ABSTRACT

Researchers have demonstrated that organizations operating within formal networks are more likely to experience knowledge transfer, and the associated benefits of knowledge transfer, than would organizations operating outside of a network. However, limited research attention has been given to how the established antecedents of knowledge transfer are affected by the different forms that multi-organizational networks can assume. Using two case studies, we develop six testable propositions regarding how three of the established antecedents of knowledge transfer—absorptive capacity, shared identity and causal ambiguity—would be affected by the different characteristics, which define multi-organizational network form. We discuss these propositions and raise issues of relevance for researchers and practitioners.

Keywords: absorptive capacity; causal ambiguity; knowledge management; organizational learning; multi-organizational networks; shared identity

INTRODUCTION

Research has shown that well-structured multi-organizational networks form the basis for superior economic gains relative to the performance of firms operating outside of a formal network. These differences have been explained in part because of the increased efficiency in accessing and transferring knowledge within a well-structured network. However, because such gains are contingent upon the knowledge transfer capabilities of member organizations, they are not guaranteed. For example, in their study of the biotechnology industry, Powell, Koput, and Smith-Doerr, (1996) determined that organizations embedded within R&D networks generated more scientific papers, with more citations per paper, and generally experienced greater sales than did similar firms that were less integrated within a network. Darr, Argote, and Epple (1995) found that members of a pizza franchise experienced shorter operational learning times, as measured by decreasing unit costs, than did similar pizza outlets not part of the same franchise. Ingram and Simons (2002) found that experiential knowledge transfer was greater among kibbutzim (agricultural coopera-
tives in Israel) within the same federation (organized network), while the kibbutzim outside of a federation did not demonstrate the same degree of experiential knowledge transfer and experienced negative economic consequences. In contrast, the multibillion dollar NASA Mars Climate Orbiter was lost in space because engineers from one of several subcontractors involved in the network project incorrectly entered data in English units instead of metric units (Postrel, 2002).

These four studies examined a loosely affiliated R&D network of biotechnology firms, a hierarchical network of pizza franchises, a decentralized agricultural network of kibbutzim and a network of subcontracted engineers, respectively—clearly a highly diversified set of networks. These network examples highlight the fact that multi-organizational networks can assume very different forms. For example, some networks are more centrally governed than others, while some networks tolerate more competition among their members than others.

Since organizations join networks to mitigate costs and uncertainties, the question of how the characteristics of different network forms would be expected to affect (or not) the transfer of knowledge is relevant to both practitioners as well as researchers in knowledge management and/or organizational learning.

In this article, we first review the primary antecedents that have been demonstrated to influence the transfer of knowledge. These include absorptive capacity, shared identity and causal ambiguity. We then review different network forms based upon two primary defining structural characteristics, with particular attention to the issue of knowledge transfer difficulty. Using data from two case studies, we then discuss and propose how two specifically selected network forms would be expected to experience these factors of knowledge transfer, based upon the structural characteristics of the networks. Finally, we discuss the conclusions reached in this article and highlight their implications, raising issues of interest to both knowledge management researchers as well as field practitioners, and propose areas for further research.

**KNOWLEDGE TRANSFER DIFFICULTY**

Knowledge has been described as a “sticky” asset which is costly to acquire and difficult to transfer between locations, even within the boundaries of a single firm (Szulanski, 1996; von Hippel, 1994). When knowledge cannot be transferred from one location to another, the organization or network of organizations may experience negative implications beyond issues of cost and simple inefficiencies. Knowledge is increasingly recognized as the engine of economic growth and a source of competitive advantage. Where knowledge is sticky and transfer is difficult, the implications are more strategic and may threaten a firm’s long-term competitiveness, including, new enterprise formation; the exploitation of technological know-how; and the successful development and commercialization of new products and services (Teece, 1998). Therefore, a better understanding of the factors that impede or enhance multi-organizational knowledge transfer can be critical to a firm’s competitiveness.

**Absorptive Capacity**

The concept of absorptive capacity as a positive antecedent or enabler of knowledge transfer has received a significant amount of research attention since Cohen and Levinthal’s (1990) foundational work on the topic. Their definition of the concept is the most widely cited and states that an organization’s ability to recognize the value of external information, assimilate it and apply it to generate economic rents is critical to its innovative capabilities. Lane, Koka and Pathak (2002) provide a thematic analysis of 189 different papers that have studied absorptive capacity from a variety of different perspectives—all using the Cohen and Levinthal definition of the concept. Researchers who have studied absorptive capacity, specifically regarding its role as an antecedent in the transfer of knowledge, agree that the recipient’s absorptive capacity is critical to an effective transfer of knowledge in an intra-organizational context—making absorptive capacity an enable or positive antecedent of knowledge transfer.
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