VEN DOR AND C LIENT P ROJECT M ANAGERS: 
E XPLORING THE C OMPLEMENTARY C OMPETENCIES

Completed Research Paper

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Abstract

This study addresses the question, “How do managerial competencies in client and vendor project managers complement each other in influencing the success of an Information System outsourcing (ISO) project?” We utilized the Social Exchange Theory to theoretically ground this study, keeping in mind the possible contradictions between domain and cross domain knowledge. We conducted a multiple case study of two ISO projects. We analyzed the business and Information Technology (IT) competence of client and vendor project managers. The results shed several insights including the importance of (1) having business-IT pairings for client-vendor project managers; (2) knowing the organizational impact of each user requirement for vendor project managers; and (3) having access to business and IT knowledge in client project managers. We conclude that it is important to examine the knowledge dimensions at a granular level and some knowledge can be compensated.

Keywords: Outsourcing project manager, project manager skills, project manager competencies, project manager knowledge, project roles
Introduction

A firm’s decision to turn over all or part of its Information Systems (IS) function to third-party vendor(s) is now a global phenomenon. Since its beginning, the economic value of IS outsourcing (ISO) has increased dramatically in terms of volume and scope; from data centers and network management, to application development, and to more recently cloud computing. Firms also engage in increasingly sophisticated forms of ISO, such as offshoring, multiple vendors, and strategic alliances.

A successful ISO venture could possibly translate into strategic (e.g., focus on core business, exploit new technologies, prompt response to IT needs), economic (e.g., costs savings, generate a positive cash flow) and technical (e.g., access to expertise, technology and better quality services) advantages (Baldwin et al. 2001). In other words, ISO have the potential to enhance a firm’s overall performance and competitiveness. Unfortunately, not all ISO projects are successful.

Previous work has identified that competencies can play an important role in the success of ISO projects. Many of these studies focused at the firm level (Feeny and Willcocks 1998; Feeny et al. 2006; Gole 2001; Levina and Ross 2003; Michell and Fitzgerald 1997; Peppard and Ward 2004). From the more limited set of studies at the individual, we have learned that, for example, the competence of project managers is said to influence the status of client-vendor relationships (Feeny et al. 2006). Langer et al. (2008) differentiated between hard skills and soft skills and identified that soft skills play a more crucial role than hard skills in explaining project success. Results from ISO risks studies also attribute lack of expertise and experience in managerial activities – such as managing or leading the client-vendor relationship – as a factor in project failures (Aubert et al. 2005; Curie 2003; Earl 1996; Schmidt et al. 2001; Taylor 2007).

Given the importance of ISO to firm performance and the link between project manager competencies and ISO outcomes as indicated by prior research, we investigated the relationship between specific areas of project manager competencies and ISO project success. Furthermore, an important characteristic of ISO projects is that two different firms are represented and that each firm often has a project manager. Thus far, we do not know of any study that looks at the role of specific areas of competence in both client and vendor project manager working and interacting with one another. The research question that guides this study asks: How do managerial competencies in client and vendor project managers complement each other (i.e., providing a complete set of the required competencies) in influencing the success of an outsourced IT project? Our expectation is that both business and IT competencies (as opposed to having any single set of competence) are required for successful project outcomes. Furthermore, the source of the competencies (i.e., whether in client or vendor project managers) is also important.

This paper presents findings from an explanatory case study using two ISO projects. We discuss relationships between competence of project managers for both the client and the vendor firms, and their role in influencing ISO project outcomes.

Theoretical Foundation

To examine ISO relationships and client-vendor exchanges, researchers have utilized the Social Exchange Theory (SET). SET is a theory that grew from the intersection of economics, psychology, and sociology. SET explains human behaviors during economic undertakings, postulating that actors exchange resources via a social exchange relationship for the mutual benefit of both (Cook 1977; Hormans 1958). There are three key elements of SET that form the crux of this study, which are: (1) Resources are not limited to tangible resources, but also include non-tangible resources such as knowledge (Cropanzano and Mitchell 2005); (2) Each actor brings unique resources (that the other actor lacks) and are involved in the exchanges for the betterment of both; and (3) Actors view the relationship important in and of itself, and would devote resources towards the development and maintenance of the relationship (Cropanzano and Mitchell 2005). Examples of prior ISO studies that utilized SET include: Goo et al. 2007, Han et al. (2008), and Lee and Kim (1999).
In this study, we utilize SET as the basis of our research. We view an ISO project as an economic undertaking. Client and vendor project manager are actors who are representing their firms. Throughout the ISO project lifecycle, client and vendor project manager are engaged in a series of exchanges that are beneficial to the project outcomes. We focus our work on the competencies of project managers as the resource being exchanged. We cover both direct exchanges (i.e., when receivers would absorb the competencies in the form of knowledge transfer) as well as indirect exchanges (i.e., when the competencies are used to execute project tasks).

When identifying the required competencies for client and vendor project manager, we find that the key elements of bringing in unique resources for exchanges (item 2) and devoting resources to developing and maintaining relationships (item 3) could possibly lead to differing interpretations. When it comes to bringing in unique resources for exchanges, it is often argued that clients bring in business knowledge and vendors bring in IT knowledge (cf. Goles 2001). We could interpret this as client project managers requiring business competence, while vendor project managers requiring IT competence. On the other hand, maintaining and developing relationships require the development of shared understanding between parties, and developing shared understanding requires cross-domain knowledge between two parties (Reich and Benbasat 2000). We could interpret this as client project managers requiring IT competence, while vendor project managers requiring business competence. Several questions come to mind: Does one view triumph over the other? Do client and vendor project managers require both domain and cross-domain knowledge? Or, is the knowledge requirement contingent upon other factors?

The literature focusing on ISO projects has demonstrated the importance of firm level competencies in determining project outcomes. Although prior research has identified client and vendor project managers as important actors in ISO projects (Feeny et al. 2006), the extant studies do not sufficiently explain the link from client and vendor project manager competencies to project outcomes. This study fills the void by investigating competencies at the project manager level. It is important to note that prior studies have employed SET to explain the relationship between firm level competencies and project outcomes. However, given the fact that SET is a theory that is applicable to different levels of analysis (i.e., individuals, groups, and organizational), we maintain that SET is relevant to this study.

Therefore, we pursue this study with an eye on resolving the issue of domain versus cross-domain knowledge and to offer insights on the roles of competencies. We further define other important elements in our research – business competence, IT competence, and ISO project success.

**Competence for Project Managers**

“[IT] Project management requires competencies in three subject areas: technology, business and behavior” - Linda Pittinger, CEO of People3 (Melymuka 2000).

For this study, we examine the business and technology knowledge requirements of project managers involved in outsourcing projects. We operationalized business and technology knowledge requirements in outsourcing project managers as business competence (Bassellier et al. 2003) and IT competence (Bassellier and Benbasat 2004), respectively. Both competencies are described further below.

**Business Competence**

In its initial conceptualization, business competence refers to the set of business and interpersonal knowledge and skills possessed by an IT professional that enables him or her to understand the business domain, speak the language of business, and interact with their business partners (Bassellier and Benbasat 2004). We contextualize business knowledge to the specific business unit on the client side that is affected by the project at hand. This adjustment was made to reflect the environment in which outsourcing applications are built. Understanding the business environment of the IS application is a crucial factor in ensuring its success (Iivari et al. 2004). In their work, Bassellier and Benbasat (2004) also included a dimension for leadership skills. Subsequent research has separated the leadership dimension from business competence and created a separate, multi-dimensional construct (Zainuddin et al. 2010). We made the same modification and focused our work on the dimensions of business competence listed in Table 1.
Table 1. Dimensions and Operational Definitions of Business Competence

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interpersonal</td>
<td></td>
</tr>
<tr>
<td>Knowledge Networking</td>
<td>Knowing where knowledge resides in client, vendor, as well as other external organizations.</td>
</tr>
<tr>
<td>Interpersonal Communication</td>
<td>Ability to communicate with people at different levels of the organization (e.g., subordinates, peers, superiors, etc.), in various scenarios (e.g., pairs, team, etc.), and with those in other functional areas (i.e., non-IT people).</td>
</tr>
<tr>
<td>Organization Specific</td>
<td></td>
</tr>
<tr>
<td>Organizational Overview</td>
<td>Client organization’s goals, objectives, critical success factors, external environment (e.g., industry, market, etc.) and constraints, where constraints include those imposed on the organization by its suppliers, buyers, government and competitors.</td>
</tr>
<tr>
<td>Organizational Units</td>
<td>Units’ goals, functions, resources, challenges, work processes, and links with other internal and external units, where units refer to the divisions in the client organization that are involved in the project.</td>
</tr>
<tr>
<td>Project Responsibility</td>
<td>Understand the impact of the project on the client organization’s performance – both for upper management (upstream) and users (downstream), as well as the impact of the project on the client-vendor’s future relationship.</td>
</tr>
<tr>
<td>IT-Business Integration</td>
<td>Create synergy between IT and business by integrating IT into business capability to solve client organization’s problems and increase performances.</td>
</tr>
</tbody>
</table>

**IT Competence**

IT competence can be reflected through an examination of the IT knowledge and areas of IT experienced of the project managers. We adapted the IT competence construct proposed and investigated by Bassellier et al. (2003). The original construct contains two primary dimensions – IT knowledge and areas of IT experience. We adjusted the construct to reflect the nature of outsourcing and we added IT standards under the umbrella of the IT knowledge dimension. This element refers to the understanding of organizational level IT protocols and guidelines such as Information Technology Infrastructure Library (ITIL), Control Objectives for Information and related Technology (COBIT) and Capability Maturity Model Integration (CMMI). Due to the influential legislation of the Sarbanes-Oxley Act of 2002, “IT professionals are facing great challenges to meet raised expectations to provide accurate, visible, and timely information, while ensuring the protection, privacy, and security of the organization’s information assets” (Damianides 2004, p. 1). Recent empirical research also supports IT standards as one of the critical IT skills for ISO project managers (Goles et al. 2008; Bullen et al. 2007). The resulting dimensions of IT Competence are presented in Table 2.
Table 2. Dimensions and Operational Definitions of IT Competence

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT Knowledge</td>
<td><strong>Technology</strong> Current and emergent technologies that are both generic to all industries, specific to both the client and vendor organizations, and their competitors.</td>
</tr>
<tr>
<td></td>
<td><strong>Applications</strong> Current and emerging IT applications portfolio, where applications refer to the ways IT is or could be used by organizations to achieve their business goals.</td>
</tr>
<tr>
<td></td>
<td><strong>System Development</strong> Involves an understanding of both systems development method and project management practices to understand the potential benefits, and limitations of IT.</td>
</tr>
<tr>
<td></td>
<td><strong>IT Standards</strong> Involves and understanding of organizational related IT protocols and guidelines.</td>
</tr>
<tr>
<td></td>
<td><strong>IT Management</strong> IT management is composed of activities similar to those used in other areas – vision and goal setting, allocating resources, purchasing resources, and monitoring progress.</td>
</tr>
<tr>
<td></td>
<td><strong>Access to IT Knowledge</strong> Knowing whom to contact to obtain more information about IT – both inside and outside of the organization, and secondary sources of knowledge (e.g., Web).</td>
</tr>
<tr>
<td>Areas of IT Experience</td>
<td><strong>IT Project Experience</strong> Involvement in the life cycle of IT projects, such as initiation, cost-benefit analysis, development, and implementation.</td>
</tr>
<tr>
<td></td>
<td><strong>IT Management Experience</strong> Involvement in directing the overall IT function, such as planning, budgeting, and policy setting.</td>
</tr>
</tbody>
</table>

**Project Success**

The customary view of ISO project success is through the lenses of the clients. Earlier studies in ISO literature operationalized ISO project success as the degree of satisfaction with the quality of the product, satisfaction with the client-vendor relationship, and the technical, strategic as well as economic benefits that clients receive from the completed project (Lee and Kim 1999; Grover et al. 1996). In contrast, more recent research has widened the view of ISO project success by adding the vendors’ commercial environment (Taylor 2007; Kern et al. 2006; Goles 2001). Kern et al. (2006) posited that when vendors are unable to earn reasonable profit margins, service or product quality decreases, and additional costs are incurred to clients. Therefore, ISO project success can only occur when the client and vendor are in a win-win scenario (Kern et al. 2006).

We employ a comprehensive view of ISO project success as displayed in Table 3. Prior studies have repeatedly linked ISO project success to firm-level business and IT competencies (Lacity and Willcocks 2006; Willcocks et al. 2006; Goles 2001; Standish Group 2006; Feeny and Willcocks 1998).
Table 3. Summary of the Multidimensional Criteria of Project Success

<table>
<thead>
<tr>
<th>Aspect of Success</th>
<th>Perspective</th>
<th>Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Process success</td>
<td>Client and vendor</td>
<td>Meeting planning goals, in terms of budgets and schedules.</td>
</tr>
<tr>
<td>Product success</td>
<td>Client</td>
<td>Providing benefits to users by meeting product requirements, delivering quality service, and delivering quality information.</td>
</tr>
<tr>
<td>Client-vendor relationship</td>
<td>Client and vendor</td>
<td>Client and vendor’s satisfaction with the interactions between the two parties; wanting to work together in future projects.</td>
</tr>
<tr>
<td>Commercial Environment</td>
<td>Vendor</td>
<td>Building potential for future revenue for vendors through referrals, testimonials and repeat business (continuous relationship).</td>
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</tbody>
</table>

**Research Method**

We applied the case study research strategy since it is the most appropriate in answering research questions framed as “how” questions that require explanatory answers (Benbasat et al. 1987; Dubé and Pare 2003; Yin 1994). Data from a case study will enable us to create “operational links [needing] that can be traced over time, rather than mere frequencies or incidence” (Yin 2003). Thus, the data from this study would enable us to create the operational links between knowledge requirements and outcomes, and ultimately, to compare the outcomes of domain and cross-domain knowledge.

This study uses the multiple case study approach, following guidelines and standards established for case study research in the IS field (Benbasat et al. 1987; Dubé and Pare 2003; Yin 1994). The analysis of these case studies will lead to the development of more specific propositions.

**Site Selection and Description**

The unit of analysis is an outsourcing project, drawn from a single organization in the educational sector. Projects were solicited in three rounds. First, the Chief Information Officer (CIO) identified several outsourcing projects that were completed within the previous three months. Second, projects were screened via a questionnaire to collect project demographics such description, size, scope, and level of success.

In order to control for the type of project, we also collected data on the strategic impact and the extent of substitution, two dimensions that are used to classify outsourcing projects (Nam et al. 1996). The extent of substitution considers the ownership and control of various IT/IS assets such as hardware, software and telecommunications infrastructure being transferred to the vendor (Kishore et al. 2003), while the second dimension – strategic impact – captures the influence that the outsourced IS functions have on the client’s competitive position and its long-term strategies.

During the second stage, we also verified that the client and vendor project managers met the following requirements: (1) the client and vendor project managers must not have worked together in previous projects; (2) the client and vendor project managers must have worked together from the beginning to the end of the project; and (3) the client project managers are regarded as business managers (or non-IT professionals). The respondent for the second stage was an IT executive from the internal IT department. And for the third stage, we contacted the vendor project managers to request for participation and to verify the information that was provided by the client.

As a result, two projects were selected. In Project Alpha, the client outsourced the customization and integration of human resource and payroll systems. Meanwhile, in Project Beta, the client outsourced the
implementation of a smart card attendance system. Both projects involved external (different) software providers. Based on the CIO response to the initial questionnaire, we classified both Project Alpha and Project Beta as having high strategic impact and high extent of substitution. Other quantitative data also provided evidence to support our classification of Project Alpha and Project Beta – i.e., high costs in both projects implying high strategic impact, and extended duration with vendor staff working on-site at client location implying high extent of substitution. In terms of project outcomes, one project was regarded as highly successful (Project Alpha), and another as less successful (Project Beta). The similar classification but contrasting outcomes will facilitate the identification of salient features that can be used to differentiation successful projects from unsuccessful ones.

**Data Collection**

There were three stages to our data collection. The first stage involved getting project documents such as meeting minutes, email correspondences, baseline schedules, actual project schedules, and project proposals. In both cases, we were able to inspect the complete project files. From these documents, we identified the critical problems that occurred as the projects unfolded. We also identified the project jargon. The interview script was modified by adding questions related to the identified problems (e.g., asking informants for their opinions as to the source of the problem, how these problems were resolved, and how they think the problem influenced the success of the project), and by replacing some of the wordings in the interview script with the specific project jargon.

The second stage involved semi-structured interviews with the key informants – client project manager, the vendor project manager, and a third-party observer. For Project Alpha, the third-party observer is the technical consultant. Meanwhile, for Project Beta, the third-party observer is the IT department liaison-cum-technical coordinator. The interview covered questions related to the project outcome, project manager's background, and critical events. These interviews lasted between 90 to 180 minutes.

In the third stage, after completing the interviews, we gave a questionnaire to each project manager. The questionnaire required the project managers to rate themselves as well as their counterpart project manager in terms of business and IT competencies. The completed questionnaires were picked up between three to five business days later.

**Data Analysis**

Data analysis followed a four-step procedure, these steps are:

Step 1: Identifying and extracting information from various sources including project documents, interview transcripts, screening questionnaires, and managerial competencies questionnaires. The interview transcripts were coded based on a coding guide derived from the construct list, and using Atlas.ti 5.2 software.

Step 2: Analyzing each case, and creating within-case analysis reports. Each within-case analysis report is approximately forty pages in length, and contains observations regarding project description, managerial competencies evaluations, explanation linking managerial competencies to tasks, critical events, and other external factors that we deem significant in influencing the project outcome.

Step 3: Submitting each report to the relevant client and vendor project managers. All parties agreed with the analyses written in the reports. However, we did receive comments related to our report of a project timeline and a request to remove a possible identifier. We made the necessary changes accordingly.

Step 4: Creating a cross-case project analysis. The cross-case analysis is approximately thirty pages in length.

We evaluated the managerial competencies at the overall and dimensional levels. We averaged the self-evaluation made by each project manager with the evaluation made by his/her counterpart project manager. In addition, we extracted qualitative data from the interviews and documents that relate to the project manager's background, experience, competencies and skills. We tried to detect discrepancies between the numerical ratings and the qualitative data. No discrepancy was detected, and both the quantitative and qualitative data appear to converge.

The within-case and cross-case analyses were developed using the qualitative analysis techniques.
recommended by Miles and Huberman (1994). Table 4 presents a summary description of Project Alpha and Project Beta.

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Project Alpha</th>
<th>Project Beta</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td>Enterprise Resource Planning (ERP) project – customization and integration of human resource and payroll systems.</td>
<td>Implementation of a smart card system for attendance. This system includes the smart cards, smart card readers, and a web-based reporting module.</td>
</tr>
<tr>
<td>Budget (USD$)</td>
<td>1.4M</td>
<td>550K</td>
</tr>
<tr>
<td>Length</td>
<td>22 months; this project was completed 1 month prior to the interview sessions.</td>
<td>24+ months (project suspended)</td>
</tr>
<tr>
<td>Business units involved</td>
<td>3 units – finance, human resources, and internal IT.</td>
<td>4 units – student services, cooperative services (a sub-unit of student services), security, and internal IT.</td>
</tr>
<tr>
<td>Team Members</td>
<td>10 team members from the client side. Vendor project manager working on-site at least 3 days per week; 3 dedicated developers working on-site. Up to 10 other vendor team members working on-and-off.</td>
<td>15 representatives from various divisions in the client organization. Vendor project manager working on-site; 1 technical consultant and 3 dedicated developers working on-site.</td>
</tr>
<tr>
<td>Level of Success</td>
<td>Highly successful, as evident from: Project exceeded deadline by only 3 weeks. Client exceeded its initial budget, but the increase was considered acceptable by upper management. All modules delivered; 1 module delivered 1 month past deadline. Users describe the system as useful and user-friendly; Upper management believes system has increased overall efficiency. Vendor achieved target profit margin. Client and vendor are proceeding with the phase 2 and phase 3.</td>
<td>Less successful, as evident from: Project was scheduled for 6 months, but after more than 2 years, there is no sign of go live. Major issues and bugs reported during pilot tests, and only 90% of the requirements are completed. Vendor did not achieve its target profit margin, and suffered a loss. Vendor reputation was jeopardized; tender submission was declined in lieu of Project Beta's outcome. There are plans to bring in a new vendor to completely overhaul the project.</td>
</tr>
</tbody>
</table>
Results

We present the summary evaluation of the managerial competencies and leadership skills for the four project managers in Table 5.

<table>
<thead>
<tr>
<th>Table 5. Summary Evaluation of Managerial Competencies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Alpha</td>
</tr>
<tr>
<td>Background and experience</td>
</tr>
<tr>
<td>Client Project Manager</td>
</tr>
<tr>
<td>PM Harry is currently the deputy director of human resources. His position is quite senior level, and he has close to twenty years of experience working for the client organization. He has worked in administrative positions in several departments before. He holds a Master of Business Administration (MBA) degree. PM Harry admitted that he has very little technical knowledge. He was never directly involved in an IT project before Project Alpha. However, he is interested with technology, and “feels comfortable” around computers.</td>
</tr>
<tr>
<td>Vendor Project Manager</td>
</tr>
<tr>
<td>PM Ron has close to twenty years of experience in the IT industry. He started as a programmer, before working up to a senior project manager position. He has seven years of IT project management experience in the finance and government sectors. Project Alpha is his first project with the client organization.</td>
</tr>
<tr>
<td>Business Competence</td>
</tr>
<tr>
<td>Client Project Manager</td>
</tr>
<tr>
<td>Overall business competence is high.</td>
</tr>
<tr>
<td>High: Organizational overview, knowledge networking, and interpersonal communication.</td>
</tr>
<tr>
<td>Moderate: Organizational units, project responsibility, and IT-business integration.</td>
</tr>
<tr>
<td>Vendor Project Manager</td>
</tr>
<tr>
<td>Overall business competence is moderate.</td>
</tr>
<tr>
<td>High: Project responsibility, knowledge networking, and interpersonal communication.</td>
</tr>
<tr>
<td>Moderate: Organizational overview, organizational units, and IT-business integration.</td>
</tr>
<tr>
<td>IT Competence</td>
</tr>
<tr>
<td>Client Project Manager</td>
</tr>
<tr>
<td>Overall IT competence is low.</td>
</tr>
<tr>
<td>High: Access to IT.</td>
</tr>
<tr>
<td>Low: Technology, applications, system development, IT standards, IT management, project experience, and IT management experience.</td>
</tr>
<tr>
<td>Vendor Project Manager</td>
</tr>
<tr>
<td>Overall IT competence is high.</td>
</tr>
<tr>
<td>High: Technology, applications, system development, IT standards, project experience, and access to IT.</td>
</tr>
<tr>
<td>Moderate: IT management and IT management experience.</td>
</tr>
<tr>
<td>Project Beta</td>
</tr>
<tr>
<td>Background and experience</td>
</tr>
<tr>
<td>Client Project Manager</td>
</tr>
<tr>
<td>PM Fred is currently the manager of cooperative services. He has close to ten years of working experience. He has been working with the client organization for the past three years prior to the interview. Before working with the client organization, PM Fred worked for an IT hardware vendor. Nevertheless, all his previous roles were in various business</td>
</tr>
<tr>
<td>Vendor Project Manager</td>
</tr>
<tr>
<td>PM George has close to fifteen years of working experience. He is a former alumnus of the client organization. His undergraduate background was in finance; however, he has been working in the IT industry for almost nine years. PM George has managed previous IT projects with the client organization. His first project with the client organization</td>
</tr>
<tr>
<td>Project Beta</td>
</tr>
</tbody>
</table>
functions such as sales, marketing, and training. He was never directly involved in an IT project before Project Beta.

was six years prior to the interview. Previous projects are mostly related to supplying, installing, and maintaining desktop computers and servers.

<table>
<thead>
<tr>
<th>Business Competence</th>
<th>Overall business competence is high.</th>
<th>Overall business competence is high.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>High:</strong> Organizational overview, organizational units, project responsibility, and interpersonal communication.</td>
<td><strong>High:</strong> Across all business dimensions.</td>
<td></td>
</tr>
<tr>
<td><strong>Moderate:</strong> Knowledge networking and IT-business integration.</td>
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<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>IT Competence</th>
<th>Overall IT competence is moderate.</th>
<th>Overall IT competence is moderate.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Moderate:</strong> Technology, applications, access to IT, and IT project experience.</td>
<td><strong>Moderate:</strong> Technology, applications, access to IT, and IT project experience.</td>
<td></td>
</tr>
<tr>
<td><strong>Low:</strong> System development, IT standards, IT management, and IT management experience.</td>
<td><strong>Low:</strong> System development, IT standards, IT management, and IT management experience.</td>
<td></td>
</tr>
</tbody>
</table>

From Table 5, we see that PM Harry (Project Alpha-Client), PM Fred (Project Beta-Client), and PM George (Project Beta-Vendor) can be classified as “business people,” having high business competence. Meanwhile, PM Ron (Project Alpha-Vendor) can be classified as “IT people,” having high IT competence. Thus, at a glance, it appears that the business-IT pairings of the client-vendor project managers in Project Alpha performs better than the business-business pairings of the client vendor project managers in Project Beta. For richer insights, we proceed with within-case and cross-case analyses guided by the role of complementary in the competencies the project managers. In our analysis, we examine each dimension of the business and IT competencies in detail. Due to the space limitation, we will focus our analyses on some key findings.

**Finding # 1 – Business Competence**

The first set of findings examined the client and vendor project managers’ business competence and how they relate to project outcomes.

**Knowledge Networking**

Knowledge networking enabled PM Harry (Project Alpha – Client) to identify key individuals who understand the detail work processes for the human resources and payroll functions. He coordinated the requirements gathering and pilot workshop schedule to accommodate the schedule of these individuals. PM Harry (Project Alpha – Client) went as far as re-scheduling meetings when these individuals were unavailable. His objective was to ensure that the key individuals had the opportunity to give their feedback, especially on the customization of the system to fit the client organization’s business processes. PM Harry (Project Alpha – Client) related that:

“So, whenever possible, when we have meetings, we get [key individual A] and [key individual B] in the meetings. Without them we have to re-schedule sometimes, because the flow... they understand better in terms of possible scenarios that you cannot imagine sometimes.”

We did not discover evidence to link knowledge networking and tasks in Project Beta’s client project manager. However, we note that the knowledge networking level for PM Fred (Project Beta – Client) was only moderate. We therefore infer that knowledge networking allows client project managers to facilitate valuable feedback to vendors and create an effective project schedule (i.e., coordinating schedule with the right people). With the right feedback and an effective project schedule, the system would better capture
the client organization’s business requirements and meet project deadlines. In formal terms,

**Proposition 1a:** High level knowledge networking in client project managers will facilitate valuable feedback to vendors and the development of effective project schedules, contributing towards product and process success in ISO projects.

**Interpersonal Communication**

Project Alpha’s documents show that meetings with the vendor team were held weekly, meetings with the client top management were held monthly, and discussions with the users were held on an as needed basis. PM Harry (Project Alpha – Client) led, asked questions, gave opinions, and raised users’ concerns during the team meetings and user discussion sessions. He was responsible for reporting Project Alpha’s status, and answering questions from the client top management during the monthly meetings. PM Fred (Project Beta – Client) carried out similar communication tasks as PM Harry (Project Alpha – Client). Even though the meetings in Project Beta were not as frequent, PM Fred’s communication tasks were more challenging. Several conflicts between the vendor and the client business units occurred in Project Beta. PM Fred was responsible for resolving these conflicts. He met with the parties involved, and discussed the issues at hand until a compromise was reached. PM Fred was effective in carrying out this particular task. As described by his counterpart vendor project manager, “it [smoothing out frictions between different parties] is ongoing... That’s where PM Fred excels.”

Meanwhile, both PM Ron (Project Alpha – Vendor) and PM George (Project Beta – Vendor) used their interpersonal communication skills to: report project status to client top management, participate in team meetings, resolve issues, and discuss requirements with users. Due to the complexity and extended nature of the projects, vendor project managers spent considerable amount of time communicating with members of the client organization. We observed one key difference between the two vendor project managers, which is that PM Ron (Project Alpha – Vendor) used his interpersonal communication skills to develop personal relationships with different members of the client organization (e.g., PM Harry (Project Alpha – Client), users, technical team members, and top management team). PM George (Project Beta – Vendor) on the other hand, only focused his attention towards PM Fred (Project Beta – Client), and his relationships with other members of the client organization remained formal. PM Ron reflected on using his interpersonal communication skills to develop client-vendor relationships:

“Sometimes we [PM Ron and members of the client organization] talk about personal stuff, but that’s just part of the communication. Talking about something personal is also a way to create trust with the customer. That’s how a project manager works, communication skills is one of them.”

The role of a project manager is communication intensive. Client project managers must often communicate with different groups from their own organizations (e.g., users, IT, and top management), and with those from the vendor organizations. Client project managers do not only facilitate direct feedback from users to vendors, but also relay the feedback themselves. Communicating user feedback ensures that the system would meet the business requirements. We also observe that when conflicts occur between the client and vendor teams, client project managers must assist both sides in reaching a compromise. Meanwhile, vendor project managers must also communicate with different groups for the same purposes as client project managers (e.g., reporting to top management, resolving conflicts). There is evidence that vendor project managers must apply their interpersonal communications skills to develop client-vendor relationships. In formal terms,

**Proposition 1b:** High level interpersonal communication skills in client and vendor project managers will facilitate valuable feedback to vendors, conflict resolutions, and communications with top management, contributing towards product and process success in ISO projects. Furthermore, high level interpersonal communication skills in vendor project managers will enable vendors to develop relationships with their clients.

**Organizational units**

We found that even though PM Harry’s (Project Alpha – Client) overall knowledge of organizational units was moderate, he had a strong grasp of the finance and human resources units’ general responsibilities and work schedule. Because of this, PM Harry (Project Alpha – Client) was able to ensure that the project
schedule was viable. In his own words, PM Harry (Project Alpha – Client) described:

“We have our own calendar, we have our own schedule...I make sure whether we can match up in their schedule...I have to tell them that sorry this month we cannot meet your milestones because we have this event, and this event, and this event...”

The importance of knowing the relevant unit’s general responsibilities and work schedule becomes even more evident when we analyze Project Beta. In one incident, PM Fred requested work authorization for smart card reader installations from only one department, when work authorizations were needed from two different departments. A formal complaint letter was sent requesting for removal of all installations, and for Project Beta to be halted. PM Fred reflected on this issue and attributed the incident to his “knowledge gap” and “personal oversight.”

The findings show that further refinement on the organizational units dimension is needed to analyze the results for the organizational units dimension. Knowledge of relevant business unit’s responsibilities and work schedules enables client project managers to develop viable project schedules; knowledge gaps may cause delays. In formal terms,

**Proposition 1c:** High level knowledge of relevant organizational unit’s responsibilities and work schedules in client project managers will facilitate the development of viable project schedules, contributing towards process success in ISO projects.

**Project Responsibility**

The users made several requests for additional requirements and customization throughout Project Alpha's lifecycle. PM Ron (Project Alpha - Vendor) understood the impact of specific requirements to the client organization, and he was able to judge the relative impact of these requirements. To maintain a balance between process outcome (adhering to budget and project schedule) and product outcome (fulfilling requirements), PM Ron suggested swapping critical additional requirements with some of the less critical initial ones. PM Ron explained:

“Instead of asking for additional cost, I propose to [client organization] to drop the less critical ones, or not important at all... especially those components that do not add value... The first thing I realized is that I don’t think those things have impact on the user. We can do it, we still can do it but the value is not there... You’re spending, let’s say 100K, but you don’t get much from that 100K.”

Project Alpha draws attention to the importance of vendor project managers’ understanding of the impact of specific requirements, and recognizing the relative importance of these requirements to the client organization. When necessary, vendor project managers can recommend exchanges; replacing the less critical initial requirements with the more critical additional ones. This action allows for a balance between process and product outcome. An important aspect to note here is that understanding the impact to organizations (or project responsibility) appears to be at a more granular level than initially suggested. Vendor project managers need to understand the effects of specific requirements, as opposed to overall project. In formal terms,

**Proposition 1d:** High level knowledge of the impact of specific requirements to organizations in vendor project managers will enable the vendor project managers to balance between product and process success in ISO projects.

**Finding # 2 – IT Competence**

The second set of findings relates to the role of the client and vendor project managers’ IT competence in influencing project outcomes.

**Technology and Applications**

PM Ron’s (Project Alpha - Vendor) knowledge in technology and applications enabled him to participate in discussion sessions with the IT team. PM Ron (Project Alpha – Vendor) was able to estimate the time required to solve technical problems, and even provided the solutions to solve a system upgrade and a database integration problem. PM George (Project Beta – Vendor) on the other hand, was more hands off
in technical matters. PM George (Project Beta – Vendor) relied on his technical lead’s reports and admitted that there were times when the project “slipped” without his awareness.

We conclude that technology and application knowledge allows vendor project managers to better monitor project progress. By becoming active participants in technical discussions, vendor project managers are more aware of possible delays that may occur and make adjustments when required. In formal terms,

**Proposition 2a:** High level knowledge of technology and applications in vendor project managers will enable better monitoring of project progress, contributing towards process success in ISO projects

**Access to IT**

PM Harry’s (Project Alpha – Client) IT competence was rated as low in almost all of the IT competence dimensions; only his access to IT knowledge was rated as high. PM Harry received assistance from a technical consultant who is part of the internal IT department. PM Harry sought help from his technical consultant to understand the technical issues that occurred throughout Project Alpha’s lifecycle, and to understand the impact of each possible solution on Project Alpha’s progress. The assistance that PM Harry received enabled him to make informed decisions related to technical implementations (e.g., which servers to use, and the best procedure to perform system upgrades), and to justify these decisions to the client top management. In addition, PM Harry always conferred with his IT consultant first, before signing-off on vendor deliverables.

We observed that high access to IT knowledge allows client project managers to make informed technical decisions, and thus, allowing the project to progress smoothly. Additionally, client project managers are able to double-checked vendor deliverables before signing-off. This extra precaution ensures that vendor deliverables are complete. We did not discover evidence to link any of the IT competence dimensions to alliance project outcome in Project Beta. However, we found that PM Fred (Project Beta – Client) received between low to moderate ratings across all of his IT competence dimensions. Specifically, PM Fred’s (Project Beta – Client) access to IT knowledge was rated as moderate. We therefore conclude that high access to IT knowledge is the key dimension in client project managers’ IT competence. In formal terms,

**Proposition 2b:** High level access to IT in client project managers will enable the client project managers to make informed technical decisions and ensure the completion of deliverable, contributing towards product and process success in ISO projects. Furthermore, high level access to IT in client project managers compensates for the lack of IT knowledge in other IT competence dimensions.

**IT Project Experience**

PM Ron’s (Project Alpha - Vendor) tasks included developing the project plan, and discussing business requirements with the users. He attributed his ability to perform these tasks to his IT project experience:

“I managed a lot of skilled IT projects in the past. I can understand what are the activities involved in the project. At the same time, I was an implementer so I was able to plan what are those activities involved in this project.”

“Because I started as implementer in the past... so I can use my common sense to discuss with users, should these requirements be within the scope or outside the scope.”

In contrast, PM George (Project Beta – Vendor) was less hands on in terms of developing a project schedule. He relied on his technical lead to develop a first draft of Project Beta’s schedule, of which he later approved. Our interpretation is that IT project experience allows vendor project managers to be more hands on in developing project schedules, and to enable vendor project managers to discuss business requirements with the users directly. We therefore conclude that high level IT project experience may lead to positive outcome for both the process and product dimensions.

**Proposition 2c:** High level IT project experience in vendor project managers will lead to more hands on approach to creating project schedules and active discussions with clients on requirements, contributing towards product and process success in ISO projects
Finding #3 – Interaction between Business and IT Competencies

The third set of findings relates to how business and IT competencies interact to influence project outcomes.

An important aspect to highlight is that PM Ron (Project Alpha - Vendor) used his interpersonal communication skills in tandem with his IT competence to explain technical topics to PM Harry (Project Alpha – Client). PM Harry described, “He [PM Ron], if I ask him he would try to explain the best he can. Even to the extent of writing on the board. This is a server… like teaching me.” This allowed PM Harry (Project Alpha – Client) to understand “what needs to be done” for the project. Meanwhile, PM Harry (Project Alpha – Client) admitted that the lack of IT competence hindered his abilities to communicate during project meetings. PM Harry (Project Alpha – Client) conveyed his frustrations that at certain points during the project he was unable to ask technical questions, “of course I couldn’t ask more than that. I can only ask why and what happened. So, for details sometimes I want to ask but I don’t know how.”

Our interpretation is that project managers will join in technical discussions during the project lifetime. There is evidence from Project Alpha that project managers require interpersonal skills and IT competence to be able to communicate effectively. In formal terms,

Proposition 3: High level interpersonal communication skills and IT competence will enable client and vendor project managers to communicate effectively during technical discussions.

Discussion

In this section, we offer several insights from this study.

First, the results support the idea of bringing in unique resources for exchanges. At a high level, the business-IT pairing in Project Alpha is more successful compared to the business-business pairing in Project Beta. Upon further inspection, we see that knowledge networking and organizational units' responsibilities and workflows are important for client project managers, while technology and applications are important for vendor project managers. This occurs because the exchanges that we are looking at are in essence, exchanges (or divisions) of managerial tasks. The client project managers are responsible for ensuring that business knowledge flows to vendor teams. The vendor project managers on the other hand, are focusing on the deliverables – i.e., making sure that the product is delivered on time and within budget. Each responsibility requires different types of knowledge within their own domain knowledge.

Second, we could not find support for the importance of cross-domain in developing the client-vendor relationship. We did observe that the interpersonal communication skill in project managers is important in developing client-vendor relationship. However, this is true for both client and vendor project managers. Furthermore, this is a rather generic skill, rather than a skill/knowledge that is specific (i.e., the knowledge is about certain organizations). Another observation is that project responsibility in vendor project managers, which is a dimension of cross-domain knowledge, is relevant for maintaining a balance between product and process outcome rather than developing relationships. Our findings are in contrast to prior IS studies that emphasize the importance of cross-domain knowledge for business-IT interactions (e.g., Reich and Benbasat 2000; Goles 2001).

Third, the findings emphasize the importance of access to business and IT knowledge for client project managers. Faraj and Sproull (2000) identified the importance of knowing where expertise is located for the purpose of coordination in software development projects. This study extends the findings of Faraj and Sproull (2000) by showing how important such knowledge for the purpose of client-vendor communication; access to business knowledge facilitates critical feedback from client to vendor. Our findings also highlight that in the presence of low IT knowledge, access to IT knowledge enables client project managers to make informed technical decisions and ensures that vendor deliverables fulfill business requirements.

Fourth, there is a need to modify the definitions of certain dimensions in business and IT competencies for them to be more applicable for alliance project managers. Some of these modifications are: (1) Organizational units knowledge does not need to include knowledge of detail business workflows; and (2)
IT-project responsibility should focus on the impact of modules/functionalities to organizations.

And last, we did not find any evidence to show the project managers’ contribution towards vendor’s commercial environment. Levina and Ross (2003) suggested that process and product satisfactions affect vendor’s commercial environment. It is also possible that vendor’s commercial environment requires a look at the interactions between client and vendor top level management (as opposed to the interactions between client and vendor project managers). Thus, the project managers’ role in terms of vendor’s commercial environment is indirect (through the project success) or simply beyond the scope of project managers.

Role of the type of projects

An important observation concerns the nature of the project. As described in the site selection process, we control for the nature of the project by selecting two projects that have high strategic impact as well as high extent of substitution – i.e., alliance projects. In these projects, tasks tend to be more complicated and team members from both the client and vendor sides must frequently interact, which involves a specific set of competencies to be successful on (Nam et al. 1996).

An alliance project has high extent of substitution and involves high strategic impact of the IS functions. In some alliance cases, the client organization will even have considerable equities in the vendor organization. But clearly in all alliance projects the relationship requires the highest commitments from all parties involved. Building classification of different types of ISO relationship, Kishore et al. (2003) identifies that different competencies and control mechanisms are required to effectively manage the relationship in different types of ISO relationship, and advise that client firm should decide on the type of outsourcing based on the pool of managerial competencies that are available as it may impact the performance of the outsourcing. Therefore, the findings that emerged from these cases should be seen as contingent on the type of the project, defined based on the extent of substitution and the strategic impact.

Conclusion and Future Work

How do managerial competencies in client and vendor project managers complement each other in influencing the success of an outsourced project? We answer this question by examining two ISO projects and providing in-depth analyses on the links between competencies and project outcomes. The results shed light on the importance of domain and cross-domain knowledge in ISO projects. Several of the rich insights from this study include: the importance of domain and cross-domain knowledge for exchanges, the importance of interpersonal communication to develop relationship, how interpersonal communication skills and IT competence interact for effective communication, the need to examine the dimensions at an even more granular level, and the notion that some dimensions of competence can be compensated. These insights contradict and refine our current understanding.

Future research can extend our work in several ways. First, by examining project managers in other forms of outsourcing arrangements that vary in terms of extent of substitution and strategic impact (Nam et al. 1996) – i.e., support, reliance, and alignment ISO projects. Would different levels of competencies or different complementarities be associated with successful projects? Second, future research can examine project managers in offshoring scenarios, in which, knowledge of national culture is an important factor (Nicholson and Sahay 2004). And third, future research can examine the types of knowledge that can be compensated against those that cannot. The results of this study suggest that cross-domain knowledge can be compensated, while domain knowledge cannot; however, this is still tentative.

On a last note, our research has important managerial implications since we provide organizations with a portfolio of competencies for client and vendor project managers in an alliance project, which is the most complex outsourcing arrangement.

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