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CLIENT INFLUENCE ON IT OUTSOURCING VENDORS' OPERATIONAL CAPABILITIES: A RELATIONSHIP LEARNING PERSPECTIVE

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Abstract

Operational capabilities are essential for any business in today's highly competitive environment. Whereas prior research on IT outsourcing vendors' operational capabilities has examined internal mechanisms, little is known about the effect of clients. This study focuses on clients' influence based on multiple cases drawn from the Japan-China IT outsourcing context. What is unique about this context is that the majority of Japanese clients are large mature IT vendors themselves. As a result, the clients play a "teacher" role for the vendors, which emphasize a strong client orientation. From a relationship learning perspective, this study shows that client characteristics, i.e., the purpose of outsourcing, level of project management maturity, and sustainability and length of projects, contribute to vendors' development of operational capabilities.

Keywords: IT outsourcing, relationship learning, operational capability development.

1 INTRODUCTION

The notion of capabilities in general refers to a firm's ability to consistently perform productive tasks and generate value (Nelson & Winter 1982). Not only are capabilities essential for a firm's growth and survival (Winter 2003), but they are also a major source of sustainable competitive advantages according to the resource-based view (Barney 1991). For IT outsourcing vendors, operational capabilities are crucial for service and product delivery (Jarvenpaa & Mao 2008), as the basis of their value proposition to the client, and thus the development of these capabilities is particularly important (Levina & Ross 2003).

External partners can be important for a firm's capability development (Andersson et al. 2002; Ngugi et al. 2010), because learning from clients is a critical means for accumulating business knowledge (Hansen et al. 1997). Moreover, learning within a client-vendor relationship cannot be achieved by the effort of either organization alone, but rather it depends on both parties' willingness to engage in joint learning activities in a cooperative manner (Selnes & Sallis 2003). Therefore, it is important to examine the role played by the client in IT vendors' operational capability development. Unfortunately, the extant literature tends to focus on the internal mechanisms of vendors, such as organizational design (e.g., Graud et al. 2006; Levina & Ross 2003; Jarvenpaa & Mao 2008) and organizational learning (e.g., Jarvenpaa & Mao 2008; Oshri et al. 2007), but largely ignores the influence of the client. Whereas a prior study examined IT vendors' capability development from an evolutionary economics perspective (Su et al. 2010), it did not specifically investigate the role of client in the process.

To fill the void in the literature, this research adopts a relationship learning perspective to IT vendors' capability development. Relationship learning refers to a joint activity in which two business partners endeavor to create value together more than they could by acting alone or with other partners (Selnes & Sallis 2003). It involves knowledge and information sharing, joint sense-making and knowledge integration (Cheung et al. 2010; Myers & Cheung 2008). The key to relationship learning is joint action (Selnes & Sallis 2003). Through interacting with the client, e.g., acquiring knowledge shared by the client and collaborating with the client to solve operational problems (Myers & Cheung 2008), a vendor gains understanding of the client's requirements, thus develops its own capabilities (Wu et al. 2006, 2007, 2011). In general, interactions between partners are instrumental for a vendor to get close enough to the "teacher firm" to acquire client-specific "how and why" knowledge, in addition to the objective and observable components of the teacher firm's capabilities. The acquisition of tacit knowledge permits the vendor to add unique value to its own capabilities (Lane & Lubatkin 1998).

The context of Japan-China IT outsourcing is well suited to research of client influence on a vendor's capability development. In contrast to US and EU clients outsourcing to India, Japanese clients tend to possess sophisticated software development expertise (Jarvenpaa & Mao 2008), which most Chinese vendors lack because of their much shorter history of existence and smaller scale, especially in the early stage of the industry (Su et al. 2010). On the one hand, Japanese clients tend to forge long-term partnerships, and some of them are willing to provide extensive support and learning materials (Huong et al. 2011) to help the vendors' growth (Su et al. 2010), e.g., by sending staff offshore to provide technical training and domain knowledge. On the other hand, most Chinese vendors adopt a learning by doing approach to capability development (Jarvenpaa & Mao 2008; Su et al. 2010), e.g., developers gradually form a meticulous and prudent style of work exhibited by the Japanese client via interacting with clients and abiding by their rigorous process management (Su & Levina 2010; Su et al. 2010). Therefore, Japanese clients play a key role in the capability development of Chinese vendors.

This multiple-case study investigates four IT outsourcing vendor-client relationships in two Chinese vendors, which demonstrate heterogeneous capabilities. In fact, we observed differences in capabilities among the groups that dealt with different Japanese clients in the same vendor. Through a comparative study of the four cases within and between the two vendors, we show factors that determine relationship

learning, to shed light on how various relational activities between different clients and vendors affect the development of vendor capabilities, and why.

2 LITERATURE REVIEW

2.1 Capabilities of IT Outsourcing Vendors

As IT outsourcing becomes increasingly prevalent, a growing number of studies have explored this rapidly evolving phenomenon (Su & Levina 2010). Although the number of studies from the vendors' perspective remains relatively small (Dibbern et al. 2004), it has been on the rise (Lacity et al. 2010). In particular, vendors' capabilities have become the focus of a number of studies (e.g., Ethiraj et al. 2005; Garud et al. 2006; Jarvenpaa & Mao 2008; Levina & Ross 2003).

Prior research has shown that three types of complementary capabilities are essential for IT outsourcing vendors, human resources, client relationship, and process management capabilities (Levina & Ross 2003). More specifically, human resources capabilities are associated with recruitment, training and staff development in general. Client relationship capabilities refer to the ability to effectively interact and collaborate with clients, whereas process management capabilities involve identification, documentation, standardization, and dissemination of best practices for managing IT projects.

Where do operational capabilities come from? Ethiraj et al. (2005) started this line of inquiry, by suggesting that repeated interactions with a client improve the vendor's client-specific capabilities, which reduce project costs and help improve project quality. Moreover, deliberate and persistent investments in infrastructure and software development processes improve a firm's project management capabilities. A later study examined IT vendors' learning mechanisms for developing capabilities, e.g., learning by doing and deliberate learning (Jarvenpaa & Mao 2008). These studies investigated how IT vendors develop operational capabilities from an internal organization perspective, but ignored the impact of interfirm relationships, especially for vendors that grew up with large clients (Hsu et al. 2008).

However, few studies focused on alliance for IT outsourcing (e.g., Su & Levina 2010; Su et al. 2010). Among the few exceptions, Su et al. (2010) investigated outsourcing vendors' interactions with their client from an evolutionary economics perspective. Such interactions allow the formation of new routines within the supplier organization as the supplier repeatedly interacts with various types of client firms. More specifically, four processes were identified, including replication of client habits, adaptation to the client, and lastly generation and preadaptation. Furthermore, another study based on the grounded theory approach (Su & Levina 2010) inductively identified the effect of a range of governance mechanisms in different client markets on Chinese IT vendors' capabilities. For example, US and EU clients emphasized vendors' ability to provide solutions for business problems, which facilitated vendors' client relationship capabilities through the collaboration process. In contrast, Japanese clients imposed strict process management on software development (Jarvenpaa & Mao 2008), by which Chinese vendors accumulated development capabilities. However, it is still not clear how clients affect IT outsourcing vendors' capabilities.

This research examines client-specific capabilities and process management capabilities. The former refers to being able to effectively communicate and interact with clients (Jarvenpaa & Mao 2008; Su et al. 2010), which is facilitated by a vendor's understanding of the business domain of the client and industry background (Deng et al. 2013; Jarvenpaa & Mao 2008). Such capabilities play a key role in quality and productivity of IT outsourcing. Process management capabilities refer to the ability to apply structured methodology and standardized techniques to managing software development tasks (Su & Levina 2010).

2.2 Relationship Learning

Relationship learning between supply chain partners has gained recognition in the literature lately (Jean et al. 2010), as a joint action between a vendor and a client to improve the efficiency and effectiveness of collaboration (Selnes & Sallis 2003). The partners share information, “which is then jointly interpreted and integrated into a shared relationship-domain-specific memory that changes the range or likelihood of potential relationship-domain-specific behavior” (Selnes & Sallis 2003: 80). In other words, relationship learning can be seen as a knowledge transformation and creation process that takes place within a specific relationship between a client and its supplier (Wu et al. 2011).

Following Myers and Cheung (2008) and Jean et al. (2010), this research considers relationship learning as interactions between an IT outsourcing vendor and its client, in which the partners share information and knowledge to address operational or strategic problems in their collaboration. It consists of three components, exchange of information and knowledge, joint sense making, and knowledge integration (Myers & Cheung 2008). Depending on the industry, the nature of information and knowledge sharing may differ. For example, partners in a supply chain often share experiences with products, changes in end-user requirements, and changes in the technology of the focal products (Myers & Cheung 2008), whereas in the IT outsourcing business, client knowledge and general technical knowledge are commonly shared (Huong et al. 2011).

Although exchange of information and knowledge is the basis for relationship learning (Cheung et al. 2010; Selnes & Sallis 2003), it is only one of the mechanisms for the working relationship to achieve operational efficiency (Myers & Cheung 2008; Jean et al. 2010). In addition, it also takes joint sense making and knowledge integration. Joint sense making is facilitated by dialogue within the relationship (Selnes & Sallis 2003). The dialogue includes face to face meetings, joint teams to analyze and discuss strategic issues (Myers & Cheung 2008), or simply telephone calls, to address operational problems (Selnes & Sallis 2003). It is also essential for the business partners to integrate knowledge gained into a relationship memory, such as “documents, computer memories, and programming” (Selnes & Sallis 2003: 83), which provides a common understanding of idiosyncratic routines and procedures governing the relationship for everyone (Myers & Cheung 2008).

In our research context, the Chinese vendors work on the downstream work of software development, i.e., coding and unit testing, as opposed to analysis and design, and thus they are only in a position to adapt to or duplicate their Japanese clients’ routines. The Japanese clients are unlikely to follow the vendor’s routines and software development processes (Su et al. 2010). Therefore, this research considers knowledge integration on the vendor side only, although the contents are based on knowledge sharing with the client and results of joint sense making.

3 RESEARCH METHODS

Since this study seeks to answer the “how” and “why” questions about a phenomenon that is deeply embedded in organizational practice, the case study methodology is selected (Walsham 1995). Following Eisenhardt’s approach to theory development (1989), this research conducted a multiple-case study, toward building a new theory on a client’s influence on operational capabilities of IT outsourcing vendors, from a relationship learning perspective. Four cases were identified through theoretical sampling (Eisenhardt 1989), and both within- and cross-case analyses were conducted to seek patterns of relationship between characteristics of clients and vendors’ operational capabilities.

3.1 Case Selection

This research was part of a larger project on IT outsourcing in China. We first chose two IT outsourcing vendors, Alpha and Beta (pseudo names to disguise their identity) from a pool of multiple vendors that the researchers had followed from 2007 to 2012, for the following reasons. The President of Alpha indicated repetitively his philosophy of “simply to follow the client,” which was a salient feature of the firm, whereas Beta strived to secure quality of delivery and to gain customer recognition by investing resources and effort heavily in process enhancement. Moreover, both vendors served a variety of clients, which permitted selection of clients of different types to compare their effects on the vendor’s capability development. The vendors exhibited various strengths of capabilities. We then chose two client-vendor relationships from each vendor firm, Alpha versus Client W and Client X, Beta versus Client Y and Client Z (pseudo names for all clients). Lastly, our long history of study on these firms provided a clear and comprehensive understanding of their unique features, evolution, and background. In short, the two firms were well suited for addressing our research questions.

3.2 Data Collection

The research team conducted semi-structured interviews onsite. Our questions centered on capability development initially, and later also explored sharing of knowledge by the client, joint sense making and interactions, and knowledge integration by the vendors, from a relationship learning perspective. Most of the interviewees held senior positions, including top managers and co-founders, and most of them were division heads and project managers (see Table 1). Each interview lasted about one hour to 1.5 hours. The interviews were recorded and transcribed for analysis, which produced a database with over 250,000 words. The research team also accumulated a large amount of archival data consisting of industry reports and interviews with professional associations.

Firms	Interviewees	Time of visit	Firm Profile
Alpha-W	10 interviews with the President, director of development center, division heads, and project managers	July 2007, July 2010, Jan. 2012, Feb. 2012	Founded in 1995, publicly listed in 2004. Headcounts over 3200 at the peak in 2007, down to about 3000 in 2012
Alpha-X	8 interviews with director of development center, division heads, and project managers	July 2010, Jan. 2012., Feb. 2012	
Beta-Y	8 interviews with the partners, division heads, and project managers	July 2007, July 2010, Jan. 2012, Feb. 2012	Founded in 2003, with a headcount of over 300 at the peak in 2007, down to 90 afterward
Beta-Z	9 interviews with the partners, division heads, and project managers	July 2007, July 2010, Jan. 2012, Feb. 2012	

Table 1. *Profiles of Interviewees*

3.3 Data Analysis

As is typical in comparative case research, we first wrote individual case write-ups based on the interviews and archival data (Eisenhardt 1989). Within-case analysis focused on identifying constructs and relationships to develop preliminary concepts and theoretical explanation for operational capability development. For each pair of vendor-client relationship we described the relationship evolution, collaboration, vendors’ human resource management and skills, and developed an understanding of relationship learning and capability. Client type, for example, was a construct emerged from this phase of analysis phase. We also recognized the relationship between clients’ type and vendors capabilities, but we left further analysis until we had completed all case write-ups in order to maintain the independence of the replication logic (Eisenhardt & Graebner 2007).

Then we conducted cross-case analysis, in which insights that emerged from each case were compared with those from other cases to identify consistent patterns and themes (Eisenhardt & Graebner 2007). Cases were grouped randomly by emerging constructs, such as client type, by capabilities, and by the same vendor, in order to facilitate comparisons and theory development. Comparisons were initially made between varied pairs of cases. Through the comparison, we refined emerging constructs and relationships between client characteristics and vendor capabilities. For example, the effect of project type on client-specific capability was identified through the comparison. As patterns emerged, other cases were added to develop more robust causal relationships (e.g., Santos & Eisenhardt 2009). Discrepancies and agreements in the emergent theory were noted and investigated further by revisiting the data. Figures and tables were drawn to help understand the relationship (Miles & Huberman 1994).

We followed an iterative process of cycling among theory, data, and literature to refine our findings, relate them to existing theories, and clarify our contributions (e.g., Santos & Eisenhardt 2009). Certainly, as with all theory building from cases, it was not an exact match, but a close one.

4 RESULTS OF DATA ANALYSIS

To illustrate the influence of clients on IT outsourcing vendors, each of the two firms is described as follows, along with two long-term clients, respectively.

4.1 Alpha with Clients W and X

Founded in 1995, Alpha was one of the largest Chinese IT outsourcing vendors that primarily targeted the Japanese market, publicly listed in Hong Kong since 2004. Since its beginning, Alpha focused on the Japanese market, mostly serving the brokerage and financial service industries. The top leaders of Alpha developed a personal relationship based on trust with their counterparts in the client firms. From 2001 to 2007, “Alpha has enlarged its size by ten times” according to the President of Alpha, “such brilliant development resulted from the stability of our two core clients” (Head of the development center). Business with the two core clients made up more than 80% of the total, among which the business with W, the largest client of Alpha, accounted for about 40%. Alpha had also become the largest Chinese vendor of these two core clients.

4.1.1 Alpha-W Relationship

“W’s main purpose for offshoring was not merely cost saving, but it had more to do with operational efficiency gains” (a VP of Alpha). Interestingly, starting from the beginning when W offshored downstream projects to Alpha, W intentionally paid a higher unit price (per man-month), 20% higher than that of other Japanese clients. W told Alpha bluntly, “I pay you such a high unit price so that you should arrange the best developers to work for my work, to start a virtuous circle” (a VP of Alpha).

Moreover, W adopted an attitude to grow hand-in-hand with its vendor, as a partner. In the early stage of their collaboration, W often sent technical experts to Alpha to teach technologies, methodology for project management, and software development processes, in a hand-holding manner. Senior managers of W also shared with Alpha managerial experiences and philosophy. For example, in light of growing costs in Beijing faced by Alpha, W “offered assistance to increase development productivity, and provided other advice” to offset the rising costs, instead of merely declining to raise the unit price.

Furthermore, W repeatedly expressed its desire for Alpha to undertake upstream tasks such as functional design, and provided to Alpha a great deal of application domain knowledge and relevant industry knowledge. “To help us (Alpha) understand its requirements, W does its best to send relevant industry background information to us” (A project manager). “Essentially we could get any materials that we

want” (Head of the development center). As a result, Alpha gradually developed the ability to conduct functional design on top of detailed design.

W possessed decades of experience in software development, to the extent that it had its own theory and methodology. Their extensive know-how was fully exhibited in its collaboration with Alpha. As recounted by a project manager, “this is in fact the PDCA theory of process enhancement, which features continuous Plan-Do-Check-Adjust. The client practices this theory really well. It attaches special importance to continuous enhancement. It is not terrible to have problems, but once a problem arises, it must be fixed. It pursues perfection relentlessly. W really implements the process to the fullest extent.”

Since the beginning, W guided Alpha in undertaking projects. Alpha gradually got used to the client’s approach over a long period of collaboration. “Their approach to doing things is entrenched in our practice, when the client leads us in projects. Therefore, when their staff is gone, we stick to the same approach naturally” (A project manager).

W’s projects were primarily in the brokerage business, and more than 50% of them were software products internally developed in W. They had a long development life cycle, associated with a great deal of follow-up maintenance work. In some cases, a product had lived for more than a decade. The shortest development project lasted for about one year. The longevity of projects was conducive to the vendor’s accumulation of business domain knowledge and industry background. Moreover, since the rules and regulations were largely the same for any firm in the brokerage industry, there was a high degree of reference value across projects, and project sustainability also benefited the vendor’s accumulation of business knowledge.

4.1.2 *Alpha-X Relationship*

X was a subsidiary of a large Japanese manufacturer, mainly servicing the retail business. It produced both hardware and embedded software applications. Its ability in managing software development was limited, weaker than W.

The motivation of X for offshore IT outsourcing was cost saving. “If our low cost is not sustainable, X would not give us new contracts any more. There is nothing left to discuss” (Director of the X division¹). Moreover, X showed no sign of interest in Alpha’s aspiration for conducting functional design, giving no response to Alpha’s proposal.

Projects from X tended to have a short life cycle, and over 50% of them lasted for 2-3 weeks, with the longest one lasting eight months. Moreover, “each project is highly unique. The previous one does not help in any way the next one,” according to the division director. As a result, accumulation of business knowledge was sparse in Alpha. Because of the short project life cycle, there were fewer travel opportunities for mutual visit, and consequently fewer on-site interactions with the client personnel.

Moreover, “background materials from the client are not quite complete. For example, one of their developers might be familiar with one particular aspect of the task, and another person knows well another. It was up to us to piece together the fragmented elements” (Project Manager (PM) 3). Therefore, Alpha’s master of business knowledge was thin, except that “a couple of project managers are relatively familiar with the business knowledge” (Director of X division).

In contrast to pure IT firms, X’s control over development processes was relatively loose. “It is because the client emphasizes rapid development, without a strict control on processes,” according to the director of the X division. Moreover, “the client staff does not stress [process management]. For example, they might send someone to train us for a half year. We could settle with whatever we have learned,” the

¹ Vendor firms were organized in divisions, each of which usually served a particular client, independent of others. In this research, the division that handled work from W would be called the X division in Alpha, or “X division” in short. The same form of reference is used for other divisions throughout the manuscript.

director added. Therefore, under this circumstance, much development work was conducted by the vendor without following the norm of software development. Documentation was not produced if the team could get by the requirement. The development processes were more lax and less standardized than in the W division in Alpha.

4.2 Beta with Clients Y and Z

Beta was the result of mergers between several smaller firms in 2001. Since its foundation, Beta provided services for two key clients Y and Z, which were also the main sources of Beta's revenues. There were two different divisions corresponding to Y and Z, respectively. As the management styles of Y and Z were saliently different, there existed significant differences between the two divisions. For example, the business of Y was largely focused in a particular domain, thus Beta had accumulated abundant business knowledge through long-term cooperation with Y, and was able to do functional design. In contrast, Z's business was scattered among multiple industries. Therefore, Beta barely had any chance to accumulate domain knowledge of related industries. However, because of its emphasis on strict control over the development process, Beta obtained experience on project management. A closer examination is presented below on the relationships between Beta and the two clients to show the effect of clients on vendor capabilities.

4.2.1 Beta-Y Relationship

Y, an end-user client, was the largest construction material producer in Japan, which focused on production management related to construction materials and developed its internal product management systems. Beta had been developing the system for Y since 2003 when Beta was one of the two vendors for Y in China. Beta initially conducted low level tasks as coding and unit testing, but eventually was able to do functional design for some projects.

"As an end-user client with several large systems that are stable, it is all about the present systems" (one of the co-founders). Beta worked on a particular module of the business within the production system on a long term basis, thus the business knowledge acquired from previous projects contributed to the vendor's understanding of the next project. Moreover, Y had a clear understanding of its own business. Through long-term cooperation, Beta obtained a great deal of relevant materials, such as specifications and business documents. "We could ask for almost any materials, as long as they do not involve the client's core data" (PM1). Because Beta accumulated a rich knowledge base, it could make modifications to the system according to the client's verbal notice only for some projects.

"We are very familiar with their system. If they want to make some modifications, I usually do it on my own while they are writing the specification. We do the work in parallel. When I almost finish the task, they send me the specification and I just check whether my understanding is in accordance with theirs. Only if there are discrepancies do I make more changes" (PM2).

Y did not have mature standards to share for managing software development, and left much room to the vendor. "There are no rules and procedures to follow" (Director of Y division), and "Y will not punish us because of our bug rate has exceeded a certain level. As long as we do not create terrible troubles (they'd always accept our work)...Y emphasizes the ultimate on-time delivery and quality, not concerned about our development process" (PM1). Moreover, "they do not even require much documentation during the development process out of cost concerns" (PM2).

4.2.2 Beta-Z Relationship

Z was one of the largest IT outsourcing companies in Japan, undertaking projects for end-user clients in all kinds of industries, and then outsourcing them by modules to multiple Chinese vendors. Each vendor

worked on only a small part of a project, and usually “still had no idea what the project was in the end” (Director of Z division). Beta had been cooperating with Z since 2004, and became a golden partner of Z in 2007, ranked in top 10 of Z’s vendor list as one of Z’s key cooperators.

Z’s project management was extremely strict and standardized. “When a project is initiated, the two sides communicate on the development environment, business knowledge and quality control. In the beginning video conferencing is quite frequent. After the middle of the project when things become gradually steady, the frequency of video conferencing is reduced to once a week, in which they explain to us the details of project management” (PM3).

Moreover, there were mutual evaluations after every project. “Members of successful and poor projects communicate with each other. Z divides the projects into fine granularity. For example, in the detailed design stage, we could make proposals even if they are not under our responsibility. Besides, the review also covers the development stage, testing stage, project management stage, and communication with the clients. All of the above should be reviewed by both sides, with tables for giving grades” (PM3).

Z required its vendors to use its standards and mature tools, “(Z) has standardized product management, and they possess special-purpose software tools to examine whether and to what extent you have done the critical product test” (a co-founder). “Although Z is unable to monitor you on site, you don’t encounter any big trouble as long as you follow the fixed rules” (Director of Z division). Beta gradually got familiar with the process of standardized project management by following Z and learned from Z’s testing tools, and “even developed our own similar tools, which are currently applied in domestic teams... We request our new recruits to use such tools to ensure the quality of projects” (a co-founder).

The projects from Z were very diverse in nature, “sometimes it is related to pharmaceuticals, and sometimes automobile, so we can hardly accumulate any business knowledge” (one co-founder). “Chances are that you receive a completely new project, which nobody understands. There is no preparation, or accumulation of knowledge. The experience gained from previous projects does not necessarily suit for this one” (Director of Z division). Despite eight years of cooperation, Beta could still only do detailed design at the best, and most of Beta’s tasks remained downstream such as coding and unit testing. “If you have never done (detailed design), they have to teach you the business knowledge, which incurs additional costs for them” (PM3).

4.3 Results of Cross-Case Analysis

Alpha and Beta started on a roughly equal footing, and both worked with large clients on a long-term basis. However, over a decade, Alpha had become a leader in the industry, with strong client bonding and capabilities to do functional design and even systems design for certain clients, whereas Beta got stuck in a small scale, mostly working on coding and unit testing. Between different divisions of the same firm, there were capability differences in dealing with different clients, although the developers came from the same pool subject to the same recruitment procedures and human resources policies. To a large extent, the differences in capability development can be attributed to the characteristics of the client. Based on a comparison between Alpha and Beta (see Table 2), and the four vendor-client relationships, the following propositions can be drawn from the data analysis.

Outsourcing Intent. A client might adopt outsourcing for one of the following three purposes, operational efficiency, tactical support, or strategic impact (Smith & Mckeen 2004). To improve operational efficiency mainly refers to cutting costs, which often involves a fee-for-service relationship with the vendor. To gain tactical support aims at increasing internal efficiency and capacity, by offloading mature IT to an outsourcer to just “keep the lights on” to allow internal staff to explore new applications. Seeking strategic impact aims to focus on core business, while outsourcing IT and the rest.

Our data shows that W stood out as an outlier, whose purpose of outsourcing appeared to be gaining tactical support. By offloading downstream development work to Chinese vendors, it focused on high

value-adding upstream of software engineering. Therefore, W had a keen interest in seeing Alpha undertake more functional design beyond the typical coding and unit testing and improve productivity. In contrast, the other three cases featured cost saving as the main purpose. According to Smith and Mckeen (2004), W aimed for tactical support, while X, Y and Z attempted to gain operational efficiency through outsourcing.

To assist its partner's productivity and task upgrade, W was willing to share with Alpha its know-how, e.g., bearing the high costs of sending a large amount of its staff to train the vendor team on site, by teaching them the development processes, standards, and quality control techniques. Moreover, in addition to specifications and all kinds of materials, W volunteered domain knowledge of the brokerage business, including relevant rules, laws, and regulations in Japan, which helped Alpha understand its requirements. Interestingly, at senior management level, W played a mentor role by sharing their managerial experiences and insights. Alpha had the opportunity to learn and integrate knowledge transferred from W, to accumulate its domain knowledge.

Furthermore, W and Alpha joined hands to address problems emerged from projects. There were constant interactions at the task level between the two organizations, which deepened Alpha's understanding of domain knowledge and process management. Dialogues at the senior management level promoted long-term collaboration, by fostering mutual understanding. For example, since the financial crisis of 2008, W was confronted with higher pressure to cut cost. The two firms shared the burden to live through the hard times. W offered assistance to increase Alpha's productivity, to deal with the rising costs in China and save cost for W. As a result, Alpha enhanced its operational capabilities through the interactions with W.

However, the other three clients provided little domain knowledge and managerial know-how beyond essential technical and business knowledge. Furthermore, on top of task level interactions between the partners, there was little dialogue at the senior management level, which did not affect the nature of the collaborative relationship. Because of clients' intention to save costs, they were reluctant to incur any additional cost on assisting the vendor. Therefore, these vendors' influence on the vendor's capability development was smaller than the client seeking tactical support from its vendor.

Proposition 1: Compared to clients aiming for operating efficiency, clients seeking tactical support play a more important role in fostering outsourcing vendors' client-specific capabilities and process capabilities. More specifically, from the relationship learning perspective, clients that seek tactical support are more willing than clients aiming for operational efficiency to share business knowledge and industry background, to engage in multiple levels of interactions with the client, and to participate in joint sense making to address operational problems, which facilitate the vendor's development of client-specific and process capabilities.

Client type. Both W and Z were world-class large software manufacturers, possessing their own development theories and methodology, and rich know-how. These vendors shared with their vendor documentation templates, testing tools, manuals for tools, and other relevant knowledge, to help standardize the vendor's development processes. Moreover, they were meticulous about working with the vendor to improve its processes, conducting joint post-project reviews to analyze root causes of bugs and enhancement solutions. The vendors were able to improve their process capabilities by learning and integrating knowledge provided by the client to address problems arising from software development.

In contrast, X and Y exhibited lower project management maturity. Neither did they have documentation templates, nor did they share standardized testing tools with their vendor. Furthermore, these clients engaged in joint post-project review infrequently, but placed more emphasis on the outcome. For example, X did not mandate Alpha to follow any rules of software development, as long as Alpha could deliver with acceptable quality. Similarly, Y also left much room to Beta, and occasionally asked Beta to develop software applications. Y took a laissez-faire approach to project management, placing little emphasis on processes and standards. This tendency was passed on to the vendor, which did not help the vendor develop process capabilities.

	Alpha-W	Alpha-X	Beta-Y	Beta-Z
Years of cooperation	Ten years	Eight years	Ten years	Nine years
Client's Share of vendor's total business	40%	10%	30%	20%
Client type	Mature software outsourcer	Supplier of solutions with relatively low IT maturity	End user	Mature software outsourcer
Project type	Long-term, high sustainable	Short-term, not sustainable	Long-term, sustainable	Short-term, not sustainable
Intent of outsourcing	To obtain tactical support	To improve operational efficiency	To improve operation efficiency	To improve operational efficiency
Relationship between top management	Very Good	Existed, but so-so	None	None
Information and knowledge sharing	Technical, Domain and Managerial knowledge provided by the client Knowledge provided by vendor	Technical knowledge provided by the client Domain knowledge provided by the client	Domain knowledge provided by the client Knowledge provided by the vendor	Technical knowledge provided by the client
Joint sense-making	Dialogues at task level Senior management level	Dialogues at task level Senior management level	Communications at task level only	Communications at task level only
Integrating knowledge	At task level At firm level	At task level	At task level	At task level At firm level
Client-specific capabilities	High, upstream tasks for some projects	Low, detailed design, and coding and unit testing only	High, upstream tasks for some projects	Low, detailed design, coding and unit testing only
Process capabilities	Standardized development process; A high level of large project management	Idiosyncratic process of development; Management of small projects	Idiosyncratic process of development; Management of small projects	Strict process of development and high quality assurance

Table 2. Summary of the Cases

Proposition 2: Clients with higher project management expertise contribute more to the vendors' development of process capabilities, by sharing more technical knowledge and placing more emphasis on quality enhancement activities.

Project characteristics. W and Y handed out projects with not only a long life cycle but inter-project linkage. Through these long-term projects and related projects, the vendor received a great deal of business knowledge from the client as time went by, which allowed a holistic master of the business requirements. As a result, communication and interactions between the client and the vendor became more effective, which not only laid a foundation for the vendor to tackle upstream tasks but also facilitated the vendor's development of client-specific capabilities. By comparison, X and Z handed out unrelated projects, which were not conducive to the vendor's accumulation of business knowledge. As a result, it was difficult to develop client-specific capabilities.

Proposition 3: Clients that outsource projects with higher sustainability and a longer life cycle foster stronger client-specific capabilities in the vendor, by sharing more business knowledge and engaging in more times of joint sense making.

5 DISCUSSION

From the relationship learning perspective, this research shows how IT outsourcing clients influence the development of the vendor's operational capabilities, and why. Several key findings are drawn from the four cases. First, a client's goal of IT outsourcing is a primary factor. More specifically, a client seeking tactical support is more willing to share information and knowledge, to work along side with the vendor to address problems, which facilitate the development of both client-specific capabilities and process capabilities. Second, a client with higher project management maturity can promote the vendor's development of process capabilities, because the client can provide more guidance and support on software development processes and standards. Lastly, if a client's projects have higher sustainability and a longer life cycle, the vendor is better able to develop client-specific capabilities, because the vendor would have more opportunities to accumulate knowledge shared by the client and to engage in joint problem-solving. This finding is similar to Liu (2012), which found relationship learning with partners enhanced capabilities.

This research has made several theoretical contributions. First, prior studies of vendor capabilities tended to focus on organizational design (e.g., Grand et al. 2006) and internal mechanisms (e.g., Jarvenpaa & Mao 2008), but largely overlooked the influence of the client. As a result, there exists no satisfactory explanation on how clients influence the development of vendors' operational capabilities. This research is situated in a unique research context, in which the Japanese clients tend to possess rich IT knowledge but the Chinese vendors need to develop their capabilities by continuous learning from their client (Su et al. 2010). This multiple-case study shows that the client's goal of IT outsourcing, project management maturity, and sustainability and length of projects all play a major role in the development of client-specific capabilities and process capabilities.

Second, whereas prior research has touched upon the benefit of repeated collaboration between a client and a vendor for operational capability development (Levina & Ross 2003) and the influence of clients in different markets (Su et al. 2010), the influencing mechanisms remain unclear. By adopting the relationship learning perspective, this study shows that the means include the client's sharing of knowledge and joint sense-making with the vendor. More specifically, differences in the nature and amount of knowledge sharing, the level of the client's process management capabilities, and the extent of joint problem-solving all contribute to the varying degrees of a vendor's operational capabilities.

Third, prior research indicates that a key source of client-specific capabilities is repeated interactions across projects with long term clients (Ethiraj et al. 2005). This research goes further, by showing the

differential effects of clients. More specifically, a client that provides projects with higher sustainability and a longer life cycle is more conducive to the vendor's development of client-specific capabilities via accumulation of business domain knowledge. Otherwise, even though a vendor might collaborate with a long-term client across many unrelated projects, the accumulated domain knowledge may be thin. In the research by Eithraj et al. (2005), the US and EU-based IT outsourcing clients tended to be end-users, which permitted the Indian vendors to accumulate rich business knowledge. The differences from this study can be attributed to the research contexts, as the Japanese clients in this study tended to be IT outsourcing vendors servicing their own domestic end-user clients.

Results of this research can be of value to IT vendors in their selection of clients, based on awareness of the influence of clients on operational capability development. More specifically, clients seeking tactical support are more desirable, because they may offer more support and assistance for long-term collaboration. Furthermore, the vendor should also pay attention to the sustainability and length of life cycle of projects from any clients, and do their best to seek such projects. Lastly, in dealing with clients that hand out multiple projects, such projects should be assigned to a dedicated project group to accumulate business knowledge.

6 LIMITATIONS AND DIRECTIONS FOR FUTURE RESEARCH

This research has several limitations, which also represent opportunities for future research. First, whereas the influence of clients is the focus, this research largely ignores the internal mechanisms for capability development, despite their importance. In fact, the internal mechanisms were the starting point of this study, but it was soon realized that the vendors in our context adopted largely homogenous practices, which did not reveal any interesting findings. Future studies that integrate both perspectives might yield more powerful explanations.

Second, because of the convenience of access, we collected vendor data only, despite the focus on the client's influence. This prevented us from presenting a more objective view free of bias from the vendor side. It would be more desirable to combine both the vendor's view and the client's perspective in the future.

Third and lastly, whereas several propositions have been proposed, which involve several variables such as sustainability and length of projects, and operational capabilities, this research lacks quantitative measures. It would be desirable to conduct surveys based on a large sample with quantitative measures. Overall, despite these limitations, this research offers a fresh perspective to vendors' development of operational capabilities, and several interesting conclusions that have practical implications.

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References

- Andersson, U.; Forsgren, M. and Holm, U. (2002). The strategic impact of external network: Subsidiary performance and competence development in the multinational corporation. *Strategic Management Journal*, 23, 979-996.
- Argote, L. and Ingram, P. (2000). Knowledge transfer: A basis for competitive advantage in firms. *Organizational Behaviour and Human Decision Processes*, 82 (1), 150-169.
- Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, 17 (1), 99-120.

- Cheung, M.S.; Myers, M.B. and Mentzer, J.T. (2010). Does relationship learning lead to relationship value? A cross-national supply chain investigation. *Journal of Operations Management*, 28 (6), 472-487.
- Deng, C.; Mao, J. and Wang, G. (2013). An empirical study on the source of vendors' relational performance in offshore information systems outsourcing. *International Journal of Information Management*, 33 (1),10-19.
- Dibbern, J.; Goles, T.; Hirschheim, R. and Bandula, J. (2004). Information systems outsourcing: A survey and analysis of the literature. *Database for Advance in Information Systems*, 34 (4), 6-102.
- Eisenhardt, K.M. (1989). Building theories from case-study research. *Academy of Management Review*, 14 (4), 532-550.
- Eisenhardt, K.M. and Graebner, M.E. (2007). Theory building from cases: Opportunities and challenges. *Academy of Management Journal*, 50 (1), 25-32.
- Ethiraj, S.; Kale, P.; Krishnan, M. and Singh, J. (2005). Where do capabilities come from and how do they matter? A study in the software services industry. *Strategic Management Journal*, 26, 25-45.
- Garud, R.; Kumaraswamy, A. and Sambamurthy, V. (2006). Emergent by design: Performance and transformation at Infosys technologies. *Organization Science*, 17 (2), 277-286.
- Grewal, R.; Johnson, J.L. and Sarker, S. (2007). Crises in business markets: Implications for interfirm linkages. *Journal of the Academy of Marketing Science*, 35 (3), 398-416.
- Hansen, M.T.; Nohria, N. and Tierney, T. (1999). What's your strategy for managing knowledge? *Harvard Business Review*, 77 (2), 106-116.
- Huong, N.T.; Katsuhiko, U. and Chi, D.H. (2011). Knowledge transfer in offshore outsourcing: A case study of Japanese and Vietnamese software companies. *Journal of Global Information Management*, 19 (2), 27-44.
- Hsu, C.; Chen, H. and Jen, L. (2008). Resource linkages and capability development. *Industrial Marketing Management*, 37, 677-685.
- Jarvenpaa, S.L. and Mao, J.Y. (2008). Operational capabilities development in mediated offshore software services models. *Journal of Information Technology*, 23 (1), 3-17.
- Jean, R.J.B.; Sinkovics, R.R. and Kim, D. (2010). Drivers and performance outcomes of relationship learning for suppliers in cross-border customer-supplier relationships: The role of communication culture. *Journal of International Marketing*, 18 (1), 63-85.
- Johnsen, R.E. and Ford, D. (2006). Interaction capability development of smaller suppliers in relationships with larger customers. *Industrial Marketing Management*, 35 (8), 1002-1015.
- Lacity, M.C.; Khan, S.; Yan, A. and Willcocks, L.P. (2010). A review of the IT outsourcing empirical literature and future research directions. *Journal of Information Technology*, 25 (4), 395-433.
- Lane, P.J. and Lubatkin, M. (1998). Relative absorptive capacity and interorganizational learning. *Strategic Management Journal*, 19 (5), 461-477.
- Levina, N. and Ross, J.W. (2003). From the vendor's perspective: Exploring the value proposition in information technology outsourcing. *MIS Quarterly*, 27 (3), 331-364.
- Liu, C-L. (2012). An investigation of relationship learning in cross-border buyer-supplier relationships: The role of trust. *International Business Review*, 21, 311-327.
- Martin, J.A. (2011). Dynamic managerial capabilities and the multibusiness team: The role of episodic teams in executive leadership groups. *Organization Science*, 22 (1), 118-140.
- Miles, M.B. and Huberman, A.M. (1994). *Qualitative Data Analysis: A Source book of New Methods*, 2nded. Beverly Hills, CA.
- Myers, M.B. and Cheung, M.S. (2008). Sharing global supply chain knowledge. *MIT Sloan Management Review*, 49 (4), 67-73.
- Nelson, R.R. and Winter, S.G. (1982). *An Evolutionary Theory of Economic Change*. Harvard University Press, Cambridge.
- Ngugi, I.K.; Johnsen, R.E. and Erd ̇yi, P. (2010). Relational capabilities for value co-creation and innovation in SMEs. *Journal of Small Business and Enterprise Development*, 17 (2), 260-278.

- Oshri, I.; Kotlarsky, J. and Willcocks, L. (2007). Managing dispersed expertise in IT offshore outsourcing: Lessons from Tata consulting services. *MISQ Executive*, 6 (2), 53-65.
- Santos, F.M. and Eisenhardt, K.M. (2009). Constructing markets and organizing boundaries: Entrepreneurial power in nascent fields. *Academy of Management Journal*, 52 (4), 643-671.
- Schrey ögg, G. and Kliesch-Eberl, M. (2007). How dynamic can organizational capabilities be? Towards a dual-process model of capability dynamization. *Strategic Management Journal*, 28 (9), 913-933.
- Selnes, F. and Sallis, J. (2003). Promoting relationship learning. *Journal of Marketing*, 67 (3), 80-95.
- Smith, H.A. and McKeen J.D. (2004). Developments in practice xiv: IT sourcing-how far can you go? *Communications of the Association for Information Systems*, 14, 507-520.
- Su, N. and Levina, N. (2010). Operational capability development in vendor internationalization: The case of China's IT service industry. Working papers, Industry Studies Association, <http://isapapers.pitt.edu/>
- Su, N.; Levina, N. and Luo, H. (2010). How IT service suppliers acquire capabilities in outsourcing alliance: An evolutionary perspective. In *Proceedings of Thirty First International Conference of Information Systems*, St. Louis, paper 62. http://aisel.aisnet.org/icis2010_submissions/62
- Walsham, G. (1995). Interpretive case-studies in IS research-nature and method. *European Journal of Information Systems*, 4 (2), 74-81.
- Winter, S.G. (2003). Understanding dynamic capabilities. *Strategic Management Journal*, 24 (10), 991-995.
- Wu, S.H. and Hsu, F.B. (2001). Towards a knowledge-based view of OEM relationship building: Sharing of industrial experiences in Taiwan. *International Journal of Technology Management*, 22(5), 503-524.
- Wu, F.; Sinkovics, R.R.; Cavusgil, S.T. and Roath, A.S. (2007). Overcoming export manufacturers' dilemma in international expansion. *Journal of International Business Studies*, 38 (2), 283-302.
- Wu, W.Y.; Lin, C.; Chen, S.H. and Wang, H.C. (2011). The mediating effect of relationship learning on the relationship between supplier development strategy and raising competence. *African Journal of Business Management*, 5 (13), 5136-5151.
- Wu, W.Y.; Chang, S.C. and Wu, Y.J. (2006). The impacts of specificity investments on relationship learning and competence building: The supplier's perspective. *International Journal of Management and Enterprise Development*, 3 (3), 244-263.
- Zollo, M. and Winter, S.G. (2002). Deliberate learning and the evolution of dynamic capabilities. *Organization Science*, 13 (3), 339-351.