Emerald Insight

European Journal of Training and Development
Revisiting knowledge sharing from the organizational change perspective
Sunyoung Park Eun-Jee Kim

Article information:

To cite this document:
Sunyoung Park Eun-Jee Kim , (2015),"Revisiting knowledge sharing from the organizational change perspective", European Journal of Training and Development, Vol. 39 Iss 9 pp. 769 - 797
Permanent link to this document:
http://dx.doi.org/10.1108/EJTD-06-2015-0042

Downloaded on: 07 November 2016, At: 02:38 (PT)
References: this document contains references to 191 other documents.
To copy this document: permissions@emeraldinsight.com
The fulltext of this document has been downloaded 656 times since 2015*

Users who downloaded this article also downloaded:

(2015),"Integrating the organizational change literature: a model for successful change", Journal of Organizational Change Management, Vol. 28 Iss 2 pp. 234-262 http://dx.doi.org/10.1108/ JOCM-11-2013-0215

(2015),"The role of organizational culture in the knowledge management process", Journal of Knowledge Management, Vol. 19 Iss 3 pp. 433-455 http://dx.doi.org/10.1108/JKM-08-2014-0353

Access to this document was granted through an Emerald subscription provided by emerald-srm:563821 []

For Authors

If you would like to write for this, or any other Emerald publication, then please use our Emerald for Authors service information about how to choose which publication to write for and submission guidelines are available for all. Please visit www.emeraldinsight.com/authors for more information.

About Emerald www.emeraldinsight.com

Emerald is a global publisher linking research and practice to the benefit of society. The company manages a portfolio of more than 290 journals and over 2,350 books and book series volumes, as well as providing an extensive range of online products and additional customer resources and services.

Emerald is both COUNTER 4 and TRANSFER compliant. The organization is a partner of the Committee on Publication Ethics (COPE) and also works with Portico and the LOCKSS initiative for digital archive preservation.

*Related content and download information correct at time of download.

Revisiting knowledge sharing from the organizational change perspective

Sunyoung Park

Louisiana State University, Baton Rouge, Louisiana, USA, and

Eun-Jee Kim

Korea Advanced Institute of Science and Technology (KAIST), Daejeon, South Korea

Abstract

Purpose – The purpose of this study is to identify how knowledge sharing literature has discussed task, structure, technology and people as elements of organizational change and to examine the interactions between the four elements of knowledge sharing.

Design/methodology/approach – The research questions guiding the study are: How do organizational change elements influence knowledge sharing? and What are the critical elements of organizational change in relation to knowledge sharing? Based on Leavitt's (1965) organizational change model, 133 articles published between 2000 and 2012 from 13 journals were reviewed and analyzed.

Findings – The total number of articles covering task, structure, technology and people in knowledge sharing was 49, 79, 49 and 97, respectively. Of all references, 97 articles (72 per cent) discussed the important aspects of people, and 79 articles (59 per cent) emphasized the influential role of organizational structure in knowledge sharing. The highest frequency of interactions (48 articles) was the interaction between structure and people (Interaction 5).

Research limitations/implications – To capture broader phenomena on knowledge sharing in organizational change, multiple data sources and a variety of journals with a longer timeframe should be collected and a more comprehensive review should be conducted. All perspectives of organizational change were not applied to this study. Theoretically, this study attempted to illuminate how knowledge sharing has been explored through the lens of four elements in organizational change and the interactions between the elements. This study attempted to expand the use of Leavitt's (1965) model by applying interactive relationships among the elements to knowledge sharing.

Practical implications – The findings can advance strategic and managerial practice by informing the planning and development of knowledge sharing associated with change in organizations. A key question is how to identify the major component of change which will trigger the other changes in the current architecture of knowledge sharing in their organizations. This study suggests that elements of structure and people, when organization face either planned or unplanned change, are critical for successful knowledge sharing by making the interactive connections with other components of change.

Originality/value – The contributions of this study are that it provides an integrative review in selected journals of knowledge sharing in terms of organizational change. By examining how knowledge sharing studies have addressed the four change factors and multi component changes, this study explains one change in knowledge sharing leads to multi-component changes. Additional contribution is that it makes connections between knowledge sharing and organizational change.

Keywords Technology, People, Knowledge sharing, Organizational change, Structure, Task

Paper type Research paper

Change is an ongoing and never-ending process of organizational life. To achieve and maintain an organization's competitive advantage, great and small changes must continuously occur in the organization. Given that knowledge is a critical resource for organizations' innovation and competitive advantage (Grant, 1996; Kogut and Zander, 1996), scholars and practitioners have attempted to uncover the constructs related to knowledge in organizations. Particularly considering that successful knowledge sharing is an important driving force in knowledge creation (Kang *et al.*, 2010), organizations strive to understand the dynamics and mechanisms of knowledge sharing in a changing environment.

A large body of literature on knowledge sharing already exists (Grover and Davenport, 2001; Wang *et al.*, 2014). With an emphasis on the importance of knowledge sharing for sustainable competitive advantage, scholars have addressed particular aspects of changes in organizations including the role of networks and information systems (Birkinshaw *et al.*, 2002; Hansen, 2002; Powell *et al.*, 1996), the impact of task structures (Lam, 2000; Tsai, 2002) or strategic changes such as incentive systems (Osterloh and Frey, 2000; Szulanski and Jensen, 2006).

Research on organizational change has attempted to show the challenges inherent in both planned and unplanned changes, but it has not accounted systematically for how components of organizational change affect its adoption in organizations (Battilana and Casciaro, 2012), particularly with knowledge sharing. Given that all organizational changes are not equivalent, organizational change may converge with or diverge from an organizational status quo (Amis *et al.*, 2004). However, the literature on organizational change is fragmented, not systematically accounted for the institutional environment in which organizations are embedded, thus hindering an integrated view of organization change. Thus, the existing literature that provides insights into the relationship between organizational changes and knowledge sharing remains theoretically and empirically under-researched, at least compared to the number of studies concerning knowledge taxonomies and processes. In other words, the effects of organizational change on knowledge sharing have not been sufficiently explored despite the theoretical and practical importance of the effects. Therefore, by demonstrating that the components of organizational change and its dynamic relationship with knowledge sharing, the current study attempts to analyze the relationships of organizational change with knowledge sharing on the extent of organizational boundaries in the extant literature. In this study, we sought to answer the following research questions that focus on the relationship among organizational change contexts and knowledge sharing:

RQ1. How do organizational change elements influence knowledge sharing?

RQ2. What are the critical elements of organizational change in relation to knowledge sharing?

To respond to this question, an integrative literature review was conducted to compare, select, and synthesize the findings.

This study provides both theoretical and practical information about knowledge sharing and organizational change. By examining the link between elements of organizational change and knowledge sharing, organizations may facilitate the processes to varying degrees by providing interventions and strategies for organizational effectiveness. Specifically, we explored the most frequently studied

variables of organizational changes in the context of knowledge sharing: task, structure, technology and people. In this regard, the purpose of this study was to identify how knowledge sharing literature has discussed task, structure, technology and people as elements of organizational change and to examine the interactions between the elements of knowledge sharing.

Literature review
In this section, we provide the definitions of organizational change for this study, review the literature about organizational change and knowledge sharing and explain the conceptual framework based on Leavitt's (1965) organizational change model.

Organizational change
Researchers define organizational change in various ways according to their perspectives. Some definitions have focused on the features of organizational change. For example, organizational change is "an empirical observation of difference in form, quality, or state over time in an organizational entity" (Van de Ven and Poole, 1995, p. 512). Another definition states that organizational change is "more broadly focused and can apply to any kind of change, including technical and managerial innovations, organization decline, or the evolution of a system over time" (Cummings and Worley, 2005, p. 4).

Other definitions of organizational change have emphasized the components of organizations. For example, Nadler and Tushman (1989, p. 195) suggested that organizational change:

[…] may involve one or more elements of the organizational system, or it may involve a realignment of the whole system, affecting all of the key elements – strategy, work, people, and formal and informal processes and structures.

Cawsey *et al.* (2011, p. 2) viewed organizational change as:

[…] planned alterations of organizational components to improve the effectiveness of the organization. Organizational components are the organizational mission, and vision, strategy, goals, structure, processes or systems, technology, and people in an organization.

There are different models that explain organizational change: Leavitt's (1965) organizational change model; Weisbord's (1976) six-box model; Nadler and Tushman's (1977) congruence model; Tichy's (1983) technical, political and cultural (TPC) framework; and Sastry's (1997) model of punctuated organizational change. These models have emphasized critical elements and process influencing organizational change. For instance, Weisbord (1976) emphasized six components (organizational purpose, structure, rewards, helpful mechanism, relationships and leadership) to understand formal and informal aspects of organizational change. Nadler and Tushman (1977) developed a framework to explain interactions and dynamics between an organization and its external environment through inputs, strategy, transformational process, feedback and outputs. Tichy (1983) argued technical, political and cultural systems should be aligned with organizational components (mission, task, network, people and process) for effective organizational change to occur.

Considering the purpose of this study, we paid more attention to the organizational component oriented definitions. We regarded organizational change as an

organization-wide transformation influenced by components or interactions among key components of organizations which reflect the complex nature of organizational systems. In this regard, we adopted Leavitt's (1965) model as a framework for our analysis because his model embraces critical factors affecting organizational change mentioned in other models; presents the roles of tasks, structures, technology and people in organizational change in an integrative manner; and suggests that these four components need to be aligned for change to be successful, and his idea is a good match for our perspectives.

Conceptual framework
Leavitt's (1965) organizational change model was selected as a conceptual framework to understand and analyze the articles that have explored knowledge sharing in organizational change contexts. Leavitt (1965) identified four elements (task, structure, technology and people) to explain how to make organizational change more effective. Task refers to organizational services, products, mission and other works to accomplish organizational purposes, while structure includes both organizational structure (e.g. hierarchy and control) and operational structure (e.g. policy, reward and management) (Leavitt *et al.*, 1973). Technology provides the tools and means that enable employees to conduct their tasks and people refers to employees and organizational members (Leavitt *et al.*, 1973). The four elements interact and mutually work with each other (Figure 1). We added "Interactions 1-6" to the labels of Leavitt's original model to emphasize the interactive relationships between the elements. Interaction 1 refers to the interactions between task and structure, Interaction 2 refers to the interactions between task and people, and Interaction 3 refers to interactions between technology and people. Interaction 4 explains the interactions between structure and technology, Interaction 5 explains the interactions between structure and people, and Interaction 6 explains the interactions between task and technology. For example, if the technology changes in an organization, the other three components adjust to maximize the impact of the technology change (e.g. new technology adoption and innovation). Interactions 1-6 were used to explain multi-component changes influencing knowledge sharing in the findings.
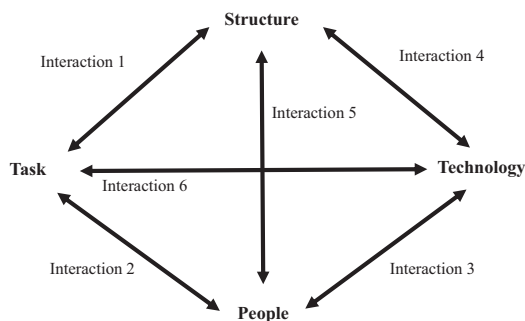

Figure 1.
Leavitt's
organizational
change model

Note: Interactions 1- 6 to the labels of Leavitt's
original model was added

Organizational change and knowledge sharing
The knowledge literature is concerned with different types of knowledge processes (e.g. using, sharing, integrating and creating knowledge) in various contexts (e.g. intra/ inter-organization, intra/inter-unit and inter-employee) (Foss *et al.*, 2009). Given the purpose of the current study, focusing on the examination of the intersection points of the knowledge sharing and organizational change literature, we limit our review, discussion and recommendations to knowledge sharing in the context of organizational change. In doing so, we analyzed how each of the classic organizational change elements relates to the concepts of knowledge sharing by building on the classic organization theory literature and more recent advances in knowledge sharing. Knowledge sharing is viewed here as the provision or receipt of task information, feedback and know-how to help others and to collaborate with others to solve problems, or develop new ideas, products or procedures (Cummings, 2004; Frank *et al.*, 2015; Hansen, 1999; Pulakos *et al.*, 2003). Knowledge sharing can occur through communications and networking with other experts, or documenting, organizing and capturing knowledge for others (Cummings, 2004; Pulakos *et al.*, 2003; Sousa *et al.*, 2015).

Based on Leavitt's (1965) model proposing that four factors of organizational change – task, structure, technology, and people – are interrelated and must be reasonably congruent for the organization to bring about change (Lyytinen *et al.*, 1988), we reviewed these elements to the extent to which knowledge sharing activities are performed in a variety of organizational change settings.

Among the four elements of the organizational change model, a task includes organizational services, products, mission and others which are supposed to be performed based on an organization's purposes, as well as its characteristics such as interdependency, complexity and significance. Other features of tasks such as size, type and ambiguity have been found to have relationships with knowledge sharing activities in organizations. For example, researchers have demonstrated a positive relationship between the characteristics of a task and the amount of information processing (Daft and Lengel, 1986; Wang and Ko, 2012). In workplaces where tasks are increasingly complex, employees need to solicit and obtain critical knowledge which helps them accomplish complicated tasks. Task complexity encourages employees and teams to share knowledge to enhance performance and accomplish goals (Wang and Ko, 2012). On the other hand, if task complexity is lower, it is likely to solicit more pro-social behaviors (Podsakoff *et al.*, 2000) such as knowledge providing. In addition, given the task of new product development, task interdependency and knowledge complexity revealed an important interacting effect on knowledge sharing in some studies (Smith *et al.*, 2005; Wang and Ko, 2012). Thus, task infrastructure, as one of the elements of organizational change, can be postulated to influence knowledge sharing.

In Leavitt's (1965) model, structure which includes organizational structure (e.g. hierarchy and centralization) and operational structure (e.g. policy, reward and management) has been noted to have a significant effect on the extent of organizational knowledge activities (Gold *et al.*, 2001; Hall, 2001; Hall and Goody, 2007). In particular, in times of organizational change such as mergers and acquisitions or intra-unit collaborations, the structural infrastructure is more likely to serve either as an enabler or disabler of knowledge sharing. For example, coordination mechanisms based on centralization and formalization are less appropriate for knowledge sharing than mechanisms that are based on decentralization and low formalization (Chen and Huang,

2007). Because these types of coordination formally determine which and how much information and knowledge should be exchanged (Egelhoff, 1991; Nidumolu, 1996), both, in general, are considered to be negatively related to knowledge sharing.

Researchers have shown that knowledge sharing may be facilitated by having a less centralized organizational structure (Kim and Lee, 2006), creating a work environment that encourages interaction among employees such as through the use of open workspaces (Jones, 2005) and the use of fluid job descriptions and job rotation (Kubo *et al.*, 2001). However, a recent study reported that expected relationships such as the negative effects of centralization or the positive effects of lower formalization and their impact on inter-unit knowledge sharing were not found (Willem and Buelens, 2009). The mixed results of the structural impacts on knowledge sharing imply that the organization-specific context in which the coordination is applied influences the potential of this coordination for knowledge sharing. In addition, knowledge sharing occurs in a dynamic context where other organizational factors and elements interactively influence one another.

A technology includes access to comprehensive information and a communication system that supports knowledge activities (Gold *et al.*, 2001). Teece (2001, p. 130) notes that a "combination of IT and co-aligned organizational processes can significantly enhance learning and competitive advantage". Access to relevant information technology and higher levels of technology use would be expected to contribute to a higher level of knowledge activity within the organization. Markus (2001) also notes that knowledge reuse depends, in part, on the availability of information technology and repositories of knowledge. Although generally taken for granted that information systems play a role as a vital part of the infrastructure that enables organizations to cultivate knowledge activities (Kankanhalli *et al.*, 2005; Massey *et al.*, 2002), more recent studies suggest that this is often not the case (Huysman and Wulf, 2006; Wasko and Faraj, 2005).

Among the four elements of the organizational change model, the people component can be divided into individual and group levels including personality, motivation, trust and subjective norms. Among them, trust has been noted as a necessary ingredient in active knowledge sharing and creation, particularly in times of organizational change (Argote *et al.*, 2003; Lee and Choi, 2003; Levin *et al.*, 2002; Szulanski *et al.*, 2004). Other elements reported in the literature include subjective norms and social capital among a group of people in multinational companies (Tortoriello *et al.*, 2012; Widén-Wulff and Ginman, 2004).

Although these contextual elements represent distinct constructs, they are not assumed to be orthogonal. Consistent with Leavitt's (1965) model, interactions among the elements are expected. For example, norms encouraging technology use would be expected to have a positive effect on technology use for knowledge activities (Kelly and Green, 1998; Venkatesh and Morris, 2000), which, in turn, could result in higher levels of knowledge sharing activity. Development of an organizational culture that encourages knowledge management activity might, for example, lead to increased access to information technologies that support those activities. Similarly, investment in information technologies that support knowledge management might be accompanied by concerted efforts to develop an organizational culture and organizational structures that would encourage its use.

Methods

We conducted a narrative review of the literature rather than a meta-analysis because:

- the wide variety of disciplines contribute to knowledge sharing research;
- our purpose is not to correct error and bias in research finding by using a meta-analysis; and
- a narrative review is useful for comparing, contrasting and categorizing the findings of articles than meta-analysis.

To gain a systematic understanding of which organizational change components have been the focus of attention in the knowledge sharing literature, we included articles in the review that had been published in 13 top-tier academically refereed journals in management, organizational behavior, information systems and human resource development (HRD).

To select appropriate journals in the fields of management and organizational behavior, we considered the journal lists that were compiled and consistently utilized and cited in subsequent reviews (Baruch and Holtom, 2008; Foss *et al.*, 2010; Podsakoff *et al.*, 2002; Werner, 2002). Based on these lists, we selected the following journals: *Academy of Management Journal*, *Academy of Management Review*, *Journal of Management*, *Journal of Information Technology, Journal of Information Science, MIS Quarterly, Organization Science*, *Organizational Behavior and Human Decision Processes* and *Strategic Management Journal*.

For information systems, we selected *Expert Systems with Application* and *Information Systems Journal* which address knowledge sharing from the system and technological perspectives. In addition, we included two academic journals with a strong focus on HRD research and practice in relation to organizational change: *Advances in Developing Human Resources* and *Human Resource Development International*. These two journals, among representative HRD four journals, are frequently mentioned in research on HRD trends (Ghosh *et al.*, 2014; Jeung *et al.*, 2011; Jo *et al.*, 2009; Sun and Wang, 2013). The other two journals, *Human Resource Development Quarterly* and *Human Resource Development Review*, were reviewed, but a search against key terms did not result in any articles published in the considered period.

We considered articles published between 2000 and 2012 that included the keywords "knowledge sharing", "knowledge exchange" and "knowledge transfer". These terms are often used interchangeably. Sometimes authors refer to "knowledge transfer" while including "knowledge sharing" and/or "knowledge exchange" in their discussion (Levin and Cross, 2004) or treat "knowledge transfer" as the ultimate outcome of the "knowledge sharing" process (Reagans and McEvily, 2003; Tsai, 2002). Considering the scope of the study, we limited our review and only included articles that explicitly addressed the elements and contexts of organizational change. Our search resulted in 133 articles. Researchers independently reviewed the 133 articles in relation to the elements and interactions of organizational change (Figure 1). In other words, the focus was on whether the articles considered organizational change elements, conditions of knowledge sharing and knowledge sharing outcomes, as well as the four interactive links between these constructs. The framework we adopted, Leavitt's (1965) model of organizational change, proposed that the four factors, task, structure, technology and people, are interrelated and must be aligned to bring about change. We determined what

primary component of organizational change that the article was focusing on and also examined the interactive relationships among the four elements of organizational change in each article. Through the coding process, inter-coder agreements remained in the 80-85 per cent range. To ensure our claim, raters cross-checked each result, and, when there was disagreement between the raters, the raters discussed the issues until consensus was reached.

Findings

Based on the data collected from 133 articles in peer-reviewed journals, we mapped the literature summarized in Table I to identify to what extent each article examined knowledge sharing in the context of organizational change and whether four factors (task, structure, technology and people) in Leavitt's (1965) model influence knowledge sharing. Table I summarizes information about each factor and the interactions between the factors. Among the 133 articles, the articles addressing task, structure, technology and people in relation to knowledge sharing were 49, 79, 49 and 97, respectively.

Task

Of the 133 articles, 49 articles (37 per cent) named task as an influential factor for knowledge sharing. Task was found to be the most frequently covered topic in the articles from the *Strategic Management Journal* (81 per cent, 18 out of 22 articles). The *Strategic Management Journal* seeks to publish research that is relevant to strategic management with a diverse mix of topics, framing and methods. Of the characteristics of task in organizational change, the significance and interdependency of tasks were emphasized when doing complicated tasks. For example, several articles noted that knowledge sharing is critical to accomplish a specific important task (e.g. new product development and plan development activity) (Dyer and Nobeoka, 2000; Schulze and Hoegl, 2006; Smith *et al.*, 2005; Wang and Ko, 2012). Task complexity and task interdependency (Staples and Webster, 2008; Wang and Ko, 2012) were also found to be significant to facilitate knowledge sharing. For example, tasks in R&D are complicated and interdependent among units or teams, making people more active in knowledge sharing for final outcomes such as resource acquisition and new product development. Thus, different types, levels and task features appear to play a pivotal role in knowledge sharing activities in organizations.

Structure

Of the 133 articles, 79 articles (59 per cent) discussed structure in knowledge sharing as part of organizational structure, policy and management. In the literature, structural components for enhancing knowledge sharing included organizational structure characteristics (Argyres and Silverman, 2004; Birkinshaw *et al.*, 2002; Lin, 2008a), organizational culture and climate (Bennett, 2009; Hall and Goody, 2007; Lin, 2008b; Smith *et al.*, 2005; Tsai and Cheng, 2010), compensation (Fey and Furu, 2008), management strategy (Blankenship and Ruona, 2009) and knowledge sharing channels (Almeida *et al.*, 2002; Owen-Smith and Powell, 2004). For instance, a high level of complexity and formalization of an organizational structure, centralized decision-making process and unclear procedure of sharing were found to be barriers to active knowledge sharing (Ardichivili, 2009; Lin, 2008a, 2008b).

	Task (T)	Structure (S)	Technology (Te)	People (P)	T-S (1)	T-P (2)	Te-P (3)	S-Te (4)	S-P (5)	T-Te (6)
Academy of Management Journal										
Heracleous and Barrett (2001)		×	×					×		
Lovelace *et al.* (2001)		×								
Malnight (2001)		×	×					×		
Sparrowe *et al.* (2001)		×	×					×		
Tasi (2001)			×	×				×		
Hansen *et al.* (2005)			×	×				×		
Smith *et al.* (2005)	×	×	×	×	×	×	×	×	×	×
Collins and Smith (2006)		×		×					×	
Srivastava *et al.* (2006)				×						
Reinholt *et al.* (2011)			×	×				×		
Sub total	1	6	7	6	1	1	4	4	2	1
Academy of Management Review										
McEvily *et al.* (2000)				×						
Tallman *et al.* (2004)		×								
Inkpen and Tsang (2005)				×						
Nebus (2006)				×						
Turner and Makhija (2006)	×	×			×					
Sub Total	1	2	0	3	1	0	0	0	0	0
Advances in Developing Human Resources										
Ardichvili (2002)	×		×							×
Hernandez (2003)	×	×		×	×	×			×	
Ardichvili, 2008			×	×			×			
Ahn (2009)		×	×					×		
Akdere (2009)	×	×		×	×	×			×	
Ardichvili (2009)	×	×		×	×	×			×	
Bennett (2009)		×	×	×			×	×	×	
Blankenship and Ruona (2009)		×		×					×	
Conley and Zheng (2009)		×	×	×			×	×	×	
Hung *et al.* (2009)		×		×					×	
Kongpichayanond (2009)	×	×			×					
Sub Total	5	9	5	8	4	3	3	3	7	1
Expert Systems with Application										
Ryu *et al.* (2003)				×						
Du *et al.* (2007)	×	×		×	×	×			×	
Hsu (2008)		×		×					×	
Law and Ngai (2008)	×	×		×	×	×			×	
Lin (2008a)		×		×					×	
Lin (2008b)		×		×					×	
Mansingh *et al.* (2009)		×	×	×			×	×	×	
Ting *et al.* (2010)	×		×	×		×	×			×
Tsai and Cheng (2010)		×		×					×	
Hong *et al.* (2011)		×	×	×			×	×	×	
Jeon *et al.* (2011)		×		×					×	

Table I.
Articles on the elements of organizational change in 13 journals, 2000-2012

	Task (T)	Structure (S)	Technology (Te)	People (P)	T-S (1)	T-P (2)	Te-P (3)	S-Te (4)	S-P (5)	T-Te (6)
Lai *et al.* (2012)	×			×		×				
Tseng and Huang (2011)	×		×							×
Mearns (2012)		×	×	×			×	×	×	
Wang and Wang (2012)	×	×		×	×	×			×	
Sub total	6	11	5	14	3	5	4	3	11	2
Human Resource Development International										
Kubo (2001)		×								
Shelton (2001)		×								
Clark (2002)		×		×					×	
Iles and Yolles (2002)	×		×							×
Pedler (2002)	×	×		×	×	×			×	
Iles (2003)		×								
Keursten and van der Klink (2003)				×						
Tillema (2005)		×		×					×	
Liu *et al.* (2006)		×								
Tillema (2006)	×	×		×	×	×			×	
Johnson *et al.* (2007)	×		×	×		×	×			×
Wiessner (2008)				×						
Sub total	4	8	2	7	2	3	1	0	4	2
Information Systems Journal										
Braganza *et al.* (2009)			×							
Yoo *et al.* (2007)		×	×	×			×	×		
Bélanger and Allport (2008)			×	×				×		
Staples and Webster (2008)	×			×		×				
Mueller *et al.* (2011)			×	×						
Sub total	1	1	4	4	0	1	2	1	0	0
Journal of Information Science										
Mei *et al.* (2004)				×						
Widen-Wulff and Ginman (2004)				×						
Willem *et al.* (2006)		×		×					×	
Hall and Goody (2007)		×	×	×				×		
Liao *et al.* (2007)				×				×	×	
Lin (2007)		×		×					×	
Choi *et al.* (2008)			×	×				×		
Lin *et al.* (2009)		×	×	×				×	×	
Suh and Shin (2010)				×						
Wang and Ko (2012)	×	×	×	×	×	×			×	×
Sub total	1	5	4	8	1	1	2	4	4	1
Journal of Information Technology										
Hislop (2002)			×							
Breu and Hemingway (2004)				×						
Huysman and Wulf (2006)			×	×			×			

Table I.

(*continued*)

	Task (T)	Structure (S)	Technology (Te)	People (P)	T-S (1)	T-P (2)	Te-P (3)	S-Te (4)	S-P (5)	T-Te (6)
Whelan (2007)		×	×					×		
Sub total	0	1	3	2	0	0	1	1	0	0
Journal of Management										
Fey and Birkinshaw (2005)	×	×			×					
Matusik and Heeley, 2005		×		×					×	
Schulze and Hoegl, 2006	×			×	×					
Wang *et al.* (2008)	×			×						
Wong *et al.* (2008)		×		×					×	
Yang *et al.* (2008)	×	×			×					
Zhang and Baden-Fuller (2010)	×			×		×				
Gong *et al.* (2012)				×						
Sub total	5	4	0	6	3	1	0	0	2	0
MIS Quarterly										
Majchrzak *et al.* (2000)		×	×					×		
Malhotra *et al.* (2005)		×	×	×			×	×	×	
Markus *et al.* (2002)		×	×					×		
Massey *et al.* (2002)		×	×	×			×	×	×	
Bock *et al.* (2005)				×						
Garud and Kumaraswamy (2005)		×	×	×			×	×	×	
Kankanhalli *et al.* (2005)		×	×	×			×	×	×	
Ko *et al.* (2005)			×	×			×			
Wasko and Faraj (2005)		×	×	×			×	×	×	
Choi *et al.* (2010)			×	×			×			
Sub total	0	7	9	8	0	0	7	7	5	0
Organization Science										
Osterloh and Frey (2000)				×						
Almeida *et al.* (2002)		×								
Birkinshaw *et al.* (2002)		×								
Hansen (2002)		×								
Tsai (2002)		×		×					×	
Bechky (2003)				×						
Owen-Smith and Powell (2004)		×	×					×		
Szulanski *et al.* (2004)				×						
Levine and Prietula (2012)				×						
Li *et al.* (2012)		×								
Tortoriello *et al.* (2012)				×						
Sub total	0	6	1	6	0	0	0	1	1	0
Organizational Behavior and Human Decision Processes										
Argote and Ingram (2000)	×		×	×		×	×			×
Darr and Kurtzberg (2000)	×	×		×	×	×			×	
Szulanski (2000)	×	×		×					×	
Alge *et al.* (2003)	×		×	×		×	×			×

(*continued*)

Table I.

	Task (T)	Structure (S)	Technology (Te)	People (P)	T-S (1)	T-P (2)	Te-P (3)	S-Te (4)	S-P (5)	T-Te (6)
Kane *et al.* (2005)	×			×		×				
Lewis *et al.* (2007)	×			×		×				
van Ginkel and van Knippenberg (2009)	×			×		×				
Steinel *et al.* (2010)				×						
Mesmer-Magnus *et al.* (2011)			×	×			×			
Sung and Choi (2012)	×	×		×	×	×			×	
Sub total	7	3	3	10	2	7	3	0	3	2
Strategic Management Journal										
Dyer and Nobeoka (2000)	×	×		×	×	×			×	
Gupta and Govindaraja (2000)		×		×				×		
Subramaniam and Venkatraman (2001)	×			×		×				
Yli-Renko *et al.* (2001)				×						
Tsang (2002)		×		×					×	
Uzzi and Gillespie (2002)	×	×			×					
Kotabe *et al.* (2003)	×	×		×	×	×			×	
Spencer (2003)	×	×	×		×			×	×	
Almeida and Phene (2004)	×	×	×		×			×		×
Argyres and Silverman (2004)	×	×	×		×			×		×
Feinberg and Gupta (2004)	×			×						×
Oxley and Sampson (2004)	×	×	×		×			×		×
Haas and Hansen (2005)	×			×		×				
Tanriverdi and Venkatraman (2005)	×	×		×	×	×			×	
Dyer and Hatch (2006)	×	×		×	×	×			×	
Szulanski and Jensen (2006)		×		×				×		
Haas and Hansen (2007)	×		×							×
Williams (2007)	×			×		×				
Fey and Furu (2008)	×	×			×					
Zhao and Anand (2009)	×	×		×	×	×			×	
Li *et al.* (2010)	×	×		×	×	×			×	
Zhou and Li (2012)	×	×	×		×				×	×
Sub total	18	16	6	14	13	9	0	6	9	6
Total	49	79	49	97	30	31	27	30	48	15

Notes: T (task), S (structure), Te (technology) and P (people); the numbers in parentheses mean interactions in Figure 1; for example, T-S (1) is Interaction 1 between task and structure. Te-P (3) refers to Interaction 3 between technology and people

Table I.

Technology
Of the 133 articles, 49 articles (37 per cent) covered technology as a tool for knowledge sharing in terms of how to apply specific technologies to support diverse knowledge sharing activities. For instance, knowledge management systems (Ardichvili, 2009; Mei *et al.*, 2004; Ting *et al.*, 2010) and enterprise systems (Choi *et al.*, 2010) have been used as powerful tools to create environments for knowledge sharing. In addition, diverse types

of technology have been adopted to support knowledge sharing such as group ware, Web 2.0 and Wikipedia (Bélanger and Allport, 2008; Breu and Hemingway, 2004; Majchrzak *et al.*, 2000; Mesmer-Magnus *et al.*, 2011; Tseng and Huang, 2011).

People
The people factor is the most frequently covered topic in all of the articles (72 per cent, 97 out of 133 articles). In most cases, the researchers discussed the individual and team characteristics influencing knowledge sharing. For example, motivation is an important component in enhancing knowledge sharing (Lin, 2007; Osterloh and Frey, 2000; Reinholt *et al.*, 2011; Steinel *et al.*, 2010). Leadership and trust have also been found to have a positive influence on knowledge sharing between teams (Srivastava *et al.*, 2006; Staples and Webster, 2008; Szulanski *et al.*, 2004). Collaboration, decision-making, proactivity, team creativity and ties were people factors influencing knowledge sharing (Gong *et al.*, 2012; Mearns, 2012; Sung and Choi, 2012; Tortoriello *et al.*, 2012; van Ginkel and van Knippenberg, 2009).

We explored how articles about knowledge sharing have covered key factors influencing organizational change including task, structure, technology and people. Among 133 articles, 97 articles (72 per cent) discussed the important aspects of people, and 79 articles (59 per cent) emphasized the influential role of organizational structure, policy and management in knowledge sharing. Task and technology components were emphasized in 49 articles. The people element is the most important factor influencing knowledge sharing for organizational change, followed by structure, task and technology (Figure 2). This finding indicated that people and structure elements play an important role in knowledge sharing, which implies the influence of organizational culture (related to people and organizational structures) on knowledge sharing.

Interactions
In addition to the four elements of the organizational change model (Leavitt, 1965), we also reviewed the interactive relationships among them based on identified components in given contexts from each article. As we stated, interactions in this study means multi-component changes influencing knowledge sharing. For example, if the technology changes in an organization, the other three components adjust to maximize the impact of the technology change (e.g. new technology adoption and innovation).
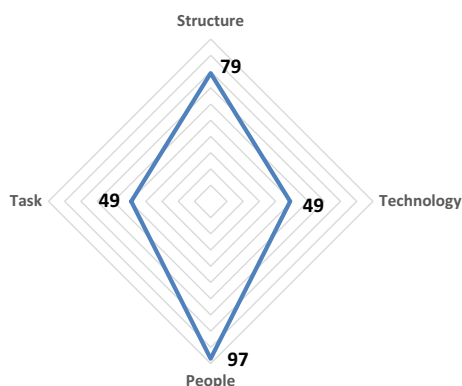

Figure 2.
Comparison of total frequency of the four components

Almost 82 per cent of the reviewed articles (110 articles) covered more than two factors, while only 18 per cent (24 articles) focused on only one factor (e.g. people or structure). As seen in Figures 1 and 3, the interactions between structure and people (Interaction 5) showed the highest frequency (48 articles) followed by interactions between task and people (Interaction 2; 31 articles), between task and structure (Interaction 1; 30 articles) and between structure and technology (Interaction 4; 30 articles). Interactions between task and technology (Interaction 6) presented the lowest frequency (15 articles) followed by interactions between technology and people (Interaction 3; 27 articles). For example, "27 articles addressed Interaction 3" means that 27 articles emphasized that both technology and people aspects are influential factors affecting knowledge and the arrow presenting technology-people relationships works in both directions for knowledge sharing (Figure 1).

As seen in Figure 3, interactions between structure and people (Interaction 5) have been emphasized in knowledge sharing throughout the years. Specifically, among 48 articles covered, Interactions 5, 17 articles published between 2009 and 2012 have a largest portion among other interactions. However, interactions between task and technology (Interaction 6) have not been discussed much, comparing other interactions in knowledge sharing for organizational change. Again, the findings confirmed the importance of people and structures in knowledge sharing and implied the role of organizational culture in knowledge sharing for organizational change.

In addition, journals in this study addressed the relationships between the four elements and knowledge sharing from their unique perspectives mostly reflecting the features of each journal. As expected, *Organizational Behavior and Human Decision Processes* discussed focused on people in knowledge sharing. *MIS Quarterly* attempted to cover both technology and people in knowledge sharing, especially in the virtual team context. However, *Expert Systems with Application* focused less on technology than we expected and paid more attention to structure and people. *Strategic Management Journal* discussed task, but there has been little discussion about task in *Organization Science* and *MIS Quarterly*.

Change context
Our analysis revealed that of the 133 articles, 83 articles (62 per cent) explicitly addressed the contexts of organizational change. Given the variety of organizational
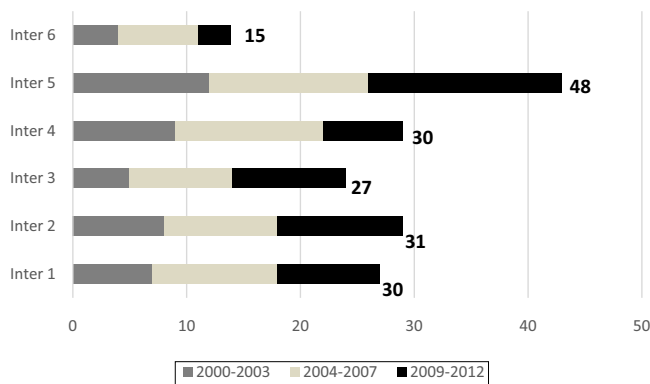

Figure 3.
Comparison of
Interactions 1-6

change, we attempted to differentiate them into several types. The types of organizational change addressed in the articles were grouped as follows:

- organizational structural change by inter organizational alliances and mergers and acquisitions;
- strategic changes for innovations;
- research and development initiatives, particularly followed by new product development; and
- new system and/or technology adoption and implementation.

Among the types of organizational change contexts in our review, technology was the most frequently covered organizational change topic in the articles (33), followed by R&D initiatives (21), inter-organizational alliances (16) and strategy innovation (13). In addition, most of the studies of new technology adoption and implementations were found to be major trends in articles published in the early 2000s, from 2000 to 2005, while most articles emphasizing strategic innovations were presented in the late 2000s. In addition, several organizational change contexts were found to have more than one change context in nature. For example, when intra-organizational alliances occurred, then other changes such as strategic changes and system changes followed accordingly.

To cope with and complete the changes in both parties, organizations implemented organizational restructuring such as re-arranging organizational units and integrating technological systems accompanied by alterations in the way work was done, communication patterns, norms of working together and problem-solving processes including knowledge sharing practices among people. (Almeida *et al.*, 2004; Li *et al.*, 2012; Oxley and Sampson, 2004).

This finding supports Nadler's (1981) assertion that major changes require not only changes in strategy and the nature of the work to be done but also alterations in structures, people, processes and others. Changes may be prompted by environmental variations, strategic shifts, the introduction of new technologies, changing employee characteristics and others. However, changes interact with other elements of organizations such as the people in them and result in diverse outcomes.

Discussion

This study attempted to increase our understanding of knowledge sharing within the context of organizational change by reviewing the extant literature based on an organizational change model including task, structure, technology and people (with a contingency approach).

First, the findings indicate that people factor is the most salient component for knowledge sharing followed by the structure factor, among other components of the organizational change model (Figure 2). For the people element, employees' proactive behaviors, relationships and networks with other people, motivation, leadership and trust play an important role in facilitating and fostering knowledge sharing (Gong *et al.*, 2012; Hansen, 2002; Reinholt *et al.*, 2011; Szulanski *et al.*, 2004; Tortoriello *et al.*, 2012). In particular, communication among colleagues, teams and different units is fundamental to establishing channels and networks for knowledge sharing (Bechky, 2003; Ko *et al.*, 2005; Mei *et al.*, 2004). These findings are in line with other studies, in that knowledge

sharing is a process of communication between the parties of knowledge seeking and providing entities (Cabrera *et al.*, 2006; Wang and Noe, 2010).

Second, the reviewed articles revealed that interactions between structure and people could have a synergy effect on knowledge sharing. In an organizational change context (e.g. innovation strategy adoption), structure (top management value) and people (employee competencies) are positively related to knowledge sharing which improves organizational performance (Hsu, 2008). Structure-related elements in the articles emphasized how to create supportive environments and policies for knowledge sharing. Organizational structure characteristics such as the level of formalization and centralization were also found to influence systemic work procedures and decision making that is related to knowledge sharing (Argyres and Silverman, 2004; Lin, 2008a). Given that structures for knowledge transfers and individual absorptive abilities contributed to knowledge creation resulting in company knowledge (Matusik and Heeley, 2005), we assert that people factors (e.g. ability, intention, motivation and trust) should be considered and structure factors (e.g. organizational system and management) should be designed to support people factors so that the two factors play an intertwined role in successful knowledge sharing.

Third, evidence from the research suggests that organizations need to cultivate an organizational culture that encourages knowledge-sharing practices in times of planned and unplanned changes in organizations. Given that organizational culture has been noted as a major factor that determines knowledge sharing practices in the literature (Park *et al.*, 2004; Wang *et al.*, 2014), we suggest that it is imperative to include organizational culture as another component of the model of organizational change, particularly associated with knowledge sharing. As shown in our review, technology and systems that capture, store and improve access to knowledge should be accompanied by a favorable environment to support, energize, mobilize and enable people at all levels to the best utilize the company's available resources (Evans, 2003). By implying the positive effects of organizational culture on knowledge sharing that leads to an improvement in organization performance, these findings draw the attention to organization theory and are especially concerned with the interplay between the creation and exchange of knowledge, and how to align the development of organizational forms with social relationships when knowledge sharing activities take place.

Finally, the results also reveal the implications for adopting a contingency approach of organizational change and knowledge sharing. The effects of changes on shaping and determining knowledge sharing practices in organizations are contingent upon the types or the degree of interplay of change components. Considering that the types of organizational changes and their impact on knowledge sharing were found to be complicated, it is reasonable to take a contingency framework for strategy formulation and other managerial practices for further studies.

These findings, with the contingency perspective of organizational change, advance current research on organizational change and knowledge sharing in several ways. First, the present study contributes to the organizational change literature by showing that the type to which organizational changes interact with others may have important implications for the factors that enable knowledge sharing. In doing so, this study bridges the organizational change and knowledge sharing literature that have tended to evolve on separate streams. The literature on organizational change has not accounted

for the knowledge sharing context in which organizations are embedded, and the knowledge sharing literature has tended to neglect planned and unplanned change dynamics. By demonstrating that the effect of interaction on change adoption is contingent on the type to which organizational change initiatives influence the phenomenon of knowledge sharing, this study paves the way for a new direction in research on organizational change.

Second, this study attempted to illuminate how knowledge sharing has been explored through the lens of four elements in organizational change and the interactions between the elements. By identifying distinctive factors influencing knowledge sharing based on the model, this study provides fundamental insights to understand the importance of the four elements in knowledge sharing (particularly the people and structure elements) and the roles and contribution of knowledge sharing with organizational change. The approach of this study can be compared with previous knowledge sharing literature which tended to collectively address an impressive number of potential organizational antecedents of knowledge sharing. Also, by examining how knowledge sharing studies have addressed the four change factors and multi-component changes, this study explains one change in knowledge sharing leads to multi-component changes.

Third, this study attempted to expand the use of Leavitt's (1965) model by applying interactive relationships among the elements to knowledge sharing. Leavitt's model has been widely used to explain the relationships between information systems and organizational change in the fields of information technology and management (Keen, 1981; Lyytinen and Newman, 2008; Markus and Robey, 1988). By comparing previous research and adopting a contingency perspective, this study demonstrated another application for Leavitt's model to emphasize elements and their interactions affecting knowledge sharing.

In addition to these theoretical contributions, our findings can advance strategic and managerial practice by informing the planning and development of knowledge sharing associated with change in organizations. A key question is how to identify the major component of change which will trigger the other changes in the current architecture of knowledge sharing in their organizations. Our study suggests that elements of structure and people, when organization face either planned or unplanned change, are critical for successful knowledge sharing by making the interactive connections with other components of change. For example, when organizations plan to promote innovation and organizational change, practitioners could consider people and structure elements for knowledge sharing as interventions to prepare for resistance and negative responses of the planned change. By emphasizing the dynamics and interactions between people and structures, top management can lead other departments and teams to work together before proceeding with the change to create a more conducive organizational climate for supporting employees.

Organizations can also leverage the matching of change components to change context by categorizing patterns of interactive relationship to recognize the flow of knowledge sharing in times of organizational changes. By becoming aware of facilitators of organizational changes such as adopting new technology and inter-organizational alliances, organizations may be better suited to the type of change they wish to introduce and thus further facilitating knowledge sharing in their organizations. For example, when organizations adopt new technologies by introducing

and promoting best practices of aligning with the work processes and successful knowledge sharing, organizations can support of creating an adaptive and contingent culture of knowledge sharing to meet diverse types of changes in organizations.

Limitations and recommendations for future research

This study has several limitations. First, the basis of the current research was 133 articles published between 2000 and 2012 from 13 journals. However, the authors did not identify the natures and the types of industries of the original research studies when analyzing the articles (i.e. SMEs, MNCs etc.). To capture broader phenomena on knowledge sharing in organizational change, multiple data sources and a variety of journals with a longer timeframe should be collected. Second, the study used Leavitt's organizational change model to understand the features of organizational change and analyze the articles covering knowledge sharing by adopting a contingency approach. However, this particular model is not exhaustive in identifying the dynamics of organizational change and its impact on knowledge sharing in diverse organizations. Accordingly, researchers could adopt different approaches to understand organizational change (e.g. a critical approach) and explore additional components influencing change in organizations (e.g. politics and societal change) in future studies. The articles addressing the four elements and their interactions in organizational change did not describe exactly what happens when one element changes. Considering that Leavitt's model emphasizes the interactions and mutual influence of all four elements in organizational change, future research should discuss how one changed element impacts other elements and how these changes influence knowledge sharing. Also, future studies should identify the types of organizational change in knowledge sharing and explain how much knowledge sharing contributes to different types of organizational change.

Third, the nature of knowledge (tacit and explicit) should be considered in an organizational change context. When people share their knowledge in different contexts, tacit and explicit knowledge could be identified and explained according to the purposes and sources. Finally, organizational culture could be included as a critical factor influencing knowledge sharing in change contexts. By adding an interactive relationship between culture and other factors (e.g. task, structure, technology and people), a new model for knowledge sharing could be proposed to explain different dynamics in organizational change. In addition, quantitative approaches could be adopted to examine the impact of the four change components on knowledge sharing. Based on reviewing empirical studies, effect sizes would be discussed to quantify and describe the strength, direction of the relationships between the four components and knowledge sharing.

The contributions of this study are that it provides an integrative review in selected journals of knowledge sharing in terms of organizational change. By examining how knowledge sharing studies have addressed the four change factors and multi-component changes, this study explains one change in knowledge sharing leads to multi-component changes. Additional contribution is that it makes connections between knowledge sharing and organizational change. Knowledge sharing can contribute to problem solving, development, innovation and improvement of ideas, products or procedures which may facilitate organizational change (Cummings, 2004). The processes and outcomes of knowledge sharing are influenced by task, structure, technology, people or different combinations of them, which are critical factors leading changes.

References

Ahn, Y., Park, S. and Jung, J. (2009), "A case study on knowledge management of Busan metropolitan city", *Advances in Developing Human Resources*, Vol. 11 No. 3, pp. 388-398.

Akdere, M. (2009), "The role of knowledge management in quality management practices: achieving performance excellence in organizations", *Advances in Developing Human Resources*, Vol. 11 No. 3, pp. 349-361.

Alge, B.J., Wiethoff, C. and Klein, H.J. (2003), "When does the medium matter? Knowledge-building experiences and opportunities in decision-making teams", *Organizational Behavior and Human Decision Processes*, Vol. 91 No. 1, pp. 26-37.

Almeida, P. and Phene, A. (2004), "Subsidiaries and knowledge creation: the influence of the MNC and host country on innovation", *Strategic Management Journal*, Vol. 25 No. 1, pp. 847-864.

Almeida, P., Song, J. and Grant, R.M. (2004), "Are firms superior to alliances and markets? An empirical test of cross-border knowledge building", *Organization Science*, Vol. 13 No. 2, pp. 147-161.

Amis, J., Slack, T. and Hinings, C.R. (2004), "The pace, sequence, and linearity of radical change", *Academy of Management Journal*, Vol. 47 No. 1, pp. 15-39.

Ardichvili, A. (2002), "Knowledge management, human resource development, and internet technology", *Advances in Developing Human Resources*, Vol. 4 No. 4, pp. 451-463.

Ardichvili, A. (2008), "Learning and knowledge sharing in virtual communities of practice: motivators, barriers, and enablers", *Advances in Developing Human Resources*, Vol. 10 No. 4, pp. 541-554.

Ardichvili, A. and Yoon, S.W. (2009), "Designing integrative knowledge management systems: theoretical considerations and practical applications", *Advances in Developing Human Resources*, Vol. 11 No. 3, pp. 307-319.

Argote, L. and Ingram, P. (2000), "Knowledge transfer: a basis for competitive advantage in firms", *Organizational Behavior and Human Decision Processes*, Vol. 82 No. 1, pp. 150-169.

Argote, L., McEvily, B. and Reagan, R. (2003), "Managing knowledge in organizations: an integrative framework and review of emerging themes", *Management Science*, Vol. 49 No. 4, pp. 571-582.

Argyres, N.S. and Silverman, B.S. (2004), "R&D, organization structure, and the development of corporate technological knowledge", *Strategic Management Journal*, Vol. 25 Nos 8/9, pp. 929-958.

Baruch, Y. and Holtom, B.C. (2008), "Survey response rate levels and trends in organizational research", *Human Relations*, Vol. 61 No. 8, pp. 1139-1160.

Battilana, J. and Casciaro, T. (2012), "Change agents, networks, and institutions: a contingency theory of organizational change", *Academy of Management Journal*, Vol. 55 No. 2, pp. 381-398.

Bechky, B.A. (2003), "Sharing meaning across occupational communities: the transformation of understanding on a production floor", *Organization Science*, Vol. 14 No. 3, pp. 312-330.

Bélanger, F. and Allport, C.D. (2008), "Collaborative technologies in knowledge telework: an exploratory study", *Information Systems Journal*, Vol. 18 No. 1, pp. 101-112.

Bennett, E.E. (2009), "Virtual HRD: the intersection of knowledge management, culture, and intranets", *Advances in Developing Human Resources*, Vol. 11 No. 3, pp. 362-374.

Birkinshaw, J., Nobel, R. and Ridderstråle, J. (2002), "Knowledge as a contingency variable: do the characteristics of knowledge predict organization structure?", *Organization Science*, Vol. 13 No. 3, pp. 274-289.

Blankenship, S.S. and Ruona, W.E.A. (2009), "Exploring knowledge sharing in social structures: potential contributions to an overall knowledge management strategy", *Advances in Developing Human Resources*, Vol. 11 No. 3, pp. 290-306.

Bock, G.W., Zmud, R.W., Kim, Y.G. and Lee, J.N. (2005), "Behavioral intention formation in knowledge sharing: examining the roles of extrinsic motivators, social-psychological forces, and organizational climate", *MIS Quarterly*, Vol. 29 No. 1, pp. 87-111.

Braganza, A., Hackney, R. and Tanudjojo, S. (2009), "Organizational knowledge transfer through creation, mobilization and diffusion: a case analysis of InTouch within Schlumberger", *Information Systems Journal*, Vol. 19 No. 5, pp. 499-522.

Breu, K. and Hemingway, C.J. (2004), "Making organisations virtual: the hidden cost of distributed teams", *Journal of Information Technology*, Vol. 19 No. 3, pp. 191-202.

Cabrera, A., Collins, W.C. and Salgado, J.F. (2006), "Determinants of individual engagement in knowledge sharing", *International Journal of Human Resource Management*, Vol. 17 No. 4, pp. 245-264.

Cawsey, T.F., Deszca, G. and Ingols, C.A. (2011), *Organizational Change: An Action-Oriented Toolkit*, Sage Publications, Thousand Oaks, CA.

Chen, C.J. and Huang, J.W. (2007), "How organizational climate and structure affect knowledge management: the social interaction perspective", *International Journal of Information Management*, Vol. 27, pp. 104-118.

Choi, S.Y., Kang, Y.S. and Lee, H. (2008), "The effects of socio-technical enablers on knowledge sharing: an exploratory examination", *Journal of Information Science*, Vol. 34 No. 5, pp. 742-754.

Choi, S.Y., Lee, H. and Yoo, Y. (2010), "The impact of information technology and transactive memory systems on k knowledge sharing, application, and team performance: a field study", *MIS Quarterly*, Vol. 34 No. 4, pp. 855-870.

Clark, E. and Geppert, M. (2002), "Management learning and knowledge transfer in transforming societies: approaches, issues and future directions", *Human Resource Development International*, Vol. 5 No. 3, pp. 263-277.

Collins, C.J. and Smith, K.G. (2006), "Knowledge exchange and combination: the role of human resource practices in the performance of high-technology firms", *Academy of Management Journal*, Vol. 49 No. 3, pp. 544-560.

Conley, C.A. and Zheng, W. (2009), "Factors critical to knowledge management success", *Advances in Developing Human Resources*, Vol. 11 No. 3, pp. 334-348.

Cummings, J. (2004), "Work groups, structural diversity, and knowledge sharing in a global organization", *Management Science*, Vol. 50 No. 3, pp. 352-364.

Cummings, T.G. and Worley, C.G. (2005), *Organizational Change and Development*, 8th ed., Thomson, Manson, OH.

Daft, R.L. and Lengel, R.H. (1986), "Organizational information requirements, media richness and structural design", *Management Science*, Vol. 32 No. 5, pp. 554-571.

Darr, E.D. and Kurtzberg, T.R.(2000), "An investigation of partner similarity dimensions on knowledge transfer", *Organizational Behavior and Human Decision Processes*, Vol. 82 No. 1, pp. 28-44.

Du, R., Ai, S. and Ren, Y. (2007), "Relationship between knowledge sharing and performance: a survey in Xi'an, China", *Expert Systems with Application*, Vol. 32 No. 1, pp. 38-46.

Dyer, J.H. and Hatch, N.W. (2006), "Relation-specific capabilities and barriers to knowledge transfers: creating advantage through network relationships", *Strategic Management Journal*, Vol. 27 No. 8, pp. 701-719.

Dyer, J.H. and Nobeoka, K. (2000), "Creating and managing a high-performance knowledge-sharing network: the Toyota case", *Strategic Management Journal*, Vol. 21 No. 3, pp. 345-367.

Egelhoff, W.G. (1991), "Information-processing theory and the multinational enterprise", *Journal of International Business Studies*, Vol. 22 No. 3, pp. 341-367.

Evans, C. (2003), *Managing for Knowledge: HR's Strategic Role*, Butterworth-Heinemann, Amsterdam.

Feinberg, S.E. and Gupta, A.K. (2004), "Knowledge spillovers and the assignment of R&D responsibilities to foreign subsidiaries", *Strategic Management Journal*, Vol. 25 Nos 8/9, pp. 823-845.

Fey, C.F. and Birkinshaw, J. (2005), "External sources of knowledge, governance mode, and R&D performance", *Journal of Management*, Vol. 31 No. 4, pp. 597-621.

Fey, C.F. and Furu, P. (2008), "Top management incentive compensation and knowledge sharing in multinational corporations", *Strategic Management Journal*, Vol. 29 No. 12, pp. 1301-1323.

Foss, N.J., Husted, K. and Michailova, S. (2010), "Governing knowledge sharing in organizations: level of analysis, governance mechanisms, and research directions", *Journal of Management Studies*, Vol. 47 No. 3, pp. 455-482.

Frank, K.A., Penuel, W.R. and Krause, A. (2015), "What is a 'good' social network for policy implementation? The flow of know-how for organizational change", *Journal of Policy Analysis and Management*, Vol. 34 No. 2, pp. 378-402.

Garud, R. and Kumaraswamy, A. (2005), "Vicious and virtuous circles in the management of knowledge: the case of Infosys Technologies", *MIS Quarterly*, Vol. 29 No. 1, pp. 9-33.

Ghosh, R., Kim, M., Kim, S. and Callahan, J.L. (2014), "Examining the dominant, emerging, and waning themes featured in select HRD publications: is it time to redefine HRD?", *European Journal of Training and Development*, Vol. 38 No. 4, pp. 302-322.

Gold, A.H., Malhotra, A. and Segars, A.H. (2001), "Knowledge management: an organizational capabilities perspective", *Journal of Management Systems*, Vol. 18 No. 1, pp. 185-214.

Gong, Y., Cheung, S.Y. and Wang, M. (2012), "Unfolding the proactive process for creativity integration of the employee proactivity, information exchange, and psychological safety perspectives", *Journal of Management*, Vol. 38 No. 5, pp. 1611-1633.

Grant, R.M. (1996), "Toward a knowledge-based theory of the firm", *Strategic Management Journal*, Vol. 17 No. 1, pp. 109-122.

Grover, V. and Davenport, T.H. (2001), "General perspectives on knowledge management: fostering a research agenda", *Journal of Management Information Systems*, Vol. 18 No. 1, pp. 5-21.

Gupta, A.K. and Govindarajan, V. (2000), "Knowledge flows within multinational corporations", *Strategic Management Journal*, Vol. 21 No. 4, pp. 473-496.

Haas, M.R. and Hansen, M.T. (2005), "When using knowledge can hurt performance: the value of organizational capabilities in a management consulting company", *Strategic Management Journal*, Vol. 26 No. 1, pp. 1-24.

Haas, M.R. and Hansen, M.T. (2007), "Different knowledge, different benefits: toward a productivity perspective on knowledge sharing in organizations", *Strategic Management Journal*, Vol. 28 No. 11, pp. 1133-1153.

Hall, H. (2001), "Input-friendliness: motivating knowledge sharing across intranets", *Journal of Information Science*, Vol. 27 No. 3, pp. 139-146.

Hall, H. and Goody, M. (2007), "KM, culture and compromise: interventions to promote knowledge sharing supported by technology in corporate environments", *Journal of Information Science*, Vol. 33 No. 2, pp. 181-188.

Hansen, M.T. (1999), "The search-transfer problem: the role of weak ties in sharing knowledge across organization subunits", *Administrative Science Quarterly*, Vol. 44 No. 1, pp. 82-111.

Hansen, M.T. (2002), "Knowledge networks: explaining effective knowledge sharing in multiunit companies", *Organization Science*, Vol. 13 No. 3, pp. 232-248.

Heracleous, L. and Barrett, M. (2001), "Organizational change as discourse: communicative actions and deep structures in the context of information technology implementation", *Academy of Management Journal, Vo*. 44 No. 4, pp. 775-778.

Hernandez, M. (2003), "Assessing tacit knowledge transfer and dimensions of a learning environment in Colombian businesses", *Advances in Developing Human Resources*, Vol. 5 No. 2, pp. 215-221.

Hislop, D. (2002), "Mission impossible? Communicating and sharing knowledge via information technology", *Journal of Information Technology*, Vol. 22 No. 1, pp. 5-12.

Hong, D., Suh, E. and Koo, C. (2011), "Developing strategies for overcoming barriers to knowledge sharing based on conversational knowledge management: a case study of a financial company", *Expert Systems with Application*, Vol. 38 No. 12, pp. 14417-14427.

Hsu, I.C. (2008), "Knowledge sharing practices as a facilitating factor for improving organizational performance through human capital: a preliminary test", *Expert Systems with Applications*, Vol. 35 No. 3, pp. 1316-1326.

Hung, R.Y.Y., Lien, B.Y.H. and McLean, G.N. (2009), "Knowledge management initiatives, organizational process alignment, social capital, and dynamic capabilities", *Advances in Developing Human Resources*, Vol. 11 No. 3, pp. 320-333.

Huysman, M. and Wulf, V. (2006), "IT to support knowledge sharing in communities towards a social capital analysis", *Journal of Information Technology*, Vol. 21, pp. 40-51.

Iles, P. and Yolles, M. (2002), "Across the great divide: HRD, technology translation, and knowledge migration in bridging the knowledge gap between SMEs and Universities", *Human Resource Development International*, Vol. 5 No. 1, pp. 23-53.

Iles, P. and Yolles, M. (2003), "International HRD alliances in viable knowledge migration and development: the Czech academic link project", *Human Resource Development International*, Vol. 6 No. 3, pp. 301-324.

Inkpen, A.C. and Tsang, E.W.K. (2005), "Social capital, networks, and knowledge transfer", *Academy of Management Review*, Vol. 30 No. 1, pp. 146-165.

Jeon, S.H., Kim, Y.G. and Koh, J. (2011), "Individual, social, and organizational contexts for active knowledge sharing in communities of practice", *Expert Systems with Application*, Vol. 38 No. 10, pp. 12423-12431.

Jeung, C.-W., Yoon, H.J., Park, S. and Jo, S.J. (2011), "The contributions of human resource development research across disciplines: a citation and content analysis", *Human Resource Development Quarterly*, Vol. 22 No. 1, pp. 87-109.

Jo, S.J., Jeung, C.W., Park, S. and Yoon, H.J. (2009), "Who is citing whom: citation network analysis among HRD publications from 1990 to 2007", *Human Resource Development Quarterly*, Vol. 20 No. 4, pp. 503-537.

Johnson, T.E., Lee, Y., Lee, M., O'Connor, D.L., Khalil, M.K. and Huang, X. (2007), "Measuring sharedness of team-related knowledge: design and validation of a shared mental model instrument", *Human Resource Development International*, Vol. 10 No. 4, pp. 437-454.

Jones, M.C. (2005), "Tacit knowledge sharing during ERP implementation: a multi-site case study", *Information Resources Management Journal*, Vol. 18 No. 2, pp. 1-23.

Kane, A.A., Argote, L. and Levine, J.M. (2005), "Knowledge transfer between groups via personnel rotation: effects of social identity and knowledge quality", *Organizational Behavior and Human Decision Processes*, Vol. 96 No. 1, pp. 56-71.

Kang, J., Rhee, M. and Kang, K. (2010), "Revisiting knowledge transfer: effects of knowledge characteristics on organizational effort for knowledge transfer", *Expert Systems with Applications*, Vol. 37 No. 12, pp. 8155-8160.

Kankanhalli, A., Tan, B.Y. and Kwok-Kee, W. (2005), "Contributing knowledge to electronic knowledge repositories: an empirical investigation", *MIS Quarterly*, Vol. 29 No. 2, pp. 113-143.

Keen, P.G.W. (1981), "Information systems and organizational change", *Communications of the ACM*, Vol. 24 No. 1, pp. 24-33.

Kelly, G.J. and Green, J. (1998), "The social nature of knowing: toward a sociocultural perspective on conceptual change and knowledge construction", in Guzzetti, B and Hynd, C. (Eds), *Perspectives on Conceptual Change: Multiple Ways to Understand Knowing and Learning in a Complex World*, Routledge, New York, NY, pp. 145-182.

Keursten, P. and van der Klink, M. (2003), "Enabling knowledge creation: an emerging concept of knowledge management", *Human Resource Development International*, Vol. 6 No. 1, pp. 117-123.

Kim, S. and Lee, H. (2006), "The impact of organizational context and information technology on employee knowledge-sharing capabilities", *Public Administration Review*, Vol. 66 No. 3, pp. 370-385.

Ko, D.G., Kirsch, L.J. and King, W.R. (2005), "Antecedents of knowledge transfer from consultants to clients in enterprise system implementations", *MIS Quarterly*, Vol. 29 No. 1, pp. 59-85.

Kogut, B. and Zander, U. (1996), "What firms do? Coordination, identity, and learning", *Organization Science*, Vol. 7 No. 5, pp. 502-518.

Kongpichayanond, P. (2009), "Knowledge management for sustained competitive advantage in mergers and acquisitions", *Advances in Developing Human Resources*, Vol. 11 No. 3, pp. 375-387.

Kotabe, M., Martin, X. and Domoto, H. (2003), "Gaining from vertical partnerships: knowledge transfer, relationship duration, and supplier performance improvement in the US and Japanese automotive industries", *Strategic Management Journal*, Vol. 24 No. 4, pp. 293-316.

Kubo, I., Saka, A. and Pan, S. (2001), "Behind the scenes of knowledge sharing in a Japanese bank", *Human Resource Development International*, Vol. 4 No. 4, pp. 465-485.

Lai, I.K.W., Tam, S.K.T. and Chan, M.F.S. (2012), "Knowledge cloud system for network collaboration: a case study in medical service industry in China", *Expert Systems with Application*, Vol. 39 No. 15, pp. 12205-12212.

Lam, A. (2000), "Tacit knowledge, organizational learning and societal institutions: an integrated framework", *Organization Studies*, Vol. 21 No. 3, pp. 487-513.

Law, C.C.H. and Ngai, E.W.T. (2008), "An empirical study of the effects of knowledge sharing and learning behaviors on firm performance", *Expert Systems with Application*, Vol. 34 No. 4, pp. 2342-2349.

Leavitt, H.J. (1965), "Applied organizational change in industry: structural, technological and humanistic approaches", in March, J.G. (Ed.), *Handbook of Organizations*, Rand McNally, Chicago, IL, Vol. 27, pp. 1144-1170.

Leavitt, H.J., Dill, W.R. and Eyring, H.B. (1973), *The Organizational World*, Harcourt Brace Jovanovich, New York, NY.

Lee, H. and Choi, B. (2003), "Knowledge management enablers, processes, and organizational performance: an integrative view and empirical examination", *Journal of Management Information Systems*, Vol. 20 No. 1, pp. 179-228.

Levin, D.Z. and Cross, R. (2004), "The strength of weak ties you can trust: the mediating role of trust in effective knowledge transfer", *Management Science*, Vol. 50 No. 11, pp. 1477-1490.

Levin, D., Lesser, E., Cross, R. and Abrams, L. (2002), "Trust and knowledge sharing: a critical combination", IBM Institute for knowledge-based organizations white paper.

Levine, S.S. and Prietula, M.J. (2012), "How knowledge transfer impacts performance: a multilevel model of benefits and liabilities", *Organization Science*, Vol. 23 No. 6, pp. 1748-1766.

Lewis, K., Belliveau, M., Herndon, B. and Keller, J. (2007), "Group cognition, membership change, and performance: investigating the benefits and detriments of collective knowledge", *Organizational Behavior and Human Decision Processes*, Vol. 103 No. 2, pp. 159-178.

Li, D., Edend, L., Hitt, M.A., Ireland, R.D. and Garrett, R.P. (2012), "Governance in multilateral R&D alliances", *Organization Science*, Vol. 23 No. 4, pp. 1191-1210.

Li, J.J., Poppo, L. and Zhou, K.Z. (2010), "Relational mechanisms, formal contracts, and local knowledge acquisition by international subsidiaries", *Strategic Management Journal*, Vol. 31 No. 4, pp. 349-370.

Liao, S.H., Fei, W.C. and Chen, C.C. (2007), "Knowledge sharing, absorptive capacity, and innovation capability: an empirical study of Taiwan's knowledge-intensive industries", *Journal of Information Science*, Vol. 33 No. 3, pp. 340-359.

Lin, H.F. (2007), "Effects of extrinsic and intrinsic motivation on employee knowledge sharing intentions", *Journal of Information Science*, Vol. 33 No. 2, pp. 135-149.

Lin, H.F., Lee, H.S. and Wang, D.W. (2009), "Evaluation of factors influencing knowledge sharing based on a fuzzy AHP approach", *Journal of Information Science*, Vol. 35 No. 1, pp. 25-44.

Lin, W.B. (2008a), "The exploration factors of affecting knowledge sharing – the case of Taiwan's high-tech industry", *Expert Systems with Applications*, Vol. 35 No. 3, pp. 661-676.

Lin, W.B. (2008b), "The effect of knowledge sharing model", *Expert Systems with Applications*, Vol. 34 No. 2, pp. 1508-1521.

Liu, Y., Pucel, D.J. and Bartlett, K.R. (2006), "Knowledge transfer practices in multinational corporations in China's information technology industry ", *Human Resource Development International*, Vol. 9 No. 4, pp. 529-552.

Lovelace, K. Shapiro, D.L. and Weingart, L.R. (2001), "Maximizing cross-functional new product teams' innovativeness and constraint adherence: a conflict communications perspective", *Academy of Management Journal*, Vol. 44 No. 4, pp. 779-793.

Lyytinen, K. and Newman, M. (2008), "Explaining information systems change: a punctuated socio-technical change model", *European Journal of Information Systems*, Vol. 17 No. 1, pp. 589-613.

Lyytinen, K., Mathiassen, L. and Ropponen, J. (1998), "Attention shaping and software risk: a categorical analysis of four classical risk management approaches", *Information Systems Research*, Vol. 9 No. 3, pp. 233-255.

Majchrzak, A., Rice, R.E., Malhotra, A., King, N. and Ba, S. (2000), "Technology adaptation: the case of a computer-supported inter-organizational virtual team", *MIS Quarterly*, Vol. 24 No. 4, pp. 569-600.

Malhotra, A., Gosain, S. and Sawy, O.A.E. (2005), "Absorptive capacity configurations in supply chains: gearing for partner-enabled market knowledge creation", *MIS Quarterly*, Vol. 29 No. 1, pp. 145-187.

Malnight, T.W. (2001), "Emerging structural patterns within multinational corporations: toward process-based structures", *Academy of Management Journal*, Vol. 44 No. 6, pp. 1187-1210.

Mansingh, G., Osei-Bryson, K.M. and Reichgelt, H. (2008), "Issues in knowledge access, retrieval and sharing-Case studies in a Caribbean health sector", *Expert Systems with Application*, Vol. 36 No. 2, pp. 2853-2863.

Markus, M.L. (2001), "Toward a theory of knowledge reuse: types of knowledge reuse situations and factors in reuse success", *Journal of Management Information Systems*, Vol. 18 No. 1, pp. 57-93.

Markus, L. and Robey, D. (1988), "The organizational validity of management information systems", *Human Relations*, Vol. 36 No. 3, pp. 203-226.

Markus, M.L., Majchrzak, A. and Gasser, L. (2002), "A design theory for systems that support emergent knowledge processes", *MIS Quarterly*, Vol. 26 No. 3, pp. 179-212.

Massey, A.P., Montoya-Weiss, M.M. and O'Driscoll, T.M. (2002), "Knowledge management in pursuit of performance: insights from Nortel Networks", *MIS Quarterly*, Vol. 26 No. 3, pp. 269-289.

Matusik, S.F. and Heeley, M.B. (2005), "Absorptive capacity in the software industry: identifying dimensions that affect knowledge and knowledge creation activities", *Journal of Management*, Vol. 31 No. 4, pp. 549-572.

Mearns, M. (2012), "Knowing what knowledge to share: collaboration for community, research and wildlife", *Expert Systems with Applications*, Vol. 39 No. 10, pp. 9892-9898.

McEvily, S.K. Das, S. and McCabe, K. (2000), "Avoiding competence substitution through knowledge sharing", *Academy of Management Review*, Vol. 25 No. 2, pp. 294-311.

Mei, Y.M., Lee, S.T. and Al-Hawamdeh, S. (2004), "Formulating a communication strategy for effective knowledge sharing", *Journal of Information Science*, Vol. 30 No. 1, pp. 12-22.

Mesmer-Magnus, J.R., DeChurch, L.A., Jimenez-Rodriguez, M., Wildman, J. and Shuffler, M. (2011), "A meta-analytic investigation of virtuality and information sharing in teams", *Organizational Behavior and Human Decision Processes*, Vol. 115 No. 2, pp. 214-225.

Mueller, J., Hutter, K., Fueller, J. and Matzler, K. (2011), "Virtual worlds as knowledge management platform – a practice-perspective", *Information Systems Journal*, Vol. 21 No. 6, pp. 479-501.

Nadler, D.A. (1981), "Managing organizational change: an integrative perspective", *Journal of Applied Behavioral Science*, Vol. 17 No. 2, pp. 191-211.

Nadler, D.A. and Tushman, M. (1977), "A diagnostic model for organizational behavior", in Hackman, J.R., Lawler, E.E. III and Porter, L.W. (Eds), *Perspectives in Behavior in Organizations*, McGraw-Hill, New York, NY, pp. 85-100.

Nadler, D.A. and Tushman, M. (1989), "Organizational frame bending: principle for managing reorientation", *Academy of Management Executive*, Vol. 3 No. 3, pp. 194-204.

Nebus, J. (2006), "Building collegial information networks: a theory of advice network generation", *Academy of Management Review*, Vol. 31 No. 3, pp. 615-637.

Nidumolu, S.R. (1996), "A comparison of the structural contingency and risk-based perspectives on coordination in software-development projects", *Journal of Information Systems*, Vol. 13 No. 2, pp. 77-113.

Osterloh, M. and Frey, B.S. (2000), "Motivation, knowledge transfer, and organizational forms", *Organization Science*, Vol. 11 No. 5, pp. 538-550.

Owen-Smith, J. and Powell, W.W. (2004), "Knowledge networks as channels and conduits: the effects of spillovers in the Boston biotechnology community", *Organization Science*, Vol. 15 No. 1, pp. 5-21.

Oxley, J.E. and Sampson, R.C. (2004), "The scope and governance of international R&D alliances", *Strategic Management Journal*, Vol. 25 Nos 8/9, pp. 723-749.

Park, H., Ribière, V. and Schulte, W.D. Jr. (2004), "Critical attributes of organizational culture that promote knowledge management technology implementation success", *Journal of Knowledge Management*, Vol. 8 No. 3, pp. 106-117.

Pedler, M. (2002), "Accessing local knowledge: action learning and organizational learning in Walsall", *Human Resource Development International*, Vol. 5 No. 4, pp. 523-540.

Podsakoff, P.M., MacKenzie, S.B., Paine, J.B. and Bachrach, D.G. (2000), "Organizational citizenship behaviors: a critical review of the theoretical and empirical literature and suggestions for future research", *Journal of Management*, Vol. 26 No. 3, pp. 513-563.

Powell, W.W., Koput, K.W. and Smith-Doerr, L. (1996), "Inter organizational collaboration and the locus of innovation: networks of learning in biotechnology", *Administrative Science Quarterly*, Vol. 41 No. 1, pp. 116-145.

Pulakos, E.D., Dorsey, D.W. and Borman, W.C. (2003), "Hiring for knowledge-based competition", in Jackson, S.E., Hitt, M.A. and Denisi, A.S. (Eds), *Managing Knowledge for Sustained Competitive Advantage: Designing Strategies for Effective Human Resource Management*, Jossey-Bass, San Francisco, CA, pp. 155-176.

Reagans, R. and McEvily, B. (2003), "Network structure and knowledge transfer: the effects of cohesion and range", *Administrative Science Quarterly*, Vol. 48 No. 2, pp. 240-267.

Reinholt, M., Pedersen, T. and Foss, N.J. (2011), "Why a central network position isn't enough: the role of motivation and ability for knowledge sharing in employee networks", *The Academy of Management Journal*, Vol. 54 No. 6, pp. 1277-1297.

Ryu, S., Ho, S.H. and Han, I. (2003), "Knowledge sharing behavior of physicians in hospitals", *Expert Systems with Application*, Vol. 25 No. 1, pp. 113-122.

Sastry, M.A. (1997), "Problems and paradoxes in a model of punctuated organizational change", *Administrative Science Quarterly*, Vol. 42 No. 2, pp. 237-275.

Schulze, A. and Hoegl, M. (2006), "Knowledge creation in new product development projects", *Journal of Management*, Vol. 32 No. 2, pp. 210-236.

Shelton, R. (2001), "Helping a small business owner to share knowledge", *Human Resource Development International*, Vol. 4 No. 4, pp. 429-450.

Sparrowe, R.T. Liden, R.C. Wayne, S.J. and Kraimer, M.L. (2001), "Social networks and the performance of individuals and groups", *Academy of Management Journal*, Vol. 44 No. 2, pp. 316-325.

Spencer, J.W. (2003), "Firms' knowledge-sharing strategies in the global innovation system: empirical evidence from the flat panel display industry", *Strategic Management Journal*, Vol. 24 No. 3, pp. 217-233.

Smith, K.G., Collins, C.J. and Clark, K.D. (2005), "Existing knowledge, knowledge creation capability, and the rate of new product introduction in high-technology firms", *The Academy of Management Journal*, Vol. 48 No. 2, pp. 346-357.

Sousa, M.J., Cascais, T. and Rodrigues, J.P. (2015), "Action research study on individual knowledge use in organizational innovation processes", in Rocha, A., Correia, A.M., Costanzo, S. and Reis, L.P. (Eds), *New Contributions in Information Systems and Technologies*, Springer, New York, NY, pp. 75-82.

Srivastava, A., Bartol, K.M. and Locke, E.A. (2006), "Empowering leadership in management teams: effects on knowledge sharing, efficacy, and performance", *Academy of Management Journal*, Vol. 49 No. 6, pp. 1239-1251.

Staples, D.S. and Webster, J. (2008), "Exploring the effects of trust, task interdependence and virtualness on knowledge sharing in teams", *Information Systems Journal*, Vol. 18 No. 6, pp. 617-640.

Steinel, W., Utz, S. and Koning, L. (2010), "The good, the bad and the ugly thing to do when sharing information: revealing, concealing and lying depend on social motivation, distribution and importance of information", *Organizational Behavior and Human Decision Processes*, Vol. 113 No. 2, pp. 85-96.

Subramaniam, M. and Venkatraman, N. (2001), "Determinants of transnational new product development capability: testing the influence of transferring and deploying tacit overseas knowledge", *Strategic Management Journal*, Vol. 22 No. 4, pp. 359-378.

Suh, A. and Shin, K.S. (2010), "Exploring the effects of online social ties on knowledge sharing: a comparative analysis of collocated vs dispersed teams", *Journal of Information Science*, Vol. 36 No. 4, pp. 443-463.

Sun, J. and Wang, G.G. (2013), "How is HRD doing in research and publications? An assessment of journals by AHRD (2005-2011)", *European Journal of Training and Development*, Vol. 37 No. 8, pp. 696-712.

Sung, S.Y. and Choi, J.N. (2012), "Effects of team knowledge management on the creativity and financial performance of organizational teams", *Organizational Behavior and Human Decision Processes*, Vol. 118 No. 1, pp. 4-13.

Szulanski, G. (2000), "The process of knowledge transfer: a diachronic analysis of stickiness", *Organizational Behavior and Human Decision Processes*, Vol. 82 No. 1, pp. 9-27.

Szulanski, G., Cappetta, R. and Jensen, R.J. (2004), "When and how trustworthiness matters: knowledge transfer and the moderating effect of causal ambiguity", *Organization Science*, Vol. 15 No. 5, pp. 600-613.

Szulanski, G. and Jensen, R.J. (2006), "Presumptive adaptation and the effectiveness of knowledge transfer", *Strategic Management Journal*, Vol. 27 No. 10, pp. 937-957.

Tallman, S. Jenkins, M., Henry, N. and Pinch, S. (2004), "Knowledge, clusters, and competitive advantage", *Academy of Management Review*, Vol. 29 No. 2, pp. 258-271.

Tanriverdi, H. and Venkatraman, N. (2005), "Knowledge relatedness and the performance of multibusiness firms", *Strategic Management Journal*, Vol. 26 No. 2, pp. 97-119.

Tasi, W. (2001), "Knowledge transfer in intraorganizational networks: effects of network position and absorptive capacity on business unit innovation and performance", *Academy of Management Journal*, Vol. 44 No. 5, pp. 996-1004.

Teece, D.J. (2001), "Strategies for managing knowledge assets: the role of firm structure and industrial context", *Long Range Planning*, Vol. 33, pp. 35-54.

Tichy, N.M. (1983), *Managing Strategic Change: Technical, Political, and Cultural Dynamics*, Wiley, New York, NY.

Tillema, H. (2005), "Collaborative knowledge construction in study teams of professionals", *Human Resource Development International*, Vol. 8 No. 1, pp. 81-99.

Tillema, H.H. (2006), "Authenticity in knowledge-productive learning: what drives knowledge construction in collaborative inquiry?", *Human Resource Development International*, Vol. 9 No. 2, pp. 173-190.

Ting, S.L., Kwok, S.K., Tsang, A.H.C. and Lee, W.B. (2010), "CASESIAN: a knowledge-based system using statistical and experiential perspectives for improving the knowledge sharing in the medical prescription process", *Expert Systems with Applications*, Vol. 37 No. 7, pp. 5336-5346.

Tortoriello, M., Reagans, R. and McEvily, B. (2012), "Bridging the knowledge gap: the influence of strong ties, network cohesion, and network range on the transfer of knowledge between organizational units", *Organization Science*, Vol. 23 No. 4, pp. 1024-1039.

Tsai, M.T. and Cheng, N.C. (2010), "Programmer perceptions of knowledge-sharing behavior under social cognitive theory", *Expert Systems with Applications*, Vol. 37 No. 12, pp. 8479-8485.

Tsai, W. (2002), "Social structure of 'competition' within a multiunit organization: coordination, competition, and inter-organizational knowledge sharing", *Organization Science*, Vol. 13 No. 2, pp. 179-190.

Tsang, E.W.K. (2002), "Acquiring knowledge by foreign partners from international joint ventures in a transition economy: learning-by-doing and learning myopia", *Strategic Management Journal*, Vol. 23 No. 9, pp. 835-854.

Tseng, S.M. and Huang, J.S. (2011), "The correlation between Wikipedia and knowledge sharing on job performance", *Expert Systems with Applications*, Vol. 38 No. 5, pp. 6118-6124.

Turner, K.L. and Makhija, M.V. (2006), "The role of organizational controls in managing knowledge", *Academy of Management Review*, Vol. 31 No. 1, pp. 197-217.

Uzzi, B. and Gillespie, J.J. (2002), "Knowledge spillover in corporate financing networks: embeddedness and the firm's debt performance", *Strategic Management Journal*, Vol. 23 No. 7, pp. 595-618.

Van de Ven, A.H. and Poole, M.S. (1995), "Explaining development and change in organizations", *Academy of Management Review*, Vol. 20 No. 3, pp. 510-540.

van Ginkel, W.P. and van Knippenberg, D. (2009), "Knowledge about the distribution of information and group decision making: when and why does it work?", *Organizational Behavior and Human Decision Processes*, Vol. 108 No. 3, pp. 218-229.

Venkatesh, V. and Morris, M. (2000), "Why don't men ever stop to ask for directions? Gender, social influence, and their role in technology acceptance and usage behavior", *MIS Quarterly*, Vol. 24 No. 1, pp. 115-139.

Wang, S. and Noe, R.A. (2010), "Knowledge sharing: a review and directions for future research", *Human Resource Management Review*, Vol. 20 No. 2, pp. 115-131.

Wang, S., Noe, R.A. and Wang, Z. (2014), "Motivating knowledge sharing in knowledge management systems: a quasi-field experiment", *Journal of Management*, Vol. 40 No. 4, pp. 978-1009.

Wang, S., Tong, T.W., Chen, G. and Kim, H. (2008), "Expatriate utilization and foreign direct investment performance: the mediating role of knowledge transfer", *Journal of Management*, Vol. 35 No. 5, pp. 1181-1206.

Wang, Z. and Wang, N. (2012), "Knowledge sharing, innovation and firm performance", *Expert Systems with Application*, Vol. 39 No. 10, pp. 8899-8908.

Wang, W.T. and Ko, N.Y. (2012), "Knowledge sharing practices of project teams when encountering changes in project scope: a contingency approach", *Journal of Information Science*, Vol. 38 No. 5, pp. 423-441.

Wasko, M.M. and Faraj, S. (2005), "Why should I share? Examining social capital and knowledge contribution in electronic networks of practice", *MIS Quarterly*, Vol. 29 No. 1, pp. 35-57.

Weisbord, M.R. (1976), "Organizational diagnosis: six places to look for trouble with or without a theory", *Group and Organizational Management*, Vol. 1 No. 4, pp. 430-447.

Werner, S. (2002), "Recent developments in international management research: a review of 20 top management journals", *Journal of Management*, Vol. 28, pp. 277-305.

Whelan, E. (2007), "Exploring knowledge exchange in electronic networks of practice", *Journal of Information Technology*, Vol. 22 No. 1, pp. 5-12.

Widén-Wulff, G. and Ginman, M. (2004), "Explaining knowledge sharing in organizations through the dimensions of social capital", *Journal of Information Science*, Vol. 30 No. 5, pp. 448-458.

Wiessner, C.A., Hatcher, T., Chapman, D. and Storberg-Walker, J. (2008), "Creating new learning at professional conferences: an innovative approach to conference learning, knowledge construction and programme evaluation", *Human Resource Development International*, Vol. 11 No. 4, pp. 367-383.

Willem, A. and Buelens, M. (2009), "Knowledge sharing in inter-unit cooperative episodes: the impact of organizational structure dimensions", *International Journal of Information Management*, Vol. 29, pp. 151-160.

Willem, A., Buelens, M. and Scarbrough, H. (2006), "The role of inter-unit coordination mechanisms in knowledge sharing: a case study of a British MNC", *Journal of Information Science*, Vol. 32 No. 6, pp. 539-561.

Williams, C. (2007), "Transfer in context: Replication and adaptation in knowledge transfer relationships", *Strategic Management Journal*, Vol. 28 No. 9, pp. 867-889.

Wong, S.S., Ho, V.T. and Lee, C.H. (2008), "A power perspective to interunit knowledge transfer: linking knowledge attributes to unit power and the transfer of knowledge", *Journal of Management*, Vol. 34 No. 1, pp. 127-150.

Yang, Q., Mudambi, R. and Meyer, K.E. (2008), "Conventional and reverse knowledge flows in multinational corporations", *Journal of Management*, Vol. 34 No. 5, pp. 882-902.

Yli-Renko, H., Autio, E. and Sapienza, H. J. (2001), "Social capital, knowledge acquisition, and knowledge exploitation in young technology-based firms", *Strategic Management Journal*, Vol. 22 Nos 6/7, pp. 587-613.

Yoo, Y., Lyytinen, K. and Heo, D. (2009), "Closing the gap: towards a process model of post-merger knowledge sharing", *Information Systems Journal*, Vol. 17 No. 4, pp. 321-347.

Zhang, J. and Baden-Fuller, C. (2010), "The influence of technological knowledge base and organizational structure on technology collaboration", *Journal of Management*, Vol. 47 No. 4, pp. 679-704.

Zhao, Z.J. and Anand, J. (2009), "A multilevel perspective on knowledge transfer: evidence from the Chinese automotive industry", *Strategic Management Journal*, Vol. 30 No. 9, pp. 959-983.

Zhou, K.Z. and Li, C.B. (2012), "How knowledge affects radical innovation: knowledge base, market knowledge acquisition, and internal knowledge sharing", *Strategic Management Journal*, Vol. 33 No. 9, pp. 1090-1102.

Corresponding author
Eun-Jee Kim can be contacted at: ejkim1@kaist.ac.kr