An Exploratory Study to Determine Factors Impacting Outsourcing of Information Systems in Healthcare

Abdul Hafeez-Baig
The University of Southern Queensland
Australia
abdulhb@usq.edu.au

Raj Gururajan
The University of Southern Queensland
Australia
gururaja@usq.edu.au

Abstract

Due to increasing costs, many countries are experiencing public and political pressure to reform their health sectors. Some common problems encountered in healthcare include long waiting lists, lack of availability of medical practitioners, high costs involved in the medication processes, insufficient infrastructure to access and unsatisfactory levels of performance by healthcare providers. While governments are aware of these problems, they are unable to balance many of these problems in order to provide quality service to the public. However, in many countries, including Australia, a solution to some of the healthcare problems is found in the form of 'outsourcing' a myriad of services, including Information Systems. In recent months, Information Systems outsourcing has produced conflicting outcomes, with some claiming there is significant cost savings in addition to improved quality of service, and others claiming failures of outsourcing. What appears to be a common theme in both successes and failures of outsourcing is the context in which it is applied, the control exercised by the management, the level of participation and the knowledge possessed by vendors. Literature indicates that while the Australian healthcare sector has outsourced many of its services (such as pathology) successfully to external vendors, the current state of information systems services outsourcing is under researched. This exploratory research would investigate those factors that have an impact on information systems outsourcing on Australian healthcare in order to develop an initial conceptual model.

Keywords: Outsourcing, Information Systems, Healthcare, strategic outsourcing

1. Introduction

Outsourcing has been around for many decades and will be in practice for some time to come. The basic theme behind outsourcing is that a specialist organization can perform a particular activity more efficiently than the client, due to factors such as economies of scale, skill level, and know how Roberts (2001). However, an outsourcing strategy is a complicated process and the actual implementation phase will be one of the prime factors for success. Outsourcing is a complex interaction among many factors, including technological development, relationship between service provider and service receiver, legal risk, and organizational factors. Managing a successful outsourcing strategy requires an understanding of these factors and their strategic relationships. Healthcare executives are facing the challenges of providing high quality of services, cost reductions, and modernization of the patient care system. Researchers believe that one of the strategic tools the healthcare executive can rely on to address these challenges is through outsourcing.

Outsourcing is viewed differently depending upon the context in which it is applied. Loh & Venkatraman (1992) mentioned outsourcing as turning over part or all of the organizations IS/IT (Information Systems/Information Technology) functions to external service provider(s) to acquire strategic, economic and technological advantages to improve overall business performance. Kakabadse and Kakabadse (2002) identified contrasting trends in outsourcing practices of US, Australian and French organizations with that of European firms. They noted that US companies choose outsourcing for strategic reasons such as to achieve the best practice, improve service quality, focus on core competencies of the organization and attempt to better utilize and leverage new technology while maintaining a discipline on costs. European companies were found to be paying greater attention to economies of scale, and non-cost based benefits.

Key research themes explored in this article include whether IT/IS outsourcing is different from traditional outsourcing?; Issues involved in IT/IS outsourcing for large healthcare organization are the same as that for small and medium size facility providing healthcare services; How important is relationship management with outsourcers?; How complex is the process of risk assessment in IT/IS outsourcing in a healthcare environment?; Is consortium outsourcing safe for small and medium size facility providing healthcare services:; Does outsourcing bring down significantly the cost of IT resource ownership?; Is IT/IS outsourcing be considered as a means of improving healthcare service and their overall performance?; Does IS/IT outsourcing lead to poor information control which is crucial for healthcare providers in general and businesses in service industries in particular?; Is a rapid advance in information technology a key motivation for information outsourcing?; Apart from economic are there other considerations for IT/IS

outsourcing?; and how is IT/IS outsourcing perceived by the existing work force in healthcare facility?

2. Literature Review

2.1 IT/IS Outsourcing and Relationship Management

Currie (2003) suggests under the uncertain economic conditions, small and medium businesses (SMB) continue to seek ways to enhance business performance through IS/IT application outsourcing in maintaining low cost of ownership of IT resources. This application-on-tap or pay-as-you-go approach of outsourcing is convenient to SMBs as they may have little or no experience of application outsourcing and do not make use of complex risk assessment tools. This approach does not involve issues related to relationship management on the long term basis.

Heckman (1999) concluded in an exploratory survey of 518 large organizations that most of the companies manage their relationship with IT suppliers in a relatively informal manner. Formalization of the relationship with IT suppliers was found to be a function of size of the customer organization and number of suppliers it uses. It is also observed in this study that companies may practice both formal and informal strategies for managing business relationship with suppliers.

In large companies where IT resources are distributed, both from business development and customer service perspective, formal relationships with IT suppliers are crucial (Leung 2002). With the size of organization, dependence on IT also increases (Rozwell, Harris et al. 2002). Large organizations need to have more than one supplier of IT solutions and need to maintain a formal business relationship with them (Davis 2002).

Lee (2001) assessed impact of knowledge sharing, organizational capability and partnership quality on IS outsourcing in Korean public sector organizations and concluded that knowledge sharing between two organizations is a key factor for success. Organizational capability to learn and acquire required knowledge from a service outsourcer is a key factor for motivating people to share knowledge. Partnership quality was found to be a significant intervening variable between knowledge sharing and IS outsourcing success.

An organization's willingness to learn and acquire knowledge motivates people to share knowledge with service provider organization. Knowledge sharing is a key to quality of partnership between organizations. Effective knowledge sharing also has a bearing on quality of partnership which decides the success of IT/IS outsourcing. Figure1 shows the impact of organizational factors on quality of partnership and eventually on IS/IT outsourcing success in the healthcare industry.

2.2 Information System Outsourcing as a Strategy

Quinn and Hilmer (1994) suggested that it is quite common for managers and leaders to turn to outsourcing strategy due to strong competition, rapid growth, and new leadership. Scheier (1997) stated the most common reasons behind the failure of an outsourcing strategy are poor platform, poor relationship between the parties, lack of coordination, and restructuring of the organization. Most of the literature on outsourcing concentrates on cost benefit analysis whereas outsourcing of information systems in healthcare is quite new and provides a complex environment for the leaders in healthcare organizations. Lorence and Spink (2004) suggested that analysis of outsourcing cost and benefits needs to concentrate on departmental and function-specific applications. Their study found six factors that influence the decision of outsourcing (of IS) in healthcare namely improved patient care, cost saving, regulations, competition, trained staff availability, and space considerations. Yang and Huang (2000) reviewed the IS outsourcing and identified factors such as management, strategy, economics, technology and quality to impact outsourcing decisions positively in healthcare management.

Tayles and Drury (2001) suggested that outsourcing decisions are influenced by the quality of information available, cost, profitability, strategic alliance, supplier quality, financial evaluation, efficiency and risk. They also suggested comprehensive use of outsourcing can provide some organizational, technical, behavioral benefits as well as provide greater visibility of both issues and processes of all the functions affected.

Kakabades and Kakabades (2002) found that US companies seem to be pursuing more value adding sourcing strategies whereas European companies are focused on gaining economies of scale through outsourcing. In EU most of the outsourcing decisions are made at board level, whilst for US companies outsourcing decisions are made by senior line and functional managers. Humphreys and Huang (2002) developed a conceptual framework for "buy or sell decision". Their model consisted of five stages: identifying and weighting performance categories; analyzing technical capabilities; comparing internal and external capabilities; analyzing supplier organizational capabilities; and total cost of analysis.

Savings can be made through outsourcing IS development to developing countries at half or less the salary levels in the West, and the trend of outsourcing is on the rise from the industrialized countries to the developing countries Quinn (1999). As the enterprises are exposing themselves to undue risk, the process of offshore outsourcing needs to be explicit and transparent (Andres 2002). Hence he argued that as the risk of ignoring offshore outsourcing completely is greater than the undue risk it poses, areas like

what should be outsourced, investing in outsourcing, assess the outsourcer, selecting the right process, and protection of intellectual property need special attention. Yang and Huang (2000) mentioned that factors like management, strategy, economics, technology and quality plays critical role in the final decision about outsourcing.

3. Information System, Outsourcing and Healthcare

Lee (2000) indicated that relationship between outsourcing parties have an effect on Information Systems outsourcing success. Their study examined the relationship between knowledge sharing and outsourcing success and established that knowledge sharing is one of the major predictors for outsourcing success and their ability to learn or acquire the needed knowledge. They also established that the partnership quality is a significant factor between knowledge sharing and outsourcing success.

Traditionally outsourcing is transferring services or operating functions to a third party, the service provider, and concentrating on the core business and distinctive competencies (Allen, 2000 and Stacey, 1998). Healthcare is no exception. It is believed that healthcare executives and the leaders can benefit by concentrating on the core business of providing quality of care and outsourcing information systems processing and operational logistics. Such a strategy will not only reduce running costs but also provide a platform for high quality service, patient care, reduction in waiting period, and state of the art health system. Shinkman (2000) noted that in the early 21st century outsourcing in healthcare is expected to rise to 5.5 % of the total budget as compared to 3.6 % in the general industry. Full outsourcing will increase by 30% in health care, compared to 11% in the general industry. Jenning (1997) stated that outsourcing provides a successful alternative in the environment of cost reduction, achievement of competitive edge, horizontal or vertical growth, and quality in the general industry. Roberts (2001) suggested that healthcare executives need to be very careful while examining the outsourcing strategy and suggested areas like outsourcing and strategic goals relationship, relationship between cost benefits and risk, need to be examined carefully.

In the healthcare literature outsourcing is used as a means of controlling costs, acquiring technical skills, and enhancing efficiency. Quinn et al. (2000) suggested that healthcare organizations outsource for some of the same reasons as other business and benefits of outsourcing are in the form of increased productivity, quality, and profitability, whereas the transformations of these benefits to the healthcare sector are not the same, leaders and decision makers need to recognize the high level of risk associated with outsourcing in healthcare.

Bhattacharya et al. (2003) mentioned that drivers of outsourcing decisions are both internal and external to the outsourcing organization, as more and more business processes are integrated with information systems. They established a business risk management framework, to provide a basis for effective outsourcing. They concluded that a continued growth of business process outsourcing contracts are largely dependent on the ability to effectively manage the managerial and business risk of the outsourcing effort. They observed that the magnitude and duration of outsourcing contract are indications of the fundamental changes that would take place in business process outsourcing. The growth of outsourcing depended on how effectively managerial and business risk of the outsourcing effort are managed. It was also observed by (Bhattacharya et al.) that outsourcing IS functions must be reconciled with the outsourcing of business processes, as business process effectiveness is usually the ultimate determinant of outsourcing success.

4. Classification

IS/IT outsourcing is not risk free and chances of failure of the process abound, (Rouse and Corrbitt 2003). But this is true for all business processes. Success can be ensured by mutually evaluating capabilities and competencies of each other. One sided evaluation of risk factors is no more applicable in the current scenario. IS/IT outsourcing is now for mutual benefits and survival as win win relationships exist between outsourcer and client organizations (Yacano 2002).

Based on the issues identified from the literature of outsourcing and the healthcare it is possible to classify the critical issues into four dimensions such as Strategic issues, technological issues, organizational issues and regulatory issues as these four dimensions appear to impact organizational outsourcing significantly. While there may be other factors influencing organizational outsourcing, these four dimensions, in our opinion, form the basis for healthcare related IS/IT outsourcing.

Organizational Issues:
Business Environments
   Management control of the outsourcing process
Vendor Selection
Management of outsourcing
Nature of the relationship between the parties
Intangible factors (strategy, quality)
Aim to achieve best practice
Improve service quality
Enhance capabilities to develop new
product/services
Lack of know how and specialist
Tangibles factors (Cost, Facilities, Human resources)
Effects on outsourcing Strategies
Downsizing
Effects on organizational structure
Outsourcing Decisions Process
Desire to concentrate on core competencies

Strategic Issues:
Value added outsourcing strategies
Cost control
Capital Budgets
Economic
Greater Flexibility
Global competition
Reduce capital cost
Reduce transaction cost
Strategic Sourcing
Coast of hardware
Expense of software development
Support for vertical integration
Total or partial outsourcing
Management responsibility and risk
Strategic Alliance
Overall Business Strategy

Regulatory Issues:
Political Relationship with countries of origin of outsourcer.
Business Relationship with countries of origin of outsourcer.
Economic Relationship with countries of origin of outsourcer.
Terms and condition of the contact.
Ownership

Technological Issues:
Achieving the best practice
Access to new technologies/skills
Technology
Rapid changing and complex technology

Classification Critical Issues

Relationships amongst the critical guiding factors contributing to IS/IT outsourcing success in healthcare have been depicted in Figure 1 for deeper understanding.

We understand, IS/IT outsourcing in healthcare is a complex phenomenon and has multidimensional effects among the issues related to organization, regulatory bodies, strategic plans and technological developments. Therefore, interrelationship among these issues and critical guiding factors contributing to the success of the outsourcing process in health care can be shown as below:

Interrelationship of Critical Issues related to IT/IS in Healthcare Outsourcing
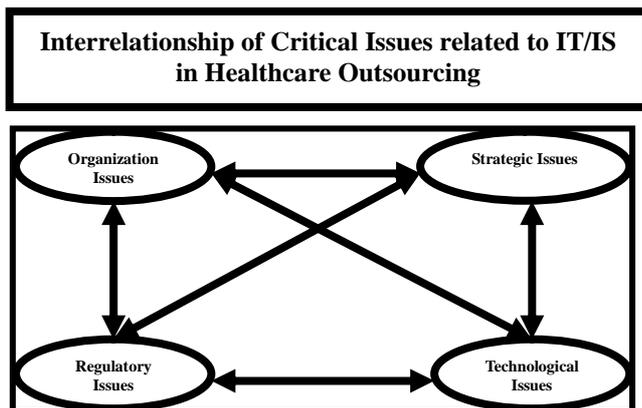
5. Conclusion

There is widespread understanding among all researchers about benefits of outsourcing and these benefits out-weigh the risk associated with it. The healthcare industry is not an exception to these benefits. IS/IT outsourcing in healthcare is consolidating as a strategic move and overall performance of the service provider depends on it. Healthcare organizations engage in information system outsourcing for various reasons which are strategically crucial. The leaders and decision makers in the healthcare industry need to make sure that the service providers have the right mix of competencies which align with their requirements and strategic goals. Due to the dynamic nature of the ever evolving information systems and information technology infrastructure the process and the practice of the outsourcing is changing rapidly as well, specially in the sensitive area of healthcare. Therefore, extensive and continued research is required in the area of healthcare and outsourcing.

6. References

Allen, S,. (2000), Outsourcing Services: "The Contract is just the Beginning." *Business Horizons 43 (2): 25 - 39*

Andres, H. P. (2002). "A contingency approach to software project coordination." Journal of Management Information Science 18(3): 41-70.

Bhattacharya S., Behara R.S. and Gundersen D.E., (2003), Business Risk Perspective on Information System Outsourcing, *International Journal of Accounting Information Systems*, 4(2003), pp 75-93.

Currie W.L., (2003), A Knowledge-based Risk Assessment Framework for Evaluating Web-Enabled Outsourcing Projects, *International Journal of Project Management*, Volume 21(2003), PP 207-217.

Davis, R. (2002). "Pursue front end solutions to revenue problems." Healthcare Financial Management 56(8): 30 - 36.

Heckman R., (1999), Organizing and Managing Supplier Relationships in Information technology Procurement, *International Journal of Information Management*, Volume 19(1999), pp 141-155.

Hunter P., Security Issues with Offshore Outsourcing:

Jenning, D., (1997), Guidelines for Strategic Outsourcing Decisions: *Strategic Change 6: 85 – 96.*

Kakabadse A. and Kakabadse N., (2002), Trends in Outsourcing: Contrasing USA and Europe, *European Management Journal*, 20(2), pp 189-198.

Lee J.N., (2001), The Impact of knowledge Sharing, Organizational Capability, and partnership Quality on IS Outsourcing Success, *Information & Management*, 38(2001), pp 323-335.

Lee, J., (2001), The impact of knowledge sharing, organizational capability and partnership quality on IS outsourcing success: *International Journal of Information Management 24 (2004) 131 – 145.*

Leung, H. (2002). "Organisation factors for successful management of software development." Journal of Computer Information Systems 42(2): 26-37.

Lorence P. D., and Spink A., (2004), Healthcare Information Systems Outsourcing: *International Journal of Information Management 24 (2004) 131 – 145.*

Loh L., and Venkatraman N., (1992), Determinants of Information Technology Outsourcing: A Cross Sectional Analysis, *Journal of Management Information Systems*, 9(1), pp 7-24.

Quinn J.B. and Hilmer F.G., (1994), Strategic Outsourcing, *Sloan Management Review*, Summer, pp 43-55.

Quinn J.B., (1999), Strategic Outsourcing: Leveraging Knowledge Capabilities, *Sloan Management Review*, Summer, pp 09-21.

Quinn J.B., (2000), Outsourcing Innovation: The New Engine of Growth, *Sloan Management Review*, Summer, pp 13-28.

Roberts, V., (2001), Managing Strategic Outsourcing in the Healthcare Industry: Journal of Healthcare Management 46 (2001), pp 239 – 249.

Rouse A., and Corbitt B., (2003), Minimizing risk in IT outsourcing: Choosing target servicec: 7th Pacific Conference on information Systems, 10-13 July 2003, Adelaide, South Australia.

Rozwell, C., K. Harris, et al. (2002). Survey of Innovative Management Technology, Gartner Research: 5.

Shin D. and Yun S., (2003), Choice of Technology in Outsourcing an Endogenous Information Structure, *Information Economics and Policy*, Forthcoming .

Scheier, R. L. (1997) , Business outsourcing more but less thrilled with results. C*omputerworld*, July 21, 14.G.

Shinkman, R. L., (2000), Outsourcing on the Upswing: *Modern Healthcare (September): 46 – 54.*

Stacey, M., (1998), Outsourcing: How organizations need to prepare to realize the Full Benefits. *Management Accounting 76 (6): 24 – 27.*

Yang C., Huang J., (2000), A Decision Model for IS Outsourcing, *International Journal of Information Management*, Volume 20, pp 225-239.

Yacano, F. (2002). "Monitoring air quality: handhelds and wireless tools from efficient links." R & D 44(5): 42 - 46.