SPANNING KNOWLEDGE BOUNDARIES IN OFFSHORE
INSOURCING THROUGH ORGANIZATIONAL LEARNING:
A CASE STUDY OF BANKCO

Mei Li, School of Computing, National University of Singapore, Singapore,
limei@comp.nus.edu.sg
Zhuolin Li, School of Computing, National University of Singapore, Singapore,
zhuolun@comp.nus.edu.sg
Shan-Ling Pan, School of Computing, National University of Singapore, Singapore,
pansl@comp.nus.edu.sg

Abstract

Recent years, offshore outsourcing has received large amount of attention from both industry and academia because of its attractive advantages such as cost reduction, talent access. As an alternative way to implement information systems in operation management, offshore insourcing has been greatly overlooked. Though organizations shun from the contractual obligations in offshore insourcing, they are still encountered with plenty of thorny decisions and communications because of the do-it-yourself nature, especially in the onshore-offshore migration process. To investigate how organizations can well deploy offshore insourcing, we employ a theoretical lens of knowledge boundary spanning and organizational learning to examine a successful offshore insourcing case. Three types of organizational learning capabilities have been identified to span the increasingly complex knowledge boundaries. Both theoretical and practical contributions are discussed.

Keywords: offshore insourcing, knowledge boundary, boundary spanning, organizational learning, case study.
1 INTRODUCTION

Nowadays, information technology (IT) plays a critical role in firms’ operations management due to the benefits of cost reduction and efficiency improvement that IT provides. However, IT implementation has been recognized as a big challenge for organizations since many failures occurred. Generally speaking, there are two ways for firms to implement IT. One is outsourcing, which involves transferring the business or functions to the external third-party. The other one is insourcing, which utilizes internal resources to achieve the same objectives of outsourcing (Hirschheim & Lacity 2000). Compared to outsourcing, though organizations shun from the contractual obligations by vertically integrating the IT development function, they are still encountered with plenty of thorny decisions and communications because of the do-it-yourself nature.

Offshoring refers to relocating any domestic business task, process, or functions to abroad sites, most in those lower cost emerging economies, so as to reduce cost or obtain other benefits such as talent access (Manning et al. 2008). With the overwhelming trend of globalization, offshore sourcing is becoming an increasingly popular form for distributed software development in recent years (Chua & Pan 2008). At the same time, assorted difficulties such as geographic dispersion, communication obstacles, employee replacement (Griffith et al. 2003; Huang et al. 2001; Volkoff et al. 2004), impede the success of these IT projects. Software offshore sourcing includes both offshore outsourcing to a third-party provider as well as offshore insourcing to an internal group within a global cooperation (Carmel & Agarwal 2002). Offshore insourcing is comparatively sophisticated since it not only relates to the geographic changes, but also the cross-area management and maintenances. While existing literature on IT offshore outsourcing (e.g., Currie 2003; Quinn 1999; Willcocks et al. 2004) has been established, few studies investigate IT offshore insourcing (M. C. Lacity et al. 2010), leaving abundant research gap for further exploration.

Firms launch offshore insourcing for many reasons. The foremost one is to reduce and control IT operating cost, followed by the strategic objectives of management focus improvement and technical talent access (Levina & Ross 2003). Some firms have to build IT systems by themselves due to the confidentiality of business processes or data. When firms choose to offshore insource their IT projects, the collaboration and coordination between onshore and offshore teams is of great challenges. Many failures, in which the initial expectation has not been matched, were resulted in. Although physical distance (i.e., temporal, spatial) and institutionalized social boundaries (i.e., cultural, organizational, and functional) have been recognized as significant obstacles for successful collaboration, some researchers argued that the most salient boundaries oftentimes arise in the collaboration process (Cramton & Hinds 2007; G Walsham 2002). Successful knowledge sharing is one of the key challenges in the collaboration process (Levina & Vaast 2008).

Knowledge sharing is an important topic for organization administration and management. How to effectively and efficiently share the knowledge across sites that are located in different geographical areas is of great research interests for organizations. To span the knowledge boundaries inside organizations, previous studies (e.g., Huber 1991; March 1991; Miner & Mezias 1996) have encouraged firms to create and enhance organizational learning capabilities. These capabilities greatly influence organizations’ core competency and capabilities to react to sudden market changes. For offshore insourcing organizations, they meet many difficulties in the migration from one site to the other. How to manage their learning capabilities to achieve better performance in such migration is still unanswered. Therefore, the research questions of our study are:

How do organizations span knowledge boundaries through organizational learning in offshore insourcing?

What types of organizational learning are required for the different phases in the migration process?

To answer these questions, we analyze a successful offshore insourcing case through the theoretical perspective of knowledge boundary spanning and organisational learning. A roadmap is prescribed for organizations that are planning or conducting offshore insourcing to effectively implement their migration.
This study makes several significant contributions. First of all, it focuses on offshore insourcing, which has been greatly overlooked by previous literature. While outsourcing has received huge amount for attention from academia, offshore insourcing is an indispensable operation strategy for organizations due to some special considerations. Our study bridges this gap by analyzing a successful offshore insourcing case and details the deployment and implementation of its migration process. Second, it enriches the framework by Carlile (2004) with elaboration of the specific organizational learning that can be utilized to span different types of knowledge boundaries across onshore and offshore sites. Congenital learning, vicarious learning and experiential learning have been incorporated to the framework as effective ways to transfer, translate and transform knowledge. Third, it provides practitioners a feasible roadmap to conduct onshore-offshore migration. Each phase and corresponding knowledge boundary spanning strategies have been illustrated and discussed for practitioners’ reference.

The remainder of this paper is organized as follows. Section 2 introduces our theoretical lens of knowledge boundary spanning and organizational learning, which are followed by Section 3 Research Methodology. Section 4 provides a brief description about the case. Case analysis and discussion is presented in section 5. We conclude this study by discussing theoretical as well as practical implications in section 6.

2 THEORETICAL BACKGROUND

2.1 Offshore Sourcing

With the increasing level of globalization, firms nowadays can utilize resources all over the world instead of within a single country (Hahn et al. 2009). Offshore sourcing has become a hot topic that attracts academia’s attention. Prior studies mainly focus on offshore outsourcing, which enables firms to contract internal tasks to external companies in foreign countries (Currie 2003; Willcocks et al. 2004). These studies can be classified into two groups. One group investigates the antecedents of offshore outsourcing decision and the other group evaluates the performance of offshore outsourcing. Cost reduction is a major force driving firms’ offshore outsourcing decision (Fisher et al. 2008; M. Lacity et al. 1994). The labour cost difference between onshore and offshore countries greatly reduces focal firm’s cost. Another important reason for firms to choose offshore outsourcing is to focus on core business (Prahalad & Hamel 1990). Non-IT firms can concentrate on production by contracting IT projects to external vendors. Other antecedents like access to expertise, business performance improvements and technical reasons also contribute to firms’ choice of offshore outsourcing (Hall 2003; McLellan et al. 1995; Sobol & Apte 1995), just name a few here. Many factors have been identified to affect the performance of offshore outsourcing. Among them, relationship (e.g., knowledge sharing effectiveness, trust and communication) between the focal firm and IT vendors is of great importance (Dibbern et al. 2008; Klepper 1995; J. N. Lee 2001). Additionally, the capabilities of client and vendor firms influence the final performance as well (Feeny & Willcocks 1998; Kern & Blois 2002; Levina & Ross 2003; Winkler et al. 2008). As a pivotal tool to govern client-vendor relationship, contract characteristics such as contract size and contract type also have impact on offshore outsourcing outcome (Poppo & Zenger 1998; Ross & Beath 2006; Joseph W Rottman 2008).

While offshore outsourcing receives a large amount of attention, offshore insourcing has rarely been investigated. Existing studies that mention offshore insourcing actually investigate the phenomenon of offshore sourcing as a whole, without detailed discussion about the implementation of offshore insourcing (Moe et al. 2012; Tannirverdi et al. 2007). In reality, some firms have to develop IT project in-house due to the concern of data security and business secret, such as financial industry and defence organizations. Investigating the implementation of offshore insourcing is of great benefit for those organizations. To respond the call by M. C. Lacity et al. (2010), this paper endeavours to shed light on the migration process of offshore insourcing with a successful case.
2.2 Knowledge Boundary Spanning

Boundary could be either explicit, visible delimitation, or implicit, hidden demarcation between subjects. In the context of offshore sourcing, successful knowledge management between client and vendor, in certain degree, determines the final quality of the IT projects (Carmel & Agarwal 2002; Kotabe & Swan 1994; J.W. Rottman & Lacity 2004). Though knowledge management has been identified as a vital aspect in offshore sourcing, it is still very difficult to control the information flow between customer and vendor since the inter-organization relation and geographical distribution (Brown & Duguid 2001). The complexity level of knowledge hampers the knowledge transferring as well (Banker et al. 1993; Basili & Perricone 1984). Because of the inter-organization relation and geographical distribution, it is not easy to manage information flow between customer and vendor timely and accurately (Brown & Duguid 2001). The complexity level of knowledge also hampers the knowledge transferring (Banker et al. 1993; Basili & Perricone 1984). Under the context of offshore sourcing, managing the information flow appropriately between the actors greatly influences the ultimate outcome of the projects (Currie 2003).

In order to overcome the knowledge boundary, it is pivotal to carefully examine its nature. In the work of Shannon (2001), three types of knowledge boundaries have been identified to echo the three levels of communication complexity in linguistic literature (Cruse 2000). The three boundaries, with gradually increasing complexity, are syntactic boundary, semantic boundary and pragmatic boundary. To deal with these three progressive complicated knowledge boundaries, different boundary spanning strategies should be exploited.

According to the framework by Carlile (2004), transferring, translating and transforming are three mechanisms that could be utilized. The lowest level of knowledge boundary – syntactic knowledge boundary is caused by the lack of common knowledge. In order to reach a consensus, the knowledge should be carried from the rich side to the poor side. This process is called transferring (Lorsch 2006; Shannon 2001), which is the simplest form to share knowledge. Information-processing acts as a way to create a common lexicon between two sides and influences the sharing results in a great extent.(Lorsch 2006; Shannon 2001).

Semantic boundaries affect knowledge sharing when actors cannot understand each other even with the presence of a common lexicon. It often happens when higher innovativeness presents. To successfully span semantic boundaries, translation is required. Translation involves large deliberation (Dougherty 1992; Nonaka 1994) and needs the actors to interpret the difference between their discrepant understanding (Dougherty 1992; Nonaka 1994). The underlying strategy for spanning this boundary is to create the shared meaning for the conflicting ideas and opinions, where interaction and persuasion may be taken to build agreement.

Pragmatic boundary presents when two sides have contradictory interests. It is the most complex and sophisticated one. In order to span pragmatic boundary, the diverse goals chased by different groups should be adjusted to develop common interests and achieve collaborative objectives. This process needs not only physical changes but also mental alternations. It is entitled as transformation (Bechky 2003; Carlile 2002).

2.3 Organizational Learning

It is widely accepted that organizational learning could increase organization competence and improve strategic performance (Arrow 1962; Dosi 1988; Loveridge & Pitt 1990; Maidique & Zirger 1985; Rosenberg 1976; Teece et al. 1990). Organizational learning is highly correlated with knowledge management in the sense that most sharing activities could be mapped to subconstructs and subprocesses in organizational learning theories. For instance, different communication media, such as face-to-face and written documents through which knowledge is shared, could be mapped to the subconstruct of media richness in the process of information interpretation (Huber 1991). The studies of organizational learning can be dated back to the work by Weber (1922), in which he described bureaucracies’ experience learning capabilities. Furthermore, Cyert and March (1963) recognized learning activities as a critical organizational process.
A substantial issue in learning literature concerns “What are the key learning processes” (Miner & Mezias 1996). The learning processes and mechanisms identified in literature are divergent because of the complex nature of learning phenomenon. After reviewing voluminous and multi-faceted literature, Huber (1991) contributed a more complete understanding about organizational learning processes and mechanisms by largely broadening his subject scope and evaluating the literature more critically. He argued that there were four constructs related to learning: knowledge acquisition, information distribution, information interpretation, and organizational memory.

As our research context is the establishment of a new IT centre, knowledge acquisition is the most important process the organization should go through. Knowledge acquisition is the process by which knowledge is obtained. It is portrayed as comprising of five subconstructs or subprocesses: congenital learning, vicarious learning, experiential learning, grafting, and searching (Huber 1991). From our point of view, these subconstructs or subprocesses follow the history of organizational development. An organization is created with a mission and resources granted by its founders. Founders have knowledge about the new organization’ initial environment and about the processes this organization can leverage on to realize their founders’ intentions. Congenital learning is employed in the initial phase of such foundation to combine the knowledge inherited at its conception and the additional knowledge acquired prior to its birth (Meyer & Rowan 1977). After its earlier establishment, an organization attempting to catch up with industry leaders need to learn about the strategies, administrative practices, and especially technologies of other organisations. In this phase, it is necessary to conduct vicarious learning, which involves “corporate intelligence” and “institutional forming”. Corporate intelligence is to borrow experience from other organizations by searching what they are doing and how they do it (Gilad et al. 1988). On the other hand, institutional forming is to mimic successful organizations to learn strategic, administrative and technologic knowledge from others (Zucker 1987). With continuous evolution of an organization, imitation is not sufficient for sustained organizational development and innovation. A successful organization is not satisfied with only imitating industry leaders to survive but with a great ambition to gain its own edges over others in the same industry. Learning from experience or learning by doing is a promising solution. Organizational self-appraisal and experimenting organization are two subprocesses in experiential learning to address this issue (Boulding 1978; Huber 1991). Organizational self-appraisal requires members in the same organization interacting and participating in sharing knowledge and feedback to improve organizational performances. Experimenting organization is another form of experiential learning in which organizations operate themselves as “experimenting” or “self-designing” to remain flexible to reach optimal adaption. Organizational self-appraisal aims enhancing adaption while the concept of experimenting organization focuses on enhancing adaptability.

In literature, grafting and searching are other two subprocesses in knowledge acquisition of organizations (Huber 1991). Grafting is to acquire new members with knowledge necessary for organizational development but not yet available within organizations. This subprocess is meant for an organization which acquires external resources to surpass limit constrained by its internal conditions. For an offshore IT centre established by its parent organization, grafting is coincident with the acquisition of additional knowledge in congenital learning. The newly recruited staffs in the offshore side carry such knowledge critical to the operation of new IT centre but not available for the parent organization. Searching can be viewed as how an organization senses the changes of environment and correspondingly response to actual problems caused by environmental changes with active performance monitoring. However, this subprocess is not directly related to our context which involves the establishment of a new offshore IT centre. The success of such establishment is defined to be the accomplishment of undertaking IT service and support from onshore side to offshore side. Whether the new offshore IT centre can react to both internal and external environment change in future is not the focus of this paper and beyond our observational data.

As mentioned above, knowledge boundary spanning is critical for the success of offshore insourcing. To address the high knowledge complexities existed in the migration process, organizational learning capabilities are of great importance for organizations. Such capabilities facilitate fluent information flow between the groups in the organization and enhance organizational capabilities to acquire and incorporate new knowledge. However, the usage of organizational learning may vary depending on
the knowledge boundary the organization encountered. In this study, we analyze the case of a successful offshore insourcing implementer and prescribe a roadmap for organizations to span their knowledge boundaries they may meet in the process of offshore insourcing.

3 RESEARCH METHODOLOGY

The case study methodology is particularly suitable for this study. There are a number of reasons for this choice. First, our research question is a “how” question (G Walsham 1995) that requires deep understanding of knowledge boundary spanning mechanisms and organizational learning processes. Second, both knowledge boundary mechanisms and organizational learning process are complex and multi-faceted in nature and inextricable in an organizational context. Therefore, the qualitative approach interpreting the dynamic process of boundary spanning is more appropriate than positivist approach (Klein & Myers 1999). Based on the research methodology, we chose a multinational organization as our single subject. In its offshore insourcing project, BankCo successfully solved the problem of knowledge boundary and shifted its development and support of information systems from onshore locations such as United Kingdom, Hong Kong and Singapore, to offshore locations such as India and Malaysia.

The case study was carried out under the guidance of the structured-pragmatic-situational approach (Pan & Tan 2011). To start, we negotiated with BankCo and access was approved. Based on the public available information of BankCo, we conceptualize it as a successful offshore insourcing implementer. In order to obtain more information about this implementation process, both structured and unstructured interviews had been conducted. Project and programme documentation, published sources, follow-up e-mails and telephone calls were also used as other sources of information (Yin 1994).

Formal interviews were conducted on different levels to obtain both panorama and details of the whole transition project. In order to understand the strategic decision of the top management team (TMT), three TMT members were interviewed to get the knowledge about the objective, process and outcome of the migration. To better understand the group-level efforts, one team-specific senior manager and five project managers were interviewed on the planning and execution of the transition. Lastly, the individual knowledge was obtained from seven system analysts and programmers. They were asked questions about the involvement, and actual execution of the knowledge transfer. With the aim to acquire the full set of information about the transition, the interviewees were selected from both the onshore and offshore sites. The interviewees were requested to describe the role they played in the project, their experience, feelings and opinions about the success of the transferring.

Data analysis was carried out according to the three-phase framework of knowledge transfer by Carlile (2004). Triangulation was confirmed to enhance internal validity with interview as the primary source of data supplemented by secondary sources of data (Yin 1994).

4 CASE DESCRIPTION

BankCo is a multinational bank with 30,000 staff located in 50 countries. In 2001, after a critical retrospection of its information system global business strategy and technology development, it determined to progressively transfer its support and development of information system from onshore locations to offshore locations. The most obvious objective of this switch was to reduce cost since staff took higher wage in onshore locations than offshore locations. In terms of labor cost differences, a Hong Kong (or Singapore) employee on average cost 50% of the cost of a United Kingdom employee while an India and Malaysia employee also cost 50%, on average, of the cost of a Hong Kong (or Singapore) employee. Aside from cost reduction, the transition also planted the seed of risk

---

1 To protect the confidentiality of our subject corporation, a masked name has been used.
reduction of shortage of technology resources in onshore locations as well as productivity and quality improvement by centralization in offshore locations.

In 2001, BankCo distributed 95% of its staff in onshore locations of United Kingdom, Hong Kong and Singapore, while there was only 5% staff located in offshore locations of India and Malaysia. However, by the end of 2004, more than 70% of the whole BankCo staff was employed in India and Malaysia. With 70% organizational memory refreshment, the knowledge transfer process must be executed carefully to preserve most valuable especially confidential organizational knowledge. BankCo officially completed this transition at the end of 2004 with subsequent but small-scale of switch in the next several years.

5 CASE ANALYSIS AND DISCUSSION

We divide the whole case into three phases according to the different development stages, namely initial phase, implementation phase, and integration phase. The analysis and discussion are presented as below.

5.1 Initial Phase

At the initial phase, the main task for BankCo was to plan and complete the preparation of the hardware capacities for the succeeding migration and actual operation. For planning, the difficulty faced by BankCo was its limited knowledge about the offshore countries. For hardware capacities preparation, BankCo need to make sure that the new offshore IT centres were configured with enough physical facilities and basic professional technical staff, which were fundamental for the start-up of the new IT centres.

To get rid of the difficulties encountered, a team in charge of knowledge transfer transition was created by BankCo. This team consists of a Programme Director, a Programme Management Office (PMO) and a Regional Transition Manager in each onshore country. A transition guide was compiled by the Programme Director to describe in detail the steps to complete the switch from onshore to offshore. The PMO also made decisions on the replacement of onshore teams with offshore teams. They decided to maintain two kinds of teams onshore: teams not cost-effective to send offshore and teams extremely business critical and of high risk to the organization. In addition, onshore project managers and offshore project managers were assigned different sets of tasks.

For onshore project managers, they were responsible to identify what kind of knowledge to transfer, who was liable for documentation preparation. The majority of documented knowledge was explicit knowledge, covering technical knowledge, application knowledge and domain knowledge. Each team individual in onshore locations was told to summarize knowledge in their area of specialization, including updating the current set of documents, listing documents to hand over, preparing presentation slides and related quizzes for future training in offshore locations.

For offshore project managers, they were responsible to recruit as many qualified member as possible. However, there were insufficient suitably qualified employees with necessary technical, application and domain knowledge in the offshore job market since the offshore managers were pushed to recruit two to five times the number of current staff within only two months. Under this stringent schedule, offshore managers were requested to devote to their jobs as much as possible, trying any likely approach to satisfy the demands of human resource, such as poaching, etc.

Although insufficient qualified staff was found owing to the overwhelming recruiting demand, the offshore staff was immediately engaged in summarizing existing documentation. Explicit knowledge was initially transferred in this phase through the form of documentation and recruitment, which launched the first step for BankCo to embark its offshore advantage-seeking strategy.
5.2 Implementation Phase

As a result of new establishment and imperfect recruitment, the offshore development centres were in great demand of orientation training. The document preparation by onshore staff in initial phase provided adequate materials such as question sets, presentation slides etc., for the following training.

The training consisted of presentation, written test or quiz, on-the-job training, support simulation, and playback. However, due to the diverse working convention in different countries, some knowledge specific to certain nation was hard to understand. What the new staff can and should do was compliance. As an onshore project manager pointed out:

“These guys come with their limited experience from their local bank and they have to roll out compliance. They had so much of issues not understanding the processes and trying to learn on the job.”

For such kind of knowledge, offshore staff had no choice but to follow the organizational experts from training team to better understand the compliance process. Presentation was adopted as the key learning medium from the beginning of knowledge transferring. Presentation has the advantage that it can convey most critical and fundamental knowledge in a one-to-many scenario so as to initially make offshore staff aware the existence of this knowledge. It is predictable that not all trainees could absorb the whole knowledge transferred in the presentation due to the fact that large amount of information rushed in one’s mind in a short time frame. Nevertheless, presentation was helpful to provide offshore staff an overview of key concepts, functions, and features they may encounter in their future work. One offshore member confirmed that:

“The training was not a waste of time – it was more of giving us the awareness. I would consider it more of an awareness training.”

The effect of training was examined by the following written tests or quiz. The quiz aimed motivating attendees to concentrate on presentation and master important concepts conveyed in the presentation. The quiz also served as a feedback mechanism for managers to judge which area need further clarification and elaboration. On-the-job training was conducted in the offshore locations. It allowed offshore staff to sit beside onshore staff and observe how onshore staff provides support. After such close observation, offshore staff could imitate onshore staff’s operation. Some past technical problems may not arise in daily operation were explained in support simulation. In simulation, the onshore staff replicated past problems and encouraged offshore staff to propose correct solutions. This simulation facilitated the transfer of tactical knowledge such as problem solving capabilities from onshore staff to offshore staff. Overall, to ensure maximum knowledge transferring, playback mechanism was employed for onshore team to observe and test whether there were irregularities during the process.

Assorted training methods were exploited in this phase to transfer the knowledge originally dwelling in the onshore sites to new staff in the offshore centres. All of those training were carried out by the experienced onshore managers, who were conversant to the work and had their own understanding and insights about the organization and the technology. Each training had its own role and function in imparting and ensuring the successes of transferring trainers’ precious trial-and-error knowledge to trainees.

5.3 Integration Phase

Although the intense orientation training was of tremendous importance and usefulness for the offshore centres’ afterward successful running, a posterior evaluation was proposed to test whether the offshore teams were ready to take over all the responsibilities of the onshore teams. In addition, remedial action was necessary to smooth the whole transition process. Oral test and readiness rating were employed as two major measurements. Oral test was conducted at individual level to test whether offshore members had truly grasped key topics in their specializations and walked through a full trouble-shooting process.

Apart from the oral test at the individual level, readiness rating was utilized as another quality check. Onshore and offshore project managers collaborated on the rating of each offshore team’s readiness to
take over the responsibilities of onshore team. Each individual in the team was assessed in technology knowledge, application and domain knowledge, respectively. Besides specialized knowledge, soft skills, such as, helpfulness, commitments, and willingness to win, were also parts of the assessment of team members. During the whole transition, a Quality Manager was in charge of the migration and he commented:

“But whether these people had really transferred the knowledge, the document would not be able to tell you. So what we do is we would interview the people doing the transition.”

If all the stakeholders were satisfactory about the transition and the offshore teams were ready to take over, all the responsibilities of onshore teams were then handed over.

After the self-appraisal tests, BankCo was aware that although the technical knowledge could be successfully transferred to offshore, the advanced application domain knowledge was not able to replicate in offshore. The senior analysts and project managers possessed this advanced knowledge and they were not replaceable by new employees recruited in offshore locations. In the original client-vendor design, onshore and offshore sites were treated as two separated entities. Hence, insourcing could be considered as “outsourcing” from onshore to offshore. BankCo quickly understood that the practical action to correct this potential strategic error was to integrate both the remaining senior members of the onshore teams and the updated but immature offshore teams into a global team. This cohesive team worked in different geographical location but kept reporting to the same manager. This remedial action seemed to work well, as pointed out by an offshore manager:

“I think what helped most was the re-organization where all of us reported one common manager. The mindset is so different now.”

By eliminating the boundary between the so-called client and vendor, the offshore insourcing finally resulted in a united global team with most staff migrating to low-cost locations. The problems BankCo encountered in each phase and corresponding solutions are listed in Table 1 for reference convenience.

<table>
<thead>
<tr>
<th>Phase</th>
<th>Problems</th>
<th>Solutions</th>
</tr>
</thead>
</table>
| Initial Phase                | Offshore sites lacked necessary hardware capacities as well as human resources. | 1. A team in charge of knowledge transfer transition was formed and a transition guide was created to describe the migration steps.  
2. Onshore project managers were responsible to organize onshore staff to prepare documentation about the knowledge that would be useful for offshore.  
3. Offshore project managers were responsible to recruit as many qualified members as possible. |
| Implementation Phase        | Unlike explicit knowledge, implicit knowledge was difficult to transfer.    | A comprehensive training was conducted in offshore site:  
1. Presentation, written test or quiz, on-the-job training, support simulation, and playback were used to help offshore staffs understand the business processes.  
2. Due to the diverse working convention in different countries, offshore staff was required to comply with the onshore standards. |
| Integration Phase           | The success of onshore-offshore migration was unknown. The original client-vendor design was inappropriate for organization operation. | 1. To gauge the success of the migration, self-appraisal tests were conducted.  
2. As onshore and offshore sites were an organic whole, a cohesive team across different geographical locations was formed. |

Table 1 Summary of Problems in Each Phase

5.4 Discussion

The successful onshore-offshore migration process of BankCo presents a completed and hand-on instance for other organizations to learn from. The migration process is summarized in Figure 1,
where the process has been divided into three phases in chronological order, namely initial phase, implementation phase, and integration phase. In this course, BankCo was encountered with three increasingly complicated knowledge boundaries (i.e. syntactic boundary, semantic boundary, and pragmatic boundary). BankCo had to adaptively utilize its organizational learning capability (i.e. congenital learning, vicarious learning and experiential learning) to span these knowledge boundaries in different phases and finally achieve its strategic goal to offshore insource the development and support of its information systems.

**Initial Phase**

In the initial phase, the major problem confronted by BankCo is the lack of common knowledge shared by both onshore and offshore staff. In the new IT centre, some newly hired employees were not sufficiently qualified for their job. Take programmers as an example. They should have a solid knowledge foundation for technical skills and have accumulated sufficient development experiences in industries (like e-commerce) where they used to work in. However, due to the heterogeneity of industries or positions, some of their existing skills or experiences can hardly be applied to their new jobs. Furthermore, some issues/requirements (like the requirement of extremely high security) that are already common knowledge in bank industry may not be realized by newly recruited staff because they do not have relevant domain knowledge. To alleviate this problem, offshore project managers tried to poach employees who were more likely to have pre-requisite technical skills and domain knowledge, from other banks. However, even those poached employees may not be fully qualified since banks have their own routines and institutions. Moreover, organizational culture difference between onshore and offshore staff added another layer that hampered knowledge sharing. To address the problem of lacking common knowledge, which can be conceptualized as syntactic knowledge boundary, BankCo tried to carry knowledge from the rich side (onshore) to the poor side (offshore). Such knowledge carrying process is described as transferring in literature (Carlile 2004; Volkoff et al. 2004).

![Figure 1 Process of Knowledge Boundary Spanning](image)

**Figure 1 Process of Knowledge Boundary Spanning**

Congenital learning is useful for newly launched organizations. Inherited knowledge and additionally acquired knowledge are two important components for new organizations to build up corporation
knowledge repository (Huber 1991). In reality, BankCo used its congenital learning capability to combine inherited knowledge and additionally acquired knowledge together. In this case, the knowledge owned by onshore staff can be treated as inherited knowledge for the new IT centre, while the knowledge owned by newly recruited offshore staff can be considered as additionally acquired knowledge. To transfer the knowledge, inherited knowledge was prepared in documents by the onshore side. By summarizing their relevant working routines and previous working experiences, the knowledge owned by onshore staff was collaboratively stored. The resulting documents can be viewed as a common lexicon for communication between onshore and offshore staffs. Via the manifestation of documents, explicit and visible knowledge from onshore was successfully transferred to offshore.

Additionally, integrating additionally acquired knowledge with inherited knowledge was implemented through assimilation. As mentioned above, the knowledge from new employees may not be directly applied to their new job because of the lack of domain knowledge and understanding of BankCo’s own requirements. After they went through the summarized documents from onshore, offshore staff could familiarize themselves with current working environment and develop a clear understanding of the requirements. This helps them adaptively apply their existing knowledge to their new jobs and contribute more to the organization. In this way, offshore IT centre integrated the additionally acquired knowledge from newly recruited staff. At the end of this phase, the new IT centre achieved the knowledge transferring with the aid of two distinct forms of congenital learning (i.e. documenting and recruiting) to build up a common lexicon on work routines and professional consensus.

Implementation Phase

Following the initial phase, the second phase is the implementation phase. A common lexicon manifested by documents has been successfully built up in the initial phase. However, tacit knowledge can hardly be transferred by the means of documentation. Unlike explicit knowledge (e.g., routines and guidelines) which can be sufficiently described in documents, tacit knowledge (e.g., intelligent programming techniques and problem-solving ability) cannot be easily described in documents. In this phase, onshore and offshore staffs cannot further transfer knowledge even with a common lexicon. This problem can be conceptualized as the semantic boundary and happens when higher innovativeness presents. In this case, tacit knowledge can be considered more innovative and advanced than explicit knowledge. Although it is cannot be shared as easily as explicit knowledge, tacit knowledge is more important for staff’s productivity and a firm’s performance. Such knowledge is a valuable asset to a firm and is constitutive of the firm’s core competence over its competitors. Therefore, BankCo incurred more efforts to create opportunities for offshore staff to learn tacit soft skills from onshore staff. Various interactive activities like on-the-job training, support simulation, and playback were organized, in which offshore staff could get the second-hand knowledge from the experienced onshore staff and reach consensus about their business process. This is consistent with the translation process in literature where translation is defined to involve large deliberation and needs the actors to interpret the difference between their discrepant understandings.

Vicarious learning was used by BankCo to help onshore and offshore staffs to interactively describe, recognize and finally eliminate their difference in understanding the tacit knowledge. Corporate intelligence and institution forming were implemented to translate tacit knowledge from onshore staff to offshore staff. Even though offshore employees were ambitious to create a new powerful IT centre which would be as competent as the onshore one, they lacked familiarity and tacit knowledge about their jobs. Hence, offshore IT centre applied corporate intelligence to actively seek for information on what onshore IT centre had done and how they managed to do it. Previous literature defines corporate intelligence as searching for information about their competitors (Fuld 1988; Gilad et al. 1988). In this case, though onshore site and offshore site are two branches under the same corporation BankCo, they in certain sense are competitors since their functions are similar. Thus, by collecting information on either explicit or tacit knowledge, the offshore site is able to obtain a clear view about their working scope and skills needed to address the problems they may encounter. Specifically, with the tight connection between onshore and offshore, offshore staff had abundant opportunities, such as regular meetings and consultations, to learn from onshore staff. To enhance this learning, specially designed interactive activities like on-the-job training were carried out. These activities allowed them to work
with and observe their onshore colleagues in action and incrementally learn lessons from onshore colleagues.

Moreover, as a newly established organization, it was necessary for offshore IT centre to form its own routines and institutions (Ravishankar et al. 2011). This knowledge involves relatively large amount of tacit knowledge that cannot be easily transferred via simple medium, such as books, documents. According to “Institutional theory” (Meyer & Rowan 1977; Zucker 1987), what offshore staff could do is to imitate the approaches their onshore peers use. Fortunately, under the same parent organization, offshore site was able to obtain the information about onshore business processes without much effort. Onshore employees were responsible for translating tacit knowledge that cannot be directly described in documents to help offshore employees to form their institutions. In interactive training process like support simulation, onshore staff simulated scenarios in which offshore staff had to provide solutions to problems that they had never met before. Offshore staff should showcase the appropriate actions, principles, and strategies to overcome such problems. Institutions originating from onshore IT centre were internalized by offshore staff through scenario analysis. Consequently, offshore employees’ problem-solving capability was polished by the valuable accumulated experiences and the organizational culture was engraved in their hearts. At the end of the second phase, BankCo finished the knowledge translation of tacit knowledge from onshore to offshore with vicarious learning (i.e., corporate intelligence and institution forming) to build up a common meaning on problem-solving capability and organizational culture.

Integration Phase

In the last phase, both explicit and tacit knowledge had been successfully switched from onshore team to offshore team. The remaining sophisticated problem faced by BankCo was the conflicting interests of onshore and offshore teams. In the original project design of offshore insourcing, onshore staff would be retrenched after they successfully transferred their knowledge and completed the handover to offshore staff. Because of this, onshore team members may hesitate to share all their valuable knowledge to offshore team without reservation. The knowledge accumulated though years of trial and error was highly important for their livelihood. In this sense, the most valuable knowledge was highly possible to be reserved by onshore team. This issue was more salient for tacit knowledge and for senior managers. As a result, the insights possessed by senior managers were not satisfactorily shared due to the conflicting interests. This problem echoes the pragmatic knowledge boundary where two sides have contradictory interests. To span the most complex and sophisticated knowledge boundary, BankCo adaptively changed its original plan in aim to develop common interests. A collaborative organizational design was conceived. Such decision was a significant transformation for BankCo.

BankCo employed its experiential learning capability to complete the adaptive transformation of onshore and offshore staffs’ interests. This transformation involved a timely self-appraisal and a bold experimental organizational spirit. Self-appraisal requires organizations to check the consistency between their current states and their previously formed self-conceptions. BankCo conducted quality checks in the forms such as oral test to evaluate whether offshore staff could fulfil its expectation to take over the responsibilities previously held by onshore staff. Quality checks were conducted on both individual and team levels to comprehensively assess offshore team’s readiness to replace the onshore team. By consistently monitoring the performance of offshore team, BankCo timely realized that some critical knowledge possessed by senior analysts and project managers cannot be transferred but such knowledge played an important role in maintaining the effectiveness of organization. To address this issue, BankCo quickly made an experimental decision to integrate both the remaining senior members of onshore team with offshore team. The new cohesive team had no concept of onshore or offshore teams but reported to the same main manager. With common interests and collaborative objectives, employees in this new team stood together as one and did their best to match the performance of previous onshore team. Such a global team not only kept the critical tacit knowledge owned by previous onshore senior analysts and managers but also reaped the low cost of human labour in offshore places. Furthermore, with the growing matureness of the global team, previous onshore senior analysts and managers could be gradually replaced by promoted staff in offshore site.
Therefore, in the last phase, BankCo completed its onshore-offshore migration process, ending up with a global team which is both efficient and cost saving.

6 CONCLUSIONS

6.1 Theoretical and Practical Contribution

By answering the research questions with the analysis of a successful offshore insourcing case, this study makes several significant theoretical contributions. First of all, this study bridges the research gap on offshore insourcing. Offshore sourcing is not a rare concept in operations management but existing studies disproportionately focus on outsourcing (Currie 2003; J. N. Lee 2001; Quinn 1999; Willcocks et al. 2004). Though IT outsourcing and insourcing share large amount of similarity, the different cooperative relationship determines that many subtle details are worth being investigated. Hence, this paper, as one of the forerunners in this field, sheds more lights on how to conduct knowledge transfer in the migration process of offshore insourcing.

The second contribution is that this study enriches the knowledge boundary spanning framework by Carlile (2004). We augment this framework by matching appropriate organizational learning capability to each knowledge boundary. Congenital learning, vicarious learning and experiential learning have been identified as effective ways to transfer, translate and transform knowledge. Moreover, our study expand the application of Carlile’s framework (2004) from product design to IT offshore insourcing.

In terms of practical implications, our model suggests that spanning knowledge boundaries in IT offshore insourcing is crucial for the successful organizational reconfiguration, even though the working environment of the new IT offshore centre is in-house. This study discloses the whole knowledge boundary spanning process with detailed elaboration, presenting a perfect instant for other organizations to learn from. Additionally, organizational learning capabilities are important forces to span the knowledge boundaries in the migration process. Practitioners are suggested to pay more attention on fostering organizational learning capabilities. Moreover, BankCo’s practice of changing business perspective from “user and vendor” to a “global team” at the last stage, sets a valuable example to other organizations to apply contingent strategies.

6.2 Limitations and Future Research

Our study does not come without limitations. Single case method adopted in this research has been considered as a “typical and legitimate endeavour” in qualitative research (A. S. Lee & Baskerville 2003). In spite of this, a common criticism of this methodology is lacking generalizability since case study cannot prove itself in statistical sense (G. Walsham 2006). Thus, if data allows in the future, multiple-case analysis, which enables stricter triangulation and provide higher validity, can be done. Second, the organizational learning capabilities described in the model are drawn from different literature and may not be progressively sophisticated to match the increasingly complex boundaries identified by Carlile (2004). Future studies are needed to further investigate the nature and complexity of the various organizational learnings. Third, we only investigate the migration process of offshore insourcing. As an alternative way to implement information systems, offshore insourcing is a continuous endeavour for firms. Future research may want to investigate how multinational firms can successfully manage the sites across different geographical areas and what organization structure is more conducive for intra-organization collaboration.

REFERENCES


