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Knowledge Process Outsourcing

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Abstract

Companies across a broad range of industries are pursuing offshore outsourcing. The wave that started with IT (Information Technology) outsourcing, led to business process outsourcing (BPO) as offshore vendors developed their capabilities and client's built up relationships with those offshore vendors. With the rise in available skilled and certified workers in key skill areas such as accounting, engineering and technical support in offshore locales, the trend is progressing to the outsourcing of knowledge based work processes (KPO). KPO requires significantly more inter-organizational information systems support to be successful. This teaching case provides opportunities for IS and management/business students to fully appreciate the challenges of outsourcing knowledge based work and the strong commitment needed in developing knowledge management across the relationship. The case also brings attention to relationship building practices that are needed to develop the vendor's capability.

Keywords

Knowledge Management, Outsourcing, Technical Support, Offshore, Vendor Management outsourcing

INTRODUCTION

Dennis Michaels, Vice President of Global Services at Blue Star, a US headquartered multinational company was worried. Blue Star was in the business of manufacturing and servicing of telecommunications equipment, networks and network based applications (such as call centers, telephony applications). Dennis pondered the conversation he just had with his CEO in the last hour. Blue Star's customers are complaining about the service experience being delivered by Blue Star's Indian service delivery vendor, Sherpa.

"Blue Star's own customers are having to make too many repeat calls to take care of 'routine' network issues under their service contracts". The CEO, who had just gotten off the phone with an executive at one of Blue Star's large multi national customers, was fuming about the recent bout of complaints. Such calls have become all too frequent, as customers have vented to the Blue Star CEO of their problematic experience with Sherpa and the resulting impact on their mission critical networks. On one of the most recent calls, the evidence was mounting of shoddy service delivery:

"A customer reported an escalation path requiring five repeat calls into Sherpa. The original service call was about a call center supervisory application launch failure on a manager's desktop PC. The initial fix by Sherpa was to change telephony server facility configurations on a gateway server and manager permissions- so the newly promoted manager could execute the supervisory application, which only managers had access to. However, the manager continued to have problems with the supervisory application, even after the configuration changes. Ultimately after multiple go arounds, the "real" solution ended up as simple as "correctly interpreting and following the documented procedural steps for new Manager provisioning in the CRM telephony server". It took a net of 8 whole business days to address the initially reported problem. Sherpa made no effort to keep the customer updated of the progress status. Moreover, Sherpa staff had repeatedly made "promises" over those 8 days to contact the customer with status updates on the problem but repeatedly failed to follow up without any explanation/notifications. It was a frustrating experience that no executive at a Fortune 100 company wants to go through. Moreover, the CEO had no system to verify the customer's history and recent service activity"

Blue Star is a leader in business telecommunications products and services and has global market presence. Blue Star designs and manufactures a variety of communications hardware and software platforms and multiple applications – such as CRM, conferencing solutions and other telephony based applications. Blue Star has a large services business and capabilities to support a customer's entire end to end solution. This experience starts with consulting and design services, who work with a business to analyze needs. Blue Star's offerings continue

into integration and implementation of the agreed upon solution. Subsequently Blue Star sells maintenance contracts to the customer (large multinational customers such as multinational banks, as well as to smaller regional business customers such as hospitals, universities) on a per port basis. A service contract entitles the customer to extended service beyond the product warranty period. Service entitlements include help desk, break fix and maintenance, administrative and management reporting activities as well. The Blue Star CEO charged Dennis to make the service experience of these top tier MNC customers his highest priority and fix the delivery issues with his outsourcing vendor in India.

The services business is an important part of Blue Star's overall operations. Upwards of 50% of Blue Star's revenue (\$2 billion a year) and 115% of Blue Star's profit (approx \$250 million) comes from the Services business. Blue Star's customers with such service contracts include large multinational companies – banks and financial services, large insurance companies, manufacturing giants in the automotive industry as well as other smaller firms with only regional presence. These customers have been riding the outsourcing wave and increasingly deploying IT facilities and back office call centers in offshore locations, such as India, China, and Eastern Europe.

With the improved reliability of computer systems and the costs of systems declining sharply as technology has evolved over the last 25 years, Blue Star's customers have been demanding large discounts in the per port charges at annual service contract renewal negotiations. A majority of the multinational customers have been with Blue Star for decades under service contracts, but often do not witness major outages or problems with their systems and thus find it hard to justify continuing extended service coverage. With the dot com bust of the early 2000's and the current worldwide economic recession, Blue Star's customers are demanding to pay less for service contracts, causing a reduction in the margins in Blue Star's services business. There has been a dramatic decline in the average per port service contract fees that Blue Star has been able to contract with customers over the last 20 years (Table 3).

Other service providers, offering competing service capabilities include large systems integrators, who have also global capabilities and service computer and networking solutions. However, while loosing business on the systems side of the contracts to competitors, Blue Star has been able to maintain a large share of the maintenance of telephony based applications, which has continued to be a profitable niche for them. With the introduction of computer based telephony solutions, internet telephony and VoIP implementations, this profitable niche has been under attack forcing Blue Star to further reduce per port revenues to maintain their customer base (Table1, Table 2 and Figure 1).

Table 1 – Blue Star Financials

Scenario	Knowledge Base does not have solution	Knowledge Base has solution
Median Cost per Call	\$463	\$239
Range per Call	Hi: \$4300; Low: \$150	Hi: \$2750; Low: \$30

Cost breakdown of an average customer support request call

Network Level Staff Cost (tier 3)	30 %	4%
Equipment Level Staff Costs (tier 2)	20%	30%
Field Engineering Staff (tier 1)	11%	18%
Systems and Infrastructure Support	4.5%	8%
Parts and Shipping	15%	25%
Travel	18%	15%

Table 2: Labor Rates

Tier 3 Staff	\$40/hr
Tier 2 Staff	\$20/hr

Offshore Rates (Sherpa): \$8/hr (incl. Overhead)

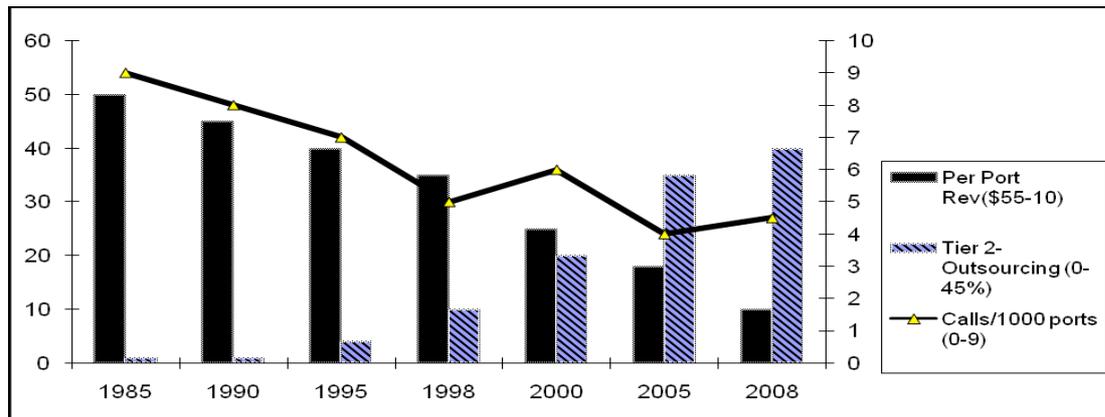


Figure 1. Outsourcing and Call Support Loads

OUTSOURCING TRENDS

Over the last decade, companies across a broad range of industries are showing increased interest in offshore business process outsourcing (BPO) as a strategic approach to managing their business processes. The wave that started with IT outsourcing lead to business process outsourcing (BPO) as vendors developed their capabilities and client’s built up relationships with offshore vendors. At the same time, many offshore vendors have been expanding into BPO, tying their companies' future growth to the expansion of their BPO services. Continued evolution in BPO has meant fundamentally re-looking at all value chain activities by clients and increasingly leading to the outsourcing of knowledge based processes or KPO. "Just a few years ago, talk of KPO seemed far-fetched, especially as businesses were still struggling to come to terms with what the earlier forms of outsourcing – IT and BPO could do for them," an IDC analyst said in a report (IDC, 2007). The technical support and financial services sectors will account for a major proportion of the KPO industry and its worth will be in excess of \$15 billion by 2010 comprising approximately 15% of the overall BPO market at \$100 billion. According to the report, most companies are expected to adopt KPO as their outsourcing capabilities mature - moving from information technology outsourcing (ITO) to business process outsourcing (BPO) and now to KPO. KPO represents a significant shift in the boundaries between what are considered 'outsourcable' and 'non-outsourcable' activities in the minds of business managers. BPO focused on transferring the execution of routine activities in a firm’s non-core or secondary value chain processes (KPMG, 2008). However, KPO involves primary value chain activities related to the firm’s sourcing, creation, selling and servicing processes. The emphasis in KPO has been the use of decision support and sophisticated IT tools to support highly educated offshore staff as these increasingly complex/core parts of the value chain are moved offshore (Table 3). Tools and technologies if adequately designed for the socio technical environment can result in more consistent results and better quality work outputs. However, cultural issues related to work and customer project interactions have been reported in KPO assignments due to the unstructured nature of the work (Shi, 2007). Among the many activities, credit scoring, loss protection calculations and fraud analytics, network design, forensics and troubleshooting are just a small set of capabilities that KPO can address.

Table 3 – Key Differences between KPO and BPO¹

Parameter	BPO	KPO
Strategic Drivers	Cost Reduction for routine work processes	Building offshore capabilities for localized needs; Supplement skills shortage
Process Complexity	Low; Basic procedures requiring standard procedures that are scripted.	High; May require semi-structured decision making.
Success Factors	Accuracy of Output	-Vendor development. -Systems, such as DSS, expert systems to support work. -Investment in client-vendor relationship.

¹ Adapted from KMPG/Swamy and Associates, Knowledge Process Outsourcing, February 2008.

Billing Rates	\$5-15 per hour	\$10-40 per hour
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The KMPG report also cited several factors that are driving the KPO phenomenon. Among these are the existing capabilities of ITO and BPO captives and third-party vendors to handle outsourced work and the availability of high quality and often certified talent in offshore locations. Other factors are the moves by organizations to extend sourcing strategies beyond traditional comfort zones and global recognition of standards, qualifications, skills and experience required to perform analytical functions. The continuing push towards global sourcing by many organizations, in the march for greater efficiency and improved economies of scale as well as access to capabilities and improved remote project management capabilities, owing to an increased sophistication in telecommunications and other enabling technologies will also push to make increasing use of KPO.

Among the key challenges that can emerge in the KPO industry are: maintaining higher quality standards; investment in KPO infrastructure; lack of talent pool; requirement of higher level of control; confidentiality and enhanced risk management; a declining dollar; and compliance and regulatory pressures. However, the report stated that the KPO phenomenon would have far-reaching consequences over the next three years. The report goes on to state that KPO is certainly not for the faint of heart! KPO requires a long term commitment and a strong effort to build the capabilities of the vendor staff (KPMG, 2008).

Companies have pursued outsourcing arrangements using different strategies. Strategies range from outsourcing of non-core processes to the business critical outsourcing of core processes. Among the different types of offshore outsourcing models, currently being used (Carmel and Agarwal, 2002)- offshore bystander, offshore experimenter, proactive cost focus using outsourcing of non-core processes and proactive strategic focus with outsourcing of core processes, only the later strategy should include KPO because the later include long term relationship management aspects. Outsourcing models also range from strong to weakly coupled models – partnerships, technical supply and pay-per transaction (Lacity and Willcocks, 1998). KPO strategies require a partnership management model that establishes processes for the long term – and rewards only come after sustained investment cycles of vendor capability building and knowledge sharing benefits. Research has shown the benefits of established channels on the sharing of knowledge across organizations (Szulanski, 2000).

Need for Knowledge Management Systems

Information Technology has been a strong foundation of offshore outsourcing. Technologies like voice over IP (VoIP), broadband networks and distributed application environments have furthered the concept of technology driven outsourcing. Knowledge Management systems (KMS) and practices are used to manage the creation, storing, sharing and reuse of knowledge (Davenport, et. al., 1998). The use of KM tools and systems such as portals, workflows and data mining can allow knowledge transfer at the strategic and operational levels so desired by the BPO/KPO firms. In fact, a study of several outsourcing cases reveals that the prospects for meaningful knowledge management and value creation are quite promising (Willcocks, et. al., 2004). Different outsourcing models and strategies require different types of knowledge sharing between the two firms. The KM practices are plotted on a graph drawn with the outsourcing strategy on the y-axis and the outsourcing model on the x-axis (Figure 2).

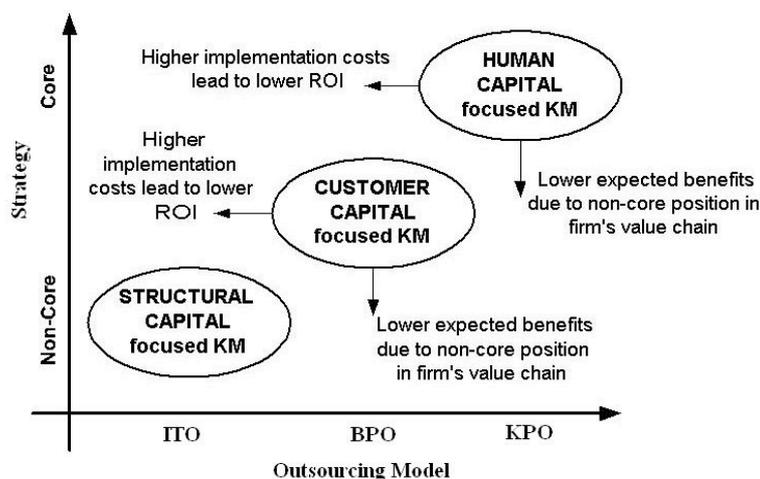


Figure 2 – Strategy vs. Outsourcing Models²

² Adapted from Ghosh, B. and J.E. Scott (2005).

The KM initiatives with structural capital focus must support all the combinations of strategy and outsourcing model. Such initiatives include systems for reporting/checking status and connecting processes across client and vendor, so that important data and information can flow. As the strategy becomes more “core” and the outsourcing more complicated, additional KM initiatives must be pursued to effectively transfer knowledge across the firms. Such initiatives may not be of benefit at less “core” strategies and less complicated outsourcing models due to higher implementation costs and/or lower expected. If the correct KM capital focus is not used, then the outcomes of the outsourcing arrangements can be hampered.

Focus of KM practice based on Strategy and Outsourcing Model

Three focus areas for KM practices have been identified in the KM research literature (Stewart, 2001) – (1) structural capital, (2) customer capital, and (3) human capital.

(1) The KM practices focused on structural capital allow the subunits of an organization to exchange knowledge through established channels that can be easily reconfigured. Examples of structural capital initiatives include setting up dashboards that allow status to be entered, updated and visible in real time. These KM tools allow the exchange of project status among sub teams.

(2) Customer capital focused KM efforts revolve around sharing knowledge and experiences with a specific customer to establish a stronger relationship with that customer. Examples of systems include a web portal to allow customers to submit feedback or periodic reports to customers of a service organization’s activities on their behalf –all represent KM initiatives to support customer capital. Since the outsourcing vendor makes direct interactions with the customer on behalf of the client, customer capital focused KM initiatives need to also include vendor development to ensure the “right message” is being delivered to the customer.

(3) KM assets that fall into the human capital focus area have its purpose of “enriching” the vendor’s operations personnel. KM practices focused on human capital require a personalization approach to KM and are needed for creating and harnessing implicit knowledge. The later are more difficult to implement and only produce benefits when paired with a partnership management model.

It is clear that offshore outsourcing strategy, the outsourcing management model and the organizational KM focus need to be closely aligned. Structural capital focused KM practices can succeed in a weakly coupled management model, while human and customer focused practices need stronger client vendor partnerships (Ghosh and Scott, 2005). A human capital focused KM initiative will be expensive to implement when a pay-per transaction management model is in place; resulting in lower return on investment (ROI). Likewise, a human capital focused KM initiative may not provide enough benefits to the client firm in a non-core outsourcing strategy resulting in a lower ROI. (Figure 2)

Technology and Systems Trends

The recent advances in the Internet and the TCP/IP protocols have made connectivity and worldwide computer communications practically seamless and have ushered in the age of electronic collaboration. That meant that systems could be used around the world as they had been used within a company's local network in the past. In other words, users could connect and work from anywhere in the world, leading to the wave of business process outsourcing. With the popularity of “Workgroup tools” - new software tools, built around networking technologies that facilitate the sharing and routing of electronic work, information and knowledge, the potential for knowledge process outsourcing is growing.

Workgroup Tools – Web 2.0

One of the major factors revolutionizing the nature of electronic collaboration was the development of tools for sharing work, commonly referred to as workgroup software. While early computer networks of the mid-1980s existed mainly to allow resources (e.g., printers, and disk drives) to be shared within office environments, the newer networking applications, such as Web 2.0 have been developed to support a dramatic improvement in collaboration (O’Reilly, 2005). These applications are unique in many ways. They are a loosely organized collection of tools—authoring, reviewing, workflow processing, communications, and document sharing—all of which revolved around the theme of supporting collaborative work. These technologies (including Wiki’s, blogs and social bookmarking) are also highly customizable and allow companies to configure the products to suit the automation of their processes, such as multi-stage document approval or the development and deployment of servicing scripts.

However, these systems can only be utilized with careful organizational planning, training of users, business process analysis and management tracking. Lotus Notes was a precursor to the more recent knowledge

management systems that facilitate content management, sharing and collaboration capabilities among dispersed team members. Currently Web 2.0 technologies have brought collaboration technologies to the forefront of the Internet. Systems like Wiki's, Weblogs and podcasting have allowed organizations to tap into remote capabilities by leveraging expertise from one part of the world to another. These technologies tend to focus on intra-network connectivity (e.g., allowing users to work with others on the same network, allowing laptop users to connect to the system via network cable and establish dialup connections). The TCP/IP protocol of the Internet has become the most common means of implementing these connections across networks.

BLUE STAR OUTSOURCING GOALS

The business strategy of Blue Star has a multinational focus. They have operations in 65 countries around the world. Activities range from R&D support tasks to supply chain sourcing to sales and services. Sales and services still constitute over 80% of global activities, however with other corporate functions concentrated in the USA. Blue Star's original experiment into outsourcing was in the late 1990's as a major effort was funded to make legacy product's Y2K compatible. At the time, Sherpa was a suitable vendor because of their strong software development capabilities. Subsequently some back office systems development and system support activities have been moved to Sherpa along with routine service delivery processes, which started with Y2K patch and update delivery for their service contract customers. The current emphasis on KPO is the result of the convergence of several forces. While lower levels (tier 2) of support activities (mostly equipment focused work) was moved overseas many years ago, the more complex levels of support, referred to as 'backbone support' (tier 3) addressing application and network level troubleshooting was kept centralized in the US operations. However, Sherpa was not a leader in BPO/KPO services, which was served more aggressively by competitors, other outsourcing vendors.

- Blue Star has always invested heavily in the design and deployment of expert systems and intelligent tools to support service delivery operations. Such tools include remote monitoring, tracing, decision support, case based expert systems, electronic documentation, etc. They helped transform a mostly labor intensive operation into a highly efficient machine bureaucracy. Last count of the number of systems and knowledge repositories supporting the services business include over 240 'expert' applications and a knowledge repository with close to a million entries, developed over 25 years.
- Blue Star's knowledge management platform (KMS) is based on Web2.0 using Wiki templates, blogs for discussions and social bookmarks for problem research/training (O'Reilly, 2005). Access to these systems have been deployed to vendor personnel as part of the outsourcing strategy. Documents are stored in several levels – by product, by release, by configuration, by vendor, by customer network and by configured application(s). Blue Star had built up this knowledge base using experience gathered in many years of service delivery, but primary for domestic US customers and users. The number of variables that differ in each customer's unique installation can be very large and knowledge must be very judiciously reused from the KMS. The KMS also supports collaboration and peer support and access to the systems has been opened up to the vendor's personnel, however usage has been limited. Blue Star is looking to enhance the content in the KMS to include more international scenarios through vendor involvement.
- Leveraging the KMS system is a key strategy for Blue Star. Information Systems can be a key driver for the sharing of knowledge (Hislop, 2002). Service scenarios developed by highly experienced technicians can be deployed and used by cheaper offshore workers. The content tools can guide the agent through a resolution flow to get to the right solution in the knowledge base. And for those cases where a new solution must be developed, integrated expertise location and collaborative authoring using templates can capture new learning that happens as technicians collaborate across the organization to deliver a response to a customer problem. These scenarios can then be saved in the knowledge base for future reuse. While the knowledge base in Blue Star's KMS deployment is large, much of it has to be modified for international environments. In addition, customized analytics leverage this usage-based data to help in root cause analysis. Features such as search tuning, auto-classification and segmentation of content, require skilled and trained agents who adhere to strict norms and standard nomenclature for the most effective service delivery by all agents.
- More and more, Blue Star's customers have been moving IT infrastructure and facilities to offshore locations. It has become difficult to support those installations from a US based operation. Even with the three tiers of support, it is becoming difficult to offer rapid response in a global environment without deploying some of the higher tiered support services as well to offshore vendors. "The environment is always challenging and nuanced and requires offshore capabilities to counter the difficulties".

- Margin pressures have made it difficult to offer price points to their customer's liking for service contracts. Newer technologies are also demanding that Blue Star retrain large portions of their aging technician work force in the US. Perhaps a more cost effective long term approach was to engage Sherpa and take their outsourcing relationship up one notch.
- 24-hour, 7 days a week support at the higher level is a requirement of their customers. Without offshore presence, this calls for high overtime pay to staff operations exclusively in the US, to deliver support to Asia or Europe based customer sites.

DATA COLLECTION

Given the spate of complaints, Dennis Michaels decided to interview a number of key managers from the service operations side and key service engineers on what might be their thoughts on the situation.

The services operations manager mentioned a lack of expertise on the vendor side, *"Our web site with all the technical documents and checklists and lessons learnt was not being consulted by the vendor, they just did not understand how they could apply it"*. Much of the rework was due to incorrect installations and inadequate trouble shooting experience on the part of the vendor, and not being able to utilize our knowledge base effectively."

The engineers expressed frustration with the late calls and overnight pager duty, *"I am frustrated with the lack of lead time on these troubles, often I have to get site information on a call with an irate customer contact in the middle of the night"*.

On careful thought, Dennis pondered if perhaps the answers lie in better relationship management, "We considered reducing the vendor's responsibilities to equipment level support. But that would not help our need for more offshore network engineers, and probably increase our workload. The knowledge was all there on the support site - if only we could get the vendor to understand the practice and utilize it correctly".

Dennis realized that the knowledge base was complicated and not easily understandable. Abbreviations, codified conventions are captured that needs years of experience to fully grasp (Table 4). Throw in the cultural differences between personnel in India and the US (Hofstede) and the need for setting correct work expectations and norms became clear to Dennis. Dennis decided to start regular communications, a mentoring program and scheduled bimonthly training sessions with the offshore people. "We need them to do the work correctly. They need to learn our way of doing things and we can gain offshore experience. They can develop confidence and be encouraged to engage us as peers. But it won't be easy to find mentors and trainers among out US staff as they are extremely busy as it is."

Table 4 – Sample KM Asset

Changing IP's - Proposed Process:

1. Change Corporate IP on KPSS – follow KPSS Admin Book.
2. Change Corporate IP on KPSS following steps on pages 46 thru 48.
Right-click Network Places, Select properties, Right-click Corporate LAN then Select Properties, TCP/IP Properties.
3. Update host files on KPSS in Basic Administration, TCP/IP Administration, KPSS Host Information Setup on pages 1-1 through 1-2. Follow this change with Basic Administration, TCP/IP Administration, KPSS Host Information Send on page 1-4 item 5 submenu 5 to send.
5. ** See note above regarding the Audits if **domain changes** otherwise skip this step
 - On KPSS in Basic Administration, Messaging Administration, enter password, F6, then highlight Audit. or
 - call Proc Sanity using task manager demand Audit
6. Verify that both hosts files on the KPSS (/etc/hosts) and KPSS (c:\WINNT\system32\drivers\etc) are correct.
 - In KPSS, go to Administration, TCP/IP Administration, KPSS Host Information Setup
Or from KPSS Linux level: cd /etc and cat hosts
 - In KPSS open Notepad to path c:\WINNT\system32\drivers\etc\hosts
7. Create another backup on the KPSS
 - In KPSS, click Start, Run, [\\mss\KPSSbackup](#)
 - Double-click Scheduled Tasks on the desktop and right-click KPSS Backup and select Run

-- With both KPSS backup and Scheduled Tasks window open (side-by-side) monitor until Last Result: shows Complete.
8. Reboot to complete the process

Building Vendor Capabilities

Dennis had read about using mentoring programs in outsourcing research papers that could allow the vendor to learn in real situations by having one of the client staff helping them out on certain projects (Ghosh and Scott, 2007). A key success factor was staff motivation, and budgeting money and staff time for the mentoring (Figure 3).

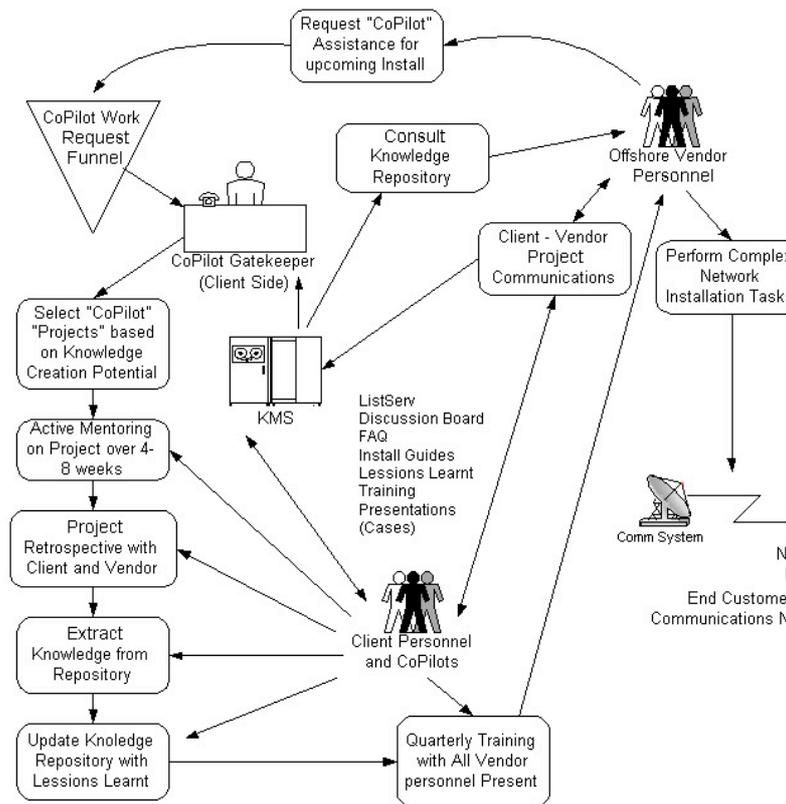


Figure 3 - Mentoring Process

In the Blue Star-Sherpa outsourcing relationship, the client personnel are more experienced in the work domain than the vendor personnel, who require training in not only the processes but also tools like Wiki's and blogs and how to use the templates and infrastructure properly. Dennis started a mentoring process to increase vendor capabilities and encourage interactions between client and vendor staff on suitable learning projects. The mentoring resources on the client side were limited and needed to be managed effectively. To serve the two fold goals of providing training to the vendor personnel as well as supporting the bi-directional knowledge transfer, Dennis decided to control the mentoring projects tightly. He forced Sherpa staff to apply for client mentoring and assistance on an upcoming project. He established a review board to screen each request for knowledge potential and optimal fit for the goals. If a project is selected, then personnel from the vendor and client work collaboratively on the project over a span of 4-6 weeks. Preliminary benefits were seen in the exchange of norms, work practices, common language and standards as well as tacit knowledge that is difficult to codify and contextualize. As obligations are set and met, trust, understanding of cultural diversity and establishment of joint ownership for work are all fostered.

Dennis faced many questions, as he pondered how to address the issues in the outsourcing. How might the vendor's capabilities be developed so that they were partners in the knowledge exchange? How to better leverage the existing knowledge systems and perhaps develop new systems and tools? How best to bridge the cultural gaps and develop working norms across the relationship? Should he pursue growing the mentoring program? The mentoring program was seen as counter to the objectives of outsourcing. Other managers viewed it as a drain on limited client staff who have been reduced in successive company restructuring. The client staff

were all very busy even without mentoring duties, Dennis was pondering whether other means might be more effective to build vendor capabilities and exchange knowledge.

CASE QUESTIONS

1. Perform a SWOT analysis for the services business for Blue Star.
2. What are the systemic problems faced by Blue Star in their outsourcing organization and management models and why?
3. What knowledge management capability is needed to support the outsourcing activities for Blue Star?
4. What are the organizational, technological and managerial components of a solution to address Blue Star's outsourcing operations?

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