



Revisiting knowledge transfer: Effects of knowledge characteristics on organizational effort for knowledge transfer

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ABSTRACT

This study analyzes the effects of knowledge characteristics on the extent of organizational effort for knowledge transfer. In this paper, three knowledge characteristics that affect organizational behavior for knowledge transfer are identified based on knowledge-based views and organizational learning theory: tacitness, difficulty, and the importance of knowledge. We establish three hypotheses on the effects of these three knowledge characteristics on the extent of effort for knowledge transfer (i.e., the frequency of contact with knowledge source), and provide empirical tests employing the dataset from project teams in a multinational consulting firm via the OLS model. Results show that tacitness, difficulty, and importance have positive effects on the frequency of contact with knowledge sources. This implies that firms exert more effort to acquire the knowledge when the knowledge is tacit, difficult, or important.

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1. Introduction

Knowledge is a critical resource for organizations' competitive advantage (Grant, 1996a; Kogut & Zander, 1992). Organizations have to create new knowledge continuously to maintain their competitive advantage in rapidly changing environments. However, knowledge creation is not a process that necessarily creates completely new knowledge but an operation that recombines and reorganizes existing knowledge. The knowledge that transfers from knowledge sources becomes the raw material in knowledge creation for a recipient organization, and successful knowledge transfer is an important driving force in knowledge creation.

With the emphasis on the importance of knowledge transfer for knowledge creation and sustainable competitive advantage, various research topics have been explored such as knowledge sourcing, methods of knowledge transfer, and the effect of knowledge transfer on innovation (Grant, 1996a,b; Lane & Lubatkin, 1998; Lord & Ranft, 1998; Powell, Koput, & Smith-Doerr, 1996; Szulanski, 1996; Zander & Kogut, 1995). In particular, the effects of knowledge characteristics on knowledge transfer has been studied extensively (Inkpen & Dinur, 1998; Lord & Ranft, 1998; Zander & Kogut, 1995).

However, previous research on the relationships between knowledge characteristics and knowledge transfer focuses on the

topics that analyze the effects of knowledge characteristics on the speed or performance of knowledge transfer. The effects of knowledge characteristics on organizational effort have not been sufficiently explored despite their theoretical and practical importance. Therefore, the present study analyzes the effects of knowledge characteristics on the extent of organizational effort to achieve knowledge transfer.

In this study, we suggest that the frequency of contact with a knowledge source represents the extent of organizational effort required for knowledge transfer. We empirically analyze the effects of important knowledge characteristics such as tacitness, difficulty, and importance on the frequency of contact with knowledge sources. This study employs the survey dataset gathered through face-to-face interviews with project managers in a large multinational consulting firm with many business divisions.

This paper aims to overcome the limitations of previous research which only analyzed the effects of knowledge characteristics on the speed or performance of knowledge transfer and this paper provides a deeper insight into the effects of knowledge characteristics on organizations' behavior. Strategic implications are also provided to firms to help them manage the knowledge transfer process.

2. Theory and hypotheses

2.1. Knowledge characteristics and knowledge transfer

Knowledge is the most important strategic resource to a firm and has enormous effects on organizations' competitive advantage.

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Thus acquiring, integrating, storing, and sharing knowledge are critical capabilities to sustain an organization's competitive advantage (Grant, 1996b; Kogut & Zander, 1992; Penrose, 1959; Spender, 1994; Teece, Pisano, & Shuen, 1997; Winter, 1987; Zack, 1999). In particular, the ability to transfer knowledge from external knowledge sources to a recipient's organizational boundary is a critical factor that determines an organization's competitive advantage in a fast changing environment. Therefore, many researchers have explored the effects of knowledge on management. Various research streams such as knowledge sourcing (Grant, 1996b; Henderson & Cockburn, 1994; Henderson & Cockburn, 1996; Liebeskind, Oliver, Zucker, & Brewer, 1996; Powell et al., 1996), internal knowledge transfer (Athanassiou & Nigh, 1999; Lord & Ranft, 1998; Szulanski, 1996; Zander & Kogut, 1995), and external knowledge transfer (Inkpen & Dinur, 1998; Lane & Lubatkin, 1998; Mowery, Oxley, & Silverman, 1996; Simonin, 1999) have been explored in the area of knowledge management.

Knowledge transfer is considered a core factor in the creation of new knowledge and the maximization of value of knowledge. Thus, there have been many research topics focused on knowledge transfer, such as methods of knowledge transfer and the relationship between knowledge transfer and the innovation, along with the effects of knowledge characteristics on knowledge transfer have been explored in depth (Inkpen & Dinur, 1998; Kogut & Zander, 1992; Lord & Ranft, 1998). In the research that analyzed the Swedish manufacturing firms, Zander and Kogut (1995) examined the effect of knowledge characteristics such as codifiability, teachability, complexity, system dependency, and product observability by competitors on the speed of internal knowledge transfer and external knowledge imitation. Lord and Ranft (1998) prove that tacitness of knowledge and organizational structure, and communication mechanisms have important effects on knowledge transfer.

However, previous research does not consider the reaction of organizations to knowledge characteristics, in spite of the importance of the organizational effort for successful knowledge transfer. The characteristics of knowledge that the organization intends to transfer can initiate diversified organizational reactions such as reinforcement, retention, and an abandonment of effort to engage in knowledge transfer. These different organizational reactions affect the speed and performance of knowledge transfer. Therefore it is important to study how the organization reacts to each knowledge property. This research identifies three important knowledge characteristics that affect knowledge transfer: tacitness, difficulty, and importance. We establish and examine three hypotheses on the relationships between these three knowledge characteristics and the extent of the organizational effort for knowledge transfer.

2.2. Tacitness of knowledge and effort for knowledge transfer

Previous literatures consider knowledge as a resource that is possessed by individuals or organizations (Alavi & Leidner, 1999; Blackler, 1995; Nonaka & Takeuchi, 1995). The resource-based view insists that the resources that determine and maintain firms' competitive advantage have characteristics such as specialty and inimitability (Amit & Schoemaker, 1993; Peteraf & Bergen, 1993; Rumelt, 1984; Wernerfelt, 1984). Tacit knowledge that tends to be inherent in an individual is difficult to describe, and sometimes cannot be explained precisely (Polanyi, 1962). Tacit knowledge is internalized in a constituent or organization, has unique characteristics, cannot be drawn up in documents, shows less mobility than explicit knowledge and is very difficult to imitate. In other words, tacit knowledge has the characteristics of the valuable resources that determine and maintain firms' competitive advantage (Grant,

1996a). Therefore, tacit knowledge plays an important role for firms' sustainable competitive advantage.

However, knowledge by itself is not a useful resource that creates value and competitive advantage until it can be shared and transferred within the organization. Thus, it is necessary to externalize and integrate the tacit knowledge for organizations' sustainable competitive advantage. When new knowledge is created, the knowledge is strongly tacit. This tacit knowledge is gradually transformed into codified and explicit knowledge (Nonaka & Takeuchi, 1995) by social coordination processes (Lam, 2000; Tsoukas & Vladimirou, 2001) because the more explicit the knowledge is, the more the organization can easily share and transfer the knowledge. Therefore, the effort to codify tacit knowledge, such as frequent contact with the knowledge source, is extremely significant for organizations which attempt to transfer tacit knowledge from the knowledge sources.

Empirical research that explores the relationship between the tacitness of knowledge and the knowledge transfer process focus on the effect of tacitness on the speed and performance of knowledge transfer and the method for successful transfer of tacit knowledge. Zander and Kogut (1995) show that highly codified knowledge transfers faster than tacit knowledge. Thus, firms should decrease the tacitness of their knowledge through an intensive effort to push for codification. Inkpen and Dinur (1998) prove the negative relationship between the tacitness of knowledge and efficiency of knowledge transfer. Lord and Ranft (1998) also show that the tacitness of knowledge has a negative effect on the effectiveness of knowledge transfer.

Previous studies focus on the effect of decreasing tacitness of knowledge on speed and performance of knowledge transfer. However, they pass over the organizational reaction to knowledge characteristics. Each organization selects different strategic behaviors, such as increase of the effort for knowledge transfer, or abandonment of knowledge transfer altogether. Thus in this paper, we study the relationship between the perception of tacitness of knowledge and organizations' behavior to acquire that knowledge.

Because tacit knowledge can be learned and transferred through observations and doing (Eisenhardt & Santos, 2002), frequent interactions between knowledge sources and recipients are strongly required to transfer tacit knowledge. Inkpen and Dinur (1998) insist that high-level interactions, such as regular meetings between involved parties, human resource exchanges, and frequent visits to manufacturing facilities are required for the successful transfer of tacit knowledge. Lam (2000) suggests that tacit knowledge can be acquired and transferred through practical experiences executed in the relevant context. Carlile (2004) proposes that a common lexicon is required to successful knowledge transfer, and sufficient time and abundant interactions are needed to build up the common lexicon. Therefore, organizations increase their effort for knowledge transfer and frequently interact with knowledge sources when the knowledge is highly tacit. Thus, we suggest the following hypothesis:

Hypothesis 1. When the perceived tacitness of knowledge is high, organizations are more inclined to frequently contact knowledge sources.

2.3. Difficulty of knowledge and effort for knowledge transfer

In the organizational learning perspective, the difficulty of knowledge is an important factor that affects an organization's effort for knowledge transfer. Because knowledge transfer is fundamentally accomplished by interactions between knowledge sources and recipients, even though knowledge sources can precisely codify their knowledge and can teach knowledge recipients

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