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Challenges and Concerns of IT Outsourcing: A Case Study of an IT Department in a Public University Library

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Abstract: Outsourcing has been viewed as a form of predetermined external provision with another enterprise for the delivery of goods and/or services that would previously have been offered in-house. Information Technology (IT) outsourcing encompasses all Business Process Outsourcing (BPO) that uses IT resources in various functions. It is a partnership with another company to handle all or some of the company's IT needs. In keeping pace with globalization and competitiveness in business environment, one cannot deny that outsourcing becomes a business strategy. Libraries store enormous and tremendous volumes of reading materials and archives and handles vast variety of users. IT outsourcing becomes an important strategy for any library concerned. Service providers are committed to provide libraries (service user) with the best available resources in computer systems, networking and application technologies. IT outsourcing enables libraries to improve service at a reduced cost. On the other hand, negative factors are inherent problems at the cost of outsourcing. This study attempts to present the findings of IT outsourcing from a case study of an IT department in a library. An interview with the head of the IT department of the library was conducted. Results suggest that the future of IT outsourcing in relation to the library is promising. Library reading materials and archives will be in digital form once the creation a digital library.

Key words: Outsourcing, IT outsourcing, library

INTRODUCTION

In general, outsourcing is nothing more than accessing expertise and resources from an external organization to supplement or take full responsibility for a function that was previously accomplished in-house (Scott, 1991). The most common forms of outsourcing are Information technology (IT) outsourcing and business process outsourcing. Information technology (IT) outsourcing can be defined as the transfer of property or decision rights in varying degrees over the IT infrastructure by a user organization to an external organization (Loh and Venkatraman, 1992).

Technology has given a new orientation and identity to all the aspects of the performance of companies including management, operations, products, markets and human resources. The largest area for outsourcing continues to be IT and the areas likely to be currently outsourced are hardware maintenance, training, applications development, re-engineering and mainframe data centers. Different organizations use IT tools in diverse ways. However, the existence of an IT unit within an organizational setup is more of a norm. These units are entrusted with the responsibilities of planning, managing and monitoring information systems, services and utilities.

IT outsourcing has also been manifested in the library domain. Libraries are established to serve as a memory institution, a learning center, a community resource and an invisible intermediary (Brophy, 2000). Library outsourcing has become a standard business practice. The degree to which it is adopted by different types of library varies. IT outsourcing in libraries is not a black and white issue. In that grey area is the issue of how much a library function should be done by outside parties (Schwalb, 1997).

Libraries have experienced a strong shift in focus over the past decades towards digital formats for information resources. As a result of global competition and new technology, in the context of library transitions, Singh (2006) identified 3 major paradigm shifts. The first shift is the transition from study to electronic media as the dominant form of information storage and retrieval. The 2nd shift relates to the shrinking financial resources and increasing demand for accountability, focusing on customers, performance measurement, bench marking and continuous improvement. The 3rd shift comes from new forms of work environment such as team work, job sharing, outsourcing, staff downsizing and re-engineering. Therefore, the introduction of IT created an opportunity to provide focused and value-added information and services.

Digital libraries has been linked with many other phrases, such as electronic library, hybrid library and virtual library. Miller (2002) described a digital library as being based on 2 components. The first component is the commercially produced databases, electronic journals and books and other electronic resources that are routinely purchased or licensed by a library for delivery via the library's interface to users both inside the libraries and remotely and for which library fund are expended for their purchase. The 2nd component comprises those materials that are produced within the library or university and subsequently made available to users electronically.

The objective of this study is to draw on parallels between a literature review of outsourcing and IT outsourcing in general and IT outsourcing, in particular. The study on IT outsourcing in the library domain in Malaysia has not been explored extensively. Hence, it is the objective of this exploratory case study to investigate the challenges and concerns of IT outsourcing in an IT department within a Malaysian public University library.

The literature review in study is complemented with a case study of a small-scale research project. An IT department in a public University library in Malaysia is chosen as a case study sample. Selection of the IT department within the public University library is considered an appropriate one since, IT department in any public University libraries is fundamentally an effective support service centre and it closely reflects a typical example of a unit within an organizational setup as discussed in the study.

The rationale of using the case study method is to enable the reality to be captured compared to other methods like study-and-pencil questionnaires, mailed questionnaires and electronic questionnaires. This case description is based on an interview with the head of IT department in a Malaysian public University library. The interview provided a real-world insight into the factors, challenges and concerns including the major impact on IT outsourcing faced by a typical IT department in a public University library in Malaysia. The nature of this research is explorative.

LITERATURE REVIEW

There exists a substantial and established body of theoretical literature on outsourcing in general (Kakabadse and Kakabadse, 2000; Kakumanu and Portaova, 2006). There is evidenced of more empirical findings being preferred by researchers Gonzalez *et al.* (2006). Bathelemy and Geyer (2005) conducted an empirical investigation of IT outsourcing versus quasi-outsourcing in France and Germany. Another, major trend in outsourcing that appears to have gained momentum is evidenced in the discipline of financial services (Braun and Winter, 2005; Carey *et al.*, 2006). Trends in IT outsourcing services can also be traced to other sectors like supply chain management, data-warehousing, pharmaceutical, hotels and ticketing. The researcher would not elaborate on IT outsourcing in these sectors, since, it is beyond the scope of this study.

The existing literature generally revolves around some key issues. Dimensions of IT outsourcing debate include reasons for outsourcing, risks and downside of outsourcing (Djavanshir, 2005; Gonzalez *et al.*, 2005; Kakumanu and Portaova, 2006; Kennedy and Clark, 2006; Weidenbaum, 2005). Cost savings is not the most important reason to outsource IT functions. The most frequently encountered problems associated with outsourcing engagements are vendors not able to fulfill their promises and project implementations took longer than expected. Similarly, Gonzalez *et al.* (2005) identified the focus of IT strategic issues being the most important reason to outsource IT functions. Cost savings was ranked 5th in their survey.

In recent years, issues on IT outsourcing and 3rd-party relationships and trust relationships seemed to be a major concern. There seemed to be a preference of long-term relationship between users and service providers in contractual agreements (Beulen and Ribbers *et al.*, 2002; Turner *et al.*, 2002). This phenomenon closely reflects the 3rd paradigm shift as discussed by Singh (2006).

IT outsourcing in the malaysian perspective: Within Malaysia, IT outsourcing trends from the USA, UK and European context are closely reflected. The Malaysian literature on IT outsourcing is less extensive than compared to the European counterparts. Sulaiman and Ho (2006) have examined current trends in IT outsourcing services in Malaysia. In another related study, Sulaiman *et al.* (2005) reported that the most common types of IT services outsourced are the application and software development.

IT outsourcing in the library domain: The depth and pace of outsourcing during the 1990s have provoked an unprecedented level of attention within different types of libraries. The relevance and benefits of IT outsourcing has been manifested in the library domain (Breeding, 2004). There seemed to be a variation in the degree to which IT outsourcing is adopted by different types of library (Ball *et al*., 2002; Willis, 2003). However, there are several issues needed to be taken into consideration, including the impact that decision to outsource has on existing staff, service productivity and quality (Goody and Hall, 2007; Pantry and Griffiths, 2004). In India, Singh (2006) highlighted that outsourcing is gaining a place in Indian special libraries.

Studies on the reasons for outsourcing in the library domain have also been investigated According to an empirical study by White (1998), cost effectiveness is an essential criterion in library outsourcing. Subsequently, White (2000) stressed that cost must be weighed against quality. Other related studies have investigated outsourcing dilemma in the library domain (Dunkle, 1996; Eberhart, 1997; Gorman and Cullen, 2000).

Public university library outsourcing in Malaysia: Even though there is evidence to suggest that the practice of IT outsourcing is prevalent and increasing in Malaysia (Sulaiman and Ho, 2006), there is little evidence available to provide recent evaluation of the extent to which IT outsourcing is practiced in the library domain in Malaysia.

But to date, there is one significant report that has published on this theme in the context of library management (Osman and Bidin, 2004). In their report, Accountability in library management: issues and strategies for the 21st century, the authors are of the opinion that:

> In order to cope with the changes and challenges posed by the 21st century, the onus is on library managers to devise strategies that would provide libraries with the competitive edge in the information delivery business despite the competition posed by computer companies, knowledge management companies and other professionals who have taken advantage of the opportunities provided by ICT and the world-wide demand for knowledge workers. Library managers must be held accountable for their libraries' performance just as they must be held accountable for the non-performance or non-delivery of their libraries.

Yazam and Nasir (2005) have attempted to address issues on library digitization in Malaysian Universities.

Hence, it is the objective of this exploratory study to draw on parallels between IT outsourcing in general and IT outsourcing, in particular. An IT department in a public University library in Malaysia has been selected as a case study.

AN IT DEPARTMENT IN A PUBLIC UNIVERSITY LIBRARY AS A CASE STUDY

The literature review in study is complemented with a case study of a small-scale research project. The nature of this research is explorative. The rationale of using the case study method is to enable the reality to be captured compared to other methods like study-and-pencil questionnaires, mailed questionnaires and electronic questionnaires. This case description is based on an interview with the head of IT department in a public University library. The interview provided a real-world insight into the factors, challenges and concerns including the major impact on IT outsourcing faced by a typical IT department in a public University library in Malaysia.

Results of Interview: The results of this interview are projected on a descriptive statistics. The context and the introduction of this investigated case are presented in Table 1 and 2 whilst the results on challenges and concerns are discussed and summarized Table 3.

Key characteristics of the IT department: The IT department is considered to be an important business unit

Table 1: Key characteristics of the IT department

Characteristics	Description
Business organization	IT dept. in a public University library
Number of years dept. has been in business	>10 years
Number of years dept. has outsourced IT services	>10 years
Approximate total cost for outsourced project	Under RM 1 million
Outsourcing budget	RM 100-RM 500 k
Supplier/vendor	Global and local service providers

Table 2: Types and current level of IT outsourcing services

Types of outsourcing services	Current level of outsourcing (%)
Procurement/supply management	90
Hardware -desktops	
-servers (mid-range and mainframe)	
Software -solutions	
-tools	
Information technology services	75
Disaster recovery	
Client server	
Mid-range and mainframe	
System development	
Application maintenance	
System architecture	
Network services	
End-user PCs	
Helpdesk	
Product and service development	60
Library solution services	
Development of cataloging system	
Development of indexing system	

Table 3: Challenges in IT outsourcing

Challenges and concerns	Problem description
Service Level Agreements (SLA)	In capabilities and/or false provider promises. Providers cannot deliver required project on time. Service delivery seems to be posing a problem.
Pricing and costing	Overcoming grey areas involving pricing and costing when the outsourcing contract is not clear or ambiguous. Cost management could be a problem.
Quality of service provider (s)	Random quality checking constantly required.
Communication	Difference/conflict in expectations between providers and user. Vendors may not fulfill gap expectation. Frustration do arises amongst staff. This may lead to employee dissatisfaction of user end

in the well established public University library. The IT department serves as the user organization, as defined in the definition. A profile of the investigated case is captured in Table 1.

The IT department for this investigated case is considered a well established one since, it has been in operation for >10 years and it has outsourced IT services for >10 years. The IT department ensures that the entire library computer systems operates with minimum downtime and maintain a high level of computer service availability and performance. Counting on the several providers, it aims for a distribution of functions and rotations over time, so that dependence on one provider in particular is reduced.

Types and current level of IT outsourcing services: It was established that activities that are most often submitted to IT outsourcing were activities related to procurement/supply management (90%), information technology services (75%) and product and service development (60%), as shown in Table 2.

The Table 2 demonstrates the various types of IT outsourcing practices in the investigated case. Hence, this investigated case practices selective outsourcing and depends on several providers (as discussed in the study).

Satisfaction with IT outsourcing results: The interviewee seems to be satisfied with the IT outsourcing results. And it is worth noting that the satisfaction level quoted is merely a perception (Further discussion-study). Although, it was not possible to really assess and measure satisfaction level accurately, the several years of IT outsourcing seems to endorse the usefulness and satisfaction for IT outsourcing. Indeed, IT outsourcing does represent a useful managerial tool.

Reasons for using IT outsourcing: The following are some of the reasons for using IT outsourcing. These positive aspects are ranked in order of importance as cited by the interviewee:

- To reduce and control cost, achieved cost savings of 25%.
- Lack of expertise/staff in IT-functions difficult to manage.
- Lack of expensive equipments, for example scanning equipments.
- High maintenance fee should the department choose not to outsource.

This finding point to cost savings seems to be the most important determinant of IT outsourcing. And this implies reinvested savings. But in practice, cost savings is rather difficult to prove. Maybe, a reduction in staff could act as a proof. IT outsourcing may enable the IT department to reduce the number of personnel and savings could then be achieved. On the other hand, should cost savings be achieved, the issue of quality of service would surface. Nevertheless, this is highlighted in the study.

As for the lack of expertise, economies of scale favour the use of contract staff over direct employment. It would be an advantage to outsource those services that can be done out of house and reassign staff to areas that require in-house coverage. Acquiring expertise on contract, without having to hire or provide training and time for learning curve, especially technological skills would be another positive aspect for IT outsourcing. As for the outsourcing of hardware, this could relieve the library of purchasing and maintaining hardware like desktops and servers, mid-range and mainframe.

Reasons for not using IT outsourcing: The major reason cited being that core activities are best performed internally rather than to outsource. This finding points out that it is of vital importance to retain control internally and work on a collaboration model. The concern about preserving secrecy/confidentiality versus the mission of the public university library was mentioned. The issue of conflict of interest was raised.

Importance of criteria by which the department chose IT outsourcing providers: Regarding the importance of criteria by which the interviewee chose outsourcing providers, the following ranking was established:

- Commitment to quality.
- Flexible contract terms.
- Access to resources and needed technology.
- References/reputation.
- Pricing does not seems to be a determining factor.

The emphasis is first on quality and price is least secondary. This implies that this investigated case regarded IT outsourcing as a way of improving its IT rather than as a means to save costs. But, it was indicated in the study that cost savings seems to be the most important reason to resort to IT outsourcing. Here, the primary concern was not cheapness but quality (Further discussion on quality versus pricing and costing is considered in the study).

Challenges and concerns: In addition to the positive side of outsourcing, outsourcing can also cause some negative side effects and inherent problems. These problems posed challenges and concerns when managing IT outsourcing. Table 3 summarizes some of the challenges and concerns cited by the interviewee. Timely service delivery is of utmost importance.

Besides, the concern for commitment to quality on the part of service providers as indicated in the study, Service Level Agreement (SLA) is another major challenge and concern facing the IT department in terms of outsourcing. In many cases, there is ambiguity, unclear and incomplete specifications as to the provision of an acceptable level of service. An SLA is often a technical document regarding concepts and terminology that can only be understood by a small group of technology oriented specialists and not by the IT department. Often, evaluation and improvement does not take place on a regular basis. In such cases, the SLA becomes a static or dead-end document with a very restricted meaning for the IT department. Coupled with delayed service delivery, the problem becomes even more acute. As such, discipline must come from outsourced service provider. Hence, the IT department faces a great challenge to monitor and manage each unique IT outsourced service. It is then desirable to develop a SLA that could define communication requirements between the user-end and the service provider.

Cost management problem is inherent to SLA. Most SLAs are parts of fixed price financial agreements, where failure to meet requirements is translated to financial penalties. The results is that service providers are targeting the delivery of the minimum service level as it is described in the SLA, since, better than the contractual performance has no financial impact. Therefore, SLA cost management structure should then become flexible and able to reward better performance than contractually described. In fact, the ultimate measure of service-level performance and satisfaction level is often based on customer's perception (Satisfaction level expressed by interviewee-study).

The future of IT outsourcing in the Malaysian public university library domain-some viewpoints: The interviewee stressed that:

- The IT department would continue and expect to increase the use of outsourcing of IT functions. This is particularly in terms of cataloging the library materials, so that librarians can be assigned to service centre.
- The IT department will continue to engage outsourcing over the next 2 years.
- Staff training should be increased in order to gain experience and technical knowledge.
- Outsourcing has to be properly managed, planned, controlled and monitored.
- Certainly there is prospect to be developed in the very near future. Digital library is imminent with library material archives being in digital form.

One closing remark is that it is more likely than not that IT outsourcing functions in the IT department in the public University library will continue, will ebb and flow with the university library's needs to provide excellent collections to support learning, teaching and research activities.

DISCUSSION

The findings from this case study has highlighted that cost savings seemed to be of a major reason when deciding whether or not to choose to outsource IT functions in the IT department in the public University library. This finding is consistent with the study conducted by Blecic *et al*. (1999), which reported that the reason given most often by libraries for outsourcing was that it resulted in cost savings.

The quality of service provided was cited of top priority consideration. But, pricing was found to be less of an importance when deciding on their choice of IT outsourcing providers. This finding is along the lines of other research papers (White, 1998, 2000). White (1998) makes some insightful arguments against outsourcing solely for the purpose of cost saving. He asserted that quality should be paramount. Similarly, Gonzalez *et al*. (2006) commented that any outsourcing decision whose objective is cost reduction is doomed to failure, if price takes priority over service quality.

In order to, ensure quality of service provided is attainable, users would face a challenging task of managing, monitoring and controlling projects. Once the outsourcing contract is established, there is the ongoing process of monitoring quality performance control and troubleshooting. Quality checking has to be selective and there is a high level of trust and mutual confidence between users and providers.

IT department in public University libraries is fundamentally an effective support service centre. It is essential that there must be trust relationship and partner relationship between users (in this case, the IT department) and the service providers. IT outsourcing in IT department in the public University library is not a substitute for management's accountability and responsibilities.

In this manner, quality assurance must be practiced in order to guarantee success in library management. It is the responsibility of the IT department managers to make sure that contracted service providers understand and are prepared for their assignments. Outsourcers need to be reminded that in order to gain credibility they should work with and not against library professionals and in doing so, they might not be seen as piranhas but rather partners (Schwalb, 1997).

The results of this study, indicated that managing service providers timely service delivery seems to be of utmost concern in the IT department. It is certainly, a challenge to manage service providers especially those that cannot deliver required project on time.

Despite, some meaningful implications, there are some limitations to this study. This research merely focused on the response of an IT head of department of one particular public University in Malaysia. It is not representative of the entire 20 public Universities libraries in Malaysia.

FUTURE RESEARCH

With the current 20 established Malaysian public Universities libraries in existence, an extension to this study could include samples from the other 19 public Universities libraries. Also, given the increased number of private Universities libraries in Malaysia due to off shoring trends in higher education, future studies may consider a public versus private University libraries comparison on IT outsourcing in the IT departments.

CONCLUSION

The aim of this study was to provide a literature review of IT outsourcing in general and to analyze IT outsourcing in the library domain, in particular, a public University library. The literature review is complemented with a case study of a small-scale research project. An IT department in a Malaysian public University library was selected as the sample for this case study. This exploratory case study, although, relatively small in scope, it does offer a valuable insight into the challenges and concerns of IT outsourcing in particular, in an IT department in a public University library. The results of this study suggest that commitment to quality by service providers is of top concern and price is least secondary.

The study on IT outsourcing in the library domain in Malaysia has not been explored extensively. There is so little empirical research exists that examines IT outsourcing in the library domain in Malaysia. Therefore, this study seeks to address this gap in the literature. The researcher hopes that this exploratory study will not only add to the vast volume of research in outsourcing but spur more interest in the aspect of IT outsourcing in the library domain, especially in Malaysia. Finally, this study may provide a useful source of information for librarians, academicians and business organizations.

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