



# Performance Monitoring Systems for Public Sector IT Outsourcing Contracts

Brian Perrin

Curtin University of Technology, GPO Box U1987, Perth WA 6845, Australia, Ph. +61802667390, Fax. +61892663076,  
perrin@cbs.curtin.edu.au

Graham Pervan

Curtin University of Technology, GPO Box U1987, Perth WA 6845, Australia, Ph. +61802667390, Fax. +61892663076,  
pervang@cbs.curtin.edu.au

## ABSTRACT

*This paper aims to contribute to existing literature on the factors that influence the choice of performance monitoring systems used in public sector IT outsourcing contracts and to highlight the need for further research in this area. This is achieved by discussing prior research and key factors identified and how they contribute to the development of a conceptual model. This model is reviewed against findings of a major Australian government study and a programme of research to test, refine and validate the model is proposed.*

## INTRODUCTION

The Information Technology (IT) outsourcing market continues to experience substantial growth, with an estimated market value of over US\$ 120 billion in 2002 (Lacity and Willcocks 2001). This increasing focus on IT outsourcing has not only been restricted to the private sector. Increasingly public sector agencies are choosing to outsource their IT needs in an attempt to improve the efficiency and effectiveness of services delivered, to reduce costs and to enhance accountability.

To date, little research evidence has been accumulated on the management of IT outsourcing contracts or on identifying the factors that influence the choice of performance monitoring systems used in IT outsourcing contracts. A key issue in contract management is monitoring of the contractor's performance to ensure that all the agreed objectives specified in the contract are achieved. Outsourcing of information technology services is not a simple process. The high number of organisations that fail to successfully achieve their objectives highlights this fact (Greco 1997). This paper outlines a conceptual model based on factors that influence choice of performance monitoring systems used in public sector IT outsourcing contracts. This model and its theoretical underpinnings is presented and a programme of research to test, refine and validate the model is proposed.

## PRIOR RESEARCH

### IT Outsourcing Research

Over the past decade a considerable amount of research on IT outsourcing has been conducted. This research has focused on numerous areas, including:

- types and extent of outsourcing;
- risks and benefits of outsourcing;
- strategic sourcing;
- identification of best practices that distinguish success from failure.

### Public Sector Outsourcing Research

Prior research in outsourcing services in the public sector has mainly focussed on the extent of outsourcing and its impact on quality, cost and accountability. In terms of quality, various critics of public sector outsourcing argue that competition often reduces prices at the expense of quality. The proposition that contractors have an opportunity to reduce costs in ways that may lead to a substantial deterioration

of quality has been demonstrated theoretically by various authors (Domberger and Hall 1995). In contrast, according to the Industry Commission of Australia report (ICA 1996), outsourcing provides an opportunity for agencies to improve their quality of service delivery through a better understanding of specification requirements and greater flexibility in choosing service providers. Domberger (1998) claims that, prior to outsourcing in the public sector; formal specification and monitoring systems often did not exist making it difficult to draw conclusions about changes in performance and or quality.

In terms of cost, many empirical research studies on cost savings due to outsourcing have been conducted (Domberger 1998). In summary, the Industry Commission (ICA 1996) concluded that 75% of Australian and Overseas empirical studies found that outsourcing reduced the ongoing costs of service provision by approximately 10 to 30 percent in over half of the services studied. There is however, limited evidence on the magnitude of transition and contract management costs. (ICA 1996).

In terms of accountability, within the public sector it is suggested that there are two dimensions of accountability against which performance should be monitored. Research in the area of accountability has resulted in conflicting views as to the level of changes in accountability. Some authors believe that accountability is reduced, whereas others state it is increased (Mulgan 2000).

Critics of contracting are particularly concerned with issues of accountability and a potential weakening of control and governance structures (Domberger and Hall 1996; Mulgan 2000). Mulgan (1997, p 115) claims that contracting out involves 'some reduction in accountability through removal of direct departmental and ministerial control over the day-to-day actions of contractors and their staff'. The Industry Commission of Australia (ICA 1996) has the opposite view and claims that when agencies transfer responsibility for service provision to other parties through legally enforceable contracts, it does not relinquish accountability. While the mode of service delivery changes, the agency still remains accountable for the performance of the service functions delegated to it. Further, they claim that contracting has the potential to enhance accountability by requiring the contracting agency to specify clearly, not only the service to be delivered, but also the criteria on which the contractor's performance is to be measured and monitored.

Prior research into the performance monitoring methods used in public sector outsourcing contracts is limited and mostly not specifically related to IT outsourcing (e.g., Hall and Rimmer, 1994).

### Contract Management and Performance Monitoring Systems

A key issue in contract management is the monitoring of the contractor's performance to ensure that all the agreed outcomes specified in the contract are met on time and within budget. The precise nature and extent of monitoring required will vary from contract to contract and is dependent upon the nature of the work, the type of contract, level of risk, and the relationship between the contractor and the agency involved. Monitoring can range from the most basic

acceptance of a delivery and payment, to more complex situations that require extensive involvement of both agency and contractor staff throughout the contract term. According to the JCPAA (2000), the responsibility for monitoring performance can be either 'direct' or 'devolved', or a mix of both. With direct monitoring, the agency conducts most of the monitoring, whereas with devolution the contractor is largely responsible.

Research in the area of contract management indicates that there are a number of approaches to performance monitoring of service contracts, including the use of service level agreements, key performance indicators, benchmarking, regular contractor reports on outcomes, customer surveys, customer complaints, and direct inspections (e.g., Halvey and Melby 2000). For those services where it is particularly difficult to monitor outcomes, a number of monitoring methods may be combined.

The development of performance indicators and their incorporation into contracts is shown to be a valuable method of ensuring objective assessment of contractor performance. For example, Hall and Rimmer (1994, p 456) define performance indicators as 'quantitative and qualitative statistical information, which is used to assist in determining how successful an organisation is in achieving its objectives'. Further, they claim that three broad types of key performance indicators can be used by public sector agencies in meeting different levels of accountability: these include workload, efficiency and effectiveness indicators.

Ittner and Larcker (1998, p205) suggest that 'the choice of performance measures is one of the most critical challenges facing organisations'. Performance monitoring systems are important in an IT outsourcing contract because they help organisations determine whether they are achieving their objectives, access the quality of services provided and identify problems that need corrective action. In recent years research on performance measurement systems has mainly focused on the different types of performance measures currently used in organisations. These different types of measures include financial, non-financial, qualitative and quantitative approaches. Ittner et al (1997) suggest the most recent research has centred on the use of non-financial measures for evaluating organisational performance, developing organisational strategy and choosing among improvement opportunities.

Very little research evidence has been accumulated on the factors that influence the choice of performance monitoring systems used in service contracts. Specifically, which factors influence public sector agency decisions to choose between different performance monitoring systems? Why do organisations choose service level agreements (SLA), performance indicators (financial, non-financial, qualitative and quantitative), reporting, customer surveys and inspections when monitoring contracts?

## FACTORS INFLUENCING PERFORMANCE MONITORING SYSTEMS CHOSEN

A number of factors influence the choice and level of performance monitoring methods used in contracting. This preliminary research indicates that risk, relationships and the outsourcing contract are key factors.

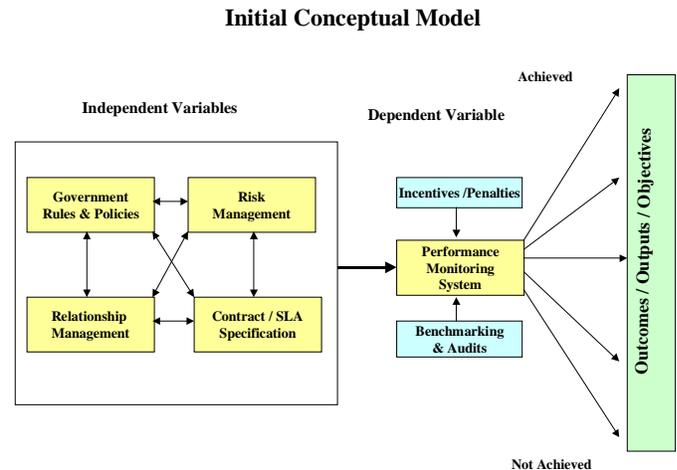
A preliminary model on the factors influencing the choice of performance measures used in IT outsourcing service contracts has been developed. (Figure 1 below). This model is based on the literature reviewed and in particular best practice contract models identified. The following is a summary of the four key independent variables in the model.

**Risk Management** - The identification, assessment and monitoring of risks associated with outsourcing services is an integral part of both good business practice and sound contract management.

**Relationship Management** - Successful management of the contract depends to a large extent on the relationship built between the agency and the organisation undertaking the outsourced activity. According to Hurley and Costa (2001 p57), 'managing the ongoing relationship is the most important part of the outsourcing cycle'.

**Contract Design / Specification / Service Level Agreement** - 'The contract is the formal link between the contractor and the contracting

Figure 1: Initial performance monitoring systems factors model



agency. It is the legal structure through which the key elements of the relationship are made clear' (ICA 1996, p321). A well-designed contract specification or service level agreement is the primary source of information for the contractor on the level of performance expected.

**Government Rules and Policies** - Each level of government is regulated by legislation and acts of parliament, treasury regulations, policies, procedures and professional accounting standards (i.e. AAS 27, AAS29 and AAS 31). Accountability in the public sector consists of multiple levels.

The conceptual model outlined in this paper shows that institutional pressures from both external and internal stakeholders influence the choice of performance monitoring systems used in public sector IT outsourcing contracts. For example, these include: resource providers, users, customers and clients of the organisation. Which of these stakeholders has the greatest influence in the design of the performance monitoring systems is an interesting question that will be addressed by this research. By gaining a better understanding of the competing stakeholders' interests will ultimately help in the design of more efficient and effective performance monitoring systems.

## CONSORTIUM IT CONTRACTING IN THE WA PUBLIC SECTOR

This section details a performance audit report tabled in parliament in December 2001 on the efficiency and effectiveness of Consortium IT Contracting in the Western Australian Public Sector (AGWA 2001). The key findings of this audit report reinforce the importance of sound contract management and performance monitoring practices. This report also highlights the importance of the factors identified in this paper and their relevance toward successfully managing and achieving the objectives of an outsourcing contract.

According to the Auditor General of Western Australia (AGWA 2001), the findings of this performance audit are very important to the future of IT Outsourcing in the Public Sector and agencies should learn from the mistakes made in these two consortium contracts. This performance audit review examined the BDMW and BIPAC consortium contracts established in July 96 and October 97 respectively. The approach used in this review to determine the success of the contracts was to measure whether the objectives stated in the contracts had been achieved. The method followed in this review was to examine agency records and conduct interviews with management, IT and end-user staff. The following is a summary of the key findings and recommendations detailed in this report:

### Objectives

The key objectives in both contracts were similar, for example; improve service levels, reduce costs, develop a competitive IT market in WA, close Centralised Bureau Services and provide agencies with greater flexibility in acquiring new technology and IT staff skills. The

review found that some objectives were not capable of measurement and those that were, have not been fully monitored by the agencies. The review concluded that agencies could not conclusively demonstrate that the reduction in costs and improved service levels had been achieved. The review recommended that in future contracts, agencies need to establish clear measurable objectives that enable proper valuation of contract outcomes.

### Performance Monitoring System

According to the review, the Service Level Agreement (SLA) specified each agency's relationship (i.e. Partnering) with the contractor, the types of services required, and the performance measures specified in the 'scorecard system'. The audit found that in general agencies had not established the systems to monitor and actively manage cost savings and service level performance. Only two of the six agencies examined collected independent data to monitor performance and only one agency collected independent performance data before and after the contract commenced. They relied mainly on the monthly performance reports produced by the contractors and did not undertake regular independent audits of the charges. They also found that the scorecard performance monitoring system was limited due to their complexity, the technical nature of the indicators and the focus on penalties rather than incentives.

The audit review recommended that agencies need to establish service level performance measures which measure user requirements and either collect independent performance data or regularly check, or audit data provided by the contractor. They also recommended that the contractor's performance should be monitored by someone other than the contract manager and regularly benchmarked against industry standards.

### Contract Management

The review found that the management of contracts subsequent to the procurement and transition stages was less than effective. Agencies could not demonstrate that they had actively managed the contracts. In general, they relied on the monthly performance reports produced by the contractors and did not undertake regular independent audits of the charges. The review also found that the use of 'management committees' to review the effectiveness of performance measures and objectives was not effective. Measures were under review for long periods of time and not all agencies attended committee meetings on a regular basis. The audit review recommended that agencies should establish performance monitoring systems that enable them to actively manage the contracts and measure whether the objectives have been achieved and should not rely solely on the contractor's performance reports.

### Risk Management

This report reinforced the importance of risk management as an integral part of sound contract management. The review found that the assessment of risk had not been conducted in accordance with government rules and regulations. Further they found that effective ongoing management of the contract and disaster recovery arrangements had not been implemented. The report stated that outsourcing provided agencies with the ability to transfer the risks associated with IT asset ownership and acquisition of IT skills to the contractor. However, it did not allow agencies to transfer their accountability for the service performance or eliminate the management of risks entirely. Agencies needed to learn how to manage a new set of risks associated with the 'loss of control' over staff, equipment, quality, security and timeliness of the service. The audit review recommended that agencies needed to ensure that all future outsourcing decisions are undertaken in accordance with State Supply Commission and Standards Australia guidelines. Agencies also need to implement an effective ongoing management structure and disaster recovery arrangements.

### Conclusions about the Proposed Model

The key findings and recommendations of this performance audit report match the factors detailed in the proposed model and therefore confirm its validity. For example, based on the partnering relationship

and high level of risk identified in these contracts, agencies should have established an appropriate performance monitoring system that they could use to actively manage the contracts and was capable of identifying whether the objectives had been achieved. Also, given the open book pricing and scorecard – incentive systems, agencies should have scrutinised the contract charges themselves and not relied solely on the performance results supplied by the contractor.

In summary, the key findings and recommendations of this performance audit highlight the importance of performance monitoring systems, provides broad agreement for the conceptual model proposed and points to a need for further research in this area. The next section summarises a programme of research to the proposed conceptual model.

### PLANNED RESEARCH

The objective of this research is to contribute to the knowledge on the factors that influence the choice of performance monitoring systems used in public sector IT outsourcing contracts. Specifically, the major outcomes to be addressed in this research are to:

- identify what factors influence the choice of performance monitoring systems used; and
- test, refine and validate the conceptual model presented in Figure 1

Minor outcomes are to:

- provide information on performance monitoring systems used and whether a lack of these systems leads to poor contract management and failure;
- identify the important issues that must be managed within an IT outsourcing relationship; and
- provide information on the effectiveness of performance monitoring methods currently used.

In order to address the different research questions posed in this study a combination of both quantitative and qualitative research methodologies will be used. It is anticipated that by using a combination of methods, a better understanding of the issues will result. Both quantitative and qualitative data will be gathered using exploratory field study and survey research methodologies. This will be conducted in three phases.

In the *first phase*, already completed, the literature has been examined and conceptual model has been proposed. The *second phase* is to conduct a series of eight case studies in the public sector (Western Australian state government and local government) which, via semi-structured interviews and documentary evidence, will review the model. The cases will cover small, medium and large government agencies. While the elements of the model provide a boundary for the data collection in this phase, the research approach will be utilising an interpretive of qualitative data obtained from the case studies. The outcome of this phase will be a revised conceptual model. The *third phase* will be to test the revised model in an Australia-wide survey of all levels of government (local, state, and federal).

### CONCLUSION

This paper represents phase one of this research program. The initial conceptual model presented in this paper is based on the literature reviewed and in particular best practice contract models identified. This preliminary research indicates that risk, relationships and the outsourcing contract are key factors that influence the choice and success of performance monitoring systems used.

With the move to greater outsourcing of programs and services, public sector agencies now face a new challenge and must equip themselves with a range of new skills, knowledge and experience to ensure that contract management is efficient and effective. According to a recent report by the Joint Committee of Public Accounts and Audit (JCPAA 2000, p 1), 'the search for excellence in contract management is one of the most pressing challenges for the Australian Public Service to address'. A key issue in this search for excellence in contract manage-

ment is the monitoring of the contractor's performance. Without this knowledge, agencies are unable to actively manage the contract, identify problems and verify whether they have achieved their objectives.

Outsourcing of information technology services is not a simple process. The high number of organisations that fail to successfully achieve their objectives highlights this fact (Greco 1997). Further research is needed in this important area. Information in this area will allow practitioners to better understand the important factors that could be used to assist in the successful management of contracts.

## REFERENCES

- Auditor General Western Australia, (2001), *First Byte: Consortium IT Contracting in the Western Australian Public Sector*, Report No. 12 December 2001.
- Domberger, S. (1998), *The Contracting Organization*, New York, Oxford University Press.
- Domberger, S., and Hall, C. (1995), *The Contracting Casebook: Competitive Tendering In Action*, Graduate School of Business, University of Sydney.
- Domberger, S., and Hall, C. (1996), "Contracting for Public Services: A Review of Antipodean Experience", *Public Administration*, Vol 74, Spring pp 129-147.
- Greco, J. (1997), "Outsourcing: The New Partnership", *Journal of Business Strategy*, July/August, pp 48-54.
- Hall, C., and Rimmer, S. (1994), "Performance Monitoring and Public Sector Contracting", *Australian Journal of Public Administration*, v 53, No 4, pp 453-461.
- Halvey, J and Melby. B. (2000), *Business Process Outsourcing – Process, Strategies, and Contracts*, John Wiley, Canada.
- Hurley, M., and Costa, C. (2001), *The blurring boundary of the organisation: outsourcing comes of age*, Melbourne, Victoria, KPMG.
- Industry Commission of Australia, (1996), *Competitive Tendering and Contracting by Public Sector Agencies*, Australian Government Publishing Service, Melbourne.
- Ittner, C., Larcker, D., and Rajan, M. (1997), "The Choice of Performance measures in Annual Bonus Contracts", *The Accounting Review*, v 72 no 2, April, pp 231-255
- Ittner, C., and Larcker, D. (1998), "Innovations in Performance Measurement: Trends and Research Implications", *Journal of Management Accounting Research*, Vol 10, pp 205-238.
- Joint Committee of Public Accounts and Audit, (2000), *Contract Management in the Public Service, Report No 379*, October.
- Lacity, M and Willcocks, L. (2001) *Global IT Outsourcing: In Search Of Business Advantage*. Wiley, Chichester.
- Mulgan, R. (1997), "Contracting Out and Accountability", *Australian Journal of Public Administration*, Vol 56, No 4, December.
- Mulgan, R. (2000), "Comparing Accountability in the Public and Private Sectors", *Australian Journal of Public Administration*, Vol 56(1) pp 87-97 March.

0 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage:

[www.igi-global.com/proceeding-paper/performance-monitoring-systems-public-sector/32444](http://www.igi-global.com/proceeding-paper/performance-monitoring-systems-public-sector/32444)

## Related Content

---

### A Review of Image Segmentation Evaluation in the 21st Century

Yu-Jin Zhang (2015). *Encyclopedia of Information Science and Technology, Third Edition* (pp. 5857-5867).

[www.irma-international.org/chapter/a-review-of-image-segmentation-evaluation-in-the-21st-century/113043](http://www.irma-international.org/chapter/a-review-of-image-segmentation-evaluation-in-the-21st-century/113043)

### A RNN-LSTM-Based Predictive Modelling Framework for Stock Market Prediction Using Technical Indicators

Shruti Mittal and Anubhav Chauhan (2021). *International Journal of Rough Sets and Data Analysis* (pp. 1-13).

[www.irma-international.org/article/a-rnn-lstm-based-predictive-modelling-framework-for-stock-market-prediction-using-technical-indicators/288521](http://www.irma-international.org/article/a-rnn-lstm-based-predictive-modelling-framework-for-stock-market-prediction-using-technical-indicators/288521)

### Computer-Assisted Parallel Program Generation

Shigeo Kawata (2018). *Encyclopedia of Information Science and Technology, Fourth Edition* (pp. 4583-4593).

[www.irma-international.org/chapter/computer-assisted-parallel-program-generation/184166](http://www.irma-international.org/chapter/computer-assisted-parallel-program-generation/184166)

### Modeling Individual Decisions from Information Search

Neha Sharma and Varun Dutt (2015). *Encyclopedia of Information Science and Technology, Third Edition* (pp. 4641-4652).

[www.irma-international.org/chapter/modeling-individual-decisions-from-information-search/112906](http://www.irma-international.org/chapter/modeling-individual-decisions-from-information-search/112906)

### The Key Role of Interfaces in IT Outsourcing Relationships

Francois Duhamel, Isis Gutiérrez-Martínez, Sergio Picazo-Vela and Luis Felipe Luna-Reyes (2012). *International Journal of Information Technologies and Systems Approach* (pp. 37-56).

[www.irma-international.org/article/key-role-interfaces-outsourcing-relationships/62027](http://www.irma-international.org/article/key-role-interfaces-outsourcing-relationships/62027)