



Knowledge transfer processes in IT outsourcing relationships and their impact on shared knowledge and outsourcing performance

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ABSTRACT

What is the impact of specific knowledge-transfer processes on the level of shared knowledge and, in turn, on outsourcing performance in outsourcing relationships? Drawing on a series of case studies covering IT providers and banks, we investigate several applied knowledge-transfer processes dedicated to the transfer of explicit or tacit knowledge between outsourcing banks and their providers. We examine the differential influence of various types of knowledge transfer on shared knowledge between the parties and on the resulting outsourcing performance. Results depict the differential impact of various knowledge-transfer processes dedicated to the transfer of explicit, or tacit knowledge, respectively, on the development of shared knowledge. Interestingly, the combination of both knowledge-transfer processes dedicated to the transfer of explicit knowledge and those dedicated to the transfer of tacit knowledge proves to be most effective. Furthermore the results indicate that high levels of shared knowledge positively influence outsourcing performance. In addition to previous literature, we found transfer processes for explicit knowledge in an outsourcing context to consist of two dimensions: The content dimension, primarily focused on in literature, and the sender–receiver dimension of transfer processes which are rarely addressed in outsourcing literature. The content dimension embraces mechanisms such as trainings, SLAs and standards that define how content has to be interpreted, whereas the sender–receiver dimension of transfer processes of explicit knowledge defines explicit, documented interaction structures between parties.

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1. Introduction

During the last decades of IS research, a vast amount of work on knowledge has accumulated and proved to be important for firms. Knowledge allows firms to add value, and it is argued that the ability to generate knowledge is at the core of the theory of the firm (Amit & Schoemaker, 1993; Hitt, Bierman, Shimizu, & Kochhar, 2001; Peppard & Ward, 2004) and that knowledge is the most critical asset of the firm (Grant, 1996). This importance is highlighted by a recent study concerning supply chain flexibility. Gosain, Malhotra, and El Sawy (2004) found that deep coordination-related knowledge was the single most important factor positively influencing supply chain flexibility. This knowledge was far more important than data connectivity and modularity issues, or the standardization of process and content interfaces. In their conclusion regarding the importance of knowledge, they stated: “This shows that the state of an enterprise’s knowledge relevant to its sensing and adap-

tation capabilities for coordination should be assessed by reference to underlying mechanisms by which knowledge is acquired, contextualized, integrated, maintained, retrieved, and used” (Gosain et al., 2004, p. 32).

Knowledge, defined as justified true belief (Nonaka, 1994), is the core of the knowledge-based theory (KBT) (Grant, 1996), or knowledge-based perspective, that builds upon the resource-based view (RBV) (Alavi & Leidner, 2001). The knowledge-based theory views “the firm as a dynamic, evolving, quasi-autonomous system of knowledge production and application” (Spender, 1996, p. 59). This perspective contends that knowledge is the principal resource of firms and that production requires the integration of a broad range of knowledge (Grant, 1996). To develop this principal resource Nickerson and Zenger (2004) suggest that the knowledge stock can be expanded by acquiring or absorbing knowledge from outside the firm or by generating new knowledge by, first, the identification of a problem and, second, the discovery of a valuable solution.

In particular, knowledge is a crucial factor in IT outsourcing decisions. IT outsourcing is defined as the “the handing over to a third party management of IT/IS assets, resources, and/or activities for required results” (Willcocks & Kern, 1998). Organizations outsource

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IT activities that are not regarded as their core competencies (Feeny & Willcocks, 1998). Therefore, they are acquiring external knowledge that has to be integrated into their routines and processes (Dibbern, Goles, Hirschheim, & Jayatilaka, 2004). This transfer of knowledge between outsourcers and their providers is two-sided as, on the one hand, knowledge is transferred from the provider to the outsourcer (technology-specific knowledge regarding, e.g. provided services) and, on the other hand, from the outsourcer to the provider (business-specific knowledge regarding processes and procedures) (Quinn, 1999). In both cases the goal is to increase the knowledge of the other's knowledge domain, that is, to increase shared knowledge through these knowledge-transfer processes. The importance of knowledge transfer in IT outsourcing becomes apparent when examining the outsourcing lifecycle. Knowledge transfer between both parties is crucial in the pre-outsourcing phase, during which vendors are selected and contracts are crafted, in the transition phase in which services are transferred to the provider, and has to be sustained over the years of the delivery phase (Dibbern et al., 2004).

Combining research on designing an effective IT outsourcing relationship and on the knowledge-based perspective, we formulate the following research questions:

- First, how do different types of knowledge-transfer processes influence the level of shared knowledge between the parties involved in an IT outsourcing relationship?
- Second, how does shared knowledge affect the performance of the IT outsourcing relationship?

In this context, we examine, in particular, the process in which knowledge is transferred and integrated, and follow the caveat of Eisenhardt and Santos (2002, p. 160), who state: "More focus should go to knowledge integration processes, in which the development of meaning and the creation of new knowledge occurs through individual interactions and is affected by social contexts."

To answer the research questions, we have conducted a case study series that surveys the IT outsourcing relationships of 12 banks and their IT providers. Different applied knowledge-transfer processes are analyzed regarding their influence on shared knowledge and outsourcing performance.

The remainder of this paper is structured as follows: the next section provides an overview of the theoretical foundation, followed by our research model and the hypotheses that guide our work in the subsequent section. The third section describes the case study setting and methodology. Afterwards, the results are presented. In the final section, limitations are discussed and conclusions are drawn.

2. Theoretical foundation and research model

Knowledge, in the interpretation of Alavi and Leidner (2001), is personalized information related to facts, judgments, ideas, observations, etc. For personalized information, it is not important whether the information is accurate, new, unique, or useful. Knowledge, in this view, results from the cognitive processing of stimuli. Knowledge is also defined as justified true belief by Nonaka (1994), who distinguishes between explicit and tacit knowledge.

Explicit knowledge can be articulated, codified, and easily transferred. Thus explicit or codified knowledge "is transmittable in formal, systematic language" (Nonaka, 1994) (Nonaka, 1994, p. 16). Therefore, it can be defined as "articulated, generalized knowledge," which is, for example, the "knowledge of major customers in a region" (Alavi & Leidner, 2001, p. 113). In contrast, *tacit knowledge* is linked to the individual and is very difficult, or even impossible, to articulate. Only through observation and doing something first-

hand is it possible to learn this type of knowledge. As knowledge is explored, put into action and socially justified, only some part of it may be codified (made more explicit), by being converted into messages that can then be processed as information and transmitted" (Eisenhardt & Santos, 2002, p. 140). Thus, "tacit knowledge is the information that has been processed in the minds of individuals through deliberation, learning, and judgment" (Pavlou, Housel, Rodgers, & Jansen, 2005, p. 208) and therefore this type of "knowledge is rooted in actions, experience, and involvement in specific context" (Alavi & Leidner, 2001, p. 113). An example of tacit knowledge is the "best means of dealing with specific customer" (Alavi & Leidner, 2001, p. 113). Tacit knowledge is partially embedded in individuals and partially in collaborative relationships (Hitt et al., 2001) and encompasses a cognitive and a technical element (Nonaka, 1994). *Technical* refers to skills and know-how whereas *cognitive* refers to mental models of an individual. Research often focuses on tacit knowledge as a means of achieving a competitive advantage (see e.g. Hitt et al., 2001). However, this should not lead to the assumption that tacit knowledge is more valuable, because tacit and explicit knowledge are mutually dependent and reinforcing, or as Alavi and Leidner explain: "Tacit knowledge forms the background necessary for assigning the structure to develop and interpret explicit knowledge" (Alavi & Leidner, 2001, p. 112).

The *generation of new knowledge* takes place in individuals. Based on generic knowledge and skills that can be described verbally (King & Zeithaml, 2003), generic knowledge and skills are enriched by practice and lead to an increased recognition of unrealized patterns, improved abilities to network knowledge domains, and lower levels of cognitive involvement. This so-called procedural stage of knowledge generation refers to developing know-how and is inherently engaged in accumulating practical skills through learning (Kogut & Zander, 1992). This accumulation of practical skills also encompasses the move from explicit forms of knowledge to more tacit forms, which can be understood using the concept of cognitive processing. Following the interpretation of Alavi and Leidner (2001), cognitive processing transforms information into knowledge. If knowledge is articulated and thus made explicit it becomes information (facts, axiomatic propositions, symbols) that can be exchanged with other individuals "once the syntactical rules required for deciphering it are known" (Kogut & Zander, 1992, p. 386). These individuals, in turn, process this information and transform it into knowledge interpreted by their mental models (Nonaka, 1994).

Based on such knowledge integration, *shared knowledge* develops. Sharing a common knowledge base is required for individuals coming to the same understanding of an issue. A shared knowledge base is essential for coordination among agents who have different models of the world and do not know the models of others (Foss, 1999). The importance of a shared knowledge base is also highlighted in, e.g. several alignment studies and studies of IT performance (e.g. Nelson & Coopridge, 1996; Preston & Karahanna, 2004; Ray, Muhanna, & Barney, 2005; Reich & Benbasat, 2000), dealing with the interaction of the business domain and the IT domain. In this context, shared knowledge can be defined as "an understanding and appreciation among IS and line managers for the technologies and processes that affect their mutual performance" (1996, p. 411). Appreciation means sensitivity to the organizational environment of the other group encompassing goals, constraints, interpretations, and behavior. Thus, shared knowledge forms the basis for performance gains.

An initial step towards the formation of shared knowledge is to create a common language. Human actors in the IT and the business domain often speak different technical and procedural languages (Keen, 1991). Therefore, the requirements, goals and constraints articulated by one domain can be perceived as unreasonable demands and as uncooperative by the other domain. Thus,

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