

INTRODUCTION

Knowledge Transfer in Organizations: Learning from the Experience of Others

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In the introduction to this special issue of *Organizational Behavior and Human Decision Processes* on the psychological foundations of knowledge transfer in organizations, we argue that knowledge transfer is becoming increasingly important in organizations. Organizations that are able to transfer knowledge effectively from one unit to another are more productive and more likely to survive than those that are less adept at knowledge transfer. Although organizations are able to realize remarkable increases in performance through knowledge transfer, successful knowledge transfer is difficult to achieve. The articles in this special issue identify factors affecting knowledge transfer in organizations. These articles provide empirical evidence about effective mechanisms for transferring knowledge as well as about barriers to and facilitators of knowledge transfer. By focusing on the psychological processes that underlie knowledge transfer within a unit and between units within a firm, this special issue

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complements work in cognitive psychology on knowledge transfer at the individual level of analysis as well as work in strategy and organizational theory on knowledge transfer at the firm or industry levels of analysis. This special issue opens up the “black box” of knowledge transfer in organizations by providing new theory and empirical evidence on the psychological processes that are the foundations for knowledge transfer in organizations. © 2000 Academic Press

How is knowledge transferred from one unit of an organization to another? What are the factors that facilitate or impede knowledge transfer in organizations? How can organizations be designed to promote knowledge transfer? What are the implications of knowledge transfer for economic performance? The articles in this special issue of *Organizational Behavior and Human Decision Processes* address these questions. They do so at different levels of analysis, from different theoretical perspectives, and with different methods. Together the articles provide a mosaic of what is known about knowledge transfer in organizations as well as point to important pieces of information that are needed to fill gaps in our understanding of this important phenomenon.

Knowledge transfer is becoming increasingly important in organizations. Firms of today are more often organized on a global basis in order to take advantage of differences in expertise, labor costs, and access to markets around the world. For example, a new product design team may consist of subgroups in the United States, Europe, and Asia. Or manufacturing may be done globally to capitalize on differences in capabilities across establishments in different countries (“Survey of Manufacturing,” 1998). Effective management of these distributed organizations requires that knowledge be transferred from one team, department, or geographical division to another.

Other current business trends that point to the importance of knowledge transfer include the increased use of joint ventures and strategic alliances (Powell, Koput, & Smith-Doerr, 1996) and the increased frequency of mergers and acquisitions (Haunschild & Miner, 1997). Realizing benefits from new relationships hinges on the success of knowledge transfer between organizations. A growing body of empirical evidence indicates that organizations that are able to transfer knowledge effectively from one unit to another are more productive and more likely to survive than organizations that are less adept at knowledge transfer (Argote, Beckman, & Epple, 1990; Baum & Ingram, 1998; Darr, Argote, & Epple, 1995).

Although organizations can realize remarkable performance benefits by transferring knowledge from one unit to another, successful knowledge transfer can be difficult to achieve (Argote, 1999). Individuals who do not understand why particular practices are effective may not be adept at communicating their knowledge to others (Szulanski, 1996). Organizational members may not share information they possess with other members (Stasser & Titus, 1987). Strong social identities and in-group favoritism may impede knowledge sharing across

groups and divisions in organizations (Ashforth & Mael, 1989; Brewer, 1979; Messick & Mackie, 1989).

A field study of 32 attempts to transfer knowledge embedded in technology from one manufacturing establishment to another within the same organization provided some quantitative evidence on the difficulties of knowledge transfer (Galbraith, 1990). Of the 32 attempts, 10 failed and were terminated. Of the remaining attempts, the initial productivity loss at the "recipient" site (relative to the level achieved at the "donor" site immediately before the transfer) ranged from 4 to 150%, with a mean productivity loss of 34%. Understanding how to facilitate knowledge transfer and minimize productivity loss can significantly improve organizational performance.

Knowledge transfer in organizations is the process through which one unit (e.g., individual, group, department, division) is affected by the experience of another. For example, an automotive assembly plant may improve its performance by implementing a new practice developed at its sister plant. Or a hotel may increase its knowledge of effective customer service by utilizing the experience of other hotels in its chain. In these examples, the recipient unit learns from the experience of other units in the organization. Thus, organizations can learn not only directly from their own experience, but also indirectly from the experience of other organizations (Argote & Epple, 1990; Huber, 1991; Levitt & March, 1988).

Knowledge transfer in organizations occurs through a variety of mechanisms. These mechanisms include personnel movement (Almeida & Kogut, 1999; Gruenfeld, Martorana, & Fan, 2000); training (Moreland & Myaskovsky, 2000; Thompson, Gentner, & Lowenstein, 2000); communication (Levine, Higgins, & Choi, 2000; Rulke, Zaheer, & Anderson, 2000; Stasser, Vaughan, & Stewart, 2000); observation (Nonaka, 1991); technology transfer (Galbraith, 1990); "reverse engineering" products; replicating routines (Szulanski, in press); patents, scientific publications, and presentations (Appleyard, 1996); interactions with suppliers and customers (von Hippel, 1988); and alliances and other forms of interorganizational relationships (Baum & Ingram, 1998; Darr, Argote, & Epple, 1995; Larsson, Bengtsson, Hendriksson, & Sparks, 1998; McEvily & Zaheer, 1999; Powell, Koput, & Smith-Doerr, 1996). The concluding article in this special issue provides a theoretical framework of mechanisms for transferring knowledge in organizations (Argote & Ingram, 2000).

The topic of knowledge transfer has long received attention in the literature on individual psychology. More recently, the phenomenon of knowledge transfer has figured prominently in the literatures on strategic management and organizational theory. At the individual level, considerable research in cognitive psychology has been devoted to how experience on one task affects the performance of another (see Singley & Anderson, 1989, for a review). For example, Singley and Anderson (1989) examined how experience acquired by individuals in one programming language affected their performance in another language. Research has also been done on the effectiveness of various training programs for transferring knowledge to individual participants (see Baldwin & Ford, 1988; Goldstein, 1991; Kraiger, Ford, & Salas, 1993). Research on knowledge

transfer in the cognitive psychology and training literatures has generally focused on outcomes at the individual level of analysis, such as the extent and the accuracy of recall or the amount of time it takes to learn new tasks.

By contrast, research in strategic management focuses on outcomes at the organizational level of analysis, such as the productivity and profitability of firms (Henderson & Cockburn, 1994; Montgomery, 1995). Firms that are effective in transferring knowledge internally while preventing the spillover of knowledge to external constituents are theorized to be more successful than those firms that lack effective knowledge management (Lipmann & Rumelt, 1982; Winter, 1995; Zander & Kogut, 1995). Although effective knowledge transfer is generally viewed as central to firm success in this line of work, with a few exceptions, the strategic management literature neither specifies nor tests the processes or underlying mechanisms through which knowledge transfer occurs in organizations.

Knowledge transfer also plays a central role in the macro-organizational theory literature. A fundamental issue in organizational theory is the variation in organizational form. New empirical evidence indicates that the ability to transfer knowledge effectively from one unit to another is an important factor explaining the emergence of the new “interconnected” organizational form. Interconnected organizations such as franchises (Darr, Argote, & Epple 1995), chains (Baum & Ingram, 1998), and alliances (Powell, Koput, & Smith-Doerr, 1996) have been found to have performance advantages relative to their more autonomous counterparts because they can transfer knowledge more readily across their constituent parts. Thus, interconnected organizations have a larger experience base from which to learn than independent organizations. In addition to playing a key role in explaining organizational form, knowledge transfer also plays a key role in explaining population-level learning (Miner & Anderson, 1999; Miner & Haunschild, 1995). Knowledge transfer across organizations is one of the major mechanisms through which learning at the level of a population of firms occurs.

The current volume examines the psychological foundations of knowledge transfer in organizations. It provides theory and presents new evidence on the effectiveness of various knowledge-transfer mechanisms, such as personnel movement, training, communication, and the like. The volume also presents evidence on those factors that facilitate and on those that impede knowledge transfer in organizations. By examining the psychological processes underlying the transfer of knowledge, the volume aims to open up the “black box” of the phenomenon of knowledge transfer in organizations. Thus, the volume complements macro work on knowledge transfer in strategic management and organizational theory by providing evidence on the mechanisms through which knowledge transfer occurs and the conditions under which it is most likely.

The volume also complements research on knowledge transfer in cognitive psychology by moving beyond individual outcomes to examine outcomes at the group, departmental, and organizational levels of analysis. Findings from cognitive psychology can be relevant in organizational contexts. In order to

understand knowledge transfer in organizations, however, we must move beyond understanding how an individual applies knowledge from one context to another to understanding how larger collectivities (e.g., groups, departments, divisions) accomplish this transfer. Knowledge transfer at levels of analysis higher than the individual generally involves important social processes such as sharing, interpreting, and combining information and storing this information so that it can persist in the face of individual turnover. Thus, important social processes come into play when analyzing knowledge transfer at levels of analysis higher than the individual. These processes are the focus of the current volume.

The articles in this volume examine knowledge transfer at levels of analysis ranging from the dyadic to the organizational. At the dyadic level, Thompson, Gentner, and Lowenstein (2000) draw on work on analogical reasoning (Gick & Holyoak, 1980) to develop and test predictions about the effectiveness of various training strategies on participants' ability to transfer knowledge to new contexts.

Several articles in the volume focus on the group level of analysis. Gruenfeld, Martorana, and Fan (2000) examine how the moving of personnel from one group to another affects the creation and transfer of knowledge. Levine, Higgins, and Choi (2000) examine how group members develop a shared reality through their interaction with one another and how that shared reality shapes their problem-solving strategies. Paulus and Yang (2000) propose and test conditions under which "brainstorming" can be productive in generating new knowledge in groups. Stasser, Vaughan, and Stewart (2000) examine conditions under which group members who possess unique information share that information in group discussions. In the context of an experiment that examines knowledge transfer over time, Moreland and Myaskovsky (2000) compare the effects of feedback and the experience of working together on the development of knowledge of "who knows what" in groups.

Other articles focus at the departmental or establishment levels of analysis. Rulke, Zaheer, and Anderson (2000) examine the effectiveness of various communication channels in conveying information about organizational capabilities in the retail food industry. Darr and Kurtzberg (2000) analyze factors facilitating knowledge transfer across fast-food franchises, with particular attention to the role of strategic similarity. Szulanski (2000) provides a conceptual model of how factors facilitating knowledge transfer in organizations vary over stages of the transfer process and illustrates the model with data from over 100 attempts to transfer best practices within organizations. The volume concludes with an article by Argote and Ingram (2000) that provides a conceptual model of knowledge transfer in organizations, argues that knowledge transfer is a major contributor to the competitive advantage of firms, and suggests directions for future research.

By bringing together these articles on knowledge transfer in a single volume, we hope to represent the richness and range of research on the psychological foundations of knowledge transfer in organizations. We hope that the diversity of perspectives represented in the volume will facilitate new insights about

this important phenomenon. We also hope that this special issue will stimulate new conceptual and empirical research to advance our understanding of knowledge transfer in organizations.

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