has highlighted obstacles associated with knowledge transfer in virtual communication. Levina and Vaast (2008)

identified five major challenges: differences in national culture, differences in competencies, differences in economic resources, differences in interpersonal connections, and social differences. It has been suggested that asymmetry and incompleteness are two other shortcomings related to the process of knowledge exchange (Lin, Geng, & Whinston, 2005). *Asymmetry* refers to a structure wherein the sender has an information advantage over the receiver in the proposed sender–receiver framework. *Incompleteness* refers to a structure wherein neither

DOI: 10.4018/ijkbo.2015040104

party has complete information about the other participant and the knowledge transfer process. The two structures—information asymmetry and symmetric incomplete information—may negatively affect knowledge transfer. Lin et al. (2005) proposed a dyadic theoretical framework based on the symmetric complete information structure for optimizing knowledge transfer between a knowledge sender and a knowledge receiver.

Another factor that may affect the transferability of knowledge is the effectiveness of virtual collaboration technologies. Leonardi and Bailey (2008) outlined the problems associated with two commonly used technologies—communication technologies and storage technologies—in virtual teams. They pointed out that communication technologies do not sufficiently convey contextual cues and subsequently hamper interaction between geographically separated individuals. Storage technologies are said to decontextualize knowledge that is communicated asynchronously. The authors advocated for the use of transformational technologies in virtual teams capable of contextualizing knowledge. Another technical barrier is technical readiness, regarding both the management and the implementation of knowledge management systems (Paulin & Suneson, 2012).

In addition to technological support, the process of knowledge transfer requires several other elements to be effective. Studies suggest that successful knowledge transfer depends on a host of factors, including mutual learning, an adaptive process (Argote & Darr, 2001), ease of communication, positive source unit–recipient unit link (Szulanski, 1996), and an organizational culture that fosters knowledge creation and sharing (Bandyopadhyay & Pathak, 2007; Senge, 1990). These factors contribute to the effectiveness of the knowledge transfer process.

To allow physically and temporally distributed groups of workers to share knowledge efficiently, companies have been resorting to novel organizational strategies. One such strategy is virtual collaboration (Blaskovich, 2008). Virtual collaboration has emerged as

one of the most viable alternatives to face-to-face interactions in recent years (Griffith, Sawyer, & Neale, 2003; Nicholson, Sarker, Sarker, & Valacich, 2007). It is believed to be a vital tool for knowledge dissemination and team performance enhancement (Griffith et al., 2003; Powell et al., 2004). However, virtual collaboration needs an efficient IT infrastructure support to enhance virtual team performance.

While IT support of virtual collaboration in geographic dispersion contexts has been studied extensively (Jarvenpaa & Leidner, 1999; Powell et al., 2004; Schiller & Mandviwalla, 2007; Yu, Lang, & Kumar, 2009), there is a dearth of systematic investigation of the relationship between virtual collaboration, collaboration technologies, knowledge management, and team performance in distributed organizations (Levina & Vaast, 2008; Tanriverdi, 2005). Through this study, the researchers explored the influence of virtual collaboration and collaboration technologies on intraorganizational knowledge transfer processes and their collective contribution to team performance in distributed organizations.

## Statement of the Problem

As organizations have increasingly become geographically distributed (Kanawattanachai & Yoo, 2002; Wainfan & Davis, 2004), there has been increased reliance on virtual tools over face-to-face interaction (B. S. Bell & Kozlowski, 2002). One noted advantage that virtual teams offer is the diversity of demographics, work-related experiences, and cultural values of team members. Martins, Gilson, and Maynard (2004) outlined two benefits of diversity in virtual organizing: reduced stereotyping and increased minority participation, since the use of some asynchronous technologies deemphasize visual demographic characteristics. Research shows there are various types of diversity in virtual teams: (a) demographic diversity or surface-level diversity, based on demographic differences such as age, sex, or racial composition (D. A. Harrison, Price, & Bell, 1998; Jehn, Northcraft, & Neale, 1999); (b) deep-level

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