Effective Knowledge Transfer When Changing IS Sourcing Strategy

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ABSTRACT

Ensuring successful knowledge transfer when embarking on IS sourcing strategy change is critical to ensure service quality and continuity, and organizational IS capability development. Managing the process, however, is complex and challenging. It involves the sharing and learning of technical IS and business knowledge. It also involves knowledge flows across organizational/national boundaries where members operate in completely different industrial, business, and cultural environments. This paper focuses on identifying a set of effective knowledge transfer strategy when changing existing IS sourcing arrangement. Experiences learned from the case study presented here serve as exemplary guidelines for those changing IS sourcing strategy.

Keywords
Knowledge Transfer, IS Sourcing Strategy, Technical IS Knowledge, Business Knowledge, Change

1.0 INTRODUCTION

Knowledge transfer is complex. It is tough. However, it is a process organizations have to painfully go through every time they change their Information Systems (IS) sourcing strategy. Successful knowledge transfer ensures continuity of services (Lee, 2001). It also ensures shifting, development, and maintenance of knowledge required to provide quality services that meet organizational needs (Lee, 2001). Despite the criticality of effective knowledge transfer, organizations often overlook or under-plan the transitioning process and discounting the time and effort required to transfer knowledge (Overby, 2004; Warner & Brown, 2005).

In the context of IS sourcing change, knowledge transfer extends beyond technical IS knowledge (i.e., hardware and software information) (Overby, 2004) to include business knowledge such as business processes and procedures, organizational structures as well as culture and context that govern the operational and running of activities (Overby, 2004; Warner & Brown, 2005). Successful transfer of both knowledge domains is not an easy task.

Further complicating the knowledge transfer process is the fact that most of the knowledge is possessed in the head of individuals. According to Steve DeLaCastro of Tatum CIO Partners, an IT professional service provider and consultancy, 60% or more of the knowledge of legacy systems sits in someone's head (Overby, 2004). What sits in the head of individuals is a form of tacit knowledge that is very difficult if not impossible to transfer (Beath & Walker, 1998; Nonaka & Takeuchi, 1995). In addition, employees who possess the knowledge are those who may likely be affected by the change in IS sourcing strategy, thus making it difficult to secure their cooperation in knowledge sharing (Overby, 2004). Even if they agree to participate, the task is demoralizing and may affect the outcome of the knowledge transfer process. Couple all these issues with high employee turnover rate during IS sourcing strategy change, ensuring successful knowledge transfer can be a daunting task.

Therefore, it is essential for organizations to have a set of effective strategy that would guide them in their knowledge transfer effort. The goal is to mitigate risk, ensure service quality and continuity, and increase the success rate of the new sourcing strategy. Existing literature that focuses specifically on knowledge transfer strategy during IS sourcing change is rare.

Thus, the goal of this paper is to identify a set of effective knowledge transfer strategy when transitioning from one sourcing arrangement to another. It details a case study of a large firm shifting from total outsourcing strategy to total backsourcing strategy (i.e., the act of transferring the once-outsourced IT functions back into the internal organization). Since the previous total outsourcing strategy has left the organization with no IT employees, the ability and the experience of the firm in harvesting a successful knowledge transfer plan and rebuilding the capability of the entire IT department offer valuable insights. In fact, its experience can serve as exemplary guidelines for organizations embarking upon IS sourcing change and knowledge transfer efforts. The implications derived from the case also contribute to the existing IS sourcing research through the examination of an important area that has not been widely addressed.

The paper is organized as follows. First it reviews literature related to the concept 'knowledge transfer'. Then the choice of methodology for collecting and analyzing the data is described. After that, a brief background of the case and the analysis of the data are

presented. Finally, lessons learned from the case study are discussed.

2.0 KNOWLEDGE TRANSFER

Knowledge transfer is the "communication of knowledge from a source so that it is learned and applied by a recipient" (Ko, Kirsch, & King, 2005). It consists of three key aspects. The first aspect is the involvement of two parties – the "source" and the "recipient" (Ko et al., 2005). The source is the party that possesses the knowledge and with whom the knowledge will be transferred from while the recipient is the party who will receive the knowledge transferred. In the case of outsourcing from a client to a vendor, the source would be the client while the recipient is the vendor. In the case of switching outsourcing vendors, the source would be both the client and the old vendor while the recipient would be the new vendor. In the case of backsourcing, the source would be the vendor while the recipient would be the client. Table 1 provides a summary of parties who are involved in the knowledge transfer process within the context of IS sourcing change. Even though clients and vendors are the main parties involved when changes occur to IS sourcing strategy, the role of consultants should not be discounted. In fact, reliance on consultants to facilitate the transitioning process is well-founded (Quinn, 1999). Depending on the type of sourcing arrangement, geographical locations where the source and the recipient reside may differ. In the case of offshore outsourcing for example, the two parties are likely to come from totally different backgrounds and cultures (Carmel & Tjia, 2005).

The second aspect of knowledge transfer is knowledge movement (Darr & Kurtzberg, 2000). For knowledge transfer to occur there must be exchanges and sharing of knowledge between the source and the recipient (Darr & Kurtzberg, 2000). In IS sourcing strategy change, the knowledge that needs to be transferred include both technical IT knowledge and business knowledge (Beath & Walker, 1998; Overby, 2004; Warner & Brown, 2005). Since most of the knowledge is tacit, residing in organizational members, tools, tasks, and their subnetworks (Argote & Ingram, 2000; Ko et al., 2005), it is very difficult to transfer relevant knowledge. Obtaining employees' cooperation to share the knowledge is also challenging. Further complicating the matter is the fact that knowledge needs to flow across organizational boundaries or in some cases national boundaries (i.e., in IS offshoring), thus involving two parties that may operate in completely different industrial, business, and cultural environments (Carmel & Tjia, 2005). Since knowledge is geographically and context sensitive (Nonaka & Takeuchi, 1995; Overby, 2004), strategizing effective method to transfer knowledge between the two parties with different mind sets, work practices, cultures, and goals is not an easy task (Nonaka & Takeuchi, 1995).

Table 1: Parties involved in the knowledge transfer process

Type of Changes in IS Sourcing Strategy	Parties Involved in the Knowledge Transfer Process	
	Source	**Recipient**
Outsourcing	Client	Vendor
Switching from an old vendor to a new vendor	Client, old vendor	New vendor
Backsourcing	Vendor	Client

The third aspect of knowledge transfer is the application of knowledge by the recipient (Argote & Ingram, 2000; Ko et al., 2005). This means that the act of transferring knowledge should result in the recipient understanding the intricacies and implications associated with the knowledge that is being transferred and is able to apply that knowledge (Darr & Kurtzberg, 2000). When knowledge is salient to the recipient, learning becomes easier and the effect of successful knowledge transfer will be evident from changes to the recipient (for example, in his or her job performance or knowledge level) (Argote & Ingram, 2000; Ko et al., 2005). In the case of IS sourcing strategy change, successful knowledge transfer should result in the recipient taking over the responsibility and performing the task required at the level equals to or better than its predecessors (i.e., the source).

3.0 METHODOLOGY

A case study methodology is chosen to investigate the research question. This method is preferred "when 'how' or 'why' questions are being posed, when the investigator has little control over events, and when the focus is on a contemporary phenomenon within some real-life context" (Yin, 1994). A case study method is also suitable for an exploratory study that requires in-depth analysis to gain new insights (Yin, 1994). The investigation of knowledge transfer process in IS sourcing strategy change satisfied all of these criteria.

3.1 Data Collection

Alpha, a large firm in the service industry, was selected to participate in this study. It met theoretical sampling requirement of organizations that have changed from one IS sourcing strategy to another and have effectively employed knowledge transfer strategy to ensure continuous operation and IS capability development.

A total of eleven interviews were conducted with seven personnel from Alpha – Managing Director of IT, Director of IT Operations, two IS managers and three IS personnel. Each interview, conducted in both unstructured and semi-structured formats, lasted between 60 to 90 minutes. All interviews were tape-recorded and transcribed.

3.2 Data Analysis Method

An 'analytic coding' method that shifts iteratively between initial coding and focused coding was employed to analyze the data (Lofland & Lofland, 1995). In initial coding, a broad search for any concrete categories that relate to how the organization transferred knowledge was conducted. Codes were used to organize and classify the categories. These codes are explanatory or inferential codes that function to pull the data together into a more meaningful form (Lofland & Lofland, 1995). In focused coding, the coding list was narrowed down by identifying and keeping frequently used codes while winnowing out less productive codes. This hermeneutic process of examining the category and refining the codes continued until important themes began to solidify.

4.0 CASE ANALYSIS

4.1 Case Background

Alpha is one of the largest service companies headquartered in North America. It has over 10000 employees located in 3000 service centers in eleven countries. In 1995, Alpha outsourced the entire IT department to VENDOR in a five-year, $32 million contract. Only two personnel remained in-house to coordinate IS activities. One of the contributing reasons to outsourcing was that the IS department was not favorably viewed by top management. By engaging VENDOR, top management hoped to reduce costs and achieve better service and performance. Top management also expected VENDOR to support its global acquisition and expansion plan.

However, Apha's expectation of outsourcing was never materialized. Deliverables with respect to the contract were not being met. Costs increased sharply. The processes were also plagued with "red tape". The two personnel who were in-charged of coordinating the outsourcing activities also resigned, leaving Alpha with no one to manage VENDOR. According to the Manager Director of IT, the outsourcing arrangement had left Alpha with "no sense of IS direction, archaic architectures, silo systems, poor processes, and outdated IS skill sets." The overall rallying cry in Alpha was: "It was just a dead IT function."

In late 1998, Alpha hired the Managing Director of IT, who in turn brought in an entire IS management team with him. It was this new IS team that made the decision to end existing contract with VENDOR and move the IS function back into Alpha. The backsourcing process began in the late 1999 and completed after three years. It was complex, challenging, and eye-opening. On top of the IS management's mind was the issue of knowledge transfer. How should they transfer knowledge from VENDOR without disrupting current services and also to ensure future capability development? How to implement a knowledge transfer plan when (1) they do not have any internal IS staff (i.e., there is no identified recipient for the knowledge transfer process), (2) VENDOR employees may not be willing to switch over to Alpha (hence the lost of their knowledge), and (3) turnover rate in VENDOR is high?

4.2 Knowledge Transfer Strategies

The following discusses the strategies employed by Alpha to ensure that knowledge required to run a fully functional IS department is transferred from VENDOR to its internal organization. Some of the strategies were pre-planned as part of the backsourcing program while some were devised when the initial formulation failed to materialize.

4.2.1. Hire Vendor's Employees

The easiest way to transfer knowledge is to hire the individuals who already hold the knowledge in their heads. That was the first strategy in Alpha's knowledge transfer plan. VENDOR had serviced Alpha for five years. Its employees knew the ins and outs of Alpha's needs as well as its daily operations. This is important as knowledge that needed to be transferred extends beyond the typical technical information; it also includes business processes, organizational structures, and organizational context/culture.

Of the list of VENDOR's employees who served on its account, Alpha selectively identified those good performers it intended to hire as internal employees. Then, Alpha approached and negotiated with VENDOR to transition these employees to its internal IS department. To attract these potential employees, Alpha offered enticing incentives including attractive salary packages and better job positioning.

> "The biggest hurdle was to make sure that the continuity of service was there. We managed that by hiring a lot of VENDOR's staff who's already in the position…We got quite a number of people to stay with us. So that helped us with the continuity of service." – Director of IT Operations

Hiring high performers from VENDOR was a win-win strategy. On the one hand, Alpha ensured important tacit knowledge that resided in the head of those employees was not lost. Should Alpha failure to retain these employees and thus lost the knowledge, it would have incur costly investment in terms of time and financial capital to hire and train new employees before they could function in the capacity of existing employees. On the other hand, Alpha ensured continuity of services at its headquarter as well as at all 3000 service centers.

4.2.2. Engage Transitional Vendor

With over 10000 employees located in 3000 service centers in eleven countries, a stable network linking these individuals is important to ensure smooth daily operations

and up-to-date information sharing and dissemination. However, VENDOR's service of the network component was the weakest link. Its employees were not skilled in the network area. As a result, Alpha complained the network going "down half of everyday." Transferring VENDOR's networking employees, therefore, would not be a smart choice. Fresh recruitment was not feasible either due to the lack of expertise in the IS management team to establish processes and procedures related to the network component. Alpha needed experienced and trained individuals to assume the job responsibility right away. It could not afford the time and the resources to train new people. Unfortunately, the supply of individuals with expertise in networking was limited. Having no credible source to share the knowledge and having no recipient to learn the knowledge, the management was dead-locked.

Finally, Alpha found a solution by engaging a 'transitional vendor'. The modus operandi of transitional vendors is to help organizations moved from an outsourced environment to a backsourced environment. Based on feasibility studies of Alpha's network requirements, the transitional vendor recruited and trained a pool of new networking personnel for six months. Alpha then chose from this potential employee pool those individuals they were interested in hiring as permanent staff. The transitional vendor also helped to prepare the documentations and ensure that necessary processes and procedures were put in place.

Here, Alpha solved the crisis of an impossible knowledge transfer through the engagement of a third party. By hiring the transitional vendor, Alpha used an indirect knowledge transfer strategy. Both the source and recipient were not the originally intended parties. The originally intended source would be VENDOR's employees while the originally intended recipient would be Alpha's employees. However, with the transitional vendor in the picture, it became the source to depart knowledge to potential employees it recruited and trained before Alpha hired a selected few. This strategy of engaging transitional vendor to transfer knowledge (tacit in the form of people and explicit in the form of documentations) into the internal organization is quite unusual. Nonetheless, it proves to be successful in Alpha.

4.2.3. Manage IT Personnel Turnover

When IS sourcing strategy changes, the most common scenario is people leaving their organizations. The same applies to a vendor organization. The moment Alpha decided not to renew its contract, many VENDOR employees left the company. This was a lost to Alpha as these potential employees carried with them knowledge capital that were accumulated over the years of servicing Alpha. Those remaining employees were anxious and uncertain about their roles and future if they chose to join Alpha. To calm VENDOR employees, Alpha gave assurance that it will hire as many of them as possible. It also promised better pay and same or better job positioning. This strategy to retain VENDOR employees ensures that tacit knowledge will be transferred to Alpha.

Furthermore, to minimize the impact of future IS employee turnover and hence knowledge lost, Alpha trained a backup person for each job position. Should one individual choose to leave, there was always another person who was prepared to assume his/her responsibility.

> "Everyone has his own little area with a backup person. For example, me, I am in the network security. I have someone that backs up me if I am not here." – IT Personnel3

4.2.4. Employ Systematic Approaches

Knowledge transfer in a total backsourcing scenario as in Alpha's case was very complex due to its scope. To overcome this obstacle, Alpha employed three systematic approaches. The first approach was the "divide-and-conquer" method. Alpha sliced the knowledge transfer process into different phases and employed a layering approach. It began with the component that was perceived to be the most problematic but easier to handle and moved up the difficulty ladder toward those that were much harder to manage and core to the functioning of its operations. For each component, Alpha evaluated the best way of transferring knowledge by first examining the possibility of hiring VENDOR's employees, and then looked at the feasibility of recruiting new staffs. Alpha also strategized on how to move explicit knowledge such as documentations, infrastructures, software, etc, into its organization. The Managing Director of IT used the metaphor of "peeling the onion" to describe this "divide-and-conquer" method,

> "That is pretty much the way we have done the exercise. We call it peeling the onion. We took the top layer of the onion which was the worst problem and we took care of it and we peel the next layer and the next layer and the next layer and the next until we reach the core. As we peel this onion, we consider if we could find the people to do this [referring to an IT component]. This (referring to an IT component) is the commodity in the market place, so it is pretty easy find people to do this."

The second approach was the "employee-trainer" method. Most of the first batch employees Alpha hired from VENDOR carried with them operational knowledge of the IS department. Wherever needed, Alpha sent these employees for external training. The first batch of employees then acted as internal trainers to transfer knowledge to the second batch of new recruits. This training chain continued until all required positions had been filled. Such "employee-trainer" method provided a great opportunity to learn new knowledge efficiently and comprehensively, thus increased the effectiveness of knowledge transfer between the trainers and the trainees.

The third approach was the "division of labor" method. Alpha divided the management and employees into two groups, one to ensure service continuity while the other one to focus on knowledge transfer for the development of long term internal IS capability. This method of utilizing only a subsection of the IS team for the knowledge transfer process ensured that daily operations in Alpha continued to run smoothly. With all three systematic approaches complementing each other, Alpha was successful in its knowledge transfer effort.

5.0 DISCUSSION AND CONCLUSIONS

Knowledge transfer is complex. It is tough. One important lesson learned from Alpha is that organizations should never underestimate the time, money, and effort needed to transfer knowledge. The success of knowledge transfer lies on a systematic yet flexible plan that adapts to changes required along the knowledge transferring effort. Alpha is a good example of effective deployment of such a plan (see Table 2). It followed systematic approaches, hired vendor's employees, and managed IT personnel turnover. Yet, when it was necessary, Alpha was flexible enough to engage transitional vendor when it realized that the initial recruiting strategy would not work for its network function. In addition, when changing IS sourcing strategy, organizations need to make knowledge transfer a key component of the transitioning plan. This is critical to ensure continuity of service and also successful development of long-term internal intellectual capital.

Table 2: Alpha's knowledge strategy and its lessons learned

Strategy	Lessons Learned
Engage Transitional Vendor	Transitional vendor could act as facilitator in recruiting and training new employees.
Hire Vendor's Employees	Transferring vendor's employees to the internal organization is the easiest form of knowledge transfer.
Manage IT Personnel Turnover	Good employee management ensures that intellectual capital remains with the organizations. Consequently, organizations could reduce the cost of hiring and training new employees.
Employ Systematic Approaches	A systematic approach helps to structure the complex task of knowledge transfer and rebuilding intellectual capital of the entire IS department.

Many think that knowledge transfer is about the knowledge itself. They forget about other equally important aspects such as change management and people retention that should have taken place at the same time. Only if organizations understand the full extent of the knowledge that must be transferred and spend resources and effort necessary to get it from the old sourcing environment to the new sourcing environment, will they be successful and capable of functioning in the new IS sourcing environment.

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