



Knowledge transfer and utilization in IT outsourcing partnerships: A preliminary model of antecedents and outcomes



Thompson S.H. Teo^{a,b,*}, Anol Bhattacharjee^c

^a Department of Decision Sciences, School of Business, National University of Singapore, Singapore

^b Department of Information Systems, School of Computing, National University of Singapore, Singapore

^c Department of Information Systems and Decision Sciences, College of Business, University of South Florida, United States

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ABSTRACT

We developed a nomological network of antecedents and outcomes of knowledge transfer and utilization in IT outsourcing relationships, and tested it using a survey of 146 IT outsourcing partnerships in Singapore.

Our findings showed that the characteristics of outsourcing clients, vendors, and knowledge transferred played important roles in facilitating knowledge transfer; the transferred knowledge in conjunction with the knowledge integration mechanisms affected knowledge utilization in client-firms, and that this generated significant operational and strategic performance gains in IT operations. Our findings can aid practitioners determine how to use outsourcing to improve knowledge management in their organization.

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1. Introduction

Increasingly, firms are using IT outsourcing to external vendors to obtain returns far beyond cost savings and operating efficiencies. As Hanif Lalani, British Telecom's Group Finance Director commented, "People have realized that ... outsourcing vendor staff are very clever." ... They have many "ideas about how they could work with you and improve things". By outsourcing to India, Singapore, and China, the Bank of America is using its IT outsourcing to acquire valuable knowledge from its vendors, in addition to cost savings, time savings, and better quality programming. Barbara Dosoer, Chief Technology, Service and Fulfillment Executive commented, "There's a lot that we've learned from our vendors that we've been able to bring back to the U.S."

The above examples suggest that IT outsourcing partnerships are gradually evolving from simple cost reduction initiatives to knowledge management initiatives, and that some firms are using IT outsourcing as a strategic partnership to learn from their vendors. However, the process by which outsourcing clients acquire knowledge from vendors, as well as the key drivers and outcomes of learning, remain unclear. Although there is an extensive body of research on the predictors and outcomes of IT

outsourcing [16], such work has focused on operational roles of outsourcing such as improving cost efficiencies or scale; relatively less attention has been devoted to understanding their potential ramifications for knowledge flows between vendor and client firms. Our research addressed this gap.

While some outsourcing research has emphasized the need for knowledge transfer from client to vendor (e.g., [7]), little research has examined knowledge transfer from vendor to client. Using an economic learning model, Cha et al. [5] found that the optimal outsourcing rate depended on the client's ability to acquire production knowledge from the vendor. In cases where such knowledge transfer was inadequate, the client tended to adopt either total insourcing or total outsourcing. In contrast, if the transfer of such knowledge was substantial, the client tended to engage in selective outsourcing. The growing preference for selective outsourcing over total insourcing or outsourcing suggests that clients do see outsourcing vendors as a valuable source of external knowledge.

A useful lens to conceptualize knowledge flows is the notion of knowledge transfer and its utilization. While there is significant research on knowledge transfer, its subsequent utilization in IT outsourcing partnerships remains underdeveloped. Though recent IS work has explored knowledge transfer between clients and vendors [17] as well as knowledge transfer portfolios within the firm [30] during the systems development process, nomological network spanning knowledge transfer and knowledge utilization remains unclear. Even less work has examined whether knowledge transferred across firm boundaries can be effectively utilized in the

* Corresponding author at: Department of Decision Sciences, School of Business, National University of Singapore, Singapore. Tel.: +65 6516 3036; fax: +65 6779 2621.

E-mail address: bizteosh@nus.edu.sg (Thompson S.H. Teo).

Table 1
Key empirical studies on knowledge management and IT outsourcing.

Article	Methodology/sample	Result
[6]	Secondary data on 617 firms.	IT-related knowledge held by vendors enables productivity gains, moderated by IT intensity.
[7] (H3)	Case study of knowledge transfer by a multinational bank to an insourced location.	Some IS body of knowledge areas are easily transferred, some require intense knowledge transfer and experiential learning.
[8]	119 responses from 17 vendors.	Deliberate cognitive learning promoted knowledge transfer from client to vendor.
[14]	Field study of 82 Korean firms.	Potential knowledge complementarities are associated with outsourcing effectiveness.
[18] (H1)	Interviews with 9 customer project managers and 6 supplier PM. Survey of 179 customer PM and 191 supplier PM.	Identified 6 obligations critical to outsourcing success from viewpoint of customer and vendor. One supplier obligation is effective knowledge transfer.
[19] (H3)	Case study of engineering firm offshoring to India.	CAE tools enable offshoring, but tacit knowledge was not made transparent. Consequently, new work practices had to be developed.
[21] (H3)	Two case studies of offshored software.	Interdependence between partners addressed through procedural coordination (specifying and partitioning tasks and implementing integration mechanisms to bridge communication gaps). Knowledge codifiability positively affected knowledge transfer.
[23]	Case study of Tata Consultancy Services manage dispersed expertise.	Identified eight practices used to manage dispersed expertise including implementing knowledge transfer and knowledge retention.
[26] (H1, H2, H4)	Case study of a large manufacturing firm and its management of global IT suppliers.	Social capital helped improve knowledge transfer, decrease development costs, shorten cycle time, increase quality of deliverables, quickly respond to changes in the regulatory environment, and build strong, strategic relationships with suppliers.
[27]	Survey of 138 client–vendor outsourcing pairs.	Clients with technical or relationship management knowledge, or high trust in vendors, use less formal controls. Task uncertainty positively associated with amount of formal control.
[37]	Conjoint survey and interviews on 1008 project-level decisions collected from 33 Japanese and 55 US managers.	Client technical knowledge negatively associated with outsourcing. Project requirements specificity positively related to outsourcing for Japanese managers but not US.

Note: Reference(s) for hypotheses is indicated in Article column.

internal activities of client firms. Furthermore, the literature that examined interorganizational knowledge transfer has identified a variety of antecedents in the broader context of international strategic alliances, rather than in the IT outsourcing context. The objective of our study was therefore to address the gaps in the literature, focusing specifically on the following research questions:

1. What are the key antecedents of knowledge transfer and utilization in IT outsourcing partnerships?
2. What contingent factors, if any, mediate the relationship between knowledge transfer and knowledge utilization in IT outsourcing partnerships?
3. What are the operational and strategic consequences of knowledge utilization for client firms with IT outsourcing partnerships?

To address these questions, we built on past research to identify key antecedents (client's motivation, vendor's willingness, knowledge codifiability, client's prior experience with vendor) presumed to influence knowledge transfer. We also examine the role of knowledge integration mechanisms in facilitating the client's utilization of such transferred knowledge to postulate the operational and strategic outcomes of the client's IT function. The proposed model is tested using data on IT outsourcing partnerships from 146 organizations in Singapore.

2. Theoretical development

Previous research on knowledge management has examined its frameworks [2,4], factors affecting it [34,40], knowledge flows [35], and its value [33]. A different stream of research on IT outsourcing has examined factors affecting it [31,37], its benefits and risks [13,22], its relationships and value and success of outsourcing [12]. Detailed reviews of IT outsourcing research are

available from, Gonzalez et al. [11] and King and Torkzadeh [15]. However, beyond a few case studies (e.g., [19,26]), relatively little research has attempted to integrate the two streams or examined IT outsourcing as a way for enhancing a firm's knowledge. A summary of key themes in this research area is shown in Table 1.

We defined *knowledge transfer* as the degree to which knowledge flows from the vendor to the client and *knowledge utilization* as the degree to which such transferred knowledge is used by the client in its internal IT activities.

Fig. 1 provides a conceptual model of knowledge transfer and utilization from previous knowledge management research. According to this model, contextual antecedents influence knowledge transfer, which, in conjunction with knowledge integration mechanisms, impacts knowledge utilization, which then influences strategic and IT performance. *Knowledge transfer* is a necessary but not sufficient condition for knowledge utilization because of the effect of knowledge integration mechanisms.

2.1. Antecedents of knowledge transfer

The three key features of knowledge management contexts are the properties of organizational units, of knowledge, and of relationships between units. Characteristics of the donor and recipient firms, attributes of the knowledge transferred, and attributes of the knowledge transfer process (relationships between units) are central to organizational learning. Likewise, knowledge transfer is affected by its characteristics (of the source, the recipient, and the context in which the transfer occurs).

Consistent with these, we expected that characteristics of the vendor and client firms, attributes of the transferred knowledge, and the relationship between vendors and clients affected the extent of knowledge transferred.

We posited that the *client's motivation* to absorb knowledge and the *vendor's willingness* to share knowledge were important antecedents of knowledge transfer in IT outsourcing partnerships.

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