

**School of Information Systems**

**An investigation of the process of IS/IT investment evaluation and  
benefits realisation in large Australian organisations**

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# Abstract

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In modern organisations a large portion of senior management's time is now being consumed in finding ways to measure the contribution of their organisations' IS/IT investments on business performance. It has been shown that IS/IT investments in many organisations are huge and increasing rapidly every year and yet there is still a lack of understanding of the impact of the proper IS/IT investment evaluation processes and practices in these organisations. At the same time, the issue of expected and actual benefits realised from IS/IT investments has generated a significant amount of debate in the IS/IT literature amongst the researchers and practitioners. This is as true in Australia as it is in the rest of the developed world. Thus, one can argue that a detailed study of current practice in IS/IT investment evaluation in Australia is warranted. In this research study, an attempt was made to: (1) establish current Australian industry and government practices and norms in managing IS/IT benefits and evaluation; and (2) develop a framework based on the fit between theory and practice of IS/IT investment evaluation by large Australian organisations, particularly in an environment where much of the IS/IT is outsourced.

Research objective one utilised an existing questionnaire based on Ward et al. (1996). This questionnaire was sent to the IS/IT managers of the largest 500 Australian organisations. The aim of this objective was to investigate IS/IT investment evaluation and benefits management and realisation in these Australian organisations, so as to shed light on the current practices and norms in this area. The second research objective employed two case studies utilising semi-structured interviews, observation and document review. The aim of this objective was to develop a framework based on the fit between theory and practice of IS/IT investment evaluation by large Australian organisations. Results from the survey and

two case studies were analysed and a framework for benefits realisation and investment evaluation was developed.

The major contribution of this research include first, the creation of several useful guidelines for large outsourcing organisations undertaking IS/IT investment evaluation and benefits realisation processes and second, the development of a benefits realisation and investment evaluation framework which offers a practical tool to help the large organisations to determine when and how the IS/IT investment evaluation and benefits realisation should be adopted.

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# Chapter 1

## Introduction and Overview

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### 1.1. Introduction

Information systems and information technology (IS/IT) now represents substantial financial investment for many organisations (Willcocks, 1992a). Information systems and technology managers have found it increasingly difficult to justify rising IS/IT expenditures (Silk, 1990; Willcocks, 1994). They are under increasing pressure to find a way to measure the contribution of their organisations' IS/IT investments to business performance, as well as to find reliable ways to ensure that the business benefits from IS/IT investments are actually realised (Willcocks and Lester, 1997). This problem has become more complex as the nature of IS/IT investments and the benefits they can deliver has evolved over time as IS/IT itself has changed rapidly (Willcocks, 1992a).

According to Symons and Walsham (1988), the potential use of IS/IT as a competitive weapon has become a popular slogan. However, there is still a lack of understanding of the impact of a proper IT investment evaluation and benefits realisation process. In consequence, the capacity of many organisations to assimilate and apply IT falls far behind the available opportunities. Therefore, it is not difficult to see that the measurement of the business value of IT investment has been the subject of considerable debate by many academics and practitioners (Ballantine et al., 1996; Hitt and Brynjolfsson, 1996). The difficulties in measuring benefits and costs are often the cause for the uncertainty about the expected benefits of IT investment and hence are the major constraint to IS/IT investments (Renkema and

Berghout, 1997). Hence, evaluation is often ignored or carried out inefficiently or ineffectively because of its elusive and complex nature (Serafeimidis and Smithson, 1996).

Recently, the issues of gaining business value from, and justifying current investment in, information technology have been identified as the most critical but difficult management issues in Australia, UK and the US (Pervan, 1998). According to Baker and Berenblum (1996), investment in IT is one of the major factors determining the success or failure of organisations. As a result, organisations are becoming increasingly competitive in seeking to implement the effective use of IT (Dober, 1994). However, recent research also indicates that IT managers may not be paying as much attention to the measurement of the organisation's IT investment as their CEOs (Pervan, 1998), resulting in difficulties in explaining the "productivity paradox" within their organisations.

One survey and two case studies were conducted for this research. The survey was sent to the CIOs or IS/IT managers of the largest 500 Australian organisations. The aim was to establish current industry and government practices and norms in managing IS/IT benefits and evaluation in large Australian organisations (research objective 1). This was done to investigate issues such as IS/IT investment evaluation methodology, benefits management methodology, benefits structures and identification, benefits realisation planning, and benefits delivery processes. Two case studies were then conducted at two major Western Australian state government departments. They were conducted to further investigate the problems and issues identified in the survey and then develop a framework based on the fit between theory and practice of benefits realisation and IS/IT investment evaluation by large Australian organisations (research objective 2).

The results show that many survey respondents and case study participants knew very little about formal IS/IT investment evaluation and benefits realisation concepts and practices. In most cases, neither IS/IT investment evaluation nor benefits realisation methodologies were adopted by organisations. Some suggested guidelines were put forward by the researcher to assist in resolving some of the problems encountered in the survey and two case studies.

Finally, a benefits realisation and investment evaluation framework was constructed after the analysis of the survey and case study data. The framework tries to assist senior managers in determining when and how IS/IT investment evaluation and benefits realisation methodologies should be adopted. However, this framework needs further testing and refinement before it can be of significant benefit to organisations which are struggling with their benefits management and investment evaluation activities.

## **1.2. Research Topic and Objectives**

The title and overall objective of this PhD research is:

**An investigation of the process of IS/IT investment evaluation and benefits realisation in large Australian organisations.**

The two objectives of this research are:

- (1) To establish current Australian industry and government practices and norms in managing IS/IT benefits and evaluation.**
- (2) To develop a framework based on the fit between theory and practice of benefits realisation and IS/IT investment evaluation by large Australian organisations.**

Given the significance (in amount invested and impact on the economy) the investigation of these objectives will focus on large Australian organisations undertaking IS/IT projects and contracts (including IS/IT outsourcing contracts).

## **1.3. The Content of the Thesis**

This PhD thesis is structured as follows:

**Chapter 1**, “Introduction and Overview”, contains an overview of the thesis, research topic and objectives, and a guide to the 14 chapters.

**Chapter 2**, “Literature Review”, contains the relevant literature review on IS/IT investment evaluation and benefits management, and discusses many issues and problems faced by organisations. Several models of IS/IT investment evaluation and benefits realisation are included in the discussion. This chapter also outlines the relevance and significance of this research. It has been argued here that, since most of the studies that have been done to date have been carried out in UK or the USA and very little published work has been conducted in Australia, the main aim of this research is to address the issues which affect the ability of the large Australian organisations to evaluate the IS/IT investment processes as well as to manage the potential benefits arising from the use of IS/IT.

**Chapter 3**, “Research Methodology”, considers a number of alternative research methods and then provides justifications for the choice of the research methodology for this particular research project. Survey and case study were chosen for this research.

**Chapter 4**, “Research Design”, contains the discussion of data collection and analysis techniques used, and illustrates how the data collected and analysed will enable the researcher to answer the research objectives posed. The data collection techniques used are: questionnaire, semi-structured interviews, observation, and document review. The qualitative data analysis method used is qualitative content analysis and SPSS is used for quantitative data analysis. In addition, the issues of reliability, validity, and triangulation are also described in this chapter.

**Chapter 5**, “Survey Results”, presents the results of the survey. The aim of the survey is to investigate issues such as IS/IT investment evaluation methodology, benefits management methodology, benefits structures and identification, benefits realisation planning, and benefits delivery processes.

**Chapter 6**, “Case 1 Descriptions”, provides a detailed description of the first case study organisation (the Department).

**Chapter 7**, “Case 1 Analysis”, contains 17 major themes or issues identified in the first case study. They are: a lack of a formal IS/IT investment evaluation



methodology and a lack of understanding of the evaluation approach used, a lack of any (formal and informal) benefits realisation methodology and a lack of understanding of benefits management practices, the use of an informal IS/IT investment evaluation process and a focus on quantitative IS/IT investment evaluation measures, conflicting motivations for outsourcing, different perceptions of success of the contracts by stakeholders, a conflict between motivations and success criteria for outsourcing, an IS/IT skill shortage within the organisation, an embedded contract mentality, complicated contract arrangements, over-reliance on a single contractor, lack of user involvement/participation in contract development, and general lack of commitment by contractors, restrictive government outsourcing contract guidelines, and inability to manage the outsourcing contracts without external influence and assistance.

**Chapter 8**, “Case 2 Description”, provides a detailed description of the second case study organisation (the Agency).

**Chapter 9**, “Case 2 Analysis”, contains 16 major themes or issues identified in the second case study. They are: a lack of a formal IS/IT investment evaluation methodology and a lack of understanding of the evaluation approach used, the use of a formal benefits realisation methodology and a good understanding of benefits management practices, the use of an informal IS/IT investment evaluation process and a focus on quantitative IS/IT investment evaluation measures, conflicting motivations for outsourcing and different perceptions of success of the contracts by stakeholders, better control over the IS/IT skill shortage within the organisation, an embedded contract mentality, lack of user involvement/participation in contract development, conflict between motivation of outsourcing and criteria for determining the success of the outsourcing contracts, general lack of commitment by contractors, restrictive government guidelines, rigorous benefits realisation process, and the ability to manage the outsourcing contracts without external influence and assistance.

**Chapter 10**, “Research Findings and Discussion”, discusses and presents the main research findings. An IS/IT investment evaluation and benefits realisation processes framework is constructed and considered based on the outcomes and findings from the survey and case studies.

**Chapter 11**, “Conclusion”, is the second last chapter. Conclusions from this research are drawn to answer the two research objectives and limitations of the research acknowledged. This is followed by some recommendations for future research.

In addition, all literature referenced (almost 400 references) in this thesis is included in the “**References**” section. This is followed by ten appendices.

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# Chapter 2

## Literature Review & Significance of Research

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### 2.1. Introduction

Information systems / information technology (hereafter referred to as IS/IT) now represents substantial financial investment for many organisations (Willcocks, 1992a; 1996). Information systems and technology managers have found it increasingly difficult to justify rising IS/IT expenditures (Silk, 1990; Willcocks, 1994). They are often under immense pressure to find ways to measure the contribution of their investments to business performance, as well as to find reliable ways to ensure that the business benefits from the investments are actually realised (Malitoris, 1990; Singh, 1993). This problem has become more complex because the nature of IS/IT investments and the benefits they can deliver have evolved over time and have changed rapidly (Alsen and van der Linde, 1994; Willcocks, 1992a). Furthermore, the evaluation of these investments is a complex tangle of financial, organisational, social, procedural and technical threads, many of which are currently either avoided or dealt with ineffectively by organisations (Mirtidis and Serafeimidis, 1994), particularly by those with IS/IT responsibilities (Pervan, 1998).

In this chapter, the researcher will attempt to show what is IS/IT investment evaluation and benefits realisation, discuss some of the problems and challenges in this area, review some of the better known approaches to this problem, acknowledge some of the leading authors in the area, discuss the importance of a stage model of evolution and IS/IT outsourcing in the context of IS/IT investment evaluation and

benefits realisation, and conclude with a summary of the current status of the field and the significance of this research.

## **2.2. What Is IS/IT Evaluation?**

With increasing levels of IS/IT investments and the growing significance of information systems within organisations, IS/IT investment evaluation is becoming widely recognised as a very important activity (Serafeimidis and Smithson, 1994; Mirtidis and Serafeimidis, 1994). According to Keen (1995), information technology (IT) has “become the generally accepted umbrella term for a rapidly expanding range of equipment, applications, services, and basic technologies.” Keen (1995) groups it into three primary categories: computers, telecommunications, and multimedia, with literally hundreds of subcategories. Katz (1993) has suggested that information technology (IT) is an “umbrella term that includes the integrated user-machine systems for providing information to support the operation, management, analysis and decision-making functions in an organisation.” Weill (1990) and Weill and Olson (1989) define IT as a collection of “all computers, communications, software, networks and all the associated expenses, including people dedicated to the management or operation of the IT.” Thachenkary (1991) defines IT in a more comprehensive manner: (a) office, computing, and accounting machinery; (b) communications equipment; (c) instruments; and (d) photocopy and related equipment. Willcocks (1994) defines information technology (IT) as a collection of “computers, telecommunications, and electronics and the resulting technologies.” Willcocks and Lester (1996a) define IT as “the hardware, software and communications technologies - essentially equipment - and attendant techniques” while IS is defined as “how designed information flows attempt to meet the information needs of the organisation.”

On the other hand, investments are commitments of resources, made with the purpose of realising benefits which will occur over a reasonably long time in the future (Deitz, 1994). Therefore, an investment in information technology (IT) may be referred to as any acquisition of software or hardware which is expected to expand or increase the business benefits of an organisation’s information systems (IS) and render long-term benefits (Apostolopoulos and Pramataris, 1997).

Evaluation is often considered as a process to diagnose malfunctions and to suggest appropriate planning and treatment by providing feedback information and contributing to organisational planning (Hawgood and Land, 1988 in Mirtidis and Serafeimidis, 1994). It is generally aimed at the identification and quantification of costs and benefits (Symons, 1994). Taking a management perspective, evaluation is about establishing by quantitative and/or qualitative means the worth of IS to the organisation (Willcocks and Lester, 1996a). According to Remenyi et al. (1997:46), evaluation is a “series of activities incorporating understanding, measurement and assessment. It is either a conscious or tacit process which aims to establish the value of or the contribution made by a particular situation. It can also relate to the determination of the worth of an object.” The definition of Remenyi et al. (1997) was further broken down by Serafeimidis (2000) into a number of elements: (a) purpose/reasons (why?); (b) the subject (what?); (c) criteria/measurement (which aspects?); (d) time frame (when?); (e) people (who?); and (f) methodologies/tool (how?).

Symons and Walsham (1988) pointed out that the primary function of evaluation is to contribute to the rationalisation of decision making. Farbey et al. (1999) take a further step by defining IT evaluation as “a process, or group of parallel processes, which take place at different points in time or continuously, for searching and for making explicit, quantitatively or qualitatively, all the impacts of an IT project and the program and strategy of which it is a part.”

By combining the definitions of investment in IT and evaluation mentioned above one can define IT investment evaluation as *the weighing up process to rationally assess, quantitatively or qualitatively, the value of any acquisition of software or hardware which is expected to improve business value of an organisation's information systems.*

### **2.3. IS/IT Investment Evaluation: An Introduction**

According to Symons and Walsham (1988), the potential use of IS/IT as a competitive weapon has become a popular slogan. However, there is still a lack of

understanding of the impact of a proper IS/IT investment evaluation and benefits realisation process (A.T. Kearney, 1990; Symons and Walsham, 1988). In consequence, the capacity of many organisations to assimilate and apply IS/IT falls far behind the available opportunities (Symons and Walsham, 1988). Therefore, it is not difficult to see that the measurement of the business value of IS/IT investment has been the subject of considerable debate by many academics and practitioners (Mitra and Chaya, 1996; van Grembergen and van Bruggen, 1998; Willcocks, 1994). The difficulties in measuring benefits and costs are often the cause for uncertainty about the expected benefits of IS/IT investments and hence are the major constraints to IS/IT investments (Enzweiler, 1996; Moad, 1994). Organisations seeking value for money in IS/IT investments have spent a lot of energy, time and money that has largely gone to waste (Simms, 1997). Therefore, evaluation is often ignored or carried out inefficiently or ineffectively because of its elusive and complex nature (A.T. Kearney, 1990; Serafeimidis and Smithson, 1996).

Recently, gaining business value from, and justifying current investment in information technology are often identified as the most critical but difficult management issues in Australia, UK and the US (Broadbent et al., 1994; Pervan, 1997). According to Baker and Berenblum (1996), investment in IS/IT is one of the major factors determining the success or failure of organisations. As a result, organisations are becoming increasingly competitive in seeking to implement IS/IT effectively (Baker and Berenblum, 1996; Dober, 1994a).

In order to remain competitive, IS/IT outsourcing has often been used as a response to reduce the cost of future IS/IT investments and seen as an opportunity to improve the bottom-line of the organisations (Willcocks et al., 1996a). According to the research by Ernst and Young (Sinton, 1994), over 80% of all Australian organisations had outsourced at least some of their IS/IT functions. The part played by IS/IT outsourcing in IS/IT investment evaluation and benefits realisation and its importance will be further elaborated later in this chapter.

## **2.4. Productivity Paradox**

However, recent research also indicates that IS/IT managers may not be paying as

much attention to the measurement of organisation's IS/IT investment as their CEOs (Pervan, 1998), resulting in difficulties in explaining the "productivity paradox" within their organisations. As mentioned earlier, information systems and information technology are often costly to purchase, set up and maintain. Therefore, it is natural to suppose that these investments offer economic value and that this value overcomes the costs (Munshi, 1996). However, according to Hochstrasser and Griffiths (1991) and Serle (1994), organisations often report that large-scale IS/IT deployment has resulted in replacing old problems with new problems, and that, overall, introducing IS/IT can be a huge disappointment since unexpected difficulties and failures are regularly encountered and expected business benefits are frequently not realised.

To add to this difficulty, the determination of IS/IT investment and returns is also problematic because of the lack of consensus in defining and measuring such investment (Mahmood and Mann, 1993; Lyon and Mooney, 1994). While organisations continue to invest heavily in IS/IT, research studies and practitioner surveys report contradictory findings on the effect of the expenditures on organisational productivity (Grover et al., 1998b). Therefore, it is not surprising to see that the term "productivity paradox" is gaining increasing notoriety as several studies point toward fairly static productivity and rising IS/IT expenditure (Attwell, 1996; Cavell, 1997; Hochstrasser, 1993).

This is the notion that despite large investments in IS/IT over many years, it has been difficult to determine where the IS/IT benefits have actually occurred, if indeed there have been any (Jurison, 1997; Willcocks and Lester, 1997). On one hand, studies conducted by many researchers around the world such as A.T. Kearney (1990), Kobler Unit (1987), Strassmann (1997), and Thachenkary (1991) have suggested that IS/IT investment produces negligible benefits. On the other hand, studies conducted by other researchers such as Bender (1986), Brynjolfsson and Hitt (1998), Lee and Barua (1999), and Lubbe et al. (1995) have disagreed, reporting that there appears to be some sort of positive relationship between organisations' performance and IS/IT spending. In summary, it is possible that the results of these studies indicate that the relationship between IS/IT investment spending and benefits is unclear and confounded by methodological problems as well as intervening variables (Grover et

al., 1998b). There is also some evidence that suggests the relevance of system measure varies by system type (Klein, 1997).

Some researchers such as Brynjolfsson (1993), Hitt and Brynjolfsson (1996), Smyrk (1994), and Rai et al. (1997) take the position that the confusion about IS/IT benefits is due to mismeasurement of outputs and inputs (inappropriate units of analysis), the difficulty of establishing the overall value of IS/IT, the choice of inappropriate methods of evaluation, lags in learning and adjustments, redistribution (IS/IT may be beneficial to individual firms but unproductive from the standpoint of the industry), confusion about terms such as expenses and revenue, and dissipation of profits, mismanagement by developers and users of IS/IT, and lack of effective IS/IT evaluation and benefits realisation management practices.

Lillrank et al. (1998) and van Nievelt (1993) have explained the phenomenon of the “productivity paradox” from different angles. Lillrank et al. (1998) explained the phenomenon through Porter’s (1980) competitive advantage theory. According to Lillrank et al. (1998), any advantage a firm achieves by innovative use of IS/IT will lead to a monopolistic advantage only for the very brief interlude until other competitors have caught up. Competitive advantage will not last long and fierce competition will soon wipe out the excess profits earned by new technology (Lillrank et al., 1998). van Nievelt (1993) and Remenyi (1996) found that customer satisfaction relative to all leading competitor’s performances was the key variable in helping to diagnose IS/IT contribution. However, many organisations did not direct their IS/IT expenditure into appropriate areas at the right time, partly because of an inability to carry out evaluation of where they were with their IS/IT expenditure and performance relative to business needs in a particular competitive and market context (van Nievelt, 1993). According to van Nievelt (1993) and Remenyi (1996), when customer satisfaction is low, the IS/IT effect is rather negative. It is only when customer satisfaction is high, that higher IS/IT expenditure becomes correlated with improved economic performance of the organisation (van Nievelt, 1993; Remenyi, 1996).

A study by Mukhopadhyay et al. (1997) have found that new IS/IT has substantial impact on the efficiency of processing complex transactions but no impact on simple



transactions. According to Mukhopadhyay et al. (1997), complex transactions can be assisted greatly by the new system and are expected to take less time to process after IS/IT deployment. Li and Ye (1999) have reported that IS/IT investment appears to have a stronger positive impact on financial performance when there are greater environmental changes, more proactive company strategy, and closer CEO/CIO ties. Prattipati and Mensah (1997) have concluded that high productivity organisations have hired new CIOs more recently than low productivity organisations, as new CIOs tend to have better understanding of new challenges and opportunities in the deployment of IS/IT.

Hayashi (1997) suggests that, at least on a macroeconomic level, the productivity paradox does not really exist. According to Hayashi (1997), the present state of the US economy which has been enjoying an almost unprecedented period of low unemployment, manageable inflation, strong growth in corporate profits and real wage increases has proved that there is a positive link between IS/IT investment and productivity. Dewan and Kraemer (1998) seem to agree with this point of view in their study of 17 developed countries over the period 1985-1992. According to their analysis, these developed countries are receiving a positive and significant return on their IS/IT investments. According to Dewan and Kraemer (1998), a potential explanation is that the estimated returns from IS/IT investments reflect other changes in the economies of developed countries that are complementary to IS/IT investments, such as infrastructure and informatisation of business processes. In other words, the positive returns are not only due to increases in IS/IT capital per worker, but also reflect simultaneous changes in education, infrastructure and other factors that complement labour and make it more productive (Dewan and Kraemer, 1998).

On the other hand, Davern and Kauffman (2000) argue that one of the difficulties in justifying and evaluating IS/IT investments is dealing with the spectrum of things that are likely to influence the value that can be appropriated by the firm once an application or infrastructure is built and implemented. For instance, one IS/IT investment project may have multiple loci of value nested within different levels of analysis from the market down to individual users of the system (Davern and Kauffman, 2000). In order to calculate the potential and realised value, a summation

of the value potential and realised value across the different loci to assess the full potential of a project is required (Davern and Kauffman, 2000). For example, a new inventory system may offer potential and realised value through lowering inventory levels for the production department as well as reducing costs for sales department, and may simultaneously have negative potential and realised value through increased opportunity cost of sales. According to Davern and Kauffman (2000), the locus of potential and realised value occurs where the opportunity to obtain returns from IS/IT investments exists for an organisation. This can happen at the level of the organisation, the business process, the individual departments, the individual user, or the marketplace. However, almost all of the IS/IT investment evaluation studies were measured at various levels of analysis instead of across multiple levels of analysis. This may also be one of the reasons for the “productivity paradox.”

Lee (2000) also offers a possible answer to the productivity paradox. Lee (2000) argues that measures which were used in IS/IT productivity studies can be categorised as: (1) measures that are not directly related to IS/IT investment, but perceived as such; (2) measures that are directly related to IT investment; and (3) measures that are related to customer satisfaction. According to Lee (2000), these measures can be considered equivalent to the following three categories of value of the information proposed by Ahituv and Neumann (1990):

- (1) Perceived value of information – it is possible that after millions of dollars are invested in a piece of hardware the organisation has still not achieved the goal of expanding market share, probably because this piece of hardware has become a competitive necessity that is required for survival. However, Lee (2000) suggests that there is no paradox in IS/IT productivity in this case because the method used to measure the outcome of IS/IT investment is based on perceived value of the information system.
- (2) Normative value of the information – this is where one has the clear idea on the pay-off function resulting from implementing the information system even before the actual implementation. Thus in terms of IS/IT investment on very-well structured-domain, there is no productivity paradox since they are using normative value of the information system before and after the implementation. For example,

some IS researchers report that the manufacturing sector is usually showing more concrete evidence of positive benefit than the service sector. This is due to the fact that the information systems that are used in the manufacturing sector are mostly based on a well-structured domain.

- (3) Realistic value of the information – the value to customers is the real value of information system investment even if it may not be real value to the organisation itself. The impact of the benefit may not be quantifiable but it is real. Therefore, one can conclude that there is no IS/IT productivity paradox if one applies the realistic value of the information system in measuring the outcome of IS/IT investment.

Similarly, Kauffman and Weill (1989 in Sriram et al., 1997) have found that heavy use of *transactional IS/IT* investments was significantly associated with financial performance, whereas heavy use of *strategic IS/IT* was neutral in the long term and was associated with poor performance in the short term. *Informational IS/IT* investments were not found to be significantly associated with financial performance. This has led Kauffman and Weill's (1989 in Sriram et al., 1997) suggestion that studies of IS/IT performance have often failed to explain how and why IS/IT creates leverage and hence has resulted in the "productivity paradox."

Finally, Chan (2000) has argued that the productivity paradox could be partly caused by the fact that much of the IS/IT investment evaluation and benefits realisation research use soft measures emphasising objective numeric assessments, and vice versa. For example, although some researchers do use both quantitative and qualitative measures, many others do not and appear to be unreceptive to certain research methods and measures (Chan, 2000).

This is not helped by the fact that most of the research carried out until now has been aimed at the organisation level or with a single number assessment (e.g. ROI or NPV) because an organisation is a complex system, when one factor is changed, meaningful assessment may need to go beyond immediate, isolated outcomes, to encompass long-term system changes as well (Schein, 1980 in Chan (2000)). A more complete assessment of IS/IT investments which involves several levels of analysis

(individual and group) and several sets of measurements might give a better indication of organisational performance (Schein, 1980 in Chan (2000)). In other words, the value of IS/IT investment may not be fully understood without incorporating, at some point, qualitative, individual, and group level measures (Chan, 2000).

This debate is still on-going. Given the financial stakes involved, determining the impact of IS/IT investments on performance and organisational processes has been and will continue to be an important research concern for both practitioners and academics (Sriram et al., 1997).

## **2.5. Recent Research**

Despite the fact that a number of studies have found contradictory evidence as to whether the benefits have materialised from IS/IT (Hitt and Brynjolfsson, 1996; King, 1996; Remenyi et al., 1997), organisations continue to invest large amounts of money in IS/IT equipment and related technologies (Dier and Mooney, 1994; Willcocks, 1994). In recent years, many senior managers have come to realise that it is increasingly difficult to justify the costs surrounding the purchase, development and use of IS/IT (Clemons, 1991; Weill and Olson, 1989). In fact, according to Hochstrasser and Griffiths (1991), it has become evident that only very few organisations consistently state that IS/IT is indeed value for money. Many desperate attempts have been made by senior managers to control and measure the expenditure on IS/IT investments in order to improve the productivity or profitability (Moad, 1994; Willcocks, 1989). However, some practitioners argue that the record on measuring, choosing and controlling IS/IT investments by the senior managers has still not been impressive (Farbey et al., 1992; Ward et al., 1996; Willcocks, 1994). The history of numerous failed and disappointing IS/IT investments in organisations has been widely documented (Elliot and Melhuish, 1995; Willcocks and Lester, 1997). This has been the case for both private and public sector organisations (Willcocks, 1992a). IS/IT investments, it seems, are often justified by faith alone (Dos Santos, 1991; Willcocks, 1994). Such investments are often difficult to assess and the difficulties are both conceptual (what should be included in the evaluation) and functional (how the evaluation should be carried out) (Apostolopoulos and

Pramataris, 1997; Serafeimidis and Smithson, 1996).

Although most organisations realise that they could significantly improve their current approach to managing IS/IT benefits, very few organisations have a complete or comprehensive management process to ensure that the proposed benefits from IS/IT investments are actually realised (Katz, 1993; Ward et al., 1996). In fact, studies carried out by Hochstrasser and Griffith (1991) and Willcocks and Lester (1993) have shown that only 16% of managers have relied on rigorous methods to calculate and measure the benefits of investments in IS/IT and over a quarter of managers did not know whether or not IS/IT was producing better or worse returns than other investments. Other studies carried out by Baker and Berenblum (1996), Ballantine and Stray (1998), and Ward et al. (1996) have indicated that very few evaluation techniques were used to justify investments, with only around 50% of organisations having at least some kind of a formal justification procedure.

As mentioned previously, the seeming lack of a commitment from organisations to applying good criteria and methodologies for evaluating and measuring the benefits of IS/IT investments does not preclude senior managers from pouring a large amount of money into IS/IT projects each year (Frenzel, 1992; Moad, 1991). Up to 93% of organisation directors have reported that IS/IT costs appear to be out of control (Sequent, 1990 in Dier and Mooney, 1994). Therefore, IS/IT costs are often a major cause of concern within most organisations (Dier and Mooney, 1994; van Nieveldt, 1993).

Globally, it has been estimated that computer and telecommunications investments now amount to half or more of most large organisations' annual capital expenditures (Willcocks and Lester, 1997). Gartner estimates the worldwide IT services market in 2001 to be around US\$700 billion (Stone, 2001). The expenditure on IS/IT investments by UK and US organisations is also large and rising. According to Willcocks (1992a), UK organisation expenditure on IS/IT exceeded a total of £10 billion per year, equivalent to an average of 1.2% annual turnover. By 1996 UK organisation expenditure on information technology was estimated as exceeding £33 billion per year, equivalent to an average of over 2% of annual turnover (Willcocks and Lester, 1996a). Price Waterhouse's UK Government IT Survey 1997 indicates

that while three-quarters of government departments expect budgets to decrease or stay static, the average overall level of IS/IT spending for these departments still accounts for at least 10% of their total departmental costs (Walker, 1997). The average IS/IT budget rose by 9% in financial year 1994/95 (Price Waterhouse, 1995). The recent Computers in Manufacturing Survey (Bowman, 1996 in Irani et al., 1997) has reported an 8% rise in UK corporate IS/IT expenditure in the manufacturing sector during 1996.

In the US, investment in IS/IT equipment grew from \$55 billion to \$90 billion in the 1980s, representing an annual growth rate of almost 15% (Willcocks, 1992a; Willcocks and Lester 1991). It was estimated by International Data Corp that expenditures on IS/IT increased at an average rate of 18% per year through most of the 1980s and the US firms were spending more than one-third of their total durable equipment budgets on IS/IT (Bryan, 1990). According to Keen (1991 in Willcocks, 1992a), the expenditure on computers and telecommunications now amounts to at least half of the annual capital expenditures of most large firms in the US. According to a study by Deloitte and Touche Consulting Group (in Sibley, 1997), IS/IT spending accounted for 2.6% of the US corporate revenue in 1996, as opposed to 1.4% in 1995. Similarly, Datamation (1996 in Irani et al., 1997) has reported an average IS budget rise of 6.2% in the US corporations during 1996.

In Australia, the Federal Government announced that, starting in 1998, it would commit \$1.2 billion over five years to boost the effective use of IS/IT in business and investment industry (Mitchell, 1998).

However, Dhillon and Backhouse (1996) and Willcocks (1992a) have pointed out that, amid all these IS/IT expenditure increases, several research studies have suggested that at least 20% of the IS/IT expenditure is wasted, and that between 30-40% of IS/IT projects realise no net benefits. Investigation into the benefits of IS/IT projects have regularly shown that, 60% of the time, IS/IT projects are either discontinued or provide benefits at levels well below those expected (Hochstrasser, 1993). Around 70% of all IS/IT investment is claimed to give no adequate return on investment (Hochstrasser and Griffiths, 1990 in Renkema, 1998). Other studies have reported that 75% of large-scale systems do not function as intended or are not used

(McGunagle, 1995). Furthermore, only 1.8% of software is used as delivered (McGunagle, 1995).

| Issues  | References  |
|---|---|
| IS/IT investment is difficult to measure and justify.   | Malitoris (1990), Singh (1993), Weill and Olson (1989)  |
| There is a lack of consensus in defining and measuring IS/IT investment.  | Mahmood and Mann (1993), Mitra and Chaya (1996), Lyon and Mooney (1994), Willcocks (1994)                                       |
| Productivity paradox – many studies found contradictory evidence as to whether benefits have materialised from IS/IT investment.  | Attwell (1996), Hitt and Brynjolfsson (1996), Hochstrasser (1993)   |
| Record on measuring, choosing and controlling IS/IT investment by organisations have not been impressive. (For example, a report indicated 30%-40% of IS/IT investments realise no net benefits.) | Dhillon and Backhouse (1996), Farbey et al. (1992), Hochstrasser (1993), McGunagle (1995), Ward et al. (1996), Willcocks (1994) |
| Organisations' annual IS/IT expenditure has been large and rising. (For example, global IS/IT expenditure in 2001 was estimated to be US\$700 billion.)   | Mitchell (1998), Price Waterhouse (1995), Stone (2001), Walker (1997), Willcocks (1992a), Willcocks and Lester (1997)           |

Table 2.1: Key issues on IS/IT investment evaluation

All the recent studies and research have pointed to a rising trend for IS/IT investment expenditure. In order to exert bottom line control over their spending in IS/IT, many organisations have made futile attempts to justify their investments (Simms, 1997). Therefore, not only it is important for organisations to direct their IS/IT expenditure into the areas which have closely aligned with the organisations' business directions at the right time, but also to understand and improve the evaluation and benefits realisation techniques and processes for their IS/IT investments (Willcocks, 1992a; Willcocks and Lester, 1997). Table 2.1 above summarises the key issues on IS/IT

investment evaluation.

## **2.6. Objectives, Criteria, Reasons and Role of IS/IT Evaluation**

### **Objectives**

IS/IT investment evaluation can serve a range of different purposes or objectives (e.g. summative, formative, political) (Serafeimidis, 2002). A review of the relevant literature reveals a number of different objectives for IS/IT investment evaluation:

- (1) It may be used as part of the process of justification for a project (Farbey et al., 1992; Willcocks and Lester, 1996a).
- (2) It enables an organisation to make comparisons of the merit of a number of different investment projects competing for limited resources (King and McAulay, 1997).
- (3) It provides a set of measures which enable the organisation to exert control over the investment (Farbey et al., 1992).
- (4) It serves as a learning device which is necessary if the organisation is to improve its system evaluation and system building capability (Katz, 1993; Willcocks and Lester, 1996a).
- (5) It helps to ensure that systems will continue to perform well by selecting the best alternative in the beginning of the project (Ballantine et al., 1996).
- (6) It supports the IS/IT broader business objectives and provides for future business expansions (Apostolopoulos and Pramataris, 1997; Ballantine and Stray, 1998).
- (7) It enables the organisations to gain competitive advantage, to develop new business, to improve productivity and performance, as well as to provide new ways of managing and organising (Earl, 1989 in Mirtidis and Serafeimidis, 1994).

The above-mentioned objectives can be used as the criteria and objectives for a balanced scorecard approach which will be discussed later in this chapter. In addition, these objectives can also be incorporated into the framework which will be developed in Chapter 10.



## **Criteria**

The most common points for IS/IT investment evaluation are related to the feasibility and the post-implementation stages (Serafeimidis, 2002). However, an organisation can evaluate an IS/IT project at any stage in its development and implementation process when:

- (1) Strategy is being developed.
- (2) A specific project has been defined.
- (3) The project is in the development stage.
- (4) The project has reached the point of “sign off” i.e. when the responsibility is being transferred from the IS/IT department to the user department.
- (5) The project has just been implemented.
- (6) The project has been in operation for some time.
- (7) The project is nearing the end of its life and the feasibility of replacement options is being investigated.

(Farbey et al., 1992)

## **Reasons**

Any evaluation involves the measurement of certain variables and the comparison of these measurements against certain criteria (Serafeimidis, 2002). These could be technical measures (e.g. response time), financial measures (e.g. costs), measures of system or information quality, user satisfaction, or some other form of impact measurement (Serafeimidis, 2002). According to Bacon (1996), the criteria used in making the decision on IS/IT investments are vital and they are significant for a number of reasons:

- (1) The criteria used or not used, and the way in which they are applied or not applied, significantly impact the effectiveness with which IS/IT investment decisions are made. They determine whether the optimal projects are selected and the suboptimal rejected.
- (2) The criteria used by an organisation in deciding upon IS/IT investments tend to reflect the effectiveness with which IS/IT resources are being used, the degree to which senior management are involved, and the level of integration between corporate/business-unit strategy and systems strategy.

- (3) The criteria are significant for the organisation's finance and management accounting function, in terms of its role in optimising return on investment, and its involvement in the cost-benefit analysis that may precede an IS/IT capital investment decisions.
- (4) The criteria have significance in the balance that an organisation achieves in their use, particularly between financial and management criteria.

### **Roles**

Finally, a review of the literature reveals several organisational roles for IS/IT evaluation:

- (1) Acting as an input to IS/IT and business strategy formulation (Peters, 1994).
- (2) Understanding of social actions (Serafeimidis, 2002).
- (3) Acting as a process for gaining organisational commitment and legitimisation (Farbey, 1994).
- (4) Assisting organisational learning by acting as a feedback function (Galliers, 1991).
- (5) Establishing quantitative/qualitative value of IS/IT to the organisation (Willcocks, 1994);

## **2.7. Emerging Problems/Challenges**

There are many problems and challenges faced by organisations and their senior IS/IT managers in evaluating their IS/IT investments. For instance, evaluation and management efforts regularly run into difficulties of three generic types:

- (1) Many organisations find themselves in a catch-22 situation. For competitive reasons they cannot afford not to invest in IS/IT, but economically they cannot find sufficient justification, and evaluation practice cannot provide enough underpinning, for making the investment (Ring, 1991; Willcocks and Lester, 1997).
- (2) As IS/IT infrastructure becomes an inextricable part of the organisation's processes and structures, it becomes increasingly difficult to separate the impact of IS/IT from that of other assets and

activities (Carlson and McNurlin, 1992; LeSaint-Grant, 1992; Willcocks and Lester, 1997).

- (3) There is widespread lack of understanding of information requirements as well as IS/IT as a major capital asset, despite the high levels of expenditure (Ballantine et al., 1994; Willcocks and Lester, 1997).

Ballantine et al. (1996) identified a number of problems which are frequently encountered during evaluation practice. These include difficulty in identifying and subsequently quantifying relevant benefits and costs, and neglecting intangible benefits and costs. This seems to confirm the results by the study carried out by Willcocks (1992a; 1992b). These problems in IS/IT evaluation are usually complex and therefore can affect the determination of the expected IS/IT benefits. These problems are mentioned in the subsequent paragraphs.

First, the budgeting practice of many organisations often conceals full costs (Frenzel, 1992; Launders, 1997; Willcocks, 1992a). IS/IT costs are no longer equatable with the budget of the IS/IT department since there are many significant hidden costs such as maintenance and training costs (Compton, 1994; Willcocks, 1992a). For example, the amount spent on training alone in UK increased from £311 million in 1995 to £442 million in 1996 (Kelly, 1997). The biggest single cost of training is in the staff time needed to be released for training (Holtham, 1989). These costs are rarely fully budgeted for in IS/IT investment proposals (Holtham, 1989), and may partially explain the phenomenon of the cost-creep (cost-blowout) (Launders, 1997; Torr, 1997), that occurs over the course of most IS/IT projects. Most organisations simply accept project overruns as the inevitable norm (Harding, 1997). In addition, there may also be political reasons for understating costs, the main one being to gain support for, and acceptance of the project from senior managers (Willcocks, 1992a). For example, a report commissioned by Australian Federal Government had found that the costs of some defence projects were underestimated in order to get Government approval (Barton, 2002).

Second, the traditional financially oriented evaluation techniques such as return on investment (ROI), discounted cash flow/internal rate of return (DCF/IRR), net

present value (NPV), profitability index (PI), cost/benefit, payback period, and present worth can be problematic in measuring IS/IT investments (Irani et al., 1997; Kumar, 1998; Semich, 1994). The problems with these methods are that they largely exclude the significant problem of risk as well as costs and benefits that may be difficult to quantify (Brown, 1994; McBride and Fidler, 1994; Willcocks, 1989). Those benefits which are intangible or soft appear to be written off as unquantifiable and thus beyond any effective measurement technique (Bacon, 1994; Sutherland, 1994). Therefore, many researchers now regard the financially oriented appraisal techniques as an inappropriate tool for justifying investments in IS/IT (Aggarwal, 1991; Remenyi et al., 1997) since these methods are unable to capture many of the qualitative benefits that IS/IT brings (Ballantine et al., 1996; Dober, 1994b). Moreover, these techniques are not sufficient to warrant an investment decision (Gunasekaran et al., 2001). They focus only on the financial or technological aspects of the IS/IT systems and not on the hidden social subsystem or human-related costs and benefits (Ryan and Harrison, 2000). There are some, possibly the major, potential benefits such as greater job satisfaction, improved customer service, improved communication, and increased competitive advantage and responsiveness from IS/IT that are not measurable using traditional financially oriented evaluation techniques (Farbey et al., 1994; Langdoc, 1996; Noble, 1989). According to Whiting et al. (1996), overreliance on these traditional financially oriented evaluation methods may lead to an excessively conservative IS/IT portfolio and loss of competitiveness, and failure to perform rigorous investment appraisal may result in a highly ineffective use of resources.

These financially oriented techniques also do not assist the process of establishing how IS/IT adds net value to an organisation (Dos Santos, 1991; Irani et al., 1997; Willcocks, 1992a). Another major limitation mentioned in the literature is that these financially oriented techniques do not capture management's ability to alter the pace of investment, or to stop investment at some point if conditions are unfavourable (Kumar, 1996). However, there is no widely accepted methodology that is relevant in all cases (Serafeimidis and Smithson, 1994).

Third, many project managers overstate costs at the feasibility stage, with the express purpose of making sure that they can deliver within time and budget (Willcocks,

1992a). This can result in wasting precious organisational resources.

Fourth, working with new technology always introduces higher levels of risk, which in turn affect the timing, costs and delivery deadlines (Griffiths and Willcocks, 1994). According to Willcocks (1992a), there are two major areas of risk that are frequently downplayed in evaluating IS/IT proposals. The first risk is the additional costs where implementation may be less than smooth. The second risk is concerned with security exposure and systems break-down for the organisation. According to McFarlan (1981) and Willcocks and Margetts (1994), risk refers to exposure to such consequences as failure to obtain some or all of anticipated benefits due to implementation costs much higher than expected, technical systems performance significantly below the estimate, and incompatibility of the system with selected hardware and software. In addition, it is important to take into account the risk of computer systems security breach and costs of computer systems break-down for the organisation when evaluating IS/IT proposals (Dhillon and Backhouse, 1996; Willcocks and Margetts, 1994). The risk is quite significant since it can contribute to the rising IS/IT expenditure for the whole organisation (Dhillon and Backhouse, 1996; Birch and McEvoy, 1996). Surveys regularly report IS/IT introduction and usage as a high risk, hidden cost process (Griffiths and Willcocks, 1994). For example, a survey conducted in Europe found that computer systems downtime costs each user, on average, 3 weeks' work a year (Leung, 1997). However, the biggest risk of all, according to Ward and Murray (1997), is that the system will not deliver the desired benefits.

Fifth, many organisations have failed to devote sufficient or appropriate evaluation time and effort to IS/IT given that it represents a major capital asset in many organisations (Irani et al., 1997). According to Willcocks (1992a), senior management rarely know how much capital is tied up in IS/IT resources. Failure to appreciate the size and the presence of the time lag of the investment can readily lead to IS/IT investments being undermanaged (Jurison, 1994). Another major problem is that many organisations failed to appreciate the timing or timescale of the likely business benefits from IS/IT investments. Time horizons or time spans used for cash flow analysis by financially oriented techniques are typically set at three to five years whereas the IS/IT investment projects take several years to fully implement, so

benefits do not become financially apparent for two to three years, but may continue for up to ten years (Anonymous, 1998; Noble, 1989; Willcocks, 1992a). Keen (1991 in Willcocks, 1992a) suggests that infrastructure investments such as networks and telecommunications may need to be evaluated separately and funded by top management as a long-range capital investment in line with corporate policy requirements.

Finally, the lack of IS/IT planning and hence the failure to create a strategic climate in which IS/IT investment can be related to organisational direction can also lead to measurement problems during the IS/IT investments evaluation process (Scott Morton, 1996; Ring, 1991; Willcocks, 1992a). Organisations must have IS/IT planning and strategies to facilitate the management and control of their resources and investments (Gottschalk, 1999; Cerpa and Verner, 1998). According to Mirani and Lederer (1993) and Willcocks (1992b), the organisational investment climate and the alignment with stated organisational goals also have a key bearing on how investment is organised and conducted, and what priorities are assigned to different IS/IT investment proposals. Organisations should only invest in those IS/IT projects that can be shown to have clear links with the overall business strategy (Fitzgerald, 1998). According to a survey by Hinton and Kaye (1996), only one in four respondents attempt to establish whether an investment is in line with overall IS/IT strategy. Another survey conducted by Hochstrasser and Griffiths (1991) has found that 66% of organisations do not formulate an IS/IT strategy. A direct consequence of the lack of IS/IT strategies is that organisations are neither satisfied with the current procedures for implementing priorities (Ward, 1990 in Hochstrasser, 1993), nor with the management of IS/IT benefits (Remenyi et al., 1991 in Hochstrasser, 1993). Hochstrasser and Griffiths (1991) also found that whereas the presence of an IS/IT strategy does not automatically guarantee a problem-free process, the organisations with an IS/IT strategy in place suffer considerably fewer setbacks when implementing new IS/IT processes.

The table (Table 2.2) below summarises the key problems and challenges for IS/IT investment evaluation.

| Issues   | References  |
|--|---|
| the budgeting practice of many organisations often conceals full costs.  | Frenzel (1992),<br>Launders (1997),<br>Willcocks(1992a)   |
| the traditional financially oriented evaluation techniques can be problematic in measuring IS/IT investments.  | Irani et al. (1997),<br>Kumar (1998),<br>Semich (1994)    |
| many project managers overstate costs at the feasibility stage in order to deliver within time and budget.   | Willcocks (1992a)   |
| working with new technology always introduces higher levels of risk.   | Griffiths and<br>Willcocks (1994)                         |
| many organisations have failed to devote sufficient or appropriate evaluation time and effort to IS/IT.  | Irani et al. (1997)                                       |
| the lack of IS/IT planning and hence the failure to create a strategic climate in which IS/IT investment can be related to organisational direction can also lead to measurement problems. | Scott Morton (1996),<br>Ring (1991),<br>Willcocks (1992a) |

Table 2.2: Problems and challenges for IS/IT investment evaluation

## 2.8. A System's Life-Cycle Approach

There are several reasons why the value of IS/IT cannot be determined by a single measure. When IS/IT operations are measured as a profit centre or as a cost centre, significant differences arise and each has to show numbers tied to management's control (Carlson and McNurlin, 1992). The top executives are no longer content to evaluate their IS/IT investments in terms of business measures and productivity gains but also want to find out where value has arisen in many segments of the firm (Carlson and McNurlin, 1992). In these circumstances, where management wants broad measures, many IS/IT managers consider the high cost of measurement "not worth the effort," and therefore progress is slow (Carlson and McNurlin, 1992).

Therefore, according to Willcocks and Lester (1997), there is a need for a family of measures that cover technical and business performance of IT in an integrated

manner. Measures are needed that point to cost effectiveness and containment, as well as embrace additional key IT/business performance criteria (Willcocks and Lester, 1997). According to a study carried out by Tallon et al. (2000), organisations that make extensive use of IS/IT evaluation techniques or measures had higher perceived payoffs from IS/IT. A diagrammatic representation of Willcocks and Lester's (1997) integrated evaluation life-cycle approach is shown below (Figure 2.1).

According to Willcocks and Lester (1997), this evaluation life-cycle approach attempts to bring together the rich and diverse set of ideas, methods, and practices that are to be found in the evaluation literature to date, and point them in the direction of an integrated approach across systems' lifetime. The approach would consist of several interrelated activities:

- (3) Identifying IS/IT benefits and costs through strategic alignment and prioritisation.
- (4) Identifying types of generic benefit, and matching these to assessment techniques.
- (5) Developing the integrated measures based on financial, service, delivery, learning and technical criteria.
- (6) Linking these measures to particular measures needed for development, implementation and post-implementation phases.
- (7) Ensuring each set of measures run from the strategic to the operational level.
- (8) Establishing responsibility for tracking these measures, and regularly review results.
- (9) Regularly reviewing the existing IS/IT investment, and relating this to strategic business direction and performance objectives.

(Willcocks and Lester, 1997)



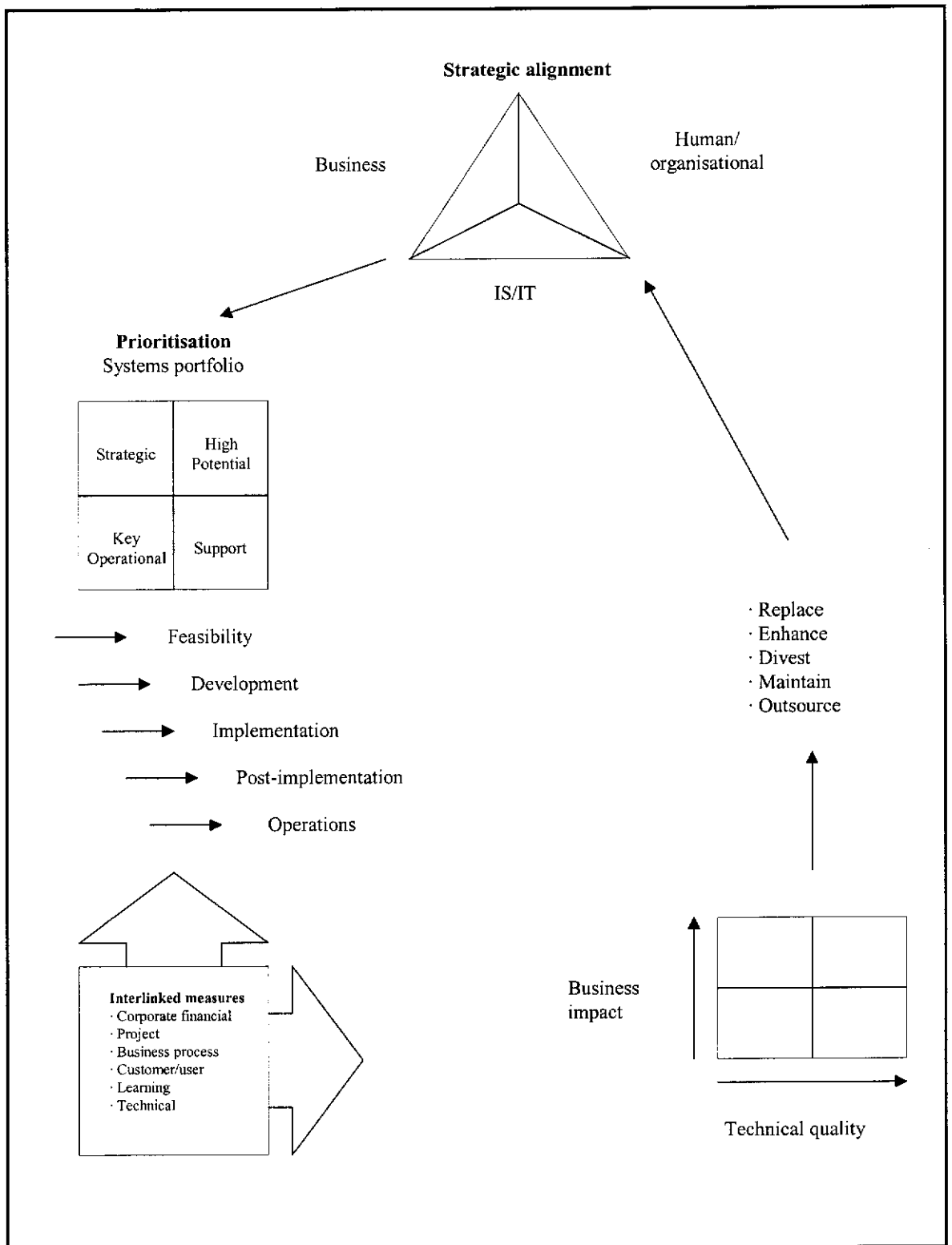


Figure 2.1 An integrated IS/IT investment evaluation life-cycle (Source: Willcocks and Lester, 1997)

Lyon and Mooney (1994) seem to have agreed, at least in part, with this type of life-cycle IS/IT investments evaluation strategy. They argue that organisations can make significantly worthwhile efforts at evaluating IS/IT investments when such efforts are carried out as part of the IS/IT planning process. Their “back to basics” approach presents a triangulation approach to IS/IT planning which is based around business need and business benefit, and is comprised of:

- (1) A review of current business procedures and the definition of desired business procedures and associated system requirements.
- (2) Post-design rationalisation of the detailed system requirements.
- (3) Management of the implementation of the new system and realisation of business benefits.

In addition, in order to make this integrated evaluation life-cycle work, it is important to involve the stakeholders in processes that operationalise the evaluation criteria and techniques. The managers can often stay in touch with relevant changes or pressures on their businesses by thinking about stakeholders, those individuals and groups whose success is bound up with the performance of the business (Hatten and Hatten, 1997). That is, to involve the stakeholders in processes that “breathe life into, adapt over time, and act upon” the evaluation criteria and techniques (Willcocks and Lester, 1997). According to Jurison (1996), the benefits that accrue to various stakeholders of a firm such as customers, suppliers, and employees have become more significant in recent years as IS/IT is no longer confined to an isolated area, but is permeating the whole value chain in modern business. The problems becomes how to tie stakeholders into supporting the implementation and subsequent operation of specific systems while achieving managerial objectives (Willcocks and Mark, 1989). This is an important issue for both researcher and practitioner for several reasons:

- (1) any IS/IT value analysis without an assessment of all relevant stakeholder benefits is incomplete and is likely to understate the full extent of the benefits.
- (2) business managers need information not only for measuring and evaluating IS/IT benefits, but more importantly, they need guidance on how to manage the investments and capture the benefits in the bottom line (Jurison, 1994).

Therefore, it is important to treat IS/IT payoff as a portfolio of benefits that are distributed across several stakeholder groups (Jurison, 1996). Bearing this mind, this integrated life-cycle approach by Willcocks and Lester (1997) is discussed in the subsequent paragraphs.

The first step in the Willcocks and Lester (1997) integrated evaluation lifecycle approach is to establish strategic alignment and linking business/organisational strategy with assessing the feasibility of any IS/IT investment. This should enable the organisations to plan for effective assessment and management of IT benefits (Jurison, 1994). However, there is much evidence to suggest that such alignment rarely exists in organisations (Bullard, 1994; Willcocks, 1992b).

There are several methodologies which help to link strategy and feasibility of the IS/IT investments. Some of these methodologies are briefly described below:

- (1) Return on Management (ROM) (Strassmann, 1990 in Willcocks et al., 1992): This is a measure of performance based on the added value to an organisation provided by management. The assumption is that in the modern organisation information costs are the costs of managing the enterprise. If ROM is calculated before and after IT is applied to an organisation, then the IT contribution to the business, which is so difficult to isolate using more traditional measures, can be assessed. ROM is calculated in several stages. First, using the organisation's financial results, the total value added is established. This is the difference between net revenues and payments to external suppliers. The contribution of capital is then separated from that of labour. Operating costs are then deducted from labour value added, to leave management value added. ROM is management value added divided by the costs of management. However, there are some problems with the method of obtaining this figure, and whether it really represents what IS/IT has contributed to business performance (Willcocks and Lester, 1994). For example, there are difficulties in distinguishing between management and operational information. Perhaps ROM is only a measure in some cases, and a fairly indirect one, of how

effectively management information is used (Willcocks and Lester, 1994).

- (2) SESAME (Willcocks et al., 1992): IBM developed this in order to provide a more flexible approach to cost/benefit analysis. Here the costs and benefits of an IT-based system are compared against an equivalent manual system. This method bases much of the assessment on user opinion, which may involve users more in the assessment process. However, user evaluation may not, in itself, be a sufficient benchmark of IT effectiveness (Willcocks and Lester, 1994). Moreover, the flexibility of the method is highly dependent on the analyst who will need considerable experience of dealing with complex and unstructured issues (Willcocks and Lester, 1994).
- (3) Matching Objectives, Projects and Techniques (Figure 2.2) (Butler Cox Foundation 1990 in Willcocks, 1992b): This method basically attempts to match the projects with the appropriate evaluation techniques.
- (4) Information Economics approach (Figure 2.3) (Parker et al., 1988 in Willcocks, 1992a; Wiseman, 1994): Here value is seen as a broader concept based on the effect IS/IT investment has on the business performance of the enterprise. It seeks to identify and measure or rank the economic impact of the changes in an organisation's performance brought about by the introduction of the new system. The first stage is building on traditional cost-benefit analysis with four additional techniques (value linking, value acceleration, value restructuring and innovation valuation) for establishing an enhanced return on investment calculation. It then enhances the cost-benefit analysis still further through business domain and technology domain assessments. This method is intended to cope with systems which provide benefits by improving the linkage and communication between departments or even between organisations. Although this approach implies a mechanistic appraisal, and contains a subjective basis for many of the scores, it does provide a useful checklist for assessing the wider impact of introducing systems, rather than focusing only on limited financial data (Moreton, 1999).

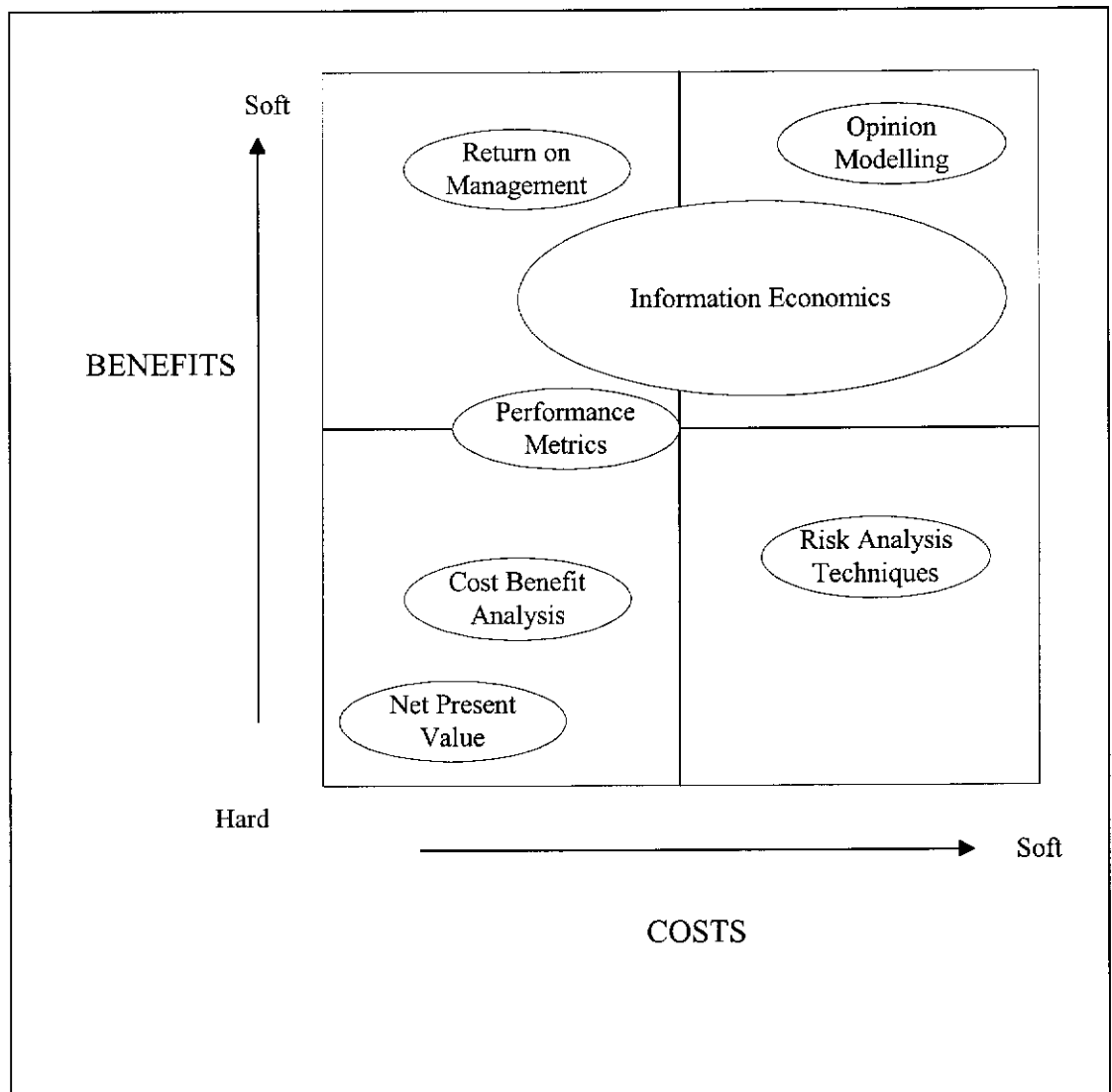


Figure 2.2: Matching projects to techniques (Source: Willcocks, 1992b)

- (5) Kobler Unit framework (Hochstrasser, 1994): The proposed framework consists of 4 modules. Each module corresponds to a stage in the evaluation process. First, evaluating a proposed project against a checklist of previously identified critical success factors. Second, ensuring that the appraisers have a clear grasp of the true costs of the proposed IS/IT system prior to evaluation of the investment. Third, identifying and specifying business performance indicators which can be used to evaluate the performance and benefits of the proposed IS/IT system. Fourth, comparing the relative merits of alternative IT systems. According to Whiting et al. (1996), the Kobler Unit framework is practical and can be implemented readily and it is easy

to see how it can be adapted to the specific requirements of a particular organisation. However, it does not take into account the stage in the system development cycle at which an appraisal is performed and its overcomplex classification of IT systems into 9 potentially overlapping areas is difficult to carry out (Whiting et al., 1996).

- (6) Multi-object, multi-criteria methods (Land, 1976 in Farbey et al., 1992): This method starts from the assumption that the value of a project can be measured in terms other than money. It allows decision makers to appraise the relative value of different outcomes in terms of their own preferences.
- (7) The Application Transfer Team (ATT) approach (Hogbin, 1984 in Whiting et al., 1996): This method helps in deciding how to invest successfully in IS/IT. A team is drawn from a wide range of relevant units within an organisation to undertake a study. The study first evaluates the business need for a proposed investment and proceeds to produce an implementation plan for the recommended IS/IT system. The method identifies three stages of cost justification: (1) concept – strategic issues are considered; (2) calculations – the high-level justifications are quantified as far as possible; and (3) control – this is concerned with monitoring costs and benefits during project implementation. According to Whiting et al. (1996), this method is relatively complex and time consuming and requires a high degree of commitment from a relatively large team of managers.
- (8) Value analysis (Melone and Wharton, 1984 in Farbey et al., 1992): It attempts to evaluate a wide range of benefits including intangible benefits. The method is based on the notion that it is more important to concentrate on value (added) than on cost saved.
- (9) Options theory (Dos Santos, 1991; 1994; Kumar, 1996): It attempts to give senior management a way to better estimate the value of infrastructure investments - investments required before applications can be built - and then track that value. The greatest value of the approach is not necessarily a project's value but the discussions about the project's investment. In addition, since time is an important

component of options theory, the further off the expiration of an option the more valuable it is.

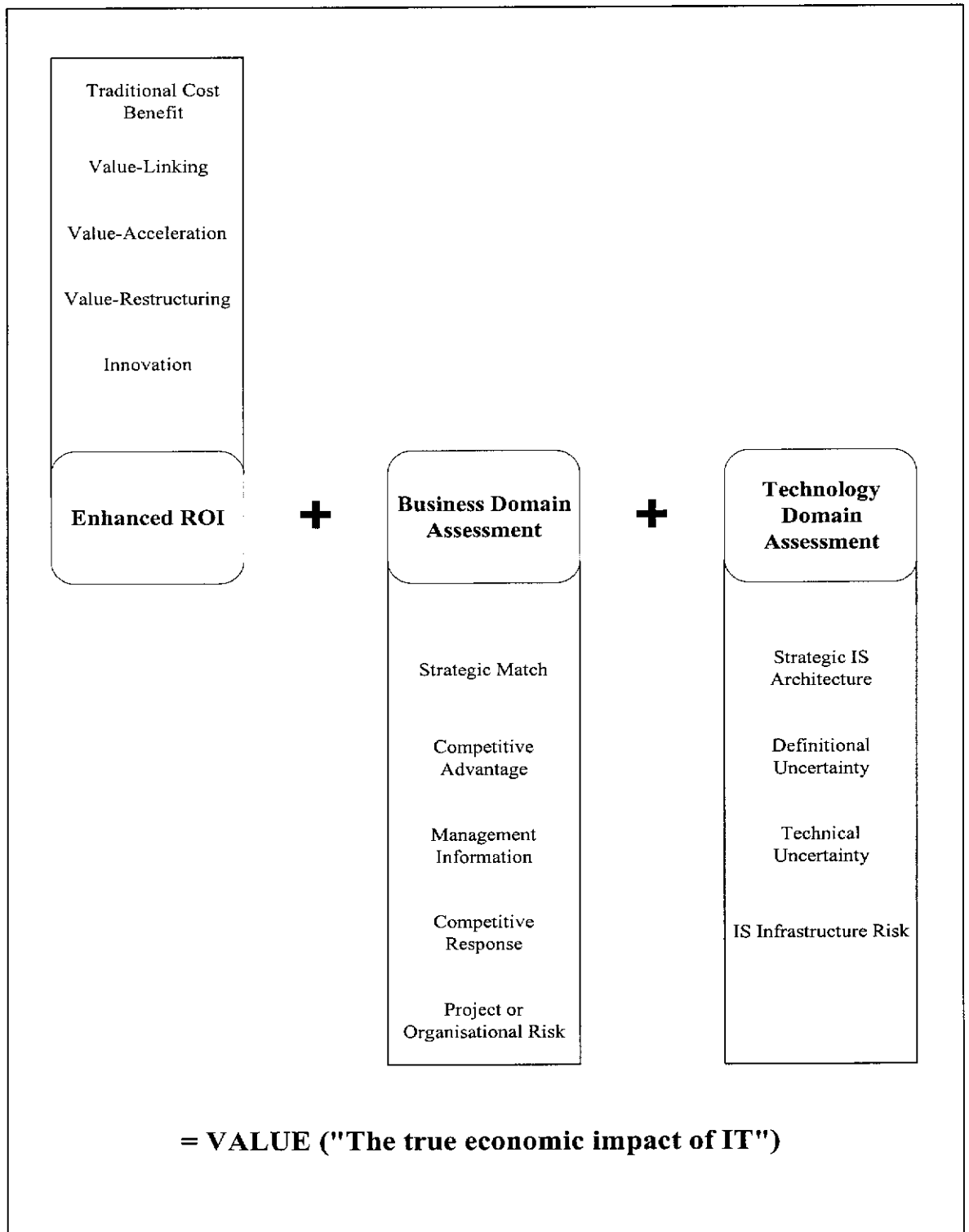


Figure 2.3: The information economics approach (Source: Willcocks, 1992b)

Having completed the selection of the IS/IT investments that will support business goals and which are aligned with the business objectives, these investments should then be prioritised (Anonymous, 1998; Iliff, 1994). The notion of a systems portfolio implies that IS/IT investment can have a variety of objectives. The practical problem becomes one of prioritisation - of resource allocation among the many objectives and projects that are put forward (Willcocks and Lester, 1996b). It is crucial here for senior management to target resources to the best and most productive IS/IT projects that will achieve the most benefits for the organisation (Bryan, 1990; Grover et al., 1998a). McFarlan's (1981 and 1984) strategic matrix (Figure 2.4) is a much-used and useful framework for focusing management attention on the ISIT evaluation question: "where does and will IS/IT give added value?" (Willcocks, 1992b).

The strategic matrix is useful for classifying systems which then demonstrate, through discussion, where IS/IT investment has been made and where it should be applied (Sutherland, 1994; Willcocks, 1992b). It reduces the potentially infinite options available to a reasonable, relevant number of alternatives (Ward, 1987). The objective of such a classification is also to determine the criticality of the relationship between the investment and business success and hence determine how the application should be managed, including how the investments will be appraised (Ward, 1993; 1994). Different types of IS/IT systems contribute more or less directly to an organisation's core business and techniques for investment appraisal need to vary in accordance with that directness (Whiting et al., 1996). According to Ward (1993; 1994), one should consider how the benefits arise in the different segments of the application portfolio. All classifications express a similar notion of the degree of distance from a direct contribution to current core business (Whiting et al., 1996). The different types of systems as categorised by the application portfolio or strategic nature are as follows:

- (1) Strategic systems - the benefits are the result of innovation and change in the conduct of business to gain a competitive edge.
- (2) Key operational systems - the benefits result from carrying out business processes more effectively overall, and normally result from rationalisation, integration or reorganisation of existing processes.
- (3) Support systems - the benefits mainly come from carrying out



business tasks more efficiently by removing them, or by automation to reduce the cost of carrying them out.

- (4) High potential systems - these systems do not actually deliver finished, operational systems and hence real benefits, and so these systems are dealt with as high risk IS/IT investment by treating them as R&D projects.

|  |   |
|--|---|
| <b>Strategic</b><br>applications critical to sustaining future business strategy               | <b>High Potential</b><br>applicaitons that may be important in achieving future success |
| <b>Key Operational</b><br>applications on which the organisation currently depends for success | <b>Support</b><br>applications that are valuable but not critical to success            |

Figure 2.4: McFarlan's strategic matrix (Adapted from: Johnson and Scholes, 1993; Ward, 1987)

One of the several methods which can be used to prioritise the IS/IT investments is IT investment mapping (Figure 2.5) (Peters, 1990). According to Peters (1994), one dimension of the map is benefits ranging from the more tangible (arising from productivity enhancing applications) to the less tangible (from business expansion applications), while another dimension is the orientation of the investment toward the business.

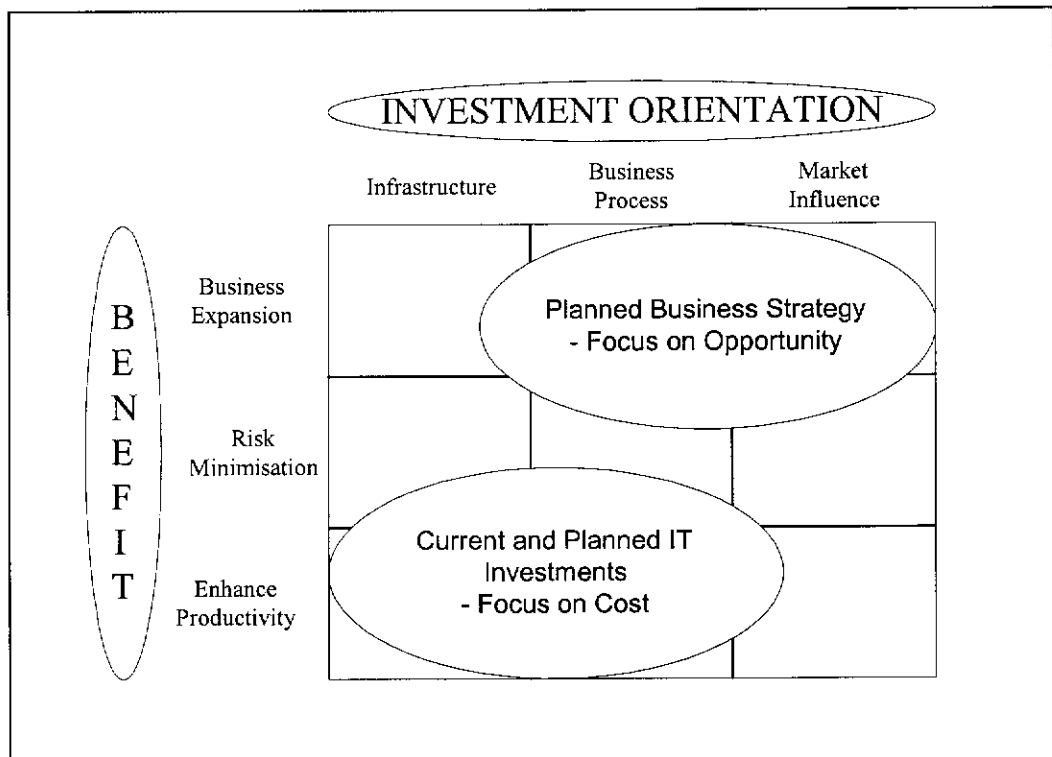


Figure 2.5: IT investment mapping (Source: Peters, 1990; 1994; 1996)

Strassmann (1997) suggests that the competency in managing fundamentally important administrative processes is the key to the management of IS/IT investments. Willcocks (1992a) states that one useful way forward on IS/IT benefits realisation is to match techniques to objectives and types of projects (Figure 2.6). A starting point is to allow business strategy and purpose to define the category of IS/IT investment. Butler Cox (1990 in Willcocks, 1992a) suggest five main purposes for IS/IT benefits realisation: (1) surviving and functioning as a business; (2) improving business performance by cost reduction/increasing sales; (3) achieving a competitive leap; (4) enabling the benefits of other IS/IT investments to be realised; and (5) being prepared to compete effectively in the future.

It is important, at this stage, to distinguish between the different types of IS/IT investments if appropriate evaluation criteria are to be applied when justifying projects (Moreton, 1999). According to Willcocks (1992a) and Willcocks and Lester (1994), the matching IS/IT investments can then be categorised into five main types: (1) mandatory investments (for example, accounting systems to permit reporting

within the organisation); (2) investments to improve performance (for example, laptop computers for sales people, partly with the aim of increasing sales); (3) competitive edge investment (for example, the American Airlines' airline reservation system); (4) infrastructure investment (this would give organisations several more degrees of freedom for manoeuvring in the future); and (5) research investments (for example, CASE tools). Hochstrasser (1990), on the other hand, provides different categories: (1) infrastructure; (2) cost replacement (for example, automating manual activities); (3) economy of scope (for example, a relational database performing an extended range of tasks); (4) customer support; (5) quality support; (6) information sharing and manipulation; and (7) new technology (for example, smart cards and home banking). However, Fitzgerald (1998) has suggested that there are really only two types IS/IT projects, efficiency and effectiveness projects.

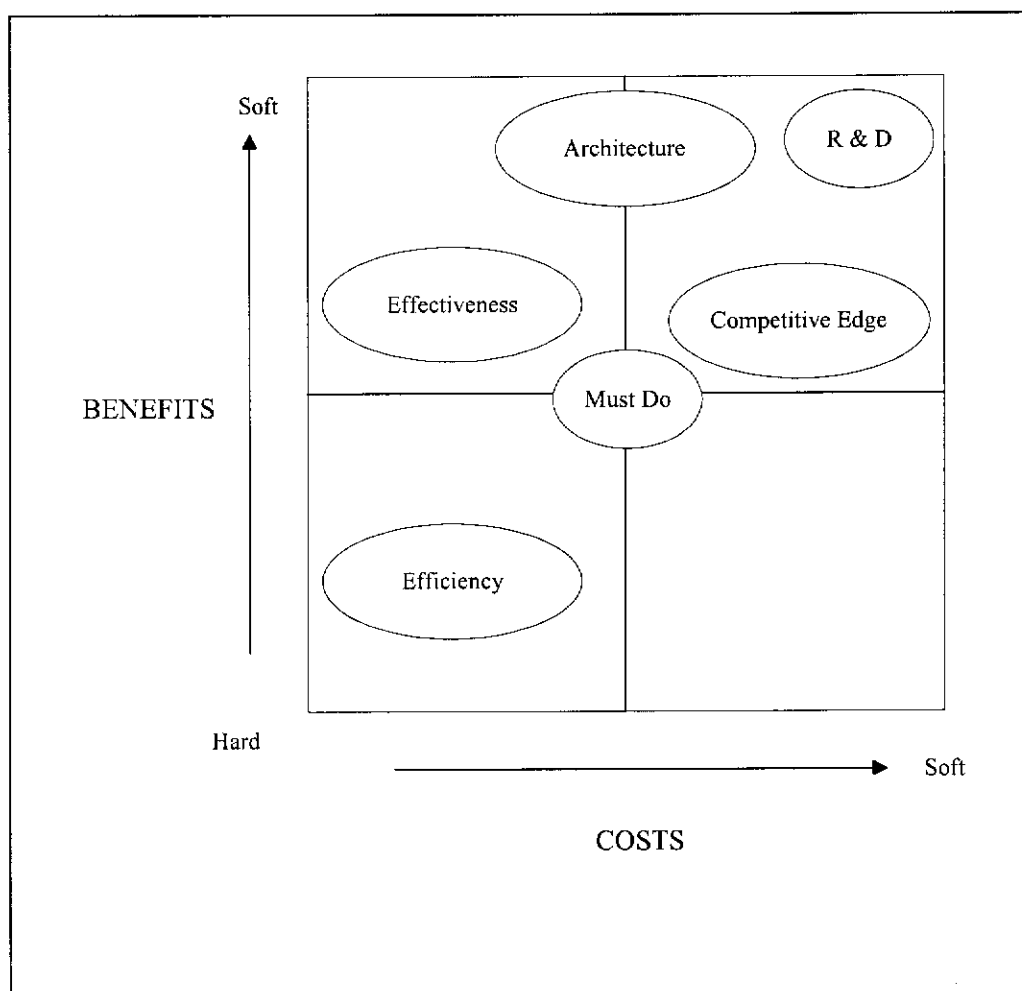


Figure 2.6: Classifying IS/IT projects (Source: Willcocks, 1992b)

There are others who argue that the evaluation method should vary according to circumstances (Berghout, 1997; Farbey et al., 1992; Katz, 1993). Farbey et al. (1992) suggest that a good way of evaluating a project is to match a project with an evaluation method. The process has three stages:

- (1) Represent the circumstances of the project which is to be evaluated:  
This has five broad dimensions: (a) the role of the evaluation - the choice of a suitable technique will depend upon whether the evaluation is taking place early in the project's planning or late, and which level (tactical or strategic) at which the evaluation is being carried out; (b) environment - this refers to the decision-making/cultural environment in which the project has to be evaluated; (c) the nature of the system; (d) organisation characteristics - industry situation and leadership role of the organisation; and (e) cause and effect relationships - this defines the extent to which the benefits are directly related to the system being evaluated and the degree of uncertainty with which the impact of the new system can be predicted.
- (2) Locating the techniques: This is to determine the circumstances in which evaluation is to be carried out against several possible evaluation techniques.
- (3) Matching: This stage involves finding a preferred evaluation technique.

Hochstrasser (1992) has developed a framework for justifying and prioritising IS/IT investments called Quality Engineering (QE). This framework is designed to rigorously assess new investment ideas concerned with improving the quality of business processes. The aim is to provide a basis for deciding trade-offs between varying levels of quality to be achieved and limited resources to be employed. There are four main modules for this framework: (1) quality standards - this addresses critical success factors in the form of a wide range of corporate quality standards that must be adhered to when proposing new IS/IT initiatives; (2) quality awareness - it is designed to raise the awareness of the wider implications of IS/IT projects on a number of issues i.e. the true costs of the project; (3) quality performance indicators - this identifies a set of measurable performance indicators for different classes of

IS/IT project i.e. how these indicators are to be measured; and (4) quality value - this builds on the previous three modules and calculates an explicit value for new IS/IT initiatives by taking into account: (a) the potential impact of second-order effects, both potential opportunities and potential barriers to success; (b) the value of the primary objectives to be achieved by the proposed system; (c) strategic integration into business plans and corporate technology platforms; and (d) risk assessment in terms of business risks and technological risks.

According to Silk (1990), there are a total of seven types of justification which might be used for IS/IT projects. The merit of the seven types of justification is that they encourage managers to sharpen up the business case to a degree to which they still feel confident with the numbers (Silk, 1990). Often this will mean stopping short of financial figures and admitting that a value judgement is then necessary (Silk, 1990). These seven types of justification by Silk (1990) are as follows:

- (1) Must-do: It relates to an investment which is unavoidable - one required by legislative change or is essential to remain as a player in the chosen sector of business.
- (2) Faith: The investment is justified as an act of faith based on the judgement or vision of senior management.
- (3) Logic: The causal logic by which a business improvement will arise from the proposed IS/IT is identified as the basis for the business case.
- (4) Direction: An appropriate observable quantity is identified which is then measured to check whether the business has indeed moved in the intended beneficial direction.
- (5) Size: The size of the change in observable quantity is estimated and this is checked quantitatively when the system is in operation.
- (6) Value: The quantified changes are given some considered weighting, so that disparate benefits can be compared with each other.
- (7) Money: In this final stage, each of the benefits is given a financial value. Not only can they be compared with each other, but the impact on overall business financial statements and performance measures can be calculated.

After alignment and prioritisation assessment, the feasibility of each IS/IT investment then needs to be examined. Many research studies show that the main weakness here has been the over-reliance on and misuse of traditional finance-based cost-benefit analysis (Willcocks and Lester, 1996b). At this stage, active involvement of a group of stakeholders is essential in judging and identifying methods in evaluating IS/IT investments (Jurison, 1996; Willcocks and Lester, 1996b).

Following this, Figure 2.1 above suggests that evaluation needs to be conducted in a linked manner across the systems development life-cycle and into systems implementation and operational use (Willcocks and Lester, 1997). According to Willcocks and Lester (1997), the evaluation life-cycle posits the development of a series of interlinked measures that reflect various aspects of IS/IT performance which are applied across the systems lifetime. These are tied to processes and people responsible for monitoring performance, improving the evaluation systems and also helping to achieve and manage the benefits from the investment (Willcocks and Lester, 1997). A good measure to use here is the balanced scorecard (BSC) approach by Kaplan and Norton (1992, 1993, and 1996a) (Figure 2.7).

A survey carried out by Willcocks and Lester (1997) indicated that 35% of organisations had adopted, or planned to adopt a balanced scorecard (BSC) approach (Kaplan, 1994; Kaplan and Norton, 1996b; 1997). According to Butler et al. (1997), the BSC approach is more than a performance measurement technique, it is a management system. In order to produce a new “dashboard” of IT performance indicators throughout the systems development life-cycle, Kaplan and Norton (1996a) proposed this method to evaluate an organisation’s progress from four different perspectives: the financial, internal processes, the customer, and innovation and learning. All of these measurements (evaluations) are framed in a strategic management system that drives improvement and that allows the management of an organisation to prepare for the future (van Grembergen and van Bruggen, 1998). It may be applied not only to assess the contribution of a specific IS/IT investment project, but also to evaluate the performance and guide the activities of an IS/IT department (Martinsons et al., 1999). To do this, the BSC approach uses a three-layered structure: (1) the mission of the organisation; (2) the mission is then translated into objectives; and (3) the objectives can be measured through well-

chosen indicators (Kaplan and Norton, 1993; van Grembergen and van Bruggen, 1998). The objectives can be anything from the seven IS/IT investment evaluation objectives mentioned earlier in this chapter to other organisational goals or objectives set by organisations themselves.

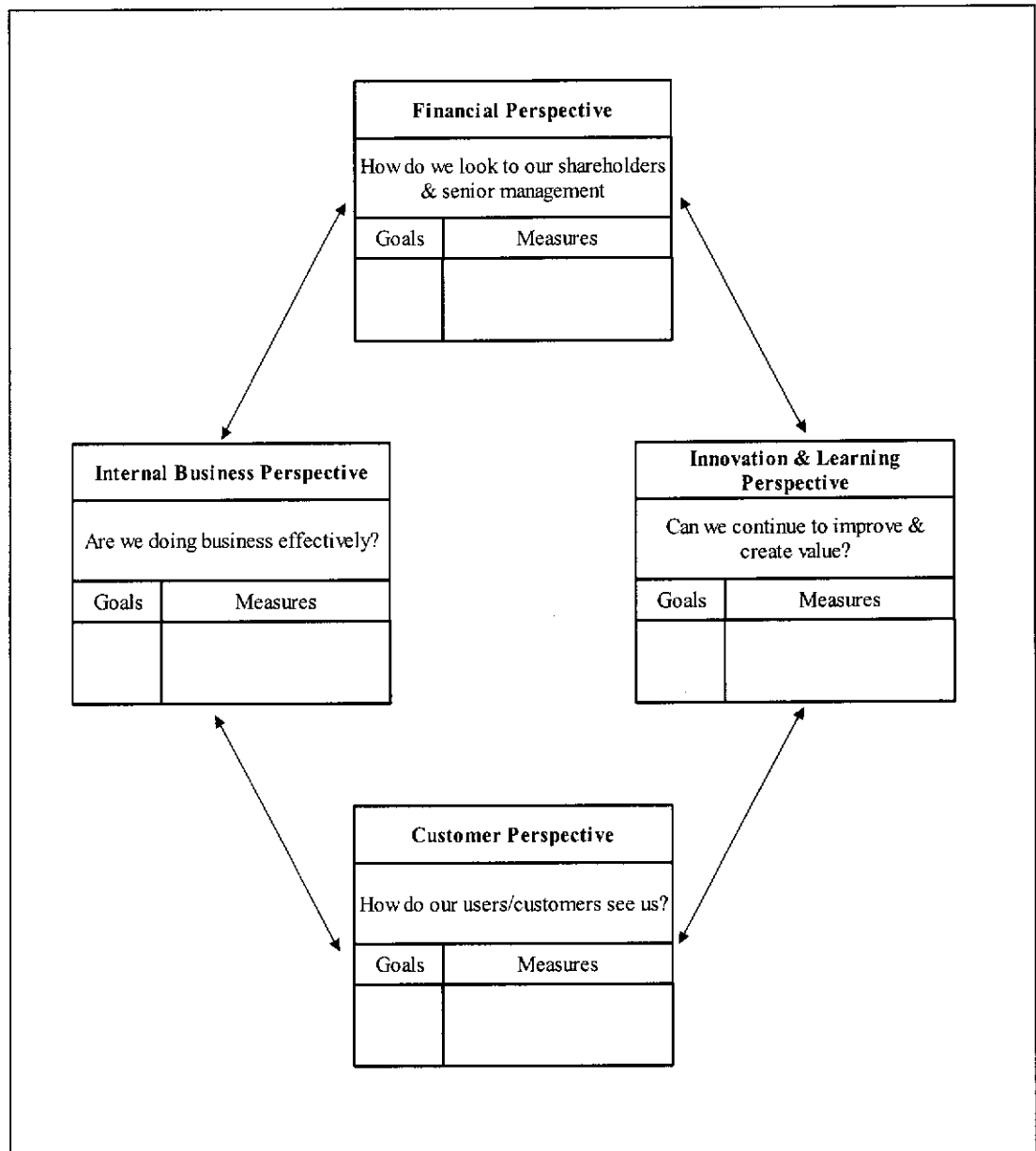


Figure 2.7: Balanced Scorecard Approach (Source: Martinsons et al., 1999)

This approach brings together, in a single management report, many of the seemingly disparate elements of a company's competitive agenda (Kaplan and Norton, 1992). This would also force senior management to consider all the important operational

measures together as well as letting them see whether improvements in one area may have been achieved at the expense of another (Kaplan and Norton, 1993).

Therefore, the BSC approach, according to Willcocks and Lester (1997), would be an ideal tool for the integrated evaluation life-cycle approach to measure the performance of IS/IT investments. The strength of the balanced scorecard is that it responds to the need for a number of high-level measures to be developed, and reflects different viewpoints on the organisation and performance (Willcocks and Lester, 1994). It can also be made to (1) respond adequately to the frequently voiced need for quantified measures; (2) provide measures that can be carefully tracked beyond the investment appraisal stage and into the system's life-cycle; and (3) provide a framework of goals and high-level measures on which a hierarchy of more detailed measures can be erected (Willcocks and Lester, 1994). However, the BSC approach also faces several obstacles. It requires a substantial commitment from key stakeholders and few modifications of its four perspectives in order to achieve business success (Martinsons et al., 1999).

Post-implementation arises out of implementation assessment on an on-going basis, with an already existing set of evaluators in place (Willcocks and Lester, 1997). This is an assessment of the IS/IT project's success or failure (Anonymous, 1998). It can provide valuable opportunities for much-needed organisational learning on IS/IT within the organisation (Willcocks and Mark, 1989). Using post-implementation reviews, data is collected, recorded and analysed to compare expected results against actual benefits and returns (Anonymous, 1998). They provide valuable feedback on the value being achieved by expenditure on information systems (Norris, 1996). According to Willcocks and Lester (1997), existing IS/IT-related activity can also devour the majority of the financial resources available for IS/IT investment. Very often such failures derive from not having in place, or not operationalising, a robust assessment approach that enables timely decisions on systems and service divestment, outsourcing, replacement, enhancement, and/or maintenance (Willcocks and Lester, 1997). Such decisions need to be based on at least two criteria - the technical quality of the system/service, and its business contribution - as well as being related back to the overall strategic direction and objectives of the organisation (Willcocks and Lester, 1997).



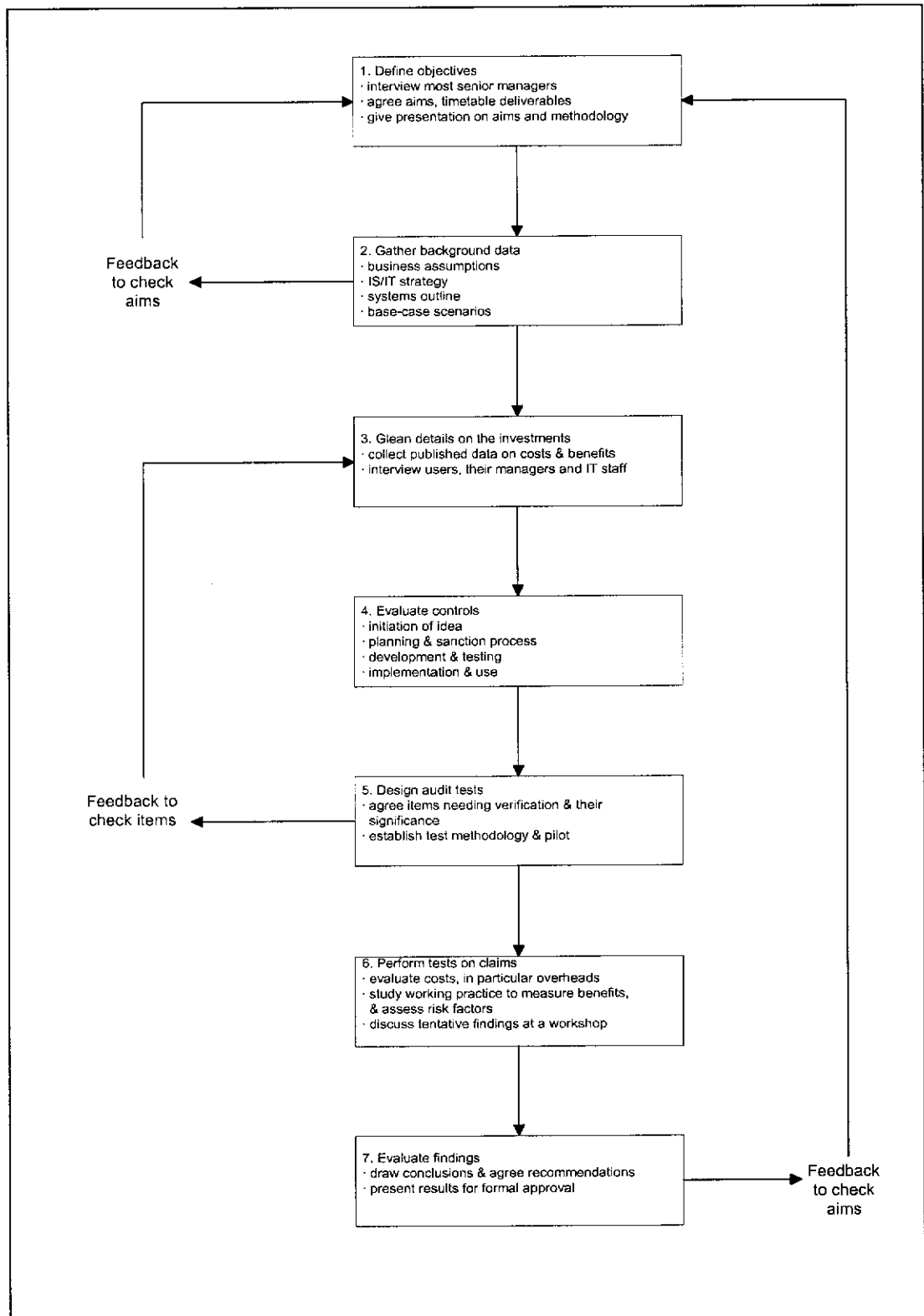


Figure 2.8: Basic seven-step approach to conducting a post-implementation appraisal

(Source: Norris, 1996)

Norris (1996) offered a basic seven-step approach (Figure 2.8 above) to conducting a post-implementation appraisal: (1) define objectives: to gain a clear statement of the specific objectives of the review; (2) gather background data: to obtain a general understanding of the business situation, the aims and history of the investment, and the logical description and physical components of the system; (3) glean details on the investment: to develop a more detailed understanding of the system; (4) evaluate controls: to identify and evaluate the controls that were, and are being, exercised; (5) design audit tests: to design its auditing procedures by using the most appropriate techniques in order to verify the statements on the costs, benefits and controls; (6) perform audit tests on claims; and (7) evaluate findings: to agree the conclusions that can be drawn from the detailed findings.

In summary, this chapter has so far introduced many important IS/IT investment evaluation concepts and research findings. Problems in managing and evaluating IS/IT investments such as measurement problems and poor IS/IT adoption practices have suggested that proper evaluation in IS/IT investments has been ignored by most organisations. However, organisations continue to invest large amount of money into IS/IT each year, despite the fact that there is often a heated debate amongst researchers and academics about the phenomenon of the “productivity paradox”.

Several IS/IT investment evaluation techniques and methodologies (e.g. Information Economics (Willcocks, 1992b) and IT investment mapping (Peters, 1990)) have also been presented here. However, it is not an easy task for the senior managers to decide which methodologies to adopt in evaluating their IS/IT investments. As a result, Willcocks and Lester (1997) suggested an integrated evaluation life-cycle approach because there is a need for a family of measures that cover technical and business performance of IS/IT investments in an unified manner.

## **2.9. Benefits Realisation**

Willcocks and Lester’s (1997) system’s life-cycle approach (Figure 2.1) introduces only a simple, strategic front-end to the traditional IS/IT development life cycle (Serafeimidis, 2002). This is because that while pre-investment appraisal and post-implementation review are important for evaluation purposes, they are still

insufficient in terms of ensuring that the benefits required are realised and delivered to the organisation (Ward and Griffiths, 1996).

Assessing the effective delivery of useful benefits from these services to the business is very difficult (Lyon and Mooney, 1994; Remenyi and Whittaker, 1996). A survey conducted by Wilson (1991) put measuring benefits as one of the most important barriers to setting up and implementing IS strategy. Another survey by Seddon et al. (2001) indicates identifying and measuring benefits as the most difficult issue in evaluating IS/IT. In addition, a survey by CIE (1990 in Norris, 1996) found that vague statement of benefits, leading to an uncertain allocation of responsibility for managing their delivery, as the number one cause for project failure.

Some of the reasons put forward for the failure to monitor whether the projected benefits of IS/IT were being realised by the organisations are:

- (1) It is difficult to assess benefits after a project has been implemented (Norris, 1996).
- (2) It is not necessary as the project was implemented according to plan (Norris, 1996).
- (3) It is too costly to undertake the proper post-implementation reviews on benefits (Norris, 1996).
- (4) Many organisations tend to give very little attention to the intangible benefits when investment decisions are made (Beaumont, 1998).
- (5) Many organisations have poor IS/IT adoption practices (Fink, 1998).
- (6) It is against many organisations' culture to act as both the watchdog and implementor for benefits delivery.

In fact, there are no direct benefits from IS/IT. IS/IT is just one of the enablers of process change (Grover et al., 1998b) and it only enables or creates a capability to derive benefits (Jurison, 1996; Ward and Murray, 1997). Increase in benefits can only be obtained if the process is changed (Grover et al., 1998b). According to Ward et al. (1996:215), the essence of benefits realisation is "not to make good forecasts but to make them come true..... and IS/IT on its own does not deliver benefits." Benefits may be considered as the effect of the changes, i.e. management of changes - the difference between the current and proposed way that work is done (Carnall,

1990; Clarke, 1994; Ward and Griffiths, 1996). Similarly, Tallon et al. (2000) has found in their study that there was a clear indication of the benefits that flow from being able to compare the impacts of a specific IS/IT investment against a set of underlying objectives with the possibility of introducing corrective action (post-implementation review) if necessary. Earl (1992) has also taken the view that benefits are associated with business change and not the technology itself. Things only get better when people start doing things differently (Ward and Murray, 1997).

As benefits are frequently long term, uncertain and intangible (Sassone, 1988), future benefits are too wide-ranging to be estimated with any accuracy (Clemons, 1991). Therefore, IS/IT projects should be evaluated in the context of accumulated costs and benefits from related initiatives, not judged on single initiatives (Galliers et al., 1996). According to Ward et al. (1994), in order to determine if the desired benefits have been achieved in practice, it is necessary to measure and evaluate post-project. If no measurable effects can be identified other than the implementation of the technology itself, then it would be safe to assume that no benefits have actually been realised (Ward et al., 1996).

Increasingly, as IS/IT expenditure has risen dramatically and as the use of IS/IT has penetrated to the core of organisations, the search has been directed towards not just improving evaluation techniques and processes, but also towards the management and realisation of benefits (Fitzgerald, 1998; Willcocks and Lester, 1997). According to Peters (1990), Ward and Griffiths (1996), and Willcocks (1992b), very few organisations have a benefits realisation approach. Furthermore, much attention is paid to ways of justifying investments, with little effort being expended to ensuring that the benefits expected are realised. As the result, there is a massive imbalance between IS/IT investment and benefits derived from that investment (Bailey, 1987; Sutherland, 1994).

According to Remenyi (2000), there have been four major areas which have contributed to the problems with IS/IT benefits measurement and management:

- (1) Benefits and identifiable performance improvements – it is seldom possible to produce a definitive statement of all the benefits that an IS development project will produce.

- (2) The issue of IS reach – IS often plays an important integrating type role in organisations and this role brings together a number of different corporate issues, problems and resources. It is often difficult to understand exactly what the results will be of bringing together information about different business issues.
- (3) Tangible and intangible benefits – intangible benefits may often be quantified by measuring instruments such as questionnaires, but it is very difficult to make a credible connection between what can be measured with such instruments and the impact on the corporate financial results.
- (4) Benefit evolution – the benefits of IS/IT are unstable, and some benefits dry up while other unforeseen benefits materialise. Therefore, it is very hard to look into the future to create a comprehensive list of potential benefits.

According to Truax (1997), there are a number of other problems for organisations not getting the benefits they expected:

- (1) Immediate results of an investment are rarely the expected benefits.
- (2) Necessary means for benefits realisation are not identified.
- (3) Benefits do not occur where and when they are planned.
- (4) The “right” benefits are difficult to identify up front.
- (5) Projects are too narrowly defined for effective delivery of benefits.
- (6) Organisations often have a limited ability to manage change.

Ward and Murray (1997) identified three mindset constraints that seem to operate strongly when business managers approach the issue of managing IS/IT. These can often lead to not getting the expected benefits from the investment. These are:

- (1) The management of IS/IT is a technical issue.
- (2) The cost should be justified by financial bottom-line.
- (3) The functionality from IS/IT is a benefit in itself.

Too often these problems are compounded with the fact that organisations operate based on traditional benefits realisation principles, as outlined in Table 2.3 below.

| <b>Traditional Benefits Realisation Principles</b>                          | <b>New Benefits Realisation Principles</b>                              |
|---|---|
| Benefits are stable over time.  | The potential benefits from an investment change over time.             |
| The investment determines the nature and scope of the benefits.             | The organisation and its business context determine the benefits.       |
| Financial returns represent the most valid justification for an investment. | All the outcomes of an investment represent potential sources of value. |
| It is sufficient to manage the investment to generate the benefits.         | The organisation must be proactive in realising benefits.               |

Table 2.3: Paradigm Shift for Benefits Realisation (Source: Truax, 1997)

According to Lederer and Mirani (1995), an understanding of benefits is very important for several reasons:

- (1) It can give researchers an opportunity to characterise IS/IT projects thematically.
- (2) It can create top management's expectations for the outcomes of IS/IT projects as it offers an opportunity to evaluate the projects, IS/IT management's ability to meet its commitments and thus retain its credibility.
- (3) It may help predicting the achievable IS/IT projects outcomes better and thus realise them more often.
- (4) It can give some guidance for IS/IT managers in proposing new projects and recommending their priorities.

In order to achieve and maximise the expected benefits from the IS/IT investments, some researchers have come up with ways of evaluating and realising the benefits. This is often called benefits realisation (or benefits management). It has been defined as "the process of organising and managing such that potential benefits arising from the use of IS/IT are actually realised" (Ward and Griffiths, 1996). It aims to be a whole life-cycle approach to getting beneficial returns on IS/IT investments (Ward and Murray, 1997). According to Coleman and Jamieson (1994), benefits realisation

plans encourage the business users to focus on exactly how they will make the system pay off and contribute to the business objectives. The ability to achieve benefits from one investment will depend on the organisation's experience and knowledge of benefits that IS/IT can or cannot deliver and how they can be obtained (Ward and Griffiths, 1996). Coleman and Jamieson (1994) stated: "an IS/IT project does not finish with the successful delivery of a working system; it continues as long as benefits are being accrued." The following diagram (Figure 2.9) illustrates the relationship between IS/IT evaluation and IS/IT benefit realisation. This diagram was modified by the researcher from diagrams by Burch and Grudnitski (1986), Ward et al. (1996), and Willcocks and Lester (1997).

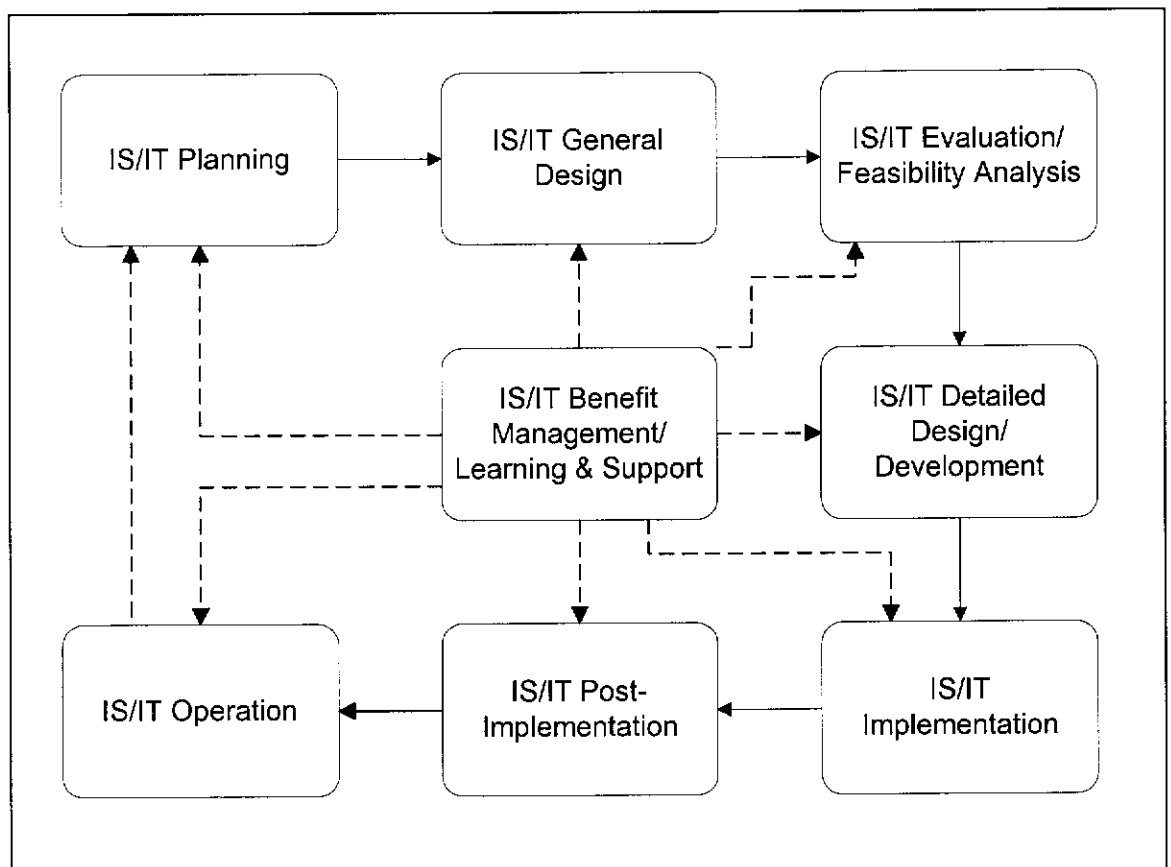


Figure 2.9: IS/IT Evaluation and Benefit Realisation Diagram (Adapted from: Burch and Grudnitski, 1986; Ward et al., 1996; Willcocks and Lester, 1997)

According to King and McAulay (1997), for the advocates of the one best way approach in evaluating IS/IT benefits, success in IS/IT evaluation is determined by the acceptance of projects which show a positive net present value (NPV). However,

as mentioned before, most researchers have argued that the financially oriented evaluation techniques such as net present value (NPV) and return on investment (ROI) normally ignore intangible benefits as well as potential risk (Hochstrasser, 1993; Shank and Govindarajan, 1992; Willcocks, 1992a). King and McAulay (1997) have further stated that, for those who suggest alternative approaches, whether quantitative or qualitative in nature, there remains an implicit assumption that selecting an appropriate evaluation technique will secure a successful choice of projects, but this is determined by the context within which the evaluation takes place (King and McAulay, 1997). The process model school, on the other hand, argues that success follows from adhering to an appropriate procedure (King and McAulay, 1997). A brief description of three major models of IS/IT benefits realisation now follows.

### **2.9.1. The Cranfield Process Model of Benefits Management**

Without an effective benefits realisation process, IS/IT benefits will not be delivered within the organisation (Brewster, 1994; Jurison, 1996). According to Ward and Griffiths (1996) and Ward et al. (1996), the process model of benefits management developed by Cranfield research program can be used as the basis for guidelines on best practice in benefits realisation. The diagram (Figure 2.10) shows the elements of this process model and they are as follows:

- (1) Identifying and structuring benefits: The proposed benefits and disbenefits are identified and, for each proposed benefit, suitable business measures are developed. The list of benefits required must be agreed by the managers whose activities are affected by the system. At the same time, potential disbenefits of the system should be considered, i.e. what adverse impacts on the business or organisation it could have. The benefits are structured in order to understand the linkages between technology effects, business changes and overall business effects. Other things which need to be identified here are: (a) who should be responsible for benefits delivery; and (b) where should the benefits occur.
- (2) Planning benefits realisation: Specific responsibility for realising the benefit is allocated within the business for each benefit. The task is to



consider the stakeholders affecting delivery of each benefit, and the changes and tasks needed to ensure delivery. In order to make a fully informed decision as to the viability of the proposed project, the required business changes are planned for and assessed, and a benefits realisation plan is produced. Only when this has been completed for all of the required benefits should funding for the IS/IT investment be sought.

- (3) Executing the benefits realisation plan: The necessary business changes as detailed in the benefits realisation plan are carried out, together with the implementation of the proposed IS/IT application. Monitoring progress against the activities and deliverables of the benefits realisation plan is just as important as for the IS/IT development plan, and the two plans interact. It will be necessary to replan, and issues may arise that prevent the delivery of some or even all of the benefits. It is also possible that further benefits are identified.
- (4) Evaluating and reviewing results: After the full implementation of IS/IT and business changes, the previously developed business measures are used to evaluate the effects of the project. Review of 'before and after' measures provides an explicit device for evaluating whether the proposed business benefits have actually been realised. This evaluation, which should involve all key stakeholders, has several purposes: (a) to maximise the benefits of the particular project; (b) to provide experience for other future projects; (c) to identify what was achieved, what has not been achieved, and why; and (d) to identify any unexpected benefits that have actually been achieved. This post-implementation review should not become a "witch-hunt" and must be an objective process with future improvements in mind.
- (5) Potential for further benefits: It may become apparent that, after the post-project review, further benefits are now achievable, which were not expected in the beginning. This stage provides the opportunity to plan for and realise these further benefits as well as to learn from the overall project process.

(Ward and Griffiths, 1996; Ward et al., 1996)

According to Ward and Murray (1997), by using this process model, it is possible to diagnose why some projects are successful in delivering benefits and others are not. It is also possible to show how the less successful could be addressed with remedial action to obtain benefits that are being lost, and, in most cases, further benefits could be uncovered (Ward and Griffiths, 1996).

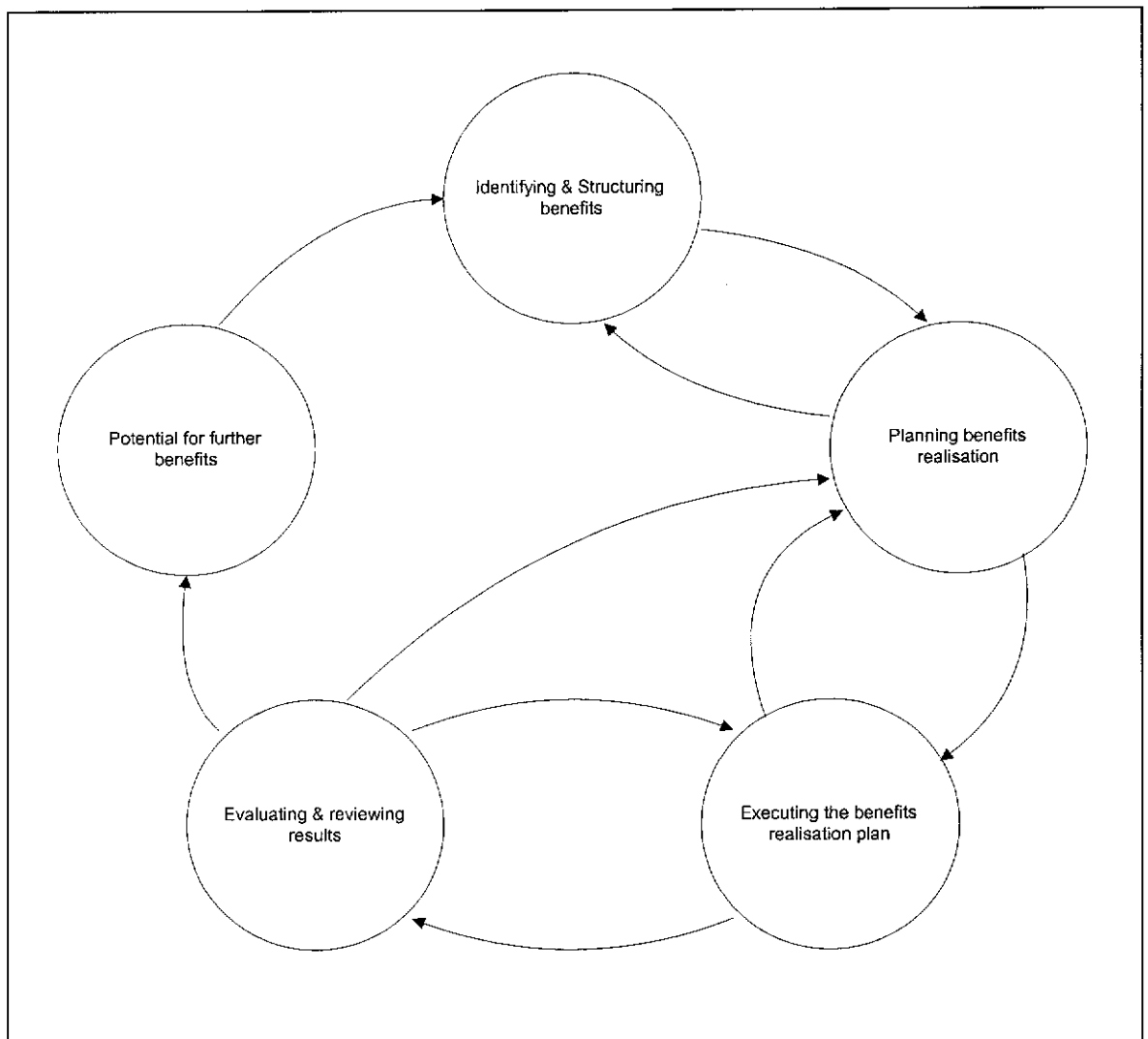


Figure 2.10: The Cranfield Process Model of Benefits Management (Source: Ward and Griffiths, 1996)

### **2.9.2. Active Benefit Realisation (ABR)**

Remenyi et al. (1997) have advocated that their approach, known as Active Benefit

Realisation (ABR), be utilised to assess and manage potential benefits arising from the use of IS/IT. It is based on an iterative formative evaluation process (Figure 2.11) (Remenyi and Sherwood-Smith, 1998). According to Remenyi et al. (1997), ABR, based on contingency philosophy, can be used to maximise value from IS/IT investment by ensuring that the information systems development process, from the beginning to benefit delivery, is managed effectively and efficiently. Fundamental to this approach is that the principal stakeholders of the information system must be identified at the onset and that they accept and agree on their continuous involvement. The process suggests a mind-set shift whereby stakeholders play a co-evolutionary role in the development of information systems in order to focus on business benefits rather than information technology (Remenyi and Sherwood-Smith, 1998). The ABR approach consists of seven activities as described in Figure 2.11: (1) initialisation of project; (2) production of pictures; (3) an agreement to proceed; (4) system development; (5) evidence collection; (6) review and learning; and (7) update of the pictures. However, the process can be approximately divided into three major distinct phases:

- (1) Setting the course - This involves the development of sets of precise requirements under the headings of a business picture, a financial picture, and a project picture. These pictures are statements, models in a loose sense, of the context, the required benefits and the specification of the appropriate metrics to be used to evaluate, monitor and control benefits realisation. Once these three pictures have been produced, a decision is made and an agreement reached as to whether or not to launch the project.
- (2) Formative evaluation - This involves assessing the progress of the project. All stakeholders are able to develop views as to how the project is progressing and to exchange these views in open and constructive discussion. There are three possible outcomes: (a) updating the three initial pictures; (b) reforming the project if there are not sufficient funds, time or skills available. This means that a material change is required to the way the original business solution is currently perceived and defined; and (c) terminating the project if the project has, for one or more reasons, become irrelevant to the organisation's business requirements.

- (3) Moving forward - This provides a feedback loop which should be available, not only during development, but also throughout the entire life of the project.

(Remenyi et al., 1997)

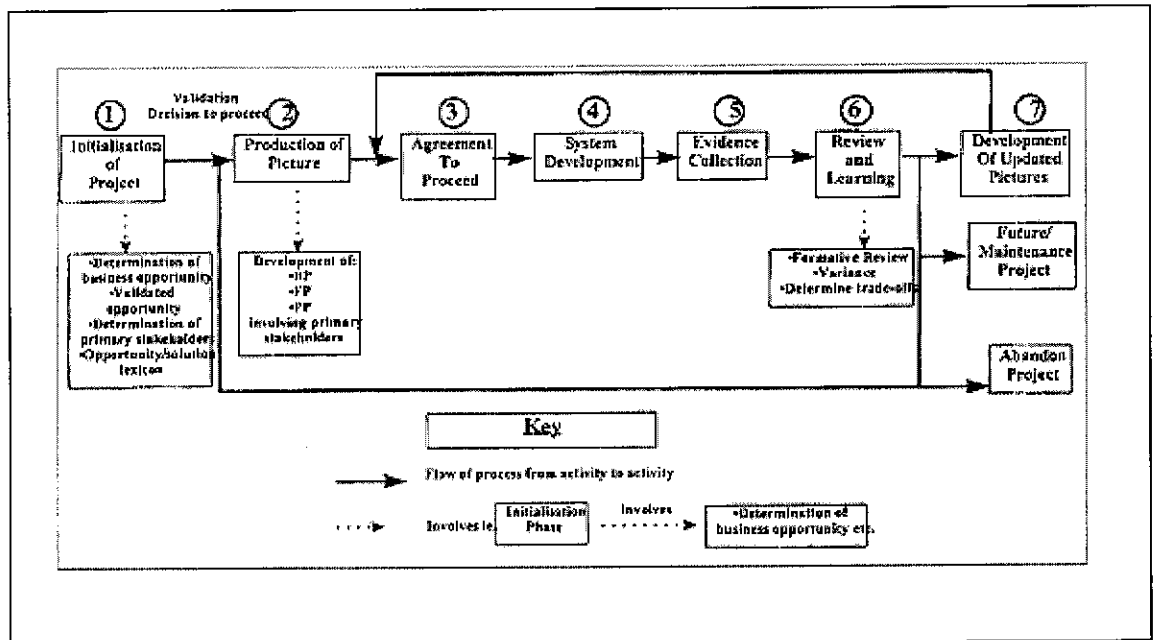


Figure 2.11: The process of ABR (Source: Remenyi and Sherwood-Smith, 1998)

### 2.9.3. The DMR Benefit Realisation Approach

According to Thorp (1998) and Truax (1997), senior management needs a new set of worldviews, in the form of richer investment decision-making frameworks and a well-rounded focus on benefits. Such an investment model must clearly map out a complete web of benefits and the logical chain of results from immediate, predictable outcomes to intermediate and final benefits. That map must display the paths linking an investment to the achievement of identified benefits, as well as provide a framework for supporting the management of the change process. According to DMR (1997), to implement benefits realisation in an organisation, new approaches are needed in four key areas:

- (1) Business cases for investment programs - This means complementing traditional return on investment (ROI) and payback analysis with assessments of other sources of value, including softer benefits and the clusters of benefits flowing over time from implementation of key

business strategies.

- (2) Methods of investment program management - Individual projects must be organised into structured investment programs in order to implement true benefits realisation cycles. These programs need to include many types of projects, not just IS/IT projects but also training, organisational change and business process redesign.
- (3) Benefits realisation modeling - A robust model of the benefits realisation process for each major investment program is needed. These are developed with DMR's unique technique called "Results Chain". The model maps key linkages among management and investment initiatives, numerous intermediate outcomes, expected contributions, assumptions about business and market conditions and the end-benefits. The Results Chain model helps define options, giving a big picture of risk/reward relationships and the true value of alternative programs.
- (4) Measurement systems and accountabilities - To ensure that business performance improves in line with the resource commitments, it is important to make adjustments to two of the most visible change agents in any organisation: measurement systems and accountabilities for results. These adjustments are tailored to each organisation, often using the Result Chain model as a reference point.

(DMR, 1997)

In summary, the DMR Benefits Realisation Approach (Figure 2.12 below) involves a long-term, sustained change effort in how organisations think, manage and act (Thorp, 2001). New processes and organisational structures will be needed to enable the new mind-set, and major changes will be required in the areas of accountability, measurement and the process of change itself by adopting a full cycle of governance view of managing projects, programs and portfolios (Thorp, 2001).

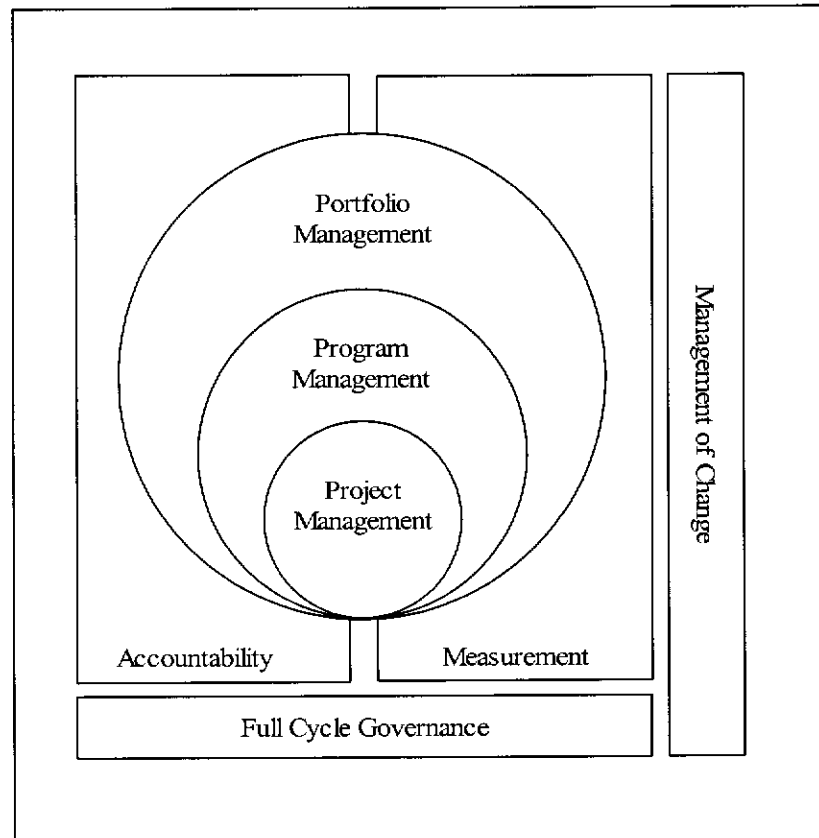


Figure 2.12: DMR Benefits Realisation Approach (Source: Thorp, 2001)

#### **2.9.4. Summary**

Realising benefits is one of the most important but often neglected activities in IS/IT. Three different benefits realisation methodologies (The Cranfield Process Model of Benefits Management, Active Benefit Realisation (ABR) and the DMR Benefit Realisation Approach) have been discussed above in some detail. Chapter 10 will present the critique of these three benefits realisation methodologies in terms of the problems and issues emerged from the data collected for this research.

Organisations might find these methodologies to be time consuming and expensive to implement. However, these benefits realisation methodologies do offer organisations an avenue to delivering the expected benefits when they are used in conjunction with an IS/IT investment evaluation methodology.

## **2.10. Stages of Growth Model**

The previous sections introduced several important tools and methodologies to help organisations in their IS/IT investment evaluation and benefits realisation practices. The discussions centred mainly on why and how these tools and methodologies would be implemented but generally failed to specify when and under what conditions an organisation was mature enough to adopt some of these tools and methodologies. Before one can determine when and under what conditions should these formal methodologies be implemented by organisations, there is a need to first look at the IS/IT in terms of organisational maturity. According to the literature, organisational growth with respect to the use of IS/IT and the approach organisations take in the management and planning of information systems could be conceived of in terms of clearly defined stages of maturity (Galliers and Sutherland, 1991).

Various stages of growth models have been presented by the researchers to describe the evolution of organisational information systems (e.g. Greiner (1972), Nolan (1979), Bhabuta (1988), Hirschheim et al. (1988), Earl (1989), and Galliers and Sutherland (1991)). Despite some criticism of these models, they provide an insightful organising framework for thinking about computing change in organisations (Galliers and Sutherland, 1991; King and Kraemer, 1984).

The Nolan's stages of growth model of evolution related to organisational information systems (Nolan, 1973; Gibson and Nolan, 1974; Nolan, 1979), is probably the most widely known and utilised model of this type. The original Nolan (1973) paper divided the "S" shaped logistic curve of growth in computing budgets into four stages: initiation, contagion, control and integration. This model was refined in the 1974 version (Gibson and Nolan, 1974) in which two significant principles were added: (1) the development of the model as equilibrium model; and (2) definition of the primary driving agent in computing growth as change in technology. Four revised stages of growth were now called: initiation, expansion, formalisation, and maturity.

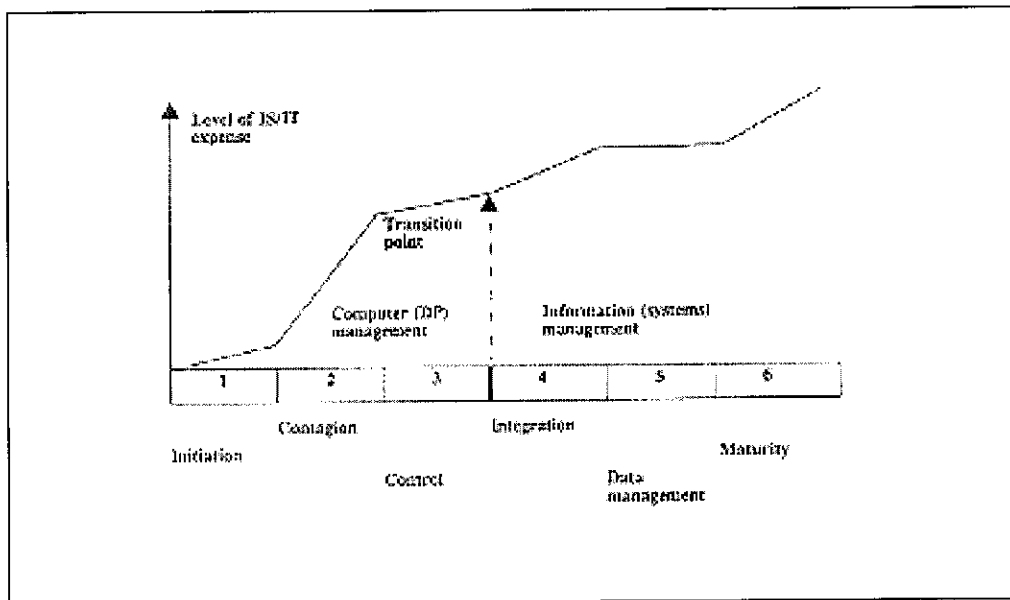


Figure 2.13. Stages of growth model (Nolan, 1979)

The Nolan's model was further elaborated in 1979 with two new stages (Figure 2.13 above). Management policies were characterised as either “slack” policies (lack of controls / encouragement of innovation) or “control” policies (constraints on growth / encouragement of efficiency). The six stages of the model were:

- (1) Initiation: Computer is introduced and the applications are usually limited to one or two departments.
- (2) Contagion: This stage is characterised by a proliferation of applications in many functional areas and by contagious, unplanned growth.
- (3) Control: The computer resource at this stage is controlled through centralisation and formalisation.
- (4) Integration: Data based applications become more widespread and exclusive reliance on the computer controls proves to be ineffective.
- (5) Data administration: This stage is characterised by applications integration.
- (6) Maturity: The applications portfolio is completed and its structure mirrors the organisation and the information flows in the company.

(Nolan, 1979)



However, this model has attracted several criticisms over the years. Nolan's own elaboration of the model over the years suggests that maturity is not a static concept (Benbasat et al., 1984). Most of these criticisms also apply to other stages of growth models. Some of the criticisms are as follows:

- (1) Computing budgets are not likely to be effective surrogates for the wide range of variables they are said to represent and do not necessarily conform to the "S" curve (Benbasat et al., 1984).
- (2) The focus on technological change as the basic driving force in computing growth is probably too simplistic (Gregoire and Lustman, 1993; King and Kraemer, 1984).
- (3) The model implicitly assumes that there is clarity and congruity on organisational goals for computing use among top managers. However, transitions are part of any stage model and the model definition is not complete without their definition and description. Briefly, the model describes how an organisation could place itself within a particular stage of IT or IS planning maturity without describing what is needed to be done in order to progress through to the more mature stages of growth (Galliers and Sutherland, 1991; Gregoire and Lustman, 1993).
- (4) It is doubtful that knowledge of appropriate means for dealing with computing will be as easy to acquire as the model suggests (King and Kraemer, 1984).
- (5) The model does not provide a detailed account of how, when and why change takes place (transitions) (Gregoire and Lustman, 1993).
- (6) Most of the testable hypotheses within the model have not been confirmed (Benbasat et al., 1984).
- (7) It is doubtful that the notion that the balance between control and slack policies can be deliberately achieved (King and Kraemer, 1984).
- (8) The assumption that change actually proceeds in a continuous manner is not upheld either by the history of computing development in organisations or by other studies of organisational or social change (King and Kraemer, 1984).

The revised stages of growth model (Figure 2.14) by Galliers and Sutherland (1991) is meant to overcome some of the above limitations by introducing a means of bringing together a range of key elements associated with the operation and management of an organisation generally. The revised model of Galliers and Sutherland (1991) can be represented as six stages, each with its particular set of conditions associated with the seven “S” elements (Table 2.4). The seven elements are described in Table 2.4 below.

|                            |   |
|----------------------------|---|
| <i>Strategy</i>            | Plan or course of action leading to the allocation of a firm’s scarce resources, over time, to reach identified goals   |
| <i>Structure</i>           | Characterisation of the organisation chart  |
| <i>Systems</i>             | Procedural reports and routine processes such as meeting formats  |
| <i>Staff</i>               | Demographic description of important personnel categories within the firm   |
| <i>Style</i>               | Characterisation of how key managers behave in achieving the organisation’s goals   |
| <i>Skills</i>              | Distinctive capabilities of key personnel or the firm as a whole  |
| <i>Superordinate goals</i> | The significant meanings or guiding concepts that an organisation imbues in its members. They can also be described as the shared value or culture of the organisation. |

Table 2.4: The Seven elements (Pascale & Athos (1981) in Galliers and Sutherland (1991))

The six stages of the revised model of Galliers and Sutherland (1991) are: ad hococracy, starting the foundations, centralised dictatorship, democratic dialectic and cooperation, entrepreneurial opportunity, and integrated harmonious relationships (Table 2.5). The Model is shown in Table 2.5 below.

| Stage | Description                          |
|-------|--------------------------------------|
| One   | “Ad Hocracy”                         |
| Two   | Starting the foundations             |
| Three | Centralised dictatorship             |
| Four  | Democratic dialectic and cooperation |
| Five  | Entrepreneurial opportunity          |
| Six   | Integrated harmonious relationships  |

Table 2.5: The six stages of the revised model of Galliers and Sutherland (1991)  
(Source: Galliers and Sutherland (1991))

According to Galliers and Sutherland (1991), stage one of the model describes the uncontrolled, ad hoc approach to the use of IS/IT usually exhibited by organisations initially. Stage two marks the beginning of the use of the IS/IT in the organisations. Stage three describes the uncontrolled but centralised implementation of the IS/IT in the organisations. In stage four, organisations start to integrate and coordinate the decentralised IS/IT systems. In stage five, the IS/IT function is coming out from under the burden of simply providing supporting services to other parts of the organisations and can begin to provide a strategic benefit in its own right. During the final and sixth stage, one notices harmonic working relationship between IS/IT personnel and other staff in the organisations and IS/IT is deeply embedded throughout every aspect of the organisations. For more detailed descriptions of the Galliers and Sutherland’s (1991) Model please refer to Appendix H.

Once an organisation has determined its IS/IT maturity level via Galliers and Sutherland’s (1991) revised stages of growth model, the organisation can then assess when and under what conditions the formal IS/IT investment evaluation and benefits realisation methodologies (as described in the previous sections) should be implemented. A framework is presented in Chapter 10 to assist organisations in achieving the latter.

In summary, the Galliers and Sutherland (1991) model can be used by researchers

and academics to describe the evolution of organisational information systems. As indicated earlier, the development of model was based on Nolan's (1979) model. This model can be used to determine the organisation's IS/IT maturity levels before implementing IS/IT investment evaluation and benefits realisation methodologies.

## **2.11. IS/IT Outsourcing**

### **2.11.1. Introduction**

IS/IT outsourcing has often been employed by most large organisations to reduce the cost of future IS/IT investments and to improve the cash flow of the organisations (Kakabadse and Kakabadse, 2001; Willcocks et al., 1996a). However, despite the fact that many IS/IT outsourcing project failures (e.g. Barton, 2002; Douglas, 1999; Mitchell, 2000a; Sohal and Ng, 1998; Willcocks, 1992a) had been reported in the media, very little attention had been paid to the use of IS/IT investment evaluation and benefits realisation methodologies in order to ensure outsourcing success. Moreover, difficulties in monitoring the performance of the outsourcing contracts is one of the most important disadvantages for outsourcing organisations (Apte et al., 1997).

In Australia, the outsourcing trend began in earnest in the early 1990s when both the Labor and Coalition Federal Governments were pushed hard by IS/IT consultants and economic rationalists (Douglas, 1999). The idea of contracting out large chunks of the Federal public service IS/IT to save money was first proposed by the Labor Government in 1991, when all government agencies were asked to examine all new and existing services with a view to outsourcing (Douglas, 1999). Although the Federal Government has promised huge savings from the massive IS/IT outsourcing contracts, many people have discovered that the outsourcing program has been plagued with problems, including impossible tendering timetables, discrimination against small and medium sized enterprises, dubious savings claims, cancelled tenders, deep dissatisfaction, non-delivery of service levels, and allegations of conflicts of interest (Douglas, 1999; Sellna, 2000).

Therefore, it is important to understand IS/IT outsourcing if one needs to establish current Australian industry and government practices and norms in managing IS/IT

benefits and evaluation. In other words, organisations' IS/IT investment evaluation and benefits realisation processes need to be looked at in the context of IS/IT outsourcing since most Australian organisations' IS/IT systems development projects nowadays have, at least to a certain extent, been involved with external outsourcing contractors.

The studies conducted by Ernst & Young (in Sinton, 1994) and Lin et al. (2000) have found that over 80% and 76%, respectively, of all Australian organisations surveyed have outsourced in some form and many are likely to consider more in the near future. Moreover, the Australian industry was the most outsourced in the OECD after the tendering of the Job Network program in 1998 (Webster and Harding, 2001). By the year 2000, the Australian Federal and most state governments had outsourced most of its IS/IT functions although the development of suitable methodologies for outsourcing had been very slow (Kakabadse and Kakabadse, 2001). Most survey respondents and the two case study organisations had also outsourced at least part of their IS/IT functions.

The outsourcing trend was not limited to the public sector. Organisations, as diverse as insurance companies, mining companies, and advertising companies are outsourcing more and more of their IS/IT functions to external contractors (Sinton, 1994). There are both many successful and unsuccessful cases. As mentioned earlier, selective outsourcing, in which key functions were kept in-house, was not only the most common route but also the most successful (Earl, 1996; Willcocks and Lester, 1997). It is estimated that by 2001, 80% of organisations will employ selective IS/IT outsourcing as a routine means to increase competitiveness or to gain access to new resources and skills (Ibrahim, 1998).

Elsewhere, outsourcing of IS/IT investment has also become so widespread in recent years that it can no longer be ignored (Hirschheim and Lacity, 2000; Slaughter and Ang, 1996). Therefore, it becomes clear that an increasingly important part of assessing the existing and future IS/IT investment is the degree to which the external IS/IT services market can provide better business, economic and technical options for an organisation (Willcocks and Lester, 1997).

The Yankee Group estimated the 1994 global IS/IT outsourcing market as exceeding US\$49.5 billion with an annual 15% growth rate (Willcocks and Lester, 1997). In Australia, IS/IT outsourcing market grew to a value of more than A\$1.3 billion in 1997 (Ibrahim, 1998). According to the Australian Federal Government, it aims to outsource about A\$4 billion worth of IS/IT requirements across all government departments in order to save A\$1 billion (Mitchell, 2000b). Moreover, Australia accounts for 53% of Asia-Pacific spending in IS/IT outsourcing services (Mitchell, 2000b). IS/IT outsourcing services opportunities in the Asia-Pacific region (excluding Japan) are expected to increase from US\$4.8 billion in 1999 to US\$10.3 billion by 2004.

#### **2.11.2. What is IS/IT outsourcing?**

However, defining IS/IT outsourcing is not an easy task as it can mean different things to different organisations. Bradley (1993 in Sinton, 1994) states that with outsourcing the organisation defines the services it requires and then the contractor becomes responsible for providing and maintaining the service. Willcocks and Lester (1997) define outsourcing as the “commissioning of third-party management of IT assets or activities to required result.” Ibrahim (1998) simplifies the definition of outsourcing by stating that it is the “IT practices which could be more efficiently delivered by an external organisation.” Similarly, Hirschheim and Lacity (2000) define outsourcing as the “practice of transferring IT assets, leases, staff, and management responsibility for delivery of services from internal IT functions to third-party vendors.” To add to these definitions, Loh and Venkatraman (1992) define outsourcing as “the significant contribution by external vendors of the physical and/or human resources associated with the entire or specific components of the IT infrastructure in the user organisation.”

#### **2.11.3. Advantages and reasons for IS/IT outsourcing**

Whatever the objective, the possibility of outsourcing tends to generate strong emotions among the IS/IT professionals, senior executives and external contractors (Earl, 1996). There are many reasons contributing to the growth of the outsourcing. Some of the reasons for outsourcing include:

- (1) Access world class expertise - There is a continuing skills

deterioration and specific skills shortages (Saia, 1999; Slaughter and Ang, 1996).

- (2) Lower costs - There is tremendous downsizing and cost-reduction pressures on many organisations (Diamond, 1993; Smith et al., 1998).
- (3) Economies of scale - Outsourcing can provide economies of scale for smaller organisations (Ibrahim, 1998).
- (4) Risk sharing – The external contractors can share the risks. The contractors have the responsibility to ensure the systems are meeting the reliability and performance criteria (Williams, 1998).
- (5) Increase efficiency/service level - Many IS/IT functions have become stable commodities that can be turned over to external contractors for more efficient processing and management (Diamond, 1993).
- (6) Eliminate internal irritant – Outsourcing can help to eliminate the tension between the users of the resources and the IS/IT staff (McFarlan and Nolan, 1995).
- (7) Change corporate culture – Outsourcing can help the senior managers to change the corporate culture in order to keep up with the latest technology (Clark et al., 1998; McFarlan and Nolan, 1995).
- (8) Greater focus - Some functions have become non-strategic due to the maturing of IT technology (Cronk and Sharp, 1998; McFarlan and Nolan, 1995).
- (9) Accelerate reengineering benefits – By outsourcing a non-core function to a world class outsourcing contractor, the organisation can begin to see the benefits of reengineering (Outsourcing Interactive, 2000).
- (10) Increase flexibility - It provides a way to increase flexibility in order to easily absorb fluctuations in environmental demands (Slaughter and Ang, 1996).
- (11) Ideological purity – The economic rationalists believe that it is good to let the free and competitive market drive economic growth (Ibrahim, 1998).

Another Australian survey, conducted by Karpathiou and Tanner (1995), suggest that although IS/IT outsourcing may not in the longer term reduce costs, it can give rise

to greater business focus and increased justification of costs against often measurable business unit outcomes. According to Karpathiou and Tanner (1995), the main reasons for IS/IT outsourcing in Australia is to overcome lack of resources and reduce bottom-line costs.

#### **2.11.4. Disadvantages and risks of IS/IT outsourcing**

However, there are always some risks associated with the IS/IT outsourcing. Some of the major IS/IT outsourcing risks include:

- (1) Possibility of weak management – It is difficult to know whether the IS/IT managers will be any better at managing an external contractor (Earl, 1996).
- (2) Increased costs – It is questionable whether or not an external contractor can deliver information services at lower costs than those experienced by a well-managed, well-equipped and well-staffed internal IS/IT function (Clark et al., 1998).
- (3) Inexperienced staff – There is no guarantee that the external contractors will necessarily have either the best expertise or solid experience (Earl, 1996). Also, there is a risk that requisite in-house capabilities and skills can not be built and retained (Willcocks et al., 1999).
- (4) Business uncertainty – There may be long-term opportunity costs which can increase with business uncertainty if the decision to outsource is based on costs or focus only (Earl, 1996).
- (5) Outdated technology skills – It is sometimes difficult to know whether the external contractor's skills will stay current (Ibrahim, 1998).
- (6) Justification problem – An overwhelming majority of senior managers view their IS/IT functions as cost burdens. As such, IS/IT managers could not appeal to effectiveness or strategic significance to justify their existence. IS/IT managers' inability to demonstrate value was tied to outsourcing evaluations by: (a) showing that external outsourcers can not provide a cheaper service; or (b) justifying resource requests; or (c) demonstrating their commitment to corporate



objectives (Lacity and Hirschheim, 1994).

- (7) Opportunism – Unscrupulous grasping of opportunities to one party's disadvantage can lead to outsourcing failure (Marcolin and McLellan, 1998; Ngwenyama and Bryson, 1999).
- (8) Performance uncertainty – It is uncertain that external contractors' performance will be satisfactory (Ngwenyama and Bryson, 1999).
- (9) Contractual difficulties – There might be some contractual disputes and litigation between two outsourcing parties (Aubert et al., 1998; Willcocks et al., 1999).
- (10) Hidden costs – Learning curves, management cost, technological dis-continuities should be weighted against the promise of early cash-flow and long-term cost savings (Aubert et al., 1998).
- (11) Loss of innovative capacity and organisational learning – Organisational learning and innovation need slack resources, organic and fluid organisational processes, experimental and entrepreneurial competencies, all attributes that external sourcing does not guarantee (Earl, 1996; King and Malhotra, 2000).

If the risks associated with the IS/IT outsourcing are not properly managed, this can often lead to partial or total IS/IT outsourcing failures for organisations. Some of the main reasons for failure in IS/IT outsourcing deals have been various combinations of the following:

- (1) Rushing the deal – There are too many organisations that rush into outsourcing without doing the homework and planning needed to ensure success (Smith, 1997).
- (2) Unrealistic expectations – There is no one solution to fit the entire problem, no all-or-nothing answer (Willcocks and Lacity, 1999).
- (3) Higher costs – It is estimated that 30-50% additional effort in internal IS/IT projects are non-costed, unpaid and bonus. Outsourcing organisations would not tolerate this and have much more refined cost tracking systems leading to previously untracked costs being charged back to the client/user (Ibrahim, 1998).
- (4) Lowest costs approach – It is often not wise to choose the lowest-cost bid or best proposal without sufficient regard for provider capabilities

or future actual costs (Harrington, 1998).

- (5) Conflicting agenda – The focus of the client is to reduce cost while the external contractor's focus is to make profit and keep the shareholders happy (Ibrahim, 1998).
- (6) Dis-economies of scale –The smaller and less high profile the outsourcing client/user the larger the incentive for the outsourcing organisation to downscale the attention the client/user receives (Ibrahim, 1998).
- (7) Under-developed contracts – Relationships can often fall victim to poor, inflexible or inadequate contract agreements (Smith, 1997).
- (8) Poorly designed contracts – A poorly designed and written contract may contain inaccurate bid data, unreasonable time frames, and unclear statement of work/service requirements (Harrington, 1998).
- (9) Loss of control of core activities – By outsourcing the people and the intellectual capital required to innovate, many organisations risk losing control of their future (Currie and Willcocks, 1998).
- (10) Short-term view – An organisation may outsource for short-term financial restructuring or cash injection rather than to leverage IS/IT assets for business advantage (Currie and Willcocks, 1998).
- (11) Inability to manage culture and internal politics – The outsourcing contractors may be unable to deal with the customer's culture and internal politics.
- (12) Lack of resources – Many organisations have insufficient internal resources to plan and implement the relationship (Harrington, 1998; Willcocks and Lacity, 1999).
- (13) Poor contract management – The external contractor is unable to effectively team with the outsourcer's logistics organisation to implement best practices (Harrington, 1998).

#### **2.11.5. Critical success factors and criteria for IS/IT outsourcing**

There are several important factors that govern successful and less successful outsourcing decision. These are as follows:

- (1) Differentiation – IS/IT can contribute to differentiate a business from

its competitors, thus providing competitive advantage. If IS/IT is not able to differentiate its business, then an organisation is likely to outsource it (Willcocks and Fitzgerald, 1994 in Willcocks and Lester, 1997).

- (2) Strategic direction – IS/IT may be strategic in underpinning an organisation's core business and achievement of goals, and critical to its present and future strategic direction, or only useful. If IS/IT is not vital to an organisation's business, then it is likely to be outsourced (Slaughter and Ang, 1996).
- (3) Degree of uncertainty – The degree of uncertainty about future business environment and needs impacts upon longer term IS/IT needs. Low uncertainty would suggest outsourcing as a better option (Slaughter and Ang, 1996).
- (4) Technology maturity – It is not appropriate for an organisation to outsource in a situation of low technology maturity. This exists where a technology is new and unstable, and/or where there is an existing technology but being applied in a radically new way, and/or where there is little relevant in-house experience with the technology (Slaughter and Ang, 1996).
- (5) Level of IS/IT integration – It is not desirable to outsource systems/activities that are highly integrated with other parts of the technical platform, and/or that interface in complex ways with many business users who will be impacted significantly by the service (Willcocks and Fitzgerald, 1994 in Willcocks and Lester, 1997).
- (6) In-house capability – There is no incentive for an organisation to outsource its IS/IT function when its in-house capability is equivalent to or better than that available on the external market (Willcocks and Fitzgerald, 1994 in Willcocks and Lester, 1997).

On the other hand, the case study carried out on Western Australian (WA) State Government departments by Sinton (1994) suggest that there are three dominant conditions for outsourcing: (1) facilitating change or re-examining organisational structure – outsourcing provides a means for the organisations to restructure and provide staff in areas that are deemed more in tune with the business needs; (2)

improving internal efficiencies – since IS/IT is usually considered as an overhead and often questioned on its value to the organisation, outsourcing provides a means for the IS/IT departments to measure their services and ensure that the organisation is obtaining the most efficient service; and (3) increasing limited funds and resources – departments may see outsourcing as a way out to resolve some of their funding and resourcing problems.

In addition, a survey conducted by Seet (1997) has found that the criteria that the WA State Government IS executives would use to judge the success of outsourcing are: (a) meeting time and budget target; (b) end-users satisfaction; (c) requirement specifications clearly defined; (d) achieving the objectives of the outsourced IS/IT functions; (e) end-users involvement; (f) contract management; (g) successful transition of staff; and (h) customer satisfaction.

#### **2.11.6. Research on IS/IT outsourcing**

According to Sinton (1994), outsourcing can vary according to organisational needs, structure and changing technology. For example, there is an option to have long or short term contracts with external contractors. In situations of high business uncertainty and/or rapid technological change shorter term contracts are more appropriate (Willcocks and Lester, 1997). Currie (1998) and Willcocks and Lester (1997) have found that selective rather than total outsourcing (80% or more of IS/IT budget spent on outsourcing) tended to be the lower risk and the more successful option to take. Moreover, organisations that invite both internal and external bids tend to have higher success rates than organisations that merely compare external bids with current IS/IT costs (Lacity and Willcocks, 1998). Furthermore, senior executives and IS/IT managers who make decision together have higher success rates than either stakeholder group acting alone (Lacity and Willcocks, 1998).

In addition, Lacity and Willcocks (1998) suggest that recently signed contracts have achieved expected cost savings with a higher relative frequency than older contracts. This indicates that organisations are learning to make better decisions and negotiate more favourable deals (Lacity and Willcocks, 1998). Moreover, they also found that the size of IS/IT function does not usefully differentiate the financial success of

outsourcing, and this may indicate that managerial practices may be more important than economies of scale associated with size when seeking IS/IT cost reductions (Lacity and Willcocks, 1998).

Furthermore, studies carried out by Willcocks and Lester (1997) suggest that outsourcing requires a considerable cultural change on evaluation. Before outsourcing any IS/IT, the more successful organisations measured everything in a 3- to 6- month baseline period. This enabled them to compare more accurately the in-house performance against a vendor bid. It also prefigured the setting up of a tighter evaluation regime with more detailed and accurate performance measures and service level agreements (Willcocks and Lester, 1997). In cases where an in-house bid won, Willcocks and Lester (1997) have found that the threat of the vendor bid actually galvanised the in-house staff into identifying new ways of improving on IS/IT performance, and into maintaining the improvement through putting in place, and acting on the output from enhanced evaluation criteria and measures.

In order to sell the idea of outsourcing to the whole organisation, it is also important to ensure that an organisation's expected saving is based on reliable financial data (Ibrahim, 1998). If an organisation's does not have a good cost tracking system, then in effect there is no effective benchmark for evaluating whether productivity has been improved (Ibrahim, 1998). Moreover, if an organisation decides to outsource, the contract is the only mechanism to ensure that expectations are realised (Lacity and Hirschheim, 1994).

#### **2.11.7. Summary**

This section (Section 2.11) has discussed some basic concepts and research findings of IS/IT outsourcing, and presents several of its strengths and weaknesses. Most organisations have, at least to a certain extent, been involved with external outsourcing contracts. In essence, IS/IT outsourcing does not necessary always pay off with huge savings (Anderson, 1998; Stedman, 2000; Seddon et al., 2001). However, outsourcing does appear to have led to an increased awareness of, and use of, IS/IT investment evaluation (Seddon et al., 2001). Organisations have to be more realistic in their outsourcing expectations (Harrington, 1998). According to

Harrington (1998), for an organisation to achieve a big jump in savings, it had to be operating very inefficiently in the past. The unsuccessful cases, mostly, saw total IS/IT outsourcing as a financial package to improve business position rather than as a way of leveraging IS/IT for business value and keeping control of its IS/IT destiny (Douglas, 1999). According to Hirschheim and Lacity (2000), there is no guarantee that the outsourcing will be perceived as successful due to the very different expectations held by the various stakeholders. Success is only related to who is doing the evaluating (Hirschheim and Lacity, 2000). Finally, as mentioned earlier, it is important to understand IS/IT outsourcing because organisations' IS/IT investment evaluation and benefits realisation processes often need to be looked at in the context of outsourcing.

## **2.12. Significance of This Research**

As evident from the discussion above, this research is of significance for a number of reasons. Firstly, as mentioned in Section 2.5, IS/IT investments in organisations are huge and increasing rapidly each year (Ballantine et al., 1996; Ward et al., 1996; Willcocks et al., 1996b). Gartner estimates the worldwide IT services market in 2001 to be around US\$700 billion (Stone, 2001). In 1996 UK organisation expenditure on information technology was estimated as exceeding £33 billion per year, equivalent to an average of over 2% of annual turnover (Willcocks and Lester, 1996a). In the US, investment in IS/IT equipment grew from \$55 billion to \$90 billion in the 1980s, representing an annual growth rate of almost 15% (Willcocks, 1992a; Willcocks and Lester 1991). In Australia, the Federal Government announced that, starting in 1998, it would commit \$1.2 billion over five years to boost the effective use of IS/IT in business and investment industry (Mitchell, 1998).

Secondly, IS/IT investments evaluation is often the subject of heated debates amongst the researchers and practitioners over the realisation of actual and expected benefits of such investments (Hochstrasser, 1990). As indicated in Section 2.4, While organisations continue to invest heavily in IS/IT investments, research studies and practitioner surveys report contradictory findings on the effect of the expenditures on organisational productivity (Grover et al., 1998b). On one hand, studies conducted by many researchers around the world such as A.T. Kearney (1990) and Thachenkary

(1991) have suggested that IS/IT investment produces negligible benefits. On the other hand, studies conducted by other researchers such as Bender (1986) and Lee and Barua (1999) have disagreed, reporting that there appears to be some sort of positive relationship between organisations' performance and IS/IT spending. It is possible that the results of these studies indicate that the relationship between IS/IT investment spending and benefits is unclear and confounded by methodological problems as well as intervening variables (Grover et al., 1998b). There is also some evidence that suggests the relevance of system measures varies by system type (Klein, 1997).

Thirdly, there is still a lack of understanding of the impact of the proper IS/IT investments evaluation and benefits realisation processes in most of the organisations (Symons and Walsham, 1988). As mentioned in Section 2.7, the problems and difficulties in measuring benefits and costs are often the main reason for uncertainty about the expected benefits of IS/IT investments and hence are the major constraints to IS/IT investments (Enzweiler, 1996; Moad, 1994). Organisations seeking value for money in IS/IT investments have spent a lot of energy, time and money that has largely gone to waste (Simms, 1997). Furthermore, assessing the effective delivery of useful benefits from the investments to the business is very difficult (Lyon and Mooney, 1994; Remenyi and Whittaker, 1996). Therefore, evaluation is often ignored or carried out inefficiently or ineffectively because of its elusive and complex nature (A.T. Kearney, 1990; Serafeimidis and Smithson, 1996).

Fourthly, there is a growing need to evaluate and improve the measurement of the benefits of IS/IT investments in organisations (Ballantine and Stray, 1998; Farbey et al., 1992; mcadam, 1996). Senior managers have attempted to control and measure the expenditure on IS/IT investments in order to improve the productivity or profitability (Moad, 1994; Willcocks, 1989). However, many academics, researchers and practitioners still argue that the record on measuring, choosing and controlling IS/IT investments by the senior managers has still not been impressive (Farbey et al., 1992; Ward et al., 1996; Willcocks, 1994). This is because the history of numerous failed and disappointing IS/IT investments in organisations has been widely documented in Australia and overseas (Elliot and Melhuish, 1995; Willcocks and Lester, 1997). As mentioned in Section 2.5, Hochstrasser and Griffith (1991) and

Willcocks and Lester (1993) have indicated that only 16% of managers have relied on rigorous methods to assess and measure the benefits of investments in IS/IT and over a quarter of managers did not know whether or not IS/IT was producing better or worse returns than other investments. Other studies carried out by Baker and Berenblum (1996), Ballantine and Stray (1998), and Ward et al. (1996) have also indicated that very few evaluation techniques were used to justify investments, with only around 50% of organisations having at least some kind of a formal justification procedure.

Fifthly, gaining business value from, and justifying current IS/IT investments are often identified as the most critical but difficult management issues in Australia, UK and the US (Broadbent et al., 1994; Pervan, 1997; 1998). Investment in IS/IT is one of the major factors determining the success or failure of organisations (Baker and Berenblum, 1996). Frequently, IS/IT managers in large Australian organisations face a range of decisions concerning levels and types of investment in IS/IT. For example, amongst other things, decisions must be reached on:

- (1) Investment in hardware (computers and telecommunications equipment, for example).
- (2) Investment in software (decisions on in-house versus software package procurement, for example).
- (3) Achieving alignment between IS/IT investment with business strategies.
- (4) The prioritisation of IS/IT projects.
- (5) The overall process of evaluation and realisation of benefits during IS/IT projects.

As a result, organisations are becoming increasingly competitive in seeking to implement IS/IT effectively (Baker and Berenblum, 1996; Dober, 1994a). In order to evaluate, achieve and maximise the expected benefits from the IS/IT investments, it is important to adopt formal IS/IT investment evaluation and benefits realisation methodologies to ensure the benefits are delivered.

Sixthly, as can be seen from the above, several IS/IT investment evaluation and benefits realisation methodologies and approaches (Sections 2.8 & 2.9) (e.g. Ward et



al., 1996; Willcocks and Lester, 1997) and IS/IT stages of growth models (Section 2.10) (e.g. Galliers and Sutherland, 1991; Nolan, 1973) have been proposed and developed over the years by many researchers, practitioners and academics in order to describe the evolution of organisational information systems as well as to ensure that the IS/IT investments are successful and their proposed benefits are realised. However, no attempt has been made by any published research here in Australia or overseas to address the relationship between the organisational IS/IT maturity and the adoption of formal IS/IT investment evaluation and benefits realisation methodologies. There was also no attempt by any published research to combine these approaches and models in a way that any organisation can use it to: (1) determine organisations' IS/IT maturity level; (2) decide when is probably the best time to adopt the formal IS/IT investment evaluation and benefits realisation methodologies; (3) determine when organisations can move themselves to the ultimate mature stage; and (4) achieve organisational objectives and eliminate or minimise possible problems arising from IS/IT projects as mentioned earlier in this chapter. Therefore, there is a need to develop a framework based on the fit between theory and practice of benefits realisation and IS/IT investment evaluation by organisations in the context of organisational IS/IT stages of growth.

Furthermore, the researcher has, so far, not been able to locate any literature which has discussion on the linkage between IS/IT outsourcing and the use of IS/IT investment evaluation and benefits realisation methodologies. As mentioned in Section 2.11, the study conducted by Ernst & Young (in Sinton, 1994) has found that over 80% of all Australian organisations surveyed have outsourced in some form and many are likely to consider more in the near future. In addition, although many IS/IT outsourcing project failures (e.g. Barton, 2002; Douglas, 1999; Mitchell, 2000a; Sohal and Ng, 1998; Willcocks, 1992a) had been reported in the literature, very little attention had been paid to the use of IS/IT investment evaluation and benefits realisation methodologies in order to ensure the expected benefits were delivered within the projects. However, there appears to be very little application of IS/IT investment evaluation and benefits realisation practices and concepts in IS/IT outsourcing in the literature. Despite the fact that the IS/IT investment evaluation and benefits realisation framework which will be developed in Chapter 10 is applicable

to organisations in general, the framework should, nevertheless, be very useful to outsourcing organisations.

In addition to investigating the general organisations' IS/IT investment evaluation and benefits realisation processes, there is also a need to look at outsourcing organisations since most large Australian organisations' IS/IT systems development projects nowadays have, at least to certain extent, been involved with external outsourcing contractors. Hence, the role played by IS/IT outsourcing in IS/IT investment evaluation and benefits realisation is, indeed, important. In this respect, the contribution of this research to the area of IS/IT outsourcing in the context of IS/IT investment evaluation and benefits realisation is also significant.

Given the complexity of the decisions and the large expenditure involved, better understanding of the basis and practice of IS/IT investment and evaluation in large Australian organisations is essential. The difficulties of evaluation and benefits realisation processes are often the determining factors in the application of any formal methodology, and must be addressed if the processes are to be understood (Symons and Walsham, 1988). For example, Sohal and Ng (1998) found that in large Australian organisations the potential of IS/IT has not been utilised to meet the competitive challenges due to inadequate and inappropriate appraisals/evaluation of the proposed IS/IT investment projects. Moreover, they reported that 45% of the responding organisations did not evaluate whether IS/IT systems were still consistent with business objectives and 59% did not determine whether expected benefits were being achieved. Furthermore, as mentioned in Section 2.7, many problems in investment evaluation and benefits realisation practices were identified by researchers and academics (e.g. Ballatine et al., 1996; Ward et al., 1996; Willcocks, 1992b). Therefore, it is anticipated by the researcher that this topic will be considered important and significant by most of the respondents for the survey (Chapter 5) and case studies (Chapters 6 – 9).

Finally, most of the studies that have been done to date have been carried out in UK or the USA. Very little published work has been conducted in Australia. Thus, one significant aspect of this research is to better understand the current trends in the effective utilisation of IS/IT (including IS/IT outsourcing) in Australia. Therefore,

this research attempts to address the issues which affect the ability of organisations to evaluate the IS/IT investment processes as well as to manage the potential benefits arising from the use of IS/IT. As indicated earlier, a benefits realisation and investment evaluation framework will be developed to assist organisations in minimising or overcoming some of the problems encountered in their IS/IT investment evaluation and benefits realisation practices.

### **2.13. Summary**

In this chapter we have discussed the basic principles of IS/IT investment evaluation and benefits realisation. The need for better methods of IS/IT investment evaluation has arisen from problems such as the 'productivity paradox' where existing measures fail to reveal the gains made from these investments. The reasons for IS/IT investment evaluation may be more than just solving this paradox, however, and may include project justification, project comparisons, control, learning, and competitive advantage.

Problems in this area include the budgeting practices of organisations concealing full costs, traditional financial evaluation techniques (such as NPV, IRR, ROI and others) excluding intangible benefits and risks, deliberate overstatement of costs by project managers, the uncertainty involved in new technology projects, lack of time and care in the evaluation process, and lack of IS/IT planning. Willcocks and Lester's (1997) proposed approach has been presented as a framework for a number of other methods and techniques that can be combined them into a process for success in this area.

Problems in managing and realising of IS/IT investments include measurement problems (particularly of intangible benefits), lack of pressure to measure, cost of post-implementation reviews, poor IS/IT adoption practices, and organisational culture. Unfortunately, some managers see IS/IT as a technical issue, seek financial bottom-line justifications, and see functionality as a benefit in itself. More recent benefits realisation principles include the recognition that (1) potential benefits change over time, (2) organisation/business context determine benefits, (3) all outcomes represent potential sources of value, and (4) organisations must be proactive in realising benefits. It is important to recognise that financially-oriented

measures such as NPV and ROI are useful but largely ignore intangible benefits.

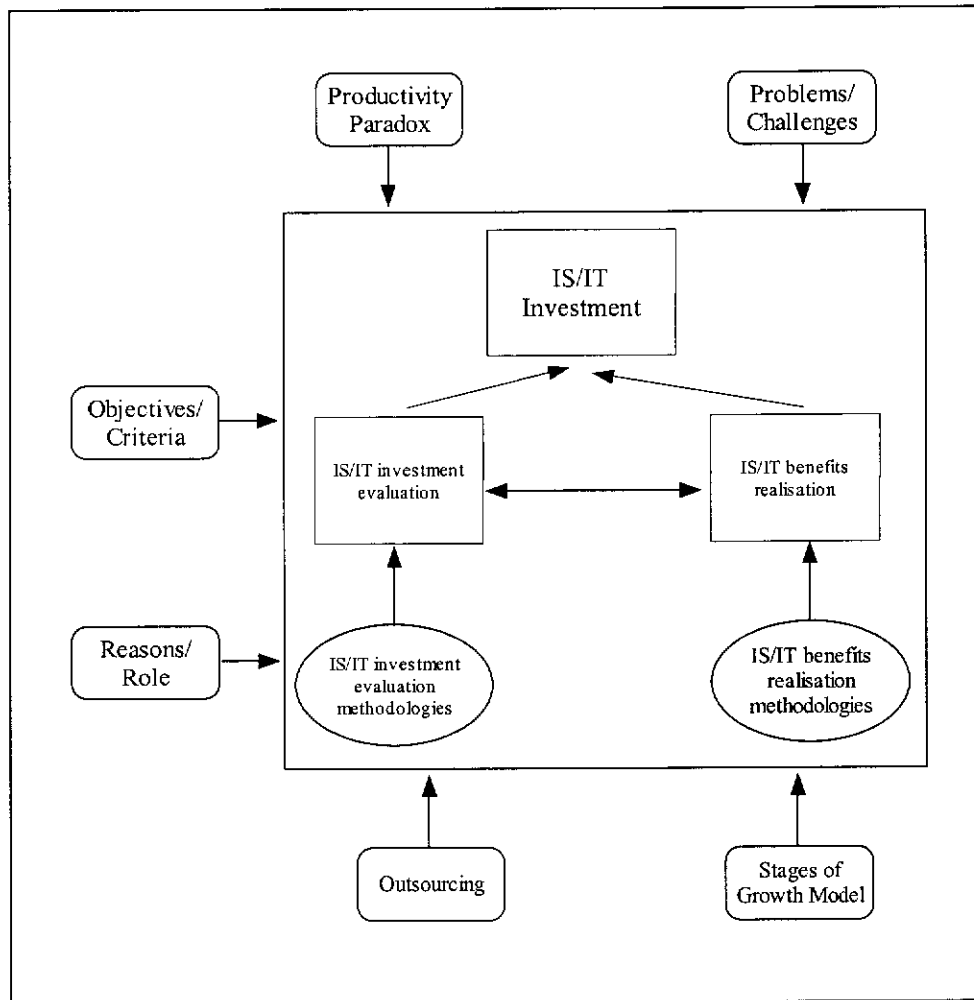


Figure 2.14. Linking the Important Elements of the Literature Review

Different approaches to benefits realisation have been discussed, including Cranfield's Process Model of Benefits Management, the Active Benefit Realisation approach, and DMR Benefit Realisation Model. In addition, the stages of growth model has been mentioned because the IS/IT investment evaluation and benefits realisation framework developed in Chapter 10 is based on this model. Furthermore, the Galliers and Sutherland's model has often been used by researchers and practitioners to describe the evolution of organisational information systems.

This chapter also discusses the basic concepts of IS/IT outsourcing, and reviews many of its advantages and disadvantages. IS/IT outsourcing has been used by many organisations to improve their IS/IT performance because it promises to provide

better economic, business and technical options. Nowadays most organisations have outsourced their IS/IT functions entirely or partially and the amount of money being spent on outsourcing has increased dramatically every year. Figure 2.14 above shows the relationship between the important elements that have been discussed in this chapter. Finally, the significance of this research is discussed.

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# Chapter 3

## Research Methodology

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### 3.1. Introduction

According to Shanks et al. (1993), all academic disciplines have implicit assumptions about what research is appropriate, in terms of both topics and research methodologies. These assumptions are usually based on the success which preferred methodologies have had in uncovering, or proving matters of importance to the discipline. Hence, finding a suitable match between research study and research methodology, of a nature that would lead to improved knowledge and practice, is a priority in deciding upon a research methodology (McKay, 1994).

This chapter will discuss the differences between positivism and interpretivism as well as quantitative and qualitative research, including their strengths and weaknesses. Several research methodologies will also be examined and discussed. Appropriate methodologies will then be chosen for satisfying the research objectives listed in Chapter 2.

### 3.2. The Selected Paradigm or Theoretical Framework

#### 3.2.1. Positivism and Interpretivism

There has been a lot of academic discussion in recent years on the different types of research paradigms or theoretical frameworks in the IS field (Galliers, 1991; Neuman, 1994; Shanks et al., 1993). Most of the approaches or methods to research in the IS field come from two main competing paradigms - positivism and

interpretivism. However, there is at least one other type of research paradigm or theoretical framework that has been mentioned in the literature - critical (Neuman, 1994). Since the critical paradigm is seldom used in IS research (Pervan, 1996), the following discussion will focus only on the two main paradigms in the IS field - positivism and interpretivism.

Traditionally, the most dominant paradigm in the IS research field has been positivism (Alavi and Carlson, 1992; Lacity and Janson, 1994). According to Shanks et al. (1993), positivism is the philosophical framework which underlies scientific method. It has been defined as “an organised method for combining deductive logic with precise empirical observations of individual behaviour in order to discover and confirm a set of probabilistic causal laws that can be used to predict general patterns of human activity” (Neuman, 1994). According to Neuman (1994), positivism is associated with many specific social theories. It attempts to discover natural laws so people can predict and control events. Positivist researchers are also likely to do quantitative social research and to use experiments, surveys, and statistics. They favour “objective” research, attempt to measure precisely things about people, and test hypotheses about the relationships among variables of interest (Lacity and Janson, 1994). They also tend to evaluate an explanation by logically deducing from theory then collecting data and analysing it in ways that exclude alternative explanations, and that other researchers can reproduce (Shanks et al., 1993). Critics say that positivism reduces people to numbers and its concern with abstract laws and formulas are not relevant to the actual lives of real people (Neuman, 1994).

On the other hand, interpretivism has been defined as “the systematic analysis of socially meaningful action through the direct detailed observation of people in natural settings in order to arrive at understandings and interpretations of how people create and maintain their social worlds” (Neuman, 1994). Interpretivists argue that positivism’s concerns with abstract laws and measurement are unrelated to the real world (Shanks et al., 1993). According to Neuman (1994), the main purpose of interpretivism is to understand and describe meaningful social action. It assumes that human action has little inherent meaning but is created out of purposeful human interaction and is largely what people perceive it to be. The interpretivists argue that researchers can never be objective (Shanks et al., 1993) and they tend to use rigorous

and detailed methods to gather large quantities of qualitative data in the form of specific details (Neuman, 1994). Whereas a positivist researcher precisely measures details about many people and uses statistics to test for laws, the interpretive researcher may spend a long period of time with a few people to get an in-depth understanding of their lives (Neuman, 1994).

### **3.2.2. Quantitative and Qualitative**

According to Remenyi and Williams (1996), it is important at the methodological level, especially in information systems research, to decide if the data collected will be of an essentially qualitative or quantitative nature. Once these decisions have been made, carrying out the research study may then be largely a matter of routine, using well established methods for analysing and interpreting the data (Remenyi and Williams, 1996).

Quantitative evidence generally uses numbers in the form of counts or measurements to give precision to a set of observations (Remenyi and Williams, 1996). It is often obvious what data is required and this data may usually be collected within a tight structure (Remenyi and Williams, 1996). According to Burns (1994), its main strengths lie in precision and control. Control is achieved through the sampling and design while precision through quantitative and reliable measure (Burns, 1994). Moreover, the sample can be larger and more representative, and the results can be generalised to larger populations within known limits of error (Fitzgerald and Howcroft, 1999). Similarly, it has its own shortcomings, too. Many researchers are concerned that the quantitative approach denigrates human individuality and ability to think (Burns, 1994) as well as impacts on the interpretive quality of the researcher's observations (Galliers and Land, 1988).

On the other hand, qualitative evidence often uses words to describe situations, individuals or circumstances surrounding a phenomenon (Remenyi and Williams, 1996). It is also often less structured and more responsive to needs and nature of research situations than quantitative evidence (Fitzgerald and Howcroft, 1999). According to Leedy (1993), qualitative methodology should: (1) be an alternative to the experimental method; (2) consider words as the elements of data; (3) be primarily



an inductive approach to data analysis; and (4) result in theory development as an outcome of data analysis. Eisner (1991 in Leedy, 1993) outlines six main features of a qualitative study:

- (1) Qualitative studies tend to be field focused.
- (2) Qualitative research considers the self as an instrument. The self is an instrument that engages the situation and makes sense of it.
- (3) It has interpretive character.
- (4) It displays the use of expressive language and the presence of voice in the text.
- (5) It focuses its attention to particulars.
- (6) It pertains to the criteria for judging their success. Qualitative research becomes believable because of its coherence, insight and instrumental utility.

To sum it up, Stainback and Stainback (1984 in Leedy, 1993) argue that there are seven basic differences between the qualitative and the quantitative methodologies:

- (1) Outsider/insider perspective - The quantitative researcher attempts to arrive at an understanding of facts from the outsider's perspective by maintaining a detached, objective view that, hypothetically, is free from all bias. In contrast, the qualitative researcher focuses on the perspective of the insider, talking to and/or observing subjects who have experienced first-hand the activities or procedures under scrutiny.
- (2) Stable/dynamic reality - The quantitative researcher focuses on the accumulation of facts and causes of behaviour and believes that the facts gathered do not change while the qualitative researcher is concerned with the changing or dynamic nature of reality.
- (3) Particularistic/holistic focus - The quantitative researcher structures the situation by identifying and isolating specific variables for study and by employing specific measurement devices to collect information on these variables. In contrast, the qualitative researcher attempts to gain a complete or holistic view of what is being studied by gathering a wide array of data such as records, documents, observations, interviews or even quantitative data.

- (4) Verification/discovery orientation - The quantitative researcher tends to tightly structure and design the procedures in order to verify or disprove predetermined hypotheses. On the other hand, the qualitative researcher tends to use flexible and exploratory procedures to gain a deeper understanding of what is being investigated.
- (5) Objective/subjective data - The quantitative researcher focuses on the objective data that exist apart from the feelings and thoughts of individuals and is typically expressed in numbers. The qualitative researcher focuses on subjective data that exist within the minds of individuals and is typically expressed or reported through language.
- (6) Controlled/naturalistic conditions - Usually quantitative data are collected under controlled conditions in order to rule out the possibility that variables other than the ones under study could account for the relationships among the variables. In contrast, qualitative data are collected within the context of their natural occurrence.
- (7) Reliable/valid results - The quantitative researcher focuses heavily on reliability while the qualitative researcher tends to concentrate on validity.

Given the research topic and research objectives previously stated in Chapter 2, this research study was: (1) about “observing researcher’s formal propositions, which not only specified independent variables, dependent variables, and the relationships among them, but also satisfied the rules of formal logic and the rules of empirical testing” (Lee, 1994) as well as concerned with objective research which attempted to measure precisely things about people (Lacity and Janson, 1994); (2) concerned with the current processes, practices, and norms of IS/IT investment evaluation and benefits management in large Australian organisations in order to understand and describe “meaningful social action” and “fluid definitions of a situation created by human interaction” (Neuman, 1994); and (3) to seek a rich and in-depth understanding of these practices and processes by studying the IS/IT investments appraisal and justification as well as benefits management in large Australian organisations. As the IS/IT investment evaluation and benefits management process and practice was a very important research topic in the IS, this research had

attempted to gain deep insights and meanings of events, social context, culture as well as how the organisations attempted to address these issues.

Hence, this research study was well-suited to be conducted using a combination of postal survey (positivist) and case study (interpretivist) approaches. The interpretivist (case study) approach with qualitative data collection techniques (i.e. interviews and observation) was employed because qualitative data tends to provide richness, diversity, accuracy, and contextual depth (Abramson and Mizrahi, 1994). This reasoning has been supported by Rouse and Dick (1994) who have stated that many information systems practices are difficult to investigate using only positivist approaches and this difficulty has been recognised in other disciplines that are concerned with social behaviour. Rouse and Dick (1994) have further stated that there is growing recognition that interpretivist research approaches are needed to capture holistic real-world answers to real-world problems in a way that is not possible in a positivist context.

On the other hand, the use of a mainly positivist approach (i.e. postal survey) with quantitative technique (i.e. questionnaire) was also carried out in order to capture those data that were not obtainable under a mainly qualitative technique (i.e. interview). According to Sekaran (1984), the quantitative approach has the advantage of being able to focus on problem solving and pursue a step-by-step logical, organised, and rigorous method to identify problems, gather data, analyse the data, and draw valid conclusions.

### **3.3. The Selection of Appropriate Research Methodologies**

Shanks et al. (1993) have pointed out that the nature of research in information systems has generated a lot of debate in recent years. The most controversy has been centred around the debate regarding the most appropriate approaches for research in information systems. Shanks et al. (1993) have argued that research can be described as exploratory, descriptive or explanatory, depending on the purpose of the research. They are as follows:

- (1) Exploratory research (formulative research): It is aimed at formulating more precise questions that future research can answer.

Exploratory researchers frequently use qualitative research methods.

- (2) Descriptive research: It attempts to analyse and describe the specific details of a situation, organisational setting or practice. The aim is to take a well-defined subject and describe its structure and function accurately. It focuses on questions such as how did it happen, who was involved, and what did they do and what were the results. It is not concerned so much with the question of why. It is most appropriate to the theory building stage and it can be used to test theory about the structure of a situation, and to disconfirm hypotheses.
- (3) Explanatory research: It attempts to answer the question of why things happened. Research with this objective usually employs methods which allow for a high level of control such as experimental methods.

(Shanks et al., 1993)

On the other hand, Galliers (1991) has proposed that three aspects need to be considered in order to select an appropriate research methodology: (1) whether the research will focus on information technology as it impacts on society, on organisations or groups, or on the individual; (2) whether the research will also focus on the technology itself or on methodological considerations; and (3) whether the research is concerned with theory building, theory testing, or theory extension.

The recommended criteria used to find the suitable match between research project and research methodology by Galliers (1991) and Shanks et al. (1993) can be combined to form the basis for selecting the most appropriate research methodology for this research. This is shown in Table 3.1.

|                            | Theorem<br>Proof | Lab.<br>Exp. | Field<br>Exp. | Case<br>Study | Survey      | Forecast.<br>& Future<br>Research | Simul. &<br>Role<br>Playing | Concep.<br>Study-<br>Subj. /<br>Argum. | Phenom.-<br>Interp. /<br>Descrip. | Action<br>Research |
|----------------------------|------------------|--------------|---------------|---------------|-------------|-----------------------------------|-----------------------------|--|-----------------------------------|--------------------|
| Exploratory                |                  | N            | N             | Y             | maybe       |                                   | Y                           | Y                                      | Y                                 | Y                  |
| <b>Descriptive</b>         |                  | N            | N             | Y             | Y           |                                   | N                           | N                                      | Y                                 | Y                  |
| Explanatory                |                  | Y            | Y             | maybe         | maybe       |                                   | N                           | N                                      | maybe                             | N                  |
| Society                    | N                | N            | maybe         | maybe         | Y           | Y                                 | maybe                       | Y                                      | Y                                 | maybe              |
| Org./Group                 | N                | maybe        | Y             | Y             | Y           | Y                                 | Y                           | Y                                      | Y                                 | Y                  |
| Individual                 | N                | Y            | Y             | maybe         | maybe       | maybe                             | Y                           | Y                                      | Y                                 | maybe              |
| Technology                 | Y                | Y            | Y             | N             | maybe       | Y                                 | Y                           | maybe                                  | maybe                             | N                  |
| <b>Methodology</b>         | N                | N            | Y             | Y             | Y           | N                                 | Y                           | Y                                      | Y                                 | Y                  |
| <b>Theory<br/>Building</b> | N                | N            | N             | Y             | Y           | Y                                 | Y                           | Y                                      | Y                                 | Y                  |
| Theory Testing             | Y                | Y            | Y             | maybe         | maybe       | N                                 | maybe                       | N                                      | maybe                             | maybe              |
| Theory<br>Extension        | maybe            | maybe        | maybe         | maybe         | maybe       | N                                 | N                           | N                                      | maybe                             | maybe              |
| <b>Objectives?</b>         | <b>x, x</b>      | <b>x, x</b>  | <b>x, x</b>   | <b>1, 2</b>   | <b>1, 2</b> | <b>x, x</b>                       | <b>x, 2</b>                 | <b>x, 2</b>                            | <b>1, 2</b>                       | <b>1, 2</b>        |

Table 3.1: Selection of methodologies (adapted from Galliers (1991) and Shanks et al. (1993))

Before deciding which methodologies are possibly suitable for this research study, it is important to assess all the criteria set out by Galliers (1991) and Shanks et al. (1993). This research was mainly *descriptive* in nature as it attempted to describe the processes and practices of IS/IT investment evaluation and benefits management in large Australian organisations. The researcher's concern was simply to describe a situation, make comparisons between different studies (i.e. similar surveys carried out in other studies), and develop a framework or model. Analysis stimulated by descriptive questions was meant to ascertain facts, not to test theory (Pinsonneault and Kraemer, 1993). Furthermore, the prime focus of this research project was how the organisations or a group of people inside an organisation handled these processes and practices. Therefore, this research study was focused on information technology as it impacted on *organisations* which were involved with *methodologies*. Furthermore, since this research study was mainly descriptive in nature and was concerned about both the organisations and methodologies, it was appropriate for *theory building*.

From arguments put forward earlier in this chapter for adopting the above analysis of the criteria set out by Galliers (1991) and Shanks et al. (1993), a number of possible approaches for this research study are:

- (1) Simulation and game / role playing.
- (2) Subjective / argumentative.
- (3) Phenomenology (descriptive or interpretive research).
- (4) Action research.
- (5) Survey.
- (6) Case study.

The arguments for and against these 6 research methodologies for 2 research objectives (see Figure 3.1) outlined in Chapter 1 will be discussed in sections 3.3.1 to 3.3.6.

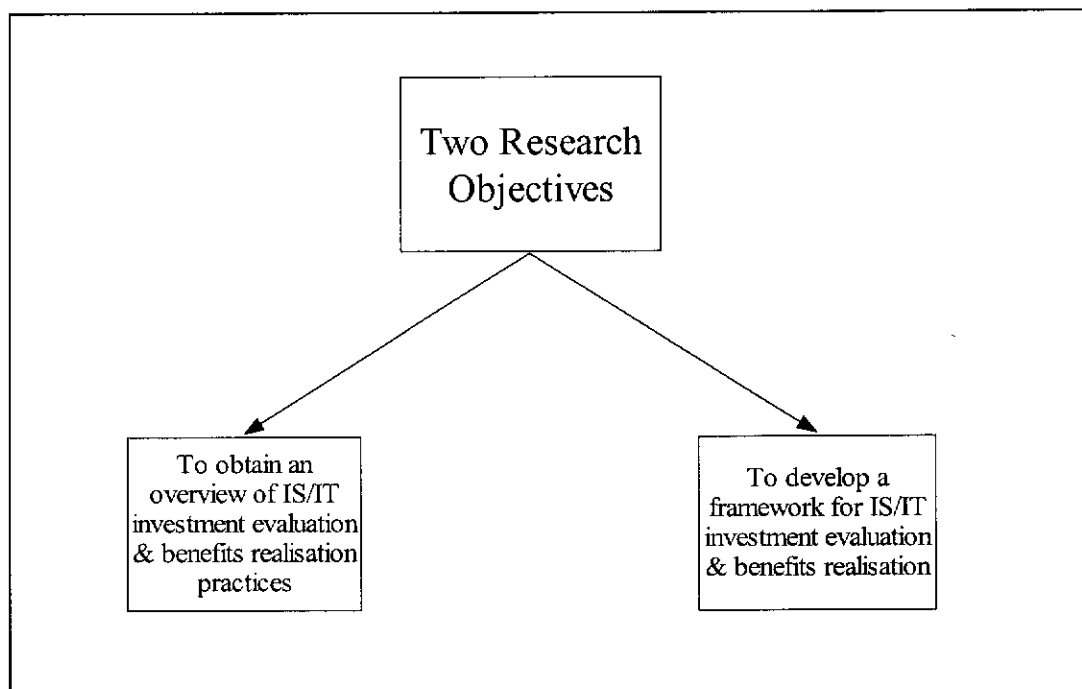


Figure 3.1: Two research objectives

### **3.3.1. Simulation and Game / Role Playing**

Simulation is used to study a problem where the variables involved are known, but where the behaviour they exhibit in interaction with each other is unknown (Shanks et al., 1993). A model is built to simulate the behaviour of the system under study

and then the model's behaviour is observed as human subjects interact within the system (Jenkins, 1985; Shanks et al., 1993). Game / role playing approach is similar to the simulation approach, except that the approach is more often used in devising hypotheses to be tested later in "real world" situations (Galliers, 1991). Although simulation and game / role playing are suitable for theory building (for research objective 2), these two approaches were not selected for this research study because the researcher did not seek to test hypotheses nor devise a simulation that reflected the real world situations.

### **3.3.2. Subjective / Argumentative**

According to Shanks et al. (1993) this approach generally involves the articulation of subjective beliefs about an area of investigation. The contents of this study are based on opinion and speculation rather than observation (Galliers, 1991). Its strengths are that it provides a critical analysis of the situation which can lead to new insights, the development of theories and deeper understanding (Shanks et al., 1993). Although subjective / argumentative approach is suitable for theory building (for research objective 2), there is a likelihood of biased interpretations which can distort the study and the interpretations of results with which the reviewer is unfamiliar (Galliers, 1991; Shanks et al., 1993). Its subjective nature can also lead to little quality control. Therefore, this approach was not selected for this research study.

### **3.3.3. Phenomenology (Descriptive or Interpretive Research)**

This research approach is concerned with making explicit the meanings and presuppositions of the subjects and the researcher (Shanks et al., 1993). Although the strength of this approach lies in the richness of understanding which can be gained about a situation, its weaknesses lie in its inability to exclude alternative explanations and to identify researchers' biases (Galliers, 1991; Shanks et al., 1993). Although this approach may be suitable for theory building and descriptive study (for research objectives 1 & 2), this approach would not be easy for an inexperienced researcher to follow as it relies heavily on the skills of the researchers and their ability to identify their biases as well as unheralded assumptions and, in some cases, unfamiliarity with the information being examined (Galliers, 1991). As a result, this approach was not

chosen for this research study.

#### **3.3.4. Action Research**

Burns (1994) has defined action research as “the application of fact finding to practical problem solving in a social situation with a view to improving the quality of action within it, involving the collaboration and co-operation of researchers, practitioners and laymen.” The aim of action research is to add to theoretical knowledge but also to apply that knowledge as useful action (Shanks et al., 1993). Action research is a total process in which a problem situation is diagnosed, remedial action planned and implemented, and its effects monitored, if improvements are to get underway (Burns, 1994). The action researchers are not immediately concerned with adding more truth to the body of knowledge which appears in articles and books (Burns, 1994). Instead, they are interested in the improvement of the practices in which they are engaging - how to do their jobs better (Burns, 1994).

According to Galliers (1991) and Shanks et al. (1993), action research is similar to the case study approach except that it involves the detailed reporting of a particular development exercise in which the action researcher actively contributes. The action researchers actively associate themselves with the practical outcomes of the research and seek to identify theoretical outcomes. Another strength of action research is that biases of the researcher are made known (Galliers, 1991). In addition, the role of subject and researcher can easily be reversed at times during action research studies.

Although action research may be suitable for theory building and descriptive study (for research objectives 1 & 2), however, the weaknesses of this approach would be difficult for the researcher to overcome. One major reason is that it would be difficult to get an organisation to agree to be the subject of an action research project for this type and scale. Other weaknesses include the inherent subjectivity of the approach, the inability of the action researcher to remain unbiased and the inability to exclude alternative explanations (Shanks et al., 1993). Therefore, action research was not employed for this research study.



### **3.3.5. Survey**

According to Galliers (1991), survey research is essentially “snapshots” of practices, situations or views at a particular point in time, undertaken using questionnaires or (structured) interviews, from which inferences may be made. It is the systematic gathering of information from respondents for the purpose of understanding and predicting some aspects of the behaviour of the population of interest (Tull and Hawkins, 1993). It is generally aimed at securing some piece of information about the present, recent past or short-term future from a respondent (Weiers, 1988). It is also one of the most frequently used empirical research methods in information systems (Shanks et al., 1993) and is believed to be well understood and applied by management information systems scholars (Grover, 1998; Pinsonneault and Kraemer, 1993). Survey research is also a way of collecting data about a situation by questioning a representative sample of the appropriate population (Shanks et al., 1993). Data can be either quantitative or qualitative, fact or opinion-based, and obtained by interview or questionnaire (Shanks et al., 1993; Weiers, 1988). In survey research, the researcher usually has very clearly defined independent and dependent variables and a specific model of the expected relationships which are tested against observations of the phenomenon (Pinsonneault and Kraemer, 1993). In general, a survey has the following main characteristics (Burns, 1994):

- (1) It requires a sample of respondents to reply to a number of standard questions under comparable conditions.
- (2) It may be administered by an interviewer, by mailing the respondent a form for self completion, or by telephone.
- (3) The respondents represent a defined population.
- (4) The results of the sample survey can be generalised to the defined population.
- (5) The use of standard questions enables comparisons of individuals to be made.

The disadvantages for undertaking a survey often include:

- (1) It is often difficult to secure an adequate response rate (especially in the area of IS) (Armstrong and Overton, 1977; Church, 1993; Yammarino et al, 1991).
- (2) The likelihood of biased sampling exists as non respondents may

differ significantly from respondents (Weiers, 1988).

- (3) Open-ended instruments may produce data that cannot be merged easily for systematic analysis (Geer, 1991).
- (4) Ambiguous, incomplete or inaccurate information cannot be followed up and responses must be accepted as given (Oppenheim, 1992; Pinsonneault and Kraemer, 1993).
- (5) The respondents can read the entire questionnaire prior to answering the questions or they can change answers to earlier questions after seeing later questions (Oppenheim, 1992).
- (6) A mailing addressed to a specific individual or job title may not reach the individual who is most relevant for the survey and it is possible that a busy executive may often pass on a questionnaire to others, who are not as qualified to complete it (Tull and Hawkins, 1993).
- (7) There is a possibility of misinterpretation of the questions by the respondents (Hessler, 1992).
- (8) The time required for the survey is generally long (Weiers, 1988).

However, utilising a survey to gather the required data for this research study also has many advantages. The main advantages of undertaking a survey research such as this one include:

- (1) It is less expensive than most of the other methods (Oppenheim, 1992).
- (2) It is designed as a means of collecting a large quantity in a time-efficient manner (Sekaran, 1984).
- (3) Structured surveys are amenable to statistical analysis (Galliers, 1991).
- (4) It can be used to describe real world situations and make easy and appropriate generalisations (Galliers, 1991).
- (5) It can be used on many variables and all normal human populations except young children (Galliers, 1991).
- (6) Each respondent receives the identical set of questions, phrased in exactly the same way (Weiers, 1988).
- (7) Errors resulting from the recording of responses by interviewers are reduced (Weiers, 1988).

- (8) The respondent is free to answer at his/her own time pace (Weiers, 1988).
- (9) Fear and embarrassment, which may result from direct contact, are avoided (Burns, 1994).
- (10) The problem of non-contact with the respondent is overcome (Weiers, 1988).
- (11) It is possible to include a larger number of subjects as well as subjects in more diverse locations than is practical with the interview (Oppenheim, 1992).
- (12) It can guarantee confidentiality and may, therefore, elicit more truthful responses (Weiers, 1988); and
- (13) Personal appearance, mood or conduct of the interviewer is not present when the questionnaire is completed (Weiers, 1988).

Survey was chosen to accomplish the research objective 1 which is to establish current Australian industry and government practices and norms in managing IS/IT benefits and evaluation. This is because the survey was able to get an overview of these practices and processes more quickly and efficiently than any of the research methods mentioned above. In addition, it had enabled the researcher to conduct a descriptive study by focusing on how these processes and practices had impacted on these organisations. Finally, some strategies were implemented to minimise some of the survey's weaknesses (see Chapters 4 & 5).

### **3.3.6. Case Study**

Yin (1984) has defined a case study as “an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident, and in which multiple sources of evidence are used.” It is a research strategy which focuses on understanding the dynamics present within single settings (Eisenhardt, 1989). According to Shanks et al. (1993), a case study involves the detailed study of a particular issue within a single organisation or group of organisations. It involves the collection of very extensive data to produce understanding of the entity being studied (Benbasat et al., 1987). The case study is often the preferred strategy when “how”,

“why”, or “what” questions are being asked, or when the researcher has little control over events, or when the focus is on a contemporary phenomenon within a real life context (Burns, 1994). It is particularly useful for a research study that needs to focus on a set of issues in a single organisation and to identify the factors involved in an in-depth study of organisation (Jankowicz, 1991). It typically combines data collection methods such as archives, interviews, questionnaires, and observations (Eisenhardt, 1989; Johnston et al., 1999). The evidence may be qualitative, quantitative, or both (Johnston et al., 1999). Finally, the case study can be used to accomplish various aims: to provide description, generate theory, or test theory (Eisenhardt, 1989).

However, using multiple data collection techniques can place considerable pressure on case study researchers (Galliers, 1991). They have to be competent in carrying out a range of data collection methods - interviewing, observation, analysing records and survey questionnaires (Johnston et al., 1999). The results are often not easily communicated in a summary fashion for decision-makers (Youtie et al., 1999). The greatest concern for the case study approach is the role of human subjectivity when selecting evidence to support or refute, or when choosing a particular explanation for the evidence found (Burns, 1994; Jankowicz, 1991). Another concern is that the case study approach provides very little evidence for scientific generalisation (Burns, 1994). A third complaint about the case study approach is that it is time-consuming and produces a massive amount of information which is impossible to adequately analyse. This, in turn, increases the tendency to selectivity and bias (Johnston et al., 1999).

There are also criticisms of the reliability and validity of the case study approach (Johnston et al., 1999). According to Burns (1994), criticisms relevant to reliability include: (a) observer insufficiently trained so observations are unreliable; (b) observer biases are intrusive leading to unreliable observations; (c) unavailability of baseline data; and (d) insufficient data for reliable generalisations or conclusions. The steps and procedures must be clearly explicit and well documented in the final report in order to improve reliability and to enable others to replicate the work. For validity of the case study approach, the checks and balances of random sampling, of standardised and reliable instruments are often missing (Burns, 1994). According to Burns (1994), reliability can be improved with triangulation plus the commitment to

seek deliberately to disconfirm one's own interpretations. The researcher can improve construct validity by the use of multiple sources of evidence to demonstrate convergence of data from all sources, and by establishing a chain of evidence that links parts together (Burns, 1994). To improve external validity, the researcher has to know whether the study's findings are generalisable beyond the immediate case (Burns, 1994). Another objection to the case study approach is that since methodological rigour appears low then results are suspect and writings of case studies reveal more literary artistry than reliable and valid explanation (Burns, 1994).

However, according to Galliers (1991) and Johnston et al. (1999), the strength of the case study approach is that it enables the capture of "reality" in considerably greater detail than is possible with most of the other approaches. It attempts to be comprehensive, and involves the researcher in describing and analysing the full richness and variety of events and issues in the organisation (Jankowicz, 1991).

Case study was chosen since it was ideal for generating and building theory (for research objective 2) under this research study. Eisenhardt (1989) listed three strengths of theory building from case study: (1) there is a likelihood of generating novel theory; (2) the emergent theory is likely to be testable with constructs that can be readily measured and hypotheses that can be proven false; and (3) the resultant theory is likely to be empirically valid. For this research, case study was used to: (1) develop a new framework for IS/IT investment evaluation and benefits realisation; (2) ensure that the framework developed will likely be readily testable in the future research (Chapter 11); and (3) make sure that the framework developed will likely be empirically valid by using a proven case study approach (e.g. Yin, 1984).

The analysis of the case study results was conducted in a cyclical manner and the results were checked by the researcher's supervisors (for more detail please refer to Chapters 4, 7, and 9). Finally, the guidelines set out by Klein and Myers (1999) for conducting and evaluating interpretive field studies in information systems were also followed in an attempt to improve the quality of this research by minimising some of the case study's main weaknesses mentioned above (e.g. human subjectivity and inexperienced researcher) (see Appendix C).

### 3.4. Integrating Survey and Case Study Research Methods

As can be seen from the discussion above, survey and case study research methods were chosen to achieve research objectives 1 and 2 of this PhD project. According to Lee (1991), survey and case study can be mutually supportive, rather than mutually exclusive. As mentioned earlier, both survey and case study have strengths and weaknesses. However, the combination of both research methods can focus on their relevant strengths and produce a final result which can highlight the significant contribution of both (Jones, 1997). Combining these methods also introduces both testability and context into the research as well as increase robustness of results (Kaplan and Duchon, 1988). In another word, results from the survey can be cross-checked by the case study and data can be looked from different angles. Collecting different kinds of data by different research methods (i.e. survey and case study) from different sources can provide a wider range of coverage that may result in a fuller picture of the unit under study than would have been achieved otherwise (Kaplan and Duchon, 1988). This can possibly yield a superior piece of research (Gable, 1994).

|   | Survey | Case Study |
|---|--------|------------|
| Controllability                               | Medium | Low        |
| Deductibility                                 | Medium | Low        |
| Repeatability                                 | Medium | Low        |
| Generalisability                              | High   | Low        |
| Discoverability (explorability)               | Medium | High       |
| Representability (potential model complexity) | Medium | High       |

Table 3.2: Relative strength of survey and case study methods (Source: Gable (1994))

From the discussion and Table 3.2 above one can observe that many of the strengths of one method compensate for weaknesses in the other (Gable, 1994). According to Gable (1994), integrating survey and case study research methods can be useful: (1) as a source of rich detail to assist in interpreting quantitative findings from the survey; and (2) as a further means of triangulation, by testing the patterns with the

case sample as well as with the quantitative survey data.

### **3.5. Summary**

As can be seen from the arguments above, postal survey was selected an appropriate tool for satisfying research objective 1 while case study methodology was chosen for accomplishing research objective 2. As mentioned earlier, the survey research would enable the researcher to collect mostly quantitative data while the case study would gather largely qualitative data. According to Remenyi and Williams (1996), the use of these two sorts of data can be used to construct theoretical models such as the framework to be developed as part of the research objective 2. For example, bias is one of the main problems often encountered during the case study interviews. Although bias cannot be totally eradicated, it can be minimised by use of such techniques as triangulation (both quantitative and qualitative data) through the use of survey data, document analysis, and observation (Remenyi and Williams, 1996).

The results from the questionnaire (Chapter 5) and case studies (Chapters 7 and 9) will then be analysed in order to develop a framework for IS/IT investment evaluation and benefits realisation in Chapter 10. The use of these two sorts of data (quantitative and qualitative) are important because the quantitative survey data will allow the researcher to claim that the case studies results have some degree of generality (Remenyi and Williams, 1996). After all, both (quantitative and qualitative) approaches to research are important and necessary and each depends upon the other if significant and generalisable additions are to be made to the body of the knowledge (Remenyi and Williams, 1996).

In the next chapter (Chapter 4), several data collection and analysis methodologies for this research will be examined. Details on how the survey and case study can be used to achieved both research objectives will be also provided in the chapter. In addition, research validity, reliability and triangulation issues will be discussed.

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# Chapter 4

## Research Design

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### 4.1. Introduction

The research design involves the selection of the proposed data collection and analysis strategies as well as the development of a research plan. According to Hedrick et al. (1993), the selection or development of a research design is a key decision for research planning as it serves as the “architectural blueprint” of a research study. It ensures that the data collection and analysis activities used to conduct the research study are tied adequately to the research questions as well as objectives, and that the complete research agenda would be addressed. It would also affect the reliability and validity of the research study (Pervan, 1994). With good research design planning before the formal research study begins, the odds of a successful study would be improved significantly.

According to Hedrick et al. (1993), the research design relies heavily on the conceptual framework developed for the study. Some of the key information items suggested by Hedrick et al. (1993) for design selection are:

- (1) Detailed descriptions of the key variables and concepts of interest and how they are expected to be related (i.e. survey of the process of IS/IT investment evaluation and benefits management).
- (2) Determination of the appropriate level of analysis (i.e. IS/IT managers).
- (3) Clarification of population (i.e. top 500 companies), geographic (i.e. Australia), and time boundaries (i.e. last 12 months).



- (4) Determination of the desired level of precision of the results (i.e. replicability, reliability and validity).

The process of refining and revising the research objectives during the research study should have yielded a clear understanding of the key concepts and variables. As this research study is mainly descriptive in nature, it was important to narrow down the scope of the study (the IS/IT investment and benefits management processes in large Australian organisations) as it went along.

According to Hedrick et al. (1993), it is also important to know what level of analysis is necessary for answering the “right” question. Correct identification of the proper level of analysis has important implications for how the data will be analysed. For example, this research study had to decide what type of qualitative and quantitative data analysis techniques to use.

The last key point relates to the level of precision for the final results. According to Hedrick et al. (1993), the level of desired precision may affect the rigour of the design to be chosen and when the sampling is used. This had important ramifications for how the respondents and organisations were chosen for this study and the number of respondents and organisations that were studied for each research objective.

Some of these issues, in addition to several data collection and analysis methodologies for this research, will be examined and discussed in this chapter. Moreover, research validity, reliability and triangulation issues will also be considered.

The analysis was conducted in a cyclical manner and followed guidelines for interpretive research set out by Klein and Meyers (1999) (Appendix C).

## **4.2. Data Collection and Analysis**

The data collection methodologies that were used for this research were: (1) questionnaire (survey) for research objective 1; and (2) semi-structured interviews, observation, and document review (case study) for research objective 2. The results

from the survey and the case studies were used to develop a framework for IS/IT investment evaluation and benefits realisation. This process is shown in Figure 4.1 below.

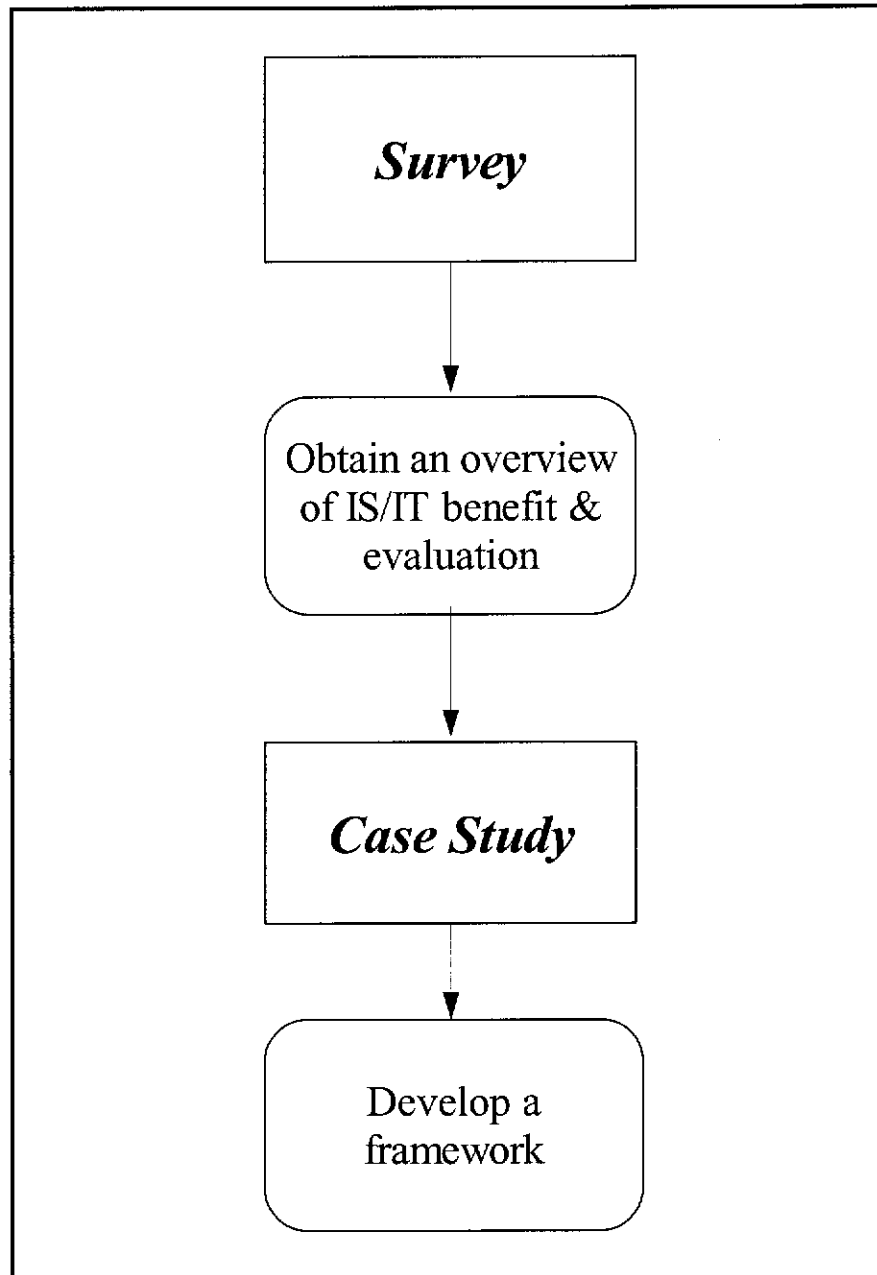


Figure 4.1: A research overview

#### **4.2.1. Survey - Research Objective One**

The first objective involved the use of an existing questionnaire based on Ward et al. (1996). (Permission had been granted in writing by the original author.) The process

is shown in Figure 4.2 below.

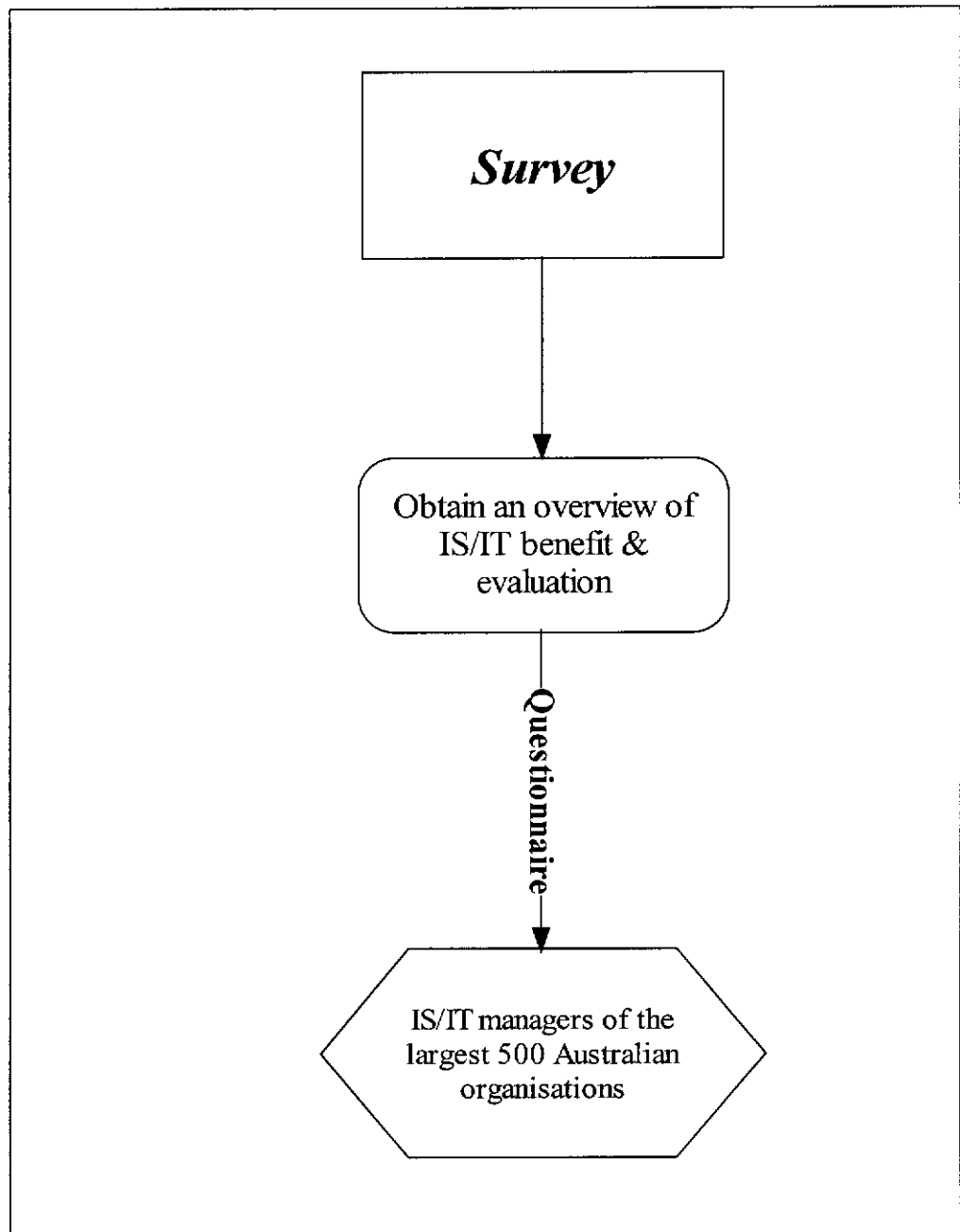


Figure 4.2: Research objective 1 - survey

### **Purpose**

The purpose of this survey was to obtain an overview of IS/IT investments and benefits management processes and practices in large Australian organisations. This was motivated by a belief of the researcher that the current practices, approaches, methodologies and models usually fail to evaluate the IS/IT investments properly and

address the management of business change adequately, with a consequent significant loss of potential benefits to the organisations (Ward et al., 1996). To this end, the researcher sought to develop a framework based on the fit between theory and practice of IS/IT investments evaluation by large Australian organisations to serve as a basis for understanding and communicating those findings and their implications for Australian organisations in general. This framework was developed after the completion of survey and case studies.

### **Selection of target population**

Since this research is to investigate the process of IS/IT investment evaluation in large Australian organisations, CIOs and IS/IT managers from the largest 500 Australian organisations by revenue were selected. BRW's (1998) top 1000 organisations list was acquired and used for the purpose of sending the questionnaire.

### **Strategies for addressing the response rate problem**

In order to secure a higher response rate, the researcher had consciously undertaken several strategies as suggested by several researchers in the past (e.g. Church, 1993; Fox et al, 1988; Jankowicz, 1991):

- (1) Used self-addressed and reply-paid envelopes.
- (2) A paper by Pervan (1998) was included as a nonmonetary incentive for the respondents to complete the questionnaire.
- (3) Anonymity of the respondents and confidentiality of the data were promised.
- (4) The length of the questionnaire was not too long.
- (5) Obtained the university to endorse the survey and had its name on the questionnaire.
- (6) The word-processed covering letters were on official university letterhead.
- (7) A courteous reminder was then mailed out to those who did not reply from the first mailout.
- (8) An expression of thanks in anticipation in the covering letter.

### **Questionnaire design**

The use of an existing questionnaire had not only saved the work involved in

developing a new questionnaire by the researcher, but also carried some evidence of reliability and validity with it (Morgan, 1997). The original questionnaire of Ward et al. (1996) was slightly modified by the researcher by adding and deleting some questions. Some IS/IT outsourcing questions were added to the questionnaire because most large Australian organisations nowadays were involved with outsourcing of at least some of their IS/IT functions. Some other questions were deleted to make sure that the length of the questionnaire was not unnecessarily long.

Then this modified questionnaire, accompanied by a covering letter to explain briefly the purpose and aim of the survey, a reply-paid return envelope, a supplementary sheet optionally identifying the respondent, and a recent paper entitled “How Chief Executive Officers in Large Organizations View the Management of their Information Systems” by Pervan (1998) was sent to the IS/IT managers of the largest 500 Australian organisations (BRW, 1998) on 13 July, 1999. This questionnaire basically asked the IS/IT managers or persons who were capable of representing their views to complete and return the questionnaire. The respondents were told that they would be provided with a summary of results for this survey if requested. The summary of the results and a paper by Pervan (1998) were included as the non-monetary incentives for the respondents to complete the questionnaire because several studies had concluded that incentives do indeed have substantial positive effects on postal survey response rates (Church, 1993; Fox et al.; Yammarino et al., 1991). Additionally, the researcher had promised the respondents that their responses and identities would remain strictly confidential in order to maximise the potential response rate.

In addition to the those disadvantages for conducting a survey mentioned in Chapter 3, there were several difficulties when the researcher attempted to gather the mailing addresses and the names of IS/IT managers from the top 500 Australian organisations. These included:

- (1) Many organisations outsourced their IT departments and therefore no one within the organisation was available for completing the questionnaire.
- (2) Several organisations would not disclose any information on their IT departments or simply did not wish to receive the questionnaire.

- (3) Several organisations were not contactable.
- (4) Some organisations' telephone receptionists did not know who their IS/IT managers were or simply failed to call back after several attempts were made to gather this information.
- (5) Several organisations shared the same IS/IT departments with other organisations or were subsidiaries of the others.

As a result of these difficulties, the researcher had to go beyond the top 500 companies. In the end, the top 640 organisations (out of BRW 1000 companies) were used to gather the required 500 organisations for the mailing list.

As mentioned above, the questionnaire by Ward et al. (1996) was chosen as a suitable method to obtain a wide range of data from a variety of large Australian organisations. Specifically, this questionnaire sought to: (a) determine how the benefits are identified, evaluated, structured, delivered and realised by organisations in Australia from their IS/IT investments; (b) determine what criteria and methodologies are used to evaluate as well as to realise appropriate and adequate benefits by organisations in Australia from their IS/IT investments; and (c) determine how organisations in Australia attempt to review and improve their current evaluation and benefits realisation processes and practices from their IS/IT investments. The results from the questionnaire were used to answer the first research objective. These results were then used to determine the type of questions being asked in the case studies.

The modified questionnaire contained 61 questions, with a mixture of yes/no, multiple choices and open-ended questions. According to Geer (1991), both closed-ended and open-ended questions are useful for gathering required information. Some background information on the respondents and responding organisations were also covered. These included questions such as the size of the responding organisations in terms of their net revenue and total employees, industry type, organisational structure, whether the respondents came from an IS/IT background as well as their most concerned issues, a categorisation of the strategic importance of IS/IT, and whether any part of the organisations' IT functions were outsourced. General questions asked were concerned with assessing the types of benefits that the

organisations' senior management perceived as being provided by IS/IT, the respondents' level of confidence in the delivery of these benefits, and number of IS/IT projects that were implemented during the last 12 months as well as number of IS/IT projects that will be implemented in the next 12 months. Several questions about methodologies for systems development, project management, IS/IT investment appraisal and benefits management were also asked in the questionnaire.

The questions on "identifying and structuring benefits" included the underlying issues that had driven the organisations' investments in IS/IT, the process that ensured IS/IT projects were linked to business objectives, types of benefits considered by the organisations when planning IS/IT projects, whether intangible benefits were included as part of the IS/IT project appraisal process, and methods and techniques used by organisations to decide upon IS/IT investments and the associated problems. Questions were also asked on whether the current process identified and quantified all available benefits, whether the process overstated benefits in order to get approval, and the objectives of the pilot study when implementing IS/IT.

The questions on "planning benefits realisation" centred on how the responsibilities and roles were allocated for realising business benefits and planning business change. Questions were also asked as to whether the organisations prepared a benefits delivery plan, and the extent to which process and organisational changes were addressed. The role of a business project manager was also examined carefully. The questions on "delivering the benefits" were mainly concerned with responsibilities and steps for ensuring the delivery and realisation of actual benefits during an IS/IT implementation.

The questions on "evaluating and reviewing results" were about how the IS/IT projects were evaluated after the implementation, whether they were successful in realising the proposed benefits, and whether intangible benefits were regarded as a major success criteria. Questions were also asked about whether the types of success criteria were sought and the time at which any success measures were developed or reviewed. Questions about post-implementation reviews were asked in terms of various objectives and lessons learned from implementing past IS/IT projects.

The key issues on “potential for further benefits” were whether the respondent believed that it was possible to anticipate all potential benefits at the project approval stage, and whether the achievable benefits could change during implementation. In addition, questions were asked about whether the organisations had a formal process to identify any further benefits after implementation, and whether any action or steps after implementation were taken to realise these further benefits and who were responsible for this action. Finally, the respondents were also asked whether there was any scope for improvement in their approaches to managing IS/IT benefits.

#### **4.2.2. Case Study - Research Objective Two**

According to Remenyi and Williams (1996) and Tellis (1997b), case study is one of the most frequently used research methods in information systems research. Case study utilising semi-structured interviews (tape-recorded), observation, and document review were employed for the research objective 2, since the need for using multiple sources of data arises from the ethical need to confirm the validity of the research processes (Tellis, 1997a). The process is shown in Figure 4.3 below.

The case studies also enabled the researcher to evaluate and compare results from the survey, clarified doubts, ensured that the responses were properly understood by repeating or rephrasing the questions, and picked up nonverbal cues from the respondents (Sekaran, 1984). The aim of the research objective two is to develop a framework based on the fit between theory and practice of IS/IT investment evaluation by large Australian organisations. Business, IS, and IT managers of two organisations were interviewed during the case studies in order to obtain different points of view. Other documentation acquired in the case study included items such as letters, agendas, minutes, administrative reports, budgets, and files. The complete interview protocol and specific questions included the purpose of the study, the issues that needed to be further clarified and interpreted from the results of the questionnaire, the propositions being investigated, operational procedures for getting data, sources of information, and questions and lines of questioning.



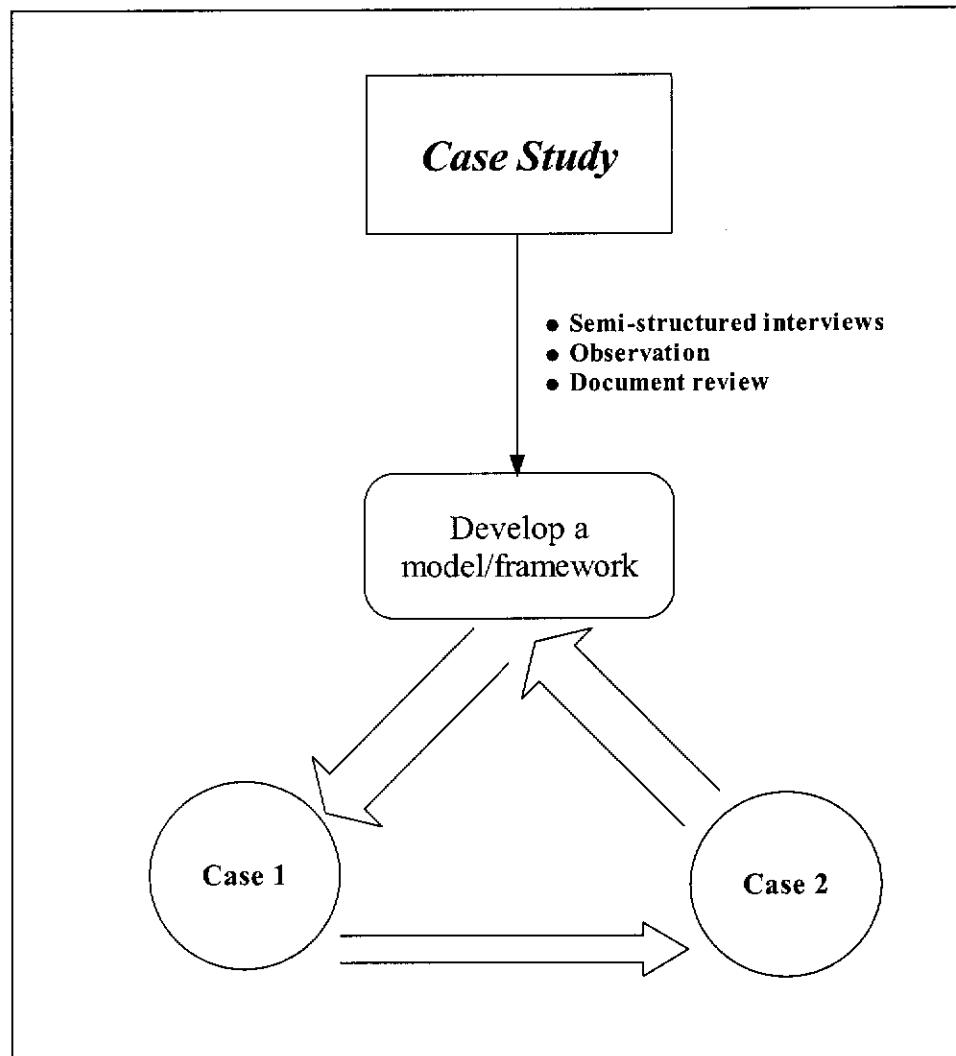


Figure 4.3: Research objective 2 - case study

In the context of the entire research, a more detailed process is shown in Figure 4.4 below. As can be seen from Figure 4.4, the postal survey was conducted as a means to obtain an overview of the current Australian industry and government practices and norms in managing IS/IT benefits and evaluation (research objective 1). Some interesting and important problems and issues were identified as the result and the researcher was able to narrow down the scope of the research. For example, most organisations did not use any formal IS/IT investment evaluation and benefits realisation methodologies. For more detail please refer to Chapter 5.

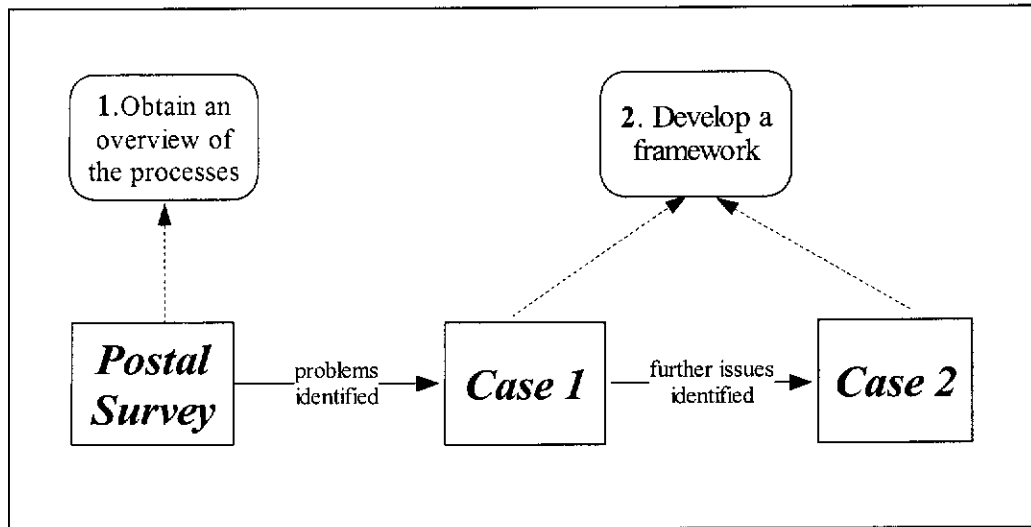


Figure 4.4: The research process for research objectives 1 & 2

Case study 1 was then conducted and these interesting and important problems and issues were investigated more closely in a large Australian organisation. As part of the learning process, more revised problems and issues were identified. For example, the case 1 organisation (the Department) which had no formal IS/IT investment evaluation and benefits realisation methodologies was unable to manage its outsourcing contracts without external influence and assistance. Case study 2 was conducted to further investigate these revised problems and issues before a framework based on the fit between theory and practice of IS/IT investment evaluation by large Australian organisations was developed (research objective 2). Please refer to Chapters 7 and 9 for more detail.

A more detailed process for the case studies is shown in Figure 4.5 below. In Figure 4.5, case study 1 was conducted initially to identify further problems and issues and therefore constituted the first level analysis. On the other hand, case study 2 was conducted in order to investigate the problems and issues identified in case study 1 and therefore served as the level 2 analysis.

#### **Selection of the case study sites**

As can be seen in Figures 4.4 & 4.5, the selection of the case study sites required careful planning. The results from the survey identified several major issues and one

of them was that most of the large Australian organisations did not have formal IS/IT investment evaluation and benefits realisation methodologies. The organisation (the Department) selected for case study 1 was an organisation that did not have formal IS/IT investment evaluation and benefits realisation methodologies (although it had an informal IS/IT investment evaluation process). The Department (case study 1) was selected to investigate these issues (in particular, IS/IT investment evaluation and benefits realisation) more closely. Additional problems and issues were identified in case study 1 (in particular, benefits realisation). But one question remained unanswered – would a formal IS/IT investment evaluation or benefits realisation methodology overcome some of the issues and problems identified during the case study 1? The Agency (case study 2) was selected because it had employed a benefits realisation methodology. The selection of these two case study sites were important in developing the IS/IT investment evaluation and benefits realisation framework, as part of the research objective 2.

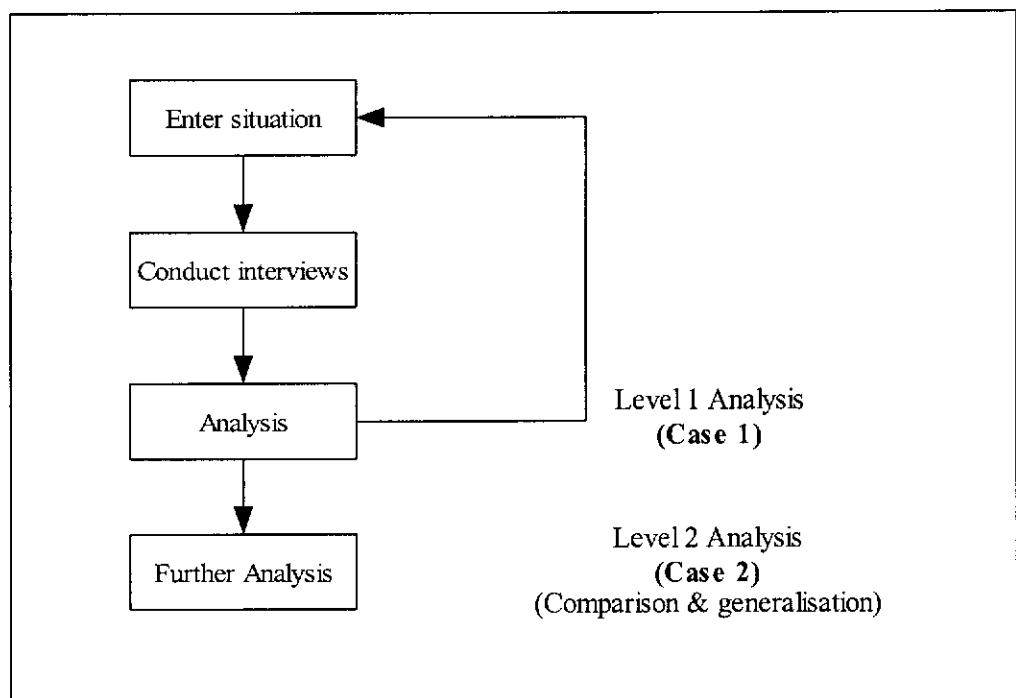


Figure 4.5: A more detailed research process for research objective 2 (modified from (Checkland, 1991))

#### **4.2.3. Case Study – Semi-structured Interviews**

Semi-structured interviews were used as one of the data collection methods for the case study. According to Taylor and Bogdan (1984, in Burns, 1994), semi-structured interviews are “repeated face-to-face encounters between the researcher and informants directed towards understanding informants’ perspectives on their lives, experiences or situations as expressed in their own words.” Rather than having structured or open-ended interviews, semi-structured interviews were used for this research study. According to Burns (1994) and Hedrick et al. (1993), semi-structured interviews are appropriate for the descriptive research such as this one.

In semi-structured interviews, the content focused on the crucial issues of this research: (a) to evaluate, support and confirm the results gathered through the questionnaire; (b) to gain deeper understanding of the issues surrounding the current processes, practices and norms in managing IS/IT benefits and investments evaluation, as mentioned in research objective one; and (c) to develop a framework for IS/IT investments evaluation and benefits management in large Australian organisations, as mentioned in research objective two. Moreover, an overall structure to the interviews was given by a number of specific questions set up by the researcher before the interviews. A professional appearance and presence on the part of the interviewer had probably facilitated cooperation, as would a brief explanation of the study and the part which the respondent was expected to play in it. Having obtained the respondents’ cooperation, the researcher had asked the required questions, in the proper sequence, and used the exact wording that was called for, in order to standardise the procedure to the extent that this research study required. Within this broad structure the interviewees were encouraged to talk about issues that were seen to be of importance to them. A typical set of interview questions for the case study is included in Appendix D.

For this research, the researcher was interested to gain deeper understanding of the interviewees’ perspectives and opinions on the processes of IS/IT investment evaluation and benefits management in large Australian organisations. The advantages of using semi-structured interviews, according to Burns (1994), are:

- (1) There is a greater length of time spent with the interviewee, which increases rapport.

- (2) The researcher has the opportunity to observe the interviewee and the total situation in which he or she is responding.
- (3) The interviewee's perspective is provided rather than the perspective of the researcher being imposed.
- (4) It is a useful method when extensive data is required on a small number of fairly complex topics.
- (5) More people are more willing to talk and react verbally than to write responses to questions.
- (6) The interviewee uses language natural to them rather than trying to understand and fit into the concepts of the study.
- (7) The interviewee is in equal status to the researcher in the dialogue rather than being a guinea pig of the research.

However, there are also several disadvantages for using semi-structured interviews (Burns, 1994):

- (1) It is more expensive (i.e. travelling costs) and time-consuming than questionnaire.
- (2) Only a limited number of interviewees may be interviewed due to time and financial considerations.
- (3) An interviewer effect may result from interaction between the interviewer and interviewee. Factors which may bias an interview include the personal characteristics of the interviewer and the opinions and expectations of the interviewer.
- (4) Interviewees may feel that they are being "put on the spot."

There are several steps, suggested by Leedy (1993), for successfully handling the interview as a technique for gathering data for one's research. This research has followed some of the guidelines as suggested by Leedy (1993):

- (1) Set up the interviews well in advance.
- (2) Confirmed the dates immediately in writing.
- (3) Sent the agenda of questions that the researcher would ask the interviewees before the meetings.
- (4) Asked for permission to tape the conversation. According to Burns (1994), taping has the obvious advantage of recording the

interviewees' responses verbatim along with the added advantage of freeing the researcher to participate in the dialogue rather than having to concentrate on note-taking.

- (5) Sent a reminder together with another agenda of questions a few days before the interviews, if possible. This step was important for increasing the response rate.
- (6) Being prompt, followed the agenda and brought extra copies of interview questions for the interviewees.
- (7) Following the interviews, submitted a typescript of the interviews and got either a written acknowledgment of its accuracy or a correct copy from the interviewees.
- (8) After the researcher had incorporated the material into the thesis, those sections of the thesis were sent to the interviewees for final approval and written permission to use the data in the final PhD thesis were obtained.

These interviews were used for getting the necessary descriptive information from the selected organisations as well as for comparing and contrasting purposes at the end. However, according to Burns (1994), semi-structured interviews may result in difficulty in comparing the information between interviewees and in coding the responses. Therefore, a proven qualitative data analysis method such as qualitative content analysis was deployed in order to minimise such problems. The qualitative content analysis will be discussed in more detail later in this chapter.

#### **4.2.4. Case Study - Observation**

To a limited extent, observation was used during the case study. The researcher was able to observe: (1) the behaviour and facial expressions of the participants (CEO, CIO, senior managers, users, and contractors) before, during, and after the interviews; and (2) the organisation as a whole. Before observation can be used in a research, three minimum conditions set out by Tull and Hawkins (1993) were met:

- (1) The data had to be accessible to observation.
- (2) The behaviour had to be repetitive, frequent, or otherwise predictable.
- (3) An event had to cover a reasonably short time span.

According to Jorgensen (1989), observation is appropriate for studies of almost every aspect of human existence. Through observation, it is possible to describe what goes on, who or what is involved, when and where things happen, how they occur, and why - at least from the standpoint of participants - things happen as they do in particular situations (Jorgensen, 1989). A great deal of time is spent on paying attention, watching and listening carefully (Neuman, 1994). The observer uses all the senses, noticing what is seen, heard, smelled, tasted, or touched (Neuman, 1994; Spradley, 1979). Ultimately, as Jorgensen (1989) has pointed out, participant observation “aims to generate practical and theoretical truths about human life grounded in the realities of daily existence.”

According to Neuman (1994), there are four possible research stances for the participant observer:

- (1) Complete participant: the researcher operates under conditions of secret observation and full participation.
- (2) Complete observer: the researcher is behind a one-way mirror or in an invisible role that permits undetected and unnoticed observation and eavesdropping.
- (3) Participant as observer: the researcher and members are aware of the research role, but the researcher is an intimate friend who is a pseudomember.
- (4) Observer as participant: the researcher is a known, overt observer from the beginning, who has more limited or formal contact with members.

In this research study, the researcher had adopted the role of observer as participant during the case study as the means for data collection for the following reasons:

- (1) The researcher did not want to be overly drawn into the subjects' world during the case study because it may damage the ability to interpret the data the researcher observes. This was to achieve balance between being close enough to subjects to understand and evaluate meaning and being distant enough to maintain some independent assessment (Abramson and Mizrahi, 1994).

- (2) The researcher did not wish to participate fully in the specific activities of the group under the study and the researcher was only given a limited access to observe the activities of the case study organisations (Alder and Alder, 1987).
- (3) This role required less time for acceptance by the members, made over-rapport less an issue, and could sometimes help members open up (Neuman, 1994).
- (4) This role also protected the researcher's self-identity and facilitated detachment.

The possible drawbacks for the role of observer as participant are:

- (1) The known presence of an observer offers the same potential for error as the presence of an interviewer in survey research (Tull and Hawkins, 1993).
- (2) The participant is less likely to have an insider's experience and so misinterpretation is more likely (Neuman, 1994). Therefore, it is wise to minimise the presence of the observer to the extent possible (Tull and Hawkins, 1993).

According to Burns (1994), the advantages of participant observation include:

- (1) It is possible to record behaviour as it occurs.
- (2) It is possible to investigate subjects who are not able to give verbal reports of either their behaviour or their feelings (infants or implicit knowledge).
- (3) Observation is independent of the willingness to report. There are occasions when research meets with resistance from the person or group being studied. Although participant observation cannot always overcome such resistance to research, it is less demanding of active co-operation on the part of the subjects.

After deciding the role of the researcher in the study, the researcher broadly followed the guidelines of Spradley (1980):

- (1) Started by making broad descriptive observations, trying to get an overview of the social situation of the organisations and what went on



there. More specifically, the researcher had focused on the organisations' processes of IS/IT investment evaluation and benefits management.

- (2) Then, after recording and analysing the initial data, the researcher narrowed the research and began to make more focused observations.
- (3) Finally, after more analysis and repeated observations in the field, the researcher narrowed the investigation still further to make selective observations until the end of the study.

#### **4.2.5. Case Study – Document Review**

In addition to the use of the semi-structured interviews and observation data collection techniques during the case studies, the researcher examined more than 5000 pages of relevant documents (e.g. meeting minutes, outsourcing contract documents, and performance reports) that were collected from the two state departments. These documents provided some useful means of corroborating data from the other sources (e.g. questionnaire and interview data) and expanded on details.

According to Johnston et al., (1999), there are several advantages and disadvantages for employing various data collection methods for case study research. They are shown in Table 4.1 below:

| Method                  | Strengths  | Weaknesses  |
|-------------------------|--|---|
| Participant observation | <ul style="list-style-type: none"> <li>* can obtain a first-hand account and an in-depth understanding</li> <li>* provides detailed assessment of interpersonal activities</li> </ul>  | <ul style="list-style-type: none"> <li>* not appropriate in many situations</li> <li>* difficult to gain access</li> <li>* time consuming</li> <li>* difficulty in assessing objectivity</li> <li>* potential for Hawthorne effect (changing behaviour when under observation)</li> </ul>     |
| Observation             | <ul style="list-style-type: none"> <li>* first-hand account of events and the context of those events</li> </ul>   | <ul style="list-style-type: none"> <li>* time consuming</li> <li>* hard to gain access</li> <li>* potential for Hawthorne effect</li> </ul>   |
| Interviews              | <ul style="list-style-type: none"> <li>* focuses directly on the case study topic</li> <li>* provides perceived causal inferences</li> </ul>   | <ul style="list-style-type: none"> <li>* interview questions must be systematically developed</li> <li>* inaccuracies from poor recall</li> <li>* potential for interviewees to provide interviewers with the answers they want to hear, or to provide socially acceptable answers</li> </ul> |
| Documentary evidence    | <ul style="list-style-type: none"> <li>* produced outside of the research (objectivity)</li> <li>* electronic communication has created numerous new forms of documentation</li> <li>* precise and consistent</li> <li>* may allow for a review across several years</li> <li>* can be obtained unobtrusively</li> </ul> | <ul style="list-style-type: none"> <li>* must be carefully scrutinised for objectivity</li> <li>* may be difficult to access, or access may be deliberately blocked</li> </ul>  |

Table 4.1: Data collection methods for case study: strengths and weaknesses (Source: Johnston et al., 1999).

### **4.3. Data Analysis**

After deciding which methods to be used for data collection, both quantitative and qualitative data analysis approaches had to be chosen.

#### 4.3.1. Quantitative Statistical Analysis

A software package, SPSS, was deployed to analyse the quantitative data collected through the survey (for research objective 1).

A number of general **descriptive** methods and tools were used to summarise and analyse patterns in the responses of people in a sample (de Vaus, 1991). **Frequency** was used to make tables and displays that showed how often different values of a variable occur in the data. For example, it was used to determine the number of respondents that were satisfied with their organisations' level of benefits delivery. The **Maximum**, **Minimum**, **Mean**, and **Medium** were used to compute summary statistics for a variable when the cases were subdivided into groups based on their values for other variables. They were also used to obtain summary statistics that described the typical value and the spread of the observations. For example, they were used to: (1) calculate the average number of IS/IT projects implemented in the last 12 months; (2) see how much spread or variability there was around this average number of projects; and (3) calculate values above which and below which certain percentages of the cases fall. **Variance** and **standard deviation** showed how well the mean summarises the distribution. For example, they were used to check whether or not the mean was distorted by extreme cases.

**Crosstab** was used to count the number of cases that had different combinations of values of two or more variables, and to calculate summary statistics and tests. For example, it was used to determine the percentage of respondents that had IS/IT benefits management methodology also practised a formal IS/IT investment appraisal process (81.8%). On the other hand, the **correlation coefficient** was used to quantify the strength of the linear relationship between two variables. The correlation coefficient ranged in value from -1 to +1. A value of 0 indicated that there was no linear relationship between the two variables. A value of +1 meant that the two variables were perfectly related, while a value of -1 means that the variables were perfectly related but as the values of one variable increased, the values of the other decreased. For example, a Pearson correlation coefficient was used to determine that there was a positive linear association between organisational size in terms of net revenue and organisational size in terms of total employees (0.8).

One-Way **ANOVA** was used to test that several independent groups came from populations with the same mean. For example, it was used to test the average amount of money spent on IS/IT projects was the same for responding organisations which had implemented four different methodologies.

#### **4.3.2. Qualitative Content Analysis**

Qualitative content analysis was used to identify themes, concepts and meaning from the qualitative data collected for this research. It is a method that can be used to answer questions about perceptions and image (Youtie et al., 1999).

Soon after the beginning of the data collection process, the researcher was faced with the problem of a mounting body of documents, field notes from participant observation, interviews, and transcripts from the tapes. At this stage, it was important for the researcher to draft an analysis plan for the following two reasons:

- (1) To ensure that the design/data collection would actually enable the researcher to answer the critical research questions or objectives.
- (2) To make the study's execution as efficient as possible (Hedrick et al., 1993).

As stated before, qualitative content analysis was chosen for analysing the data collected using the data collection methods mentioned earlier in this chapter. According to Carney (1972), qualitative content analysis always “aims to compare the data it extracts against some norm, standard or theory, so as to draw its conclusions.” It can be used to assess what is written between the lines. The purpose of analysing the data is to describe the content of the respondents' utterances systematically, and classify the various meanings expressed in the material that have been recorded (Jankowicz, 1991). It has to be organised so that comparisons, contrasts and insights can be made and demonstrated (Burns, 1994).

The results from the questionnaire were analysed mainly by using SPSS, but some open ended questions and extra comments from the questionnaires as well as interview transcripts from the case studies were analysed using qualitative content analysis. The first stage of qualitative content analysis was to identify themes,

concepts and meaning. Miles and Huberman (1994) have called this the unit of analysis. The basic unit of analysis selected for this research study was the theme. This was done in two ways: either because a theory or rationale prescribes them, or because the review of the material suggested to the researcher that it was useful (Jankowicz, 1991).

The next two stages were to develop a list of coding categories as well as to code the units of analysis. A short name was assigned to each and a number to each sub-category. According to Burns (1994), this is a form of classifying content. The data was then categorised to permit analysis and comparison of meanings within a category. The coding began as soon as the data was collected. The early coding assisted the researcher to focus on essential features of the project as they developed. In addition, each piece of data from interviews, meetings and participant observation was analysed for themes/topics. As the research focus became narrower each category included discussion about why certain foci were chosen rather than others and revealed emerging ideas which were strengthened or weakened by successive data collection methods used. In general, according to Abramson and Mizrahi (1994), several things might happen to the research projects as a result of this: (1) add or modify research question; (2) direct the additional efforts or time to less represented categories; and (3) improve the researcher's interview techniques.

According to Burns (1994), the coding of qualitative data is important, as it operates as a labelling, retrieval and organising device. If a coding system appears not to be working in that it is difficult to code some elements, then a new coding system may emerge that brings material together in completely new way, and adds insight into the topic. The coding scheme is, in fact, the conceptual model.

The fourth stage of qualitative content analysis was to group together all similarly coded data. After the initial coding of all transcripts was completed, all similarly coded data needed to be grouped together. According to Miles and Huberman (1994), this would enable the researcher to find out something about the relevance of applicability of the findings to other similar settings as well as to deepen understanding and explanation.

Then the researcher aimed to draw preliminary conclusions based on the various categories identified before. Some sub-categories were formed at this stage. According to Miles and Huberman, there are 13 tactics to be used to draw and verify conclusions: (1) noting patterns, themes; (2) seeing plausibility; (3) clustering; (4) making metaphors; (5) counting; (6) making contrasts/comparisons; (7) partitioning variables; (8) subsuming particulars into the general; (9) factoring; (10) noting relations between variables; (11) finding intervening variables; (12) building a logical chain of evidence; and (13) making conceptual/theoretical coherence. The researcher had used some of the above tactics as well as self reflection to help draw the tentative conclusions from the findings. An example of how a theme was identified is included in Appendix E.

Once the data was analysed, the researcher was able to draw conclusions from it. The conclusions were then be used to satisfy research objective 2 by developing a framework for IS/IT investment evaluation and benefits realisation. Please note that at the end of the data collection process, all data (e.g. interview transcripts, contract documents and observation notes) were re-examined and cross-checked (where possible). Interviewees were again contacted if there were differences of opinion or data values.

#### **4.4. Reliability and Validity**

According to Hedrick et al. (1993) and Pervan (1994), selection of a research design affects the validity of the research, its reliability, and its feasibility. Validity is concerned with the soundness, the effectiveness of the measuring instrument (Leedy, 1993). Reliability is seen as a fit between what the researcher records as data and what actually occurs in the setting under study, rather than the literal consistency across different observations (Burns, 1994).

##### **4.4.1. Reliability**

According to Burns (1994), reliability is based on two assumptions. The first is that the study can be repeated. Other researchers must be able to replicate the steps of the original research, employing the same categories of the study, the same procedures, the same criteria of correctness and the same perspectives.

The second assumption is that two or more people can have similar interpretations by using these categories and procedures. However, as pointed out by Jick (1979), it is difficult for a researcher employing case study approach to replicate the exact findings of another because the flow of information is dependent on the social role held within the organisations studied and the knowledge deemed appropriate for incumbents of that role to possess.

### **Case Study**

Therefore, conclusions reached by the researcher using case study research approach are qualified by the social roles investigators hold within the research site. It is possible that other researchers may fail to obtain comparable findings unless they develop corresponding social positions or have research partners who can do so (Burns, 1994).

As mentioned earlier, it would be difficult to obtain reliability for the two case studies of this research. This is because it would not be easy for other researchers to repeat the case studies and/or replicate the steps of the research. However, the researcher had tried to ensure the reliability for the case studies by providing the data collection instrument (interview questions in Appendix D) which are fully explained so that other researchers could follow them without any significant loss of data accuracy.

### **Survey**

According to Hufnagel and Conca (1994), survey research which relies on people's judgment, recall, and interpretation skills for accuracy, seldom produces perfectly precise answers. As a result, all survey data contains some amount of random error or deviation from the "true value." Random error in survey data can be dealt in two ways: (1) the researcher can exercise care during instrument design so as to avoid problems that commonly affect reliability; and (2) the researcher can use statistical methods to estimate the size of the error component and increase sample size to obtain the desired statistical power (Hufnagel and Conca, 1994).

Moreover, the researcher had tried several methods described earlier in this chapter

in order to increase the survey's response rate. Furthermore, the data collection instrument for the survey (questionnaire in Appendix F) is also provided so that other researchers could apply it without any loss of data accuracy.

#### **4.4.2. Validity**

##### **Case Study**

According to Burns (1994), establishing validity necessitates demonstration that the propositions generated, refined or tested match the causal conditions that exist in human life or real world. As the second research objective of this project employed case study, it could really only possess internal validity as it was a one-off intervention in a specific context. According to Burns (1994), an account can be judged to be internally valid if the author demonstrates that the changes indicated by the analysis of a problem situation constitute an improvement to it. Internal validity normally applies to explanatory or causal studies, but not to a descriptive or exploratory study such as this one (Pervan, 1996). The researcher had tried to ensure the internal validity for the case studies by:

- (1) Conducting the interviews by the same researcher to avoid variations in administration of the instrument.
- (2) Using a proven method such as qualitative content analysis to analyse the data collected to avoid sampling differences.
- (3) Assuring the respondents of anonymity and confidentiality of the data to ensure that data gathered were accurate and unbiased.
- (4) Retaining original data such as interview recordings, interview transcripts, and field notes.
- (5) Allowing the respondents to choose time and place of interview and interview time was limited to prevent fatigue.
- (6) Allowing the respondents to choose comfortable and familiar surroundings for interview.
- (7) Making sure that strong arguments have been put forward for each interpretation and issue.
- (8) Making comparisons between the literature and the interpretation / issue.
- (9) Using triangulation of sources and methods (e.g. survey, observation,



interview, document review).

(10) Double-checking the data to prevent coding and data entry errors.

## **Survey**

Construct validity is defined in relation to the theory being tested and can only be evaluated in that context (Hufnagel and Conca, 1994). The bias introduced by question wording (in questionnaire) relates most directly to the notion of construct validity (Hufnagel and Conca, 1994). Although bias is relatively easy to identify in objective or factual data where a “true value” can be established or agreed upon, it is more difficult to assess in the subjective domain - the focus of most survey research (Hufnagel and Conca, 1994). There are two general classes of errors and biases in survey data: those that result from improper sampling procedures (sampling errors) and those that result from faulty data collection procedures (nonsampling errors) (Hufnagel and Conca, 1994). Nonsampling errors are typically attributable to poorly designed survey instruments, vague, inconsistent or misleading administration procedures and respondent reactions to the research process itself.

Construct validity could be applied to the first research objective of this project (survey) due to the data collection and analysis techniques used by the researcher. The researcher had tried to increase construct validity of the survey by:

- (1) Minimising the nonsampling errors by using a modified version of a questionnaire from Ward et al. (1996). As the questionnaire had been tried in the UK, most of the nonsampling errors such as poorly designed instruments or vague questions should have been avoided.
- (2) Minimising the sampling errors by making sure the data collected were analysed properly and all records (including the actual questionnaires) were kept.

Ultimately, as Daft (1983, in Lacity and Janson (1994)) puts it, the “proof of an idea or theory is its acceptability to common sense. An important test of validity is liking an idea, feeling right about it, being able to use it to throw light on a previously hidden aspect of organisation. Objective proof seldom will exist somewhere outside one’s self that will demonstrate correctness or validity. No statistical test will do this for us; no amount of replication will make acceptable an idea that does not square

with experience.”

#### **4.4.3. Triangulation**

According to Gable (1994) and Jick (1979), triangulation involves the use of multiple techniques within a given method to collect and interpret data. Leedy (1993) argues that triangulation is a compatibility procedure that is designed to reconcile the two major methodologies by eclectically using elements from each of the major methodologies as these contribute to the solution of the major problem. It increases the reliability of the data and the process of gathering it as well as serving to corroborate the data gathered from other sources (Tellis, 1997a; 1997b). Exclusive reliance on one method may bias or distort the researcher’s picture of the particular slice of reality the researcher is investigating (Burns, 1994). Bias may be in the form of perceptual deceptions or distortions (Remenyi and Williams, 1996). Although it cannot be totally eradicated, bias may be minimised by the use of such techniques as triangulation (Remenyi and Williams, 1996).

For this research, several techniques were used to triangulate the data. Several data collection techniques - questionnaire, semi-structured interviews, document review, and observation, as well as a quantitative data analysis using SPSS software and a qualitative data analysis technique (i.e. qualitative content analysis) were used to collect and interpret data in order to corroborate the data gathered from other sources. For example, the researcher was able to confirm that no formal benefits realisation methodology was used by most survey organisations and the case 1 organisation (the Department) by looking at the questionnaire and interview data with evidence from observation and relevant documents. In cases where there were differences of opinion between participants or inconsistencies amongst the data, the researcher was able to either go back to the participants for clarification or recheck the data.

Triangulation provided the researcher with several important opportunities and strengths (Jick, 1979):

- (1) The use of multiple techniques allowed the researcher to be more confident of his results.

- (2) It had also help to uncover the deviant or off-quadrant dimension of a phenomenon. In seeking explanations for divergent results, the researcher had uncovered some unexpected results or unseen contextual factors which did not fit a theory or model. On the other hand, where there was convergence, confidence in the results had grown considerably.
- (3) The researcher was able to get close to the situation which allows greater sensitivity to the multiple sources of data. The researcher's claim to validity rested on a judgment or a capacity to organise materials within a plausible framework. It was in this respect that the first hand knowledge drawn from qualitative methods could become critical.
- (4) It would establish a chain of evidence that enabled the reader to follow derivation of evidence from question to conclusion (Yin, 1984).
- (5) It could generate holistic work or thick description. As Weiss (1968, in Jick, 1979) called it, "qualitative data are apt to be superior to quantitative data in density of information, vividness, and clarity of meaning - characteristics more important in holistic work, than precision and reproducibility."

According to Keen (1991), information systems research rests on contributing to some aspect of effectiveness and should also be at the forefront of debate and investigation about the application of information technology across every aspect of business, government and society and that it has many valuable, original and practical recommendations to offer. This means that relevance (before rigour) must drive information systems research, in terms of a clear conception of the target audiences it wishes to influence (Keen, 1991). For this research, the target audiences would be senior business and government policy makers as well as senior IS/IT managers. The concern within these target audiences that this research is addressing would be the need for better understanding of IS/IT investment evaluation and benefits realisation processes.

## **4.5. Summary**

In this chapter, several data collection and analysis methodologies (i.e. questionnaire, semi-structured interview, document review, observation, and qualitative content analysis) which formed part of this research were discussed in detail. The reasons for using these methodologies as well as their strengths and weaknesses were also included in the discussion. Furthermore, research validity, reliability and triangulation issues were also discussed.

In the next chapter (Chapter 5), the results from the questionnaire (postal survey) will be presented and discussed. This survey, undertaken from June to August 1999, focused on Australia's largest 500 organizations by gross revenue.

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# Chapter 5

## Survey Results

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### 5.1. Introduction

A survey (see Appendix F) was conducted to satisfy the research objective 1 (Figure 5.1) which was to investigate many aspects of IS/IT investments evaluation and benefits management processes and practices in large Australian organisations.

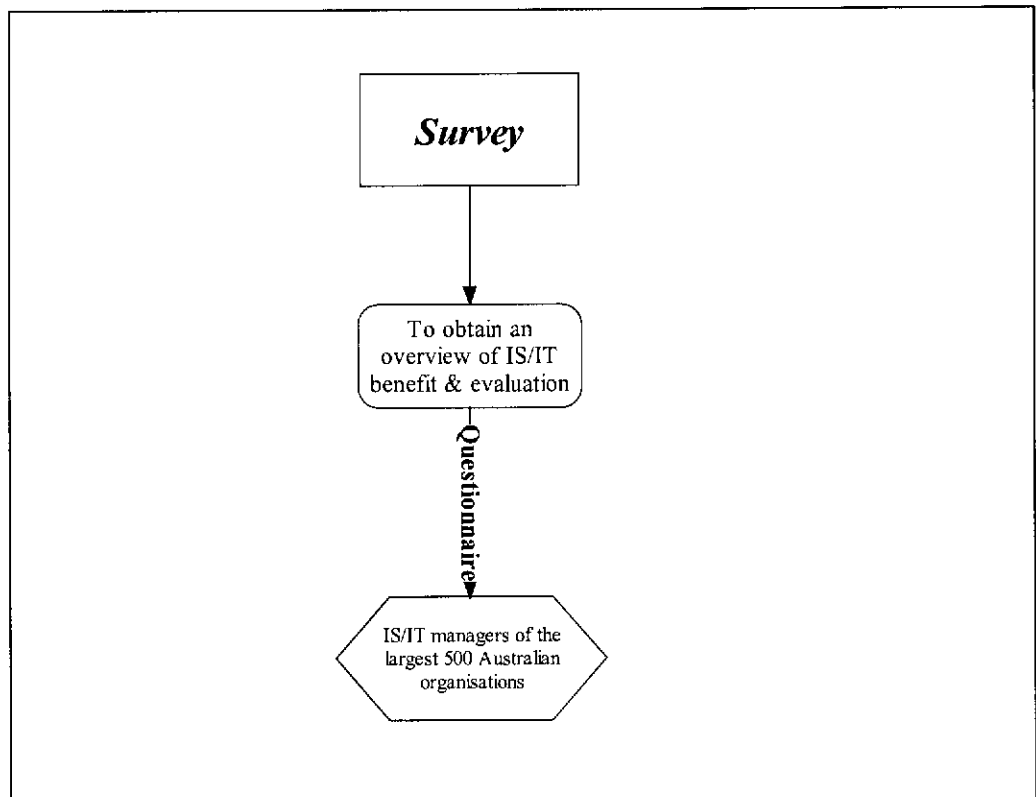


Figure 5.1: Research objective 1

## 5.2. The Survey

The main focus of this survey was on IS/IT benefits realisation. This survey, undertaken from June to August 1999, targeted Australia's largest 500 organisations. A list of chief information officers (CIOs) of the largest 500 organisations by gross revenue was prepared and used in this survey (see Appendix F). Specifically, the survey sought to determine:

- (1) How benefits from IS/IT investments were identified, evaluated, structured, delivered and realised by organisations.
- (2) What criteria and methodologies were used to evaluate as well as to realise appropriate and adequate benefits.
- (3) How organisations in Australia attempted to review and improve their current evaluation and benefits realisation processes and practices.

The structure of the questionnaire addressed many aspects of IS/IT benefits realisation and followed the key elements of the models with a mix of Likert scale, nominal scale and open-ended questions (Appendix F). It is mostly based on an previously validated survey conducted by Ward et al. (1996) in the UK. Thus, the researcher felt it was not necessary to further validate the questionnaire.

There were two mailouts for this postal survey. At the end of the *first* of two mailouts, a total of 35 completed questionnaires were received, giving a net response rate of 7%. This low response rate may be partially due to the fact that another researcher in the same school also used the same mailing database and sent his questionnaire at about the same time as the researcher's. This had probably caused some confusion. As a result, several organisations wrongly thought they had received the same questionnaire twice and decided to complete only one of the two questionnaires. Moreover, the IS/IT managers of the largest 500 Australian companies were often some of the busiest people around and, therefore, they simply had insufficient time or interest in completing and returning the questionnaire. Furthermore, several organisations sent back their questionnaires and indicated that their corporate policy did not allow them to participate in any survey. Finally, some level of mis-addressing was also inevitable given the volatility in the IT labour market (Seddon, 2001).

As a result of the low response rate (7%) from the first mailout, a reminder and a copy of the original questionnaire were sent, as part of the *second* and final mailout, to each of the 500 companies that were included in the first mailing in order to improve the response rate. This approach was favoured by many researchers in the past (Fox et al., 1988; Yammarino et al., 1991). By the end of November 1999, 34 additional completed questionnaires were received as a result of this, giving a total of **69** completed questionnaires or a net response rate of **13.8%**.

This low response rate did not really come as a complete surprise, given that postal surveys had often been plagued by low response rates (Church, 1993; Oppenheim, 1992; Weiers, 1988). This response rate was also comparable to many other similar survey studies conducted in the last few years:

- (1) 14% by Sriram et al. (1997) in their study of IT investments in purchasing by US companies.
- (2) 15.61% by Sohal and Ng (1998) in their study of the role of impact of IT in Australian business.
- (3) 13% by Seddon, Graeser, and Willcocks (2001) in their study of IS/IT investment evaluation of medium to large European and US firms.
- (4) 10.8% by Laitinen (2002) in his study of performance measures in small Finnish technology companies.
- (5) 10% by Wang (2002) in his study of customised software outsourcing from a group of medium to large-sized firms in Taiwan.

Since the response rate was only 13.8%, the results were, therefore, not generalisable with confidence to all large Australian organisations. However, the distribution of respondents was fairly close to that of the original target sample and the responses from these 69 IS/IT managers still provided valuable insights into these organisations' IS/IT investment evaluation and benefits realisation practices. In fact, Chi-squared Goodness of Fit tests of an industry sector, net revenue, and total number of employees, showed that the sample respondents were statistically similar (at the 1% significance level) to the target population. Therefore, the 69 respondents can be considered representative of the population as a whole.

The responses from the received questionnaires were entered into SPSS software for analysis and Microsoft Word for presentation. The comments from the survey were recorded verbatim and also used for analysis. In addition, several problems were encountered when the researcher had attempted to code these 69 returned questionnaires into SPSS software:

- (1) Some handwriting was difficult to read or comprehend.
- (2) Several questionnaires were incomplete but were not completely deleted as some of the responses provided were useful for analysis of results.
- (3) Some responses had to be partly eliminated because of the invalidity. These could be due to things such as incomprehensible handwriting or selecting more choices than allowed (e.g. selecting both Yes and No). However, they had not made any difference to the final results.
- (4) Some of the responses did not appear to answer the questions but still had to be included for analysis.
- (5) Some of the responses did not agree with the questions asked and their comments were recorded for further analysis.
- (6) There were too many open-ended questions to code.
- (7) Some respondents ticked two boxes instead of one box requested for the closed-ended questions. These responses had to be averaged.
- (8) Two more categories had to be added for Yes/No questions - "Yes - but not all the time" and "No - but planning to". This was done to code to those qualified responses.

In the following discussion of results the percentages referred to normally represented the proportion of valid (answered) cases only and did not indicate missing values. The respondents were IS/IT managers or persons who could represent their views. Additionally, most of the information presented below was based on descriptive statistics, but some comparisons between groups were made using one-way ANOVA tests and correlation statistics.



### 5.3. Background Information

The table below (Table 5.1) provides background information collected from the responding organisations for the postal survey.

| Range                                |                           | Percent (%) | Standard Deviation |
|--------------------------------------|---------------------------|-------------|--------------------|
| <b>(a) Industry sectors</b>          |                           |             | N/A                |
|                                      | Manufacturing             | 23.2        |                    |
|                                      | Financial Services        | 11.6        |                    |
|                                      | Mining                    | 11.6        |                    |
|                                      | Construction              | 5.8         |                    |
|                                      | Education                 | 5.8         |                    |
|                                      | Insurance                 | 5.8         |                    |
|                                      | Retailing or Distribution | 5.8         |                    |
|                                      | Utility                   | 5.8         |                    |
|                                      | Other                     | 24.6        |                    |
|                                      | <b>Total</b>              | <b>100</b>  |                    |
| <b>(b) Net revenue (A\$m)</b>        |                           |             | 1.03               |
| <500                                 | (=1)                      | 55.6        |                    |
| 501-1000                             | (=2)                      | 19.0        |                    |
| 1001-2000                            | (=3)                      | 15.9        |                    |
| 2001 and above                       | (=4)                      | 9.5         |                    |
|                                      | <b>Total</b>              | <b>100</b>  |                    |
| <b>(c) Total number of employees</b> |                           |             | 1.02               |
| <500                                 | (=1)                      | 24.6        |                    |
| 501-2000                             | (=2)                      | 34.8        |                    |
| 2001-4000                            | (=3)                      | 24.7        |                    |
| 4001 and above                       | (=4)                      | 15.9        |                    |
|                                      | <b>Total</b>              | <b>100</b>  |                    |
| <b>(d) Organisational structure</b>  |                           |             |                    |
| Hierarchical                         | (=1)                      | 78.4        | 0.42               |
| Flat                                 | (=0)                      | 21.6        |                    |
|                                      | <b>Total</b>              | <b>100</b>  |                    |
| Centralised                          | (=1)                      | 60.0        | 0.49               |
| Decentralised                        | (=0)                      | 40.0        |                    |
|                                      | <b>Total</b>              | <b>100</b>  |                    |
| Divisional/functional                | (=1)                      | 81.0        | 0.40               |
| Cross-functional                     | (=0)                      | 19.0        |                    |
|                                      | <b>Total</b>              | <b>100</b>  |                    |

| Range   |                              | Average            | Standard<br>Deviation |
|---|------------------------------|--------------------|-----------------------|
| <b>(e) CIO's IS/IT Background</b>   |                              |                    | 0.42                  |
| Yes   | (=1)                         | 78.3               |                       |
| No  | (=0)                         | 21.7               |                       |
| <b>Total</b>  |                              | <b>100</b>         |                       |
| <b>(f-1) Size of projects implemented last year (A\$m)</b>                              |                              |                    |                       |
| <1  |                              | 16.3               | 38.19                 |
| 1-10  |                              | 2.4                | 3.99                  |
| >10   |                              | 1.2                | 2.12                  |
| <b>(f-2) Size of projects to be implemented next year (A\$m)</b>                        |                              |                    |                       |
| <1  |                              | 16.6               | 42.00                 |
| 1-10  |                              | 3.1                | 5.91                  |
| >10   |                              | 0.7                | 1.27                  |
| <b>(g) Reporting Level between the IS/IT Head and the chief executive officer (CEO)</b> |                              | 0.9                | 0.65                  |
| (i.e. the IS/IT Head is an average 1.9 levels below the CEO)                            |                              |                    |                       |
| (Direct Link=0; One Level=1; Two Levels=2; Three or more Levels=3)                      |                              |                    |                       |
| <b>(h) The proportion for each of the following function outsourced (%)</b>             |                              | <b>Percent (%)</b> | <b>N/A</b>            |
| a)  | systems development          | 49.1               |                       |
| b)  | user support                 | 27.4               |                       |
| c)  | telecommunication/networking | 39.4               |                       |
| d)  | operation                    | 24.1               |                       |
| e)  | project management           | 18.2               |                       |
| f)  | IS/IT planning               | 3.2                |                       |

Table 5.1: Background information of the responding organisations

Overall, the responding organisations were large in revenue and number of employees, typical of the large corporate sector with large numbers from manufacturing, financial services and mining, and almost evenly divided between multinational and national. An overwhelming majority of the respondents came from an IS/IT background originally (78.3%). More than half (59.7%) indicated that there

was one reporting level between the IS/IT Head and the chief executive officer (CEO), while 23.9% of the respondents said that there was a direct link.

The organisations were mostly hierarchical, and centralised with a divisional/functional structure. The figures for the number of projects that were and would be implemented for the past and next 12 months were very similar and are consistent with the findings from Ward et al. (1996).

As mentioned in Chapter 2, IS/IT outsourcing had been carried out by most organisations undertaking systems development projects. By the year 2000, the Australian federal and most state governments had outsourced most of its IS/IT functions although the development of suitable methodologies for outsourcing had been very slow (Kakabadse and Kakabadse, 2001). Most survey respondents and the two case study organisations had also outsourced at least part of their IS/IT functions. A number of reasons were presented, but reducing the cost of future IS/IT capital investment is usually one of the first quoted (Willcocks et al., 1996a). Most respondents (75.8%) of this survey indicated that they had outsourced at least some part of the organisation's IS/IT functions. On average, almost half of the responding organisations' systems development function was outsourced (49.1%). Hierarchically structured organisations outsourced significantly less (at the 5% level) of their IS/IT operations (12.7% vs 57.5%), project management (11.6% vs 43.3%) and systems development (45.5% vs 76.7%) than flat organisations, indicating that flatter organisations had less need to control a great deal of their IS/IT activity. All outsourced activities showed a negative correlation between the percentage of outsourcing and organisational size (in revenue and number of employees), perhaps indicating that larger organisations already obtained substantial economies of scale (and cost savings) because of their size and felt less pressure to outsource (although it could be argued that outsourcing itself makes an organisation smaller, at least in number of employees!).

The IS/IT managers were asked to indicate perceptions of the role of IS/IT applications in the organisation. 82.1% disagreed that IS/IT provided only a support role which was not critical to everyday operations. Almost all respondents (a) indicated that IS/IT provided key operational processes which were essential to

everyday operations (98.4%), (b) agreed that IS/IT was of strategic importance to the organisation (88.9%), and (c) agreed that IS/IT was used to develop processes which may become important in the future (86.4%). Interestingly, those who did not perceive IS/IT to be of strategic importance had a much higher proportion of outsourcing (62% vs 26%). Overall, however, the respondents saw IS/IT applications as having key operational, strategic, and high potential (future) roles and that the role of IS/IT was more than just as a support mechanism.

For more detailed information regarding the profiles of the responding organisations please refer to Appendix A.

## **5.4. IS/IT Investment Evaluation**

Cost and budgets, Y2K, and staff retention and training were ranked as the three most serious issues currently concerning the IS/IT managers. Overall, cost and budgets was mentioned most frequently and seen as a very important issue, reflecting the continued drive for value for money from IS/IT. Against this continued pressure to reduce IS/IT costs, perhaps it is time to address seriously the benefits side of the value for money equation. Ward et al. (1996) also found cost and budgets as one of the top three issues concerning UK managers. On the other hand, Y2K was ranked as the single most important issue in the great majority of cases, indicating a panic rush to fix the bug by many organisations before the year 2000. However, despite the focus of this survey, "IT benefits and value" ranked much lower (equal 7<sup>th</sup>), as was also found in an earlier Australian survey where CEOs placed much more emphasis on evaluating IT investments than CIOs (Pervan, 1998).

The IS/IT managers were asked to provide views of the benefits that senior managers perceived to be provided by IS/IT. The most frequently cited benefits were competitive advantage, process efficiency, and satisfying information needs. Cost reduction was perceived to be a further major benefit, with improved systems applications, productivity, and business necessity, also ranking highly. These results are largely consistent with findings from Ward et al. who listed cost reduction, process efficiency, competitive advantage, and business necessity as some of their major perceived IS/IT benefits.

Cost reduction is usually seen as the most popular reason for justifying IT (Hinton and Kaye, 1996). It was also seen as the most important driver in this study, followed by competitive advantage. Process efficiency and improved service quality were also major drivers. Not surprisingly, cost and budgets was also one of the three most serious issues for IS/IT managers, indicating cost and budgets was the main driver for IS/IT investments in order to reduce costs. On the other hand, another important driver - competitive advantage was also a most important benefit perceived by senior managers, pointing to the attempt by the organisations to reduce costs while gaining competitive advantage through the deployment of IS/IT projects. Overall, competitive advantage and improved process efficiency were both seen as being the major current benefits, as well as the major drivers for IS/IT investments. This is largely consistent with the findings by Ward et al. (1996) who have also listed improved process efficiency as being the major current benefits as well as the major drivers for IS/IT investments.

Cost reduction was seen as the most important benefit to consider when planning IS/IT projects. Service quality, and revenue and margin were also important benefits to consider. Competitive advantage and process efficiency were seen to be the further benefits to consider before planning IS/IT projects. This indicated that the organisations were still under a lot of pressure to reduce IS/IT costs while attempting to address the problems of benefits realisation.

Most respondents showed a high level of confidence that IS/IT was actually delivering benefits to their organisations, with 23.9% indicating a very high level of confidence, while no respondent indicated no confidence at all. The average confidence level was 3.9 (out of a five-point scale ranging from “not at all” to “very”). Some of the most quoted reasons for this high level of confidence were feedback from users and reviews within the organisations, as well as through some sort of measured results. Further analysis revealed a significant negative correlation between confidence level and organisational size, perhaps suggesting the difficulties that larger organisations face in deriving these benefits (leading to less confidence by the CIO in their delivery). Further questioning revealed a number of issues that might undermine confidence. These included the selection of wrong projects, lack of formal

approaches, and inability to achieve the intended cost savings. In many cases the success criteria of project delivery was determined through some sort of reviews, meetings, or user feedback. In other cases project delivery “on time, working, to budget” was quoted, rather than measured benefits as a result of changes within the business. This is consistent with the findings from Ward et al. (1996).

Respondents were asked about adoption, usage and success with formal methodologies or processes for various IS/IT activities and revealed a reasonably high adoption of methodologies for systems development (49.3%), project management (43.3%), and IS/IT investment appraisal (65.7%), but less for IS/IT benefits management (32.8%). This is consistent with findings from Ward et al. (1996) which have largely similar adoption rates for systems development (52%), project management (52%), IS/IT investment appraisal (60%), and IS/IT benefits management (12%). In addition, 17.4% of the respondents indicated that they did not have any of these methodologies, while the similar percentage of the respondents (15.9%) had all four methodologies. Therefore, overall, their use was found to be commonplace but by no means universal. In particular, a significant majority had a formal methodology or process for their IS/IT investment appraisal.

Of those that had methodologies, respondents indicated that systems development, project management, and investment appraisal process were widely used (selected 4 or 5 out of a five-point scale ranging from “not at all” to “extensively”) in 63.6%, 55.2%, and 54.5% of cases, respectively. However, only 22.7% of those who had a benefits management methodology pointed out that it was widely used in their organisations. In terms of effectiveness of those methodologies in ensuring successful information systems, respondents who had methodologies indicated that systems development, and project management were effective (selected 4 or 5 out of a five-point scale ranging from “not at all” to “extensively”) in 54.5%, and 69% of cases, respectively. However, only 41.9% and 38.1%, respectively, of those who had investment appraisal process and benefits management methodologies pointed out that they were effective in ensuring successful information systems. Overall, both systems development methodology and project management methodology were widely used and effective in ensuring successful information systems. However, the IS/IT investment appraisal process was not effective in ensuring successful

information systems although it was widely used. Furthermore, IS/IT benefits management methodology was neither widely used nor effective in ensuring successful information system.

An examination of those organisations that did use a formal IS/IT investment appraisal process revealed a quite significant level of usage, averaging 3.73 (on a scale from 1 “not at all” to 5 “extensively”). Level of usage was significantly correlated with organisational size (in terms of net revenue), perhaps indicating that larger organisations (with more IS/IT investment) found a greater incentive to use formal IS/IT investment appraisal processes than smaller organisations. Further, most of these organisations considered their use successful, averaging 3.42 (on the same 1-5 scale) and 86% rating the success 3 or higher. Level of usage and success were very significantly correlated (0.824), indicating greater success seemed to come with greater usage of these processes.

Of those who had an IS/IT benefits management methodology, 81.8% also practised a formal IS/IT investment appraisal process, while use of systems development and project management methodologies was somewhat mixed (59.1% and 54.5%, respectively). Ward et al. (1996) raised the question as to whether respondents' interpretation of IS/IT benefits management methodology was aligned with the wider interpretation of benefits management presented in this research. For example, only 60% of those who had IS/IT benefits management methodology had a benefits delivery plan generated as part of it. Therefore, it was possible that a lot less respondents than was indicated by this survey had a benefits management methodology in the sense of the definition presented in this research.

## **5.5. Identifying and Structuring Benefits**

Much of the literature suggests that most organisations use traditional financially oriented evaluation techniques although these techniques are not always an appropriate way to evaluate IS/IT projects (Irani et al., 1997; Willcocks and Lester, 1993). Likewise, the traditional financially oriented evaluation techniques such as net present value (NPV) and cost/benefit analysis (CBA) were still the most commonly mentioned appraisal techniques by the respondents of this survey for deciding upon

IS/IT investments (note: survey respondents did not distinguish between general methods such as CBA and specific techniques used within them such as NPV, ROI, IRR, etc. and the results are presented in the terms provided by them). Return on investment (ROI) was another popular technique. Many responding organisations employed more than one technique or method (58%) and just over half of the respondents (54%) mentioned formally recognised techniques such as payback, internal rate of return (IRR), CBA, ROI, NPV, or discounted cash flow. These results are generally consistent with findings by Ballantine and Stray (1998) and Ward et al. (1996). Ballantine and Stray (1998) have indicated in their UK study that the most popular project appraisal techniques employed by their survey organisations are CBA (72%), payback (60%), ROI (43%), IRR (24%), and NPV (24%). Moreover, Ward et al. (1996) have listed ROI and CBA as the most commonly mentioned appraisal techniques. However, less than 50% of their survey respondents have mentioned any of the recognised techniques. Finally, in their survey of CIMA members, Hinton and Kaye (1996) found that 60% of decision-makers employ more than one technique to evaluate their IS/IT investments. The IS/IT managers in this survey seemed to be consistent with these other reports.

However, interesting differences exist when attempting to compare these survey results with the case study results (Arribas and Inchusta, 1999). The survey method normally reveals a significant use of traditional financially oriented evaluation techniques by organisations while in the case study this use is seen as very much a minority result (Arribas and Inchusta, 1999). For example, Farbey et al. (1992) quoted four out of 16 cases (25%) which use traditional financially oriented evaluation techniques and Arribas and Inchusta (1999) discovered only two out of twenty organisations studied (10%). However, as cited earlier many survey studies indicated that more than 50% of the responding organisations used traditional financially oriented techniques. This may have something to do with the way the questions were put forward to the respondents. As mentioned in Chapter 3, this shows the importance of using both quantitative and qualitative research methods.

In terms of appropriateness, the majority of the respondents (76.6%) rated their methods and techniques for deciding upon IS/IT investments as less than “very appropriate”. This finding is consistent with the finding from Ward et al. (1996) in



which their survey indicates 82% of the respondents rated their methods and techniques as less than “very appropriate”. This was not really surprising as problems with these traditional financially oriented evaluation methods are that they largely exclude the significant problem of risk as well as costs and benefits that may be difficult to quantify (Brown, 1994; Willcocks, 1989). According to Serafeimidis and Smithson (1994), there is simply no widely accepted methodology that is relevant in all cases. There is also evidence that, whether traditional financially oriented evaluation methods are widespread or not, the results are often ignored (McGolpin, 1991 in Whiting et al., 1996). However, the average rating of appropriateness was 3.81 on a 1-5 scale, indicating reasonable satisfaction with these techniques despite their limitations.

Cross-functional organisations had higher average rating of appropriateness (4.2 vs 3.7 on a 1-5 scale) than divisional/functional organisations, indicating that divisional/functional type of organisations were less satisfied with their methods and techniques for deciding IS/IT investments.

Of those respondents who felt that the methods and techniques used by their organisations were less than “very appropriate”, many problems were put forward. Common problems with the methods and techniques were that the respondents: (1) were unable to select the right projects; (2) did not have formal approaches; and (3) could not achieve the intended cost savings. However, very few respondents pointed out the problems of identification and quantification of relevant benefits and costs, or measurement problems, frequently mentioned in the literature (Ballantine et al., 1996; Malitoris, 1990; Seddon et al., 2001). Some interesting comments mentioned by the respondents included that there were no problems at all. Several respondents felt that incorrect decisions were made as the results of these problems. Other consequences of these problems mentioned by other respondents were that wrong projects were often selected and goals were consistently not achieved. The results are a bit different from Ward et al. (1996) in which inability to take account of potential benefits (especially the intangible benefits) was cited as the most common problem with the methods and techniques, and wrong projects were often approved as a result.

Intangible benefits are often critical to an organisation’s operation and efficiency

(Norris, 1996). However, they are usually omitted from evaluation studies, because they cannot be quantified or justified by traditional financial evaluation techniques (Apostolopoulos and Pramataris, 1997). Many respondents (84.7%) indicated that they had included intangible benefits in their IS/IT project appraisal process. However, of those who did consider intangible benefits, only 32.1% “often or always” took steps to review these benefits at a later stage. Similarly, only 31.8% of the respondents “often or always” regarded intangible benefits as major success criteria. These results on project appraisal techniques and their appropriateness confirm the findings of previous researchers such as Ballantine et al. (1994), Farbey et al. (1992), and Willcocks and Lester (1991).

Further analysis revealed a significant negative correlation between intangible benefit inclusion in IS/IT project appraisal process and organisational size in terms of total employees, perhaps suggesting the difficulties that larger organisations face in including these intangible benefits (leading to exclusion of intangible benefits in their appraisal processes).

According to Mirani and Lederer (1993), alignment with stated organisational objectives has a key bearing on how investment is organised and conducted, and the priorities that are assigned to different IS/IT investment proposals. A great majority of the respondents (87.7%) had a process ensuring that IS/IT projects were linked to business objectives. Of those who had this, committee processes, business planning processes, or business alignment activities were most generally used by respondents to help ensure that IS/IT projects were linked to business objectives.

Many of the respondents (79.7%) stated that IT management was “often or always” responsible for preparing and submitting the justification for approval. However, those organisations which stated that IT management was “rarely” responsible for preparing and submitting the justification for approval were more likely to outsource their project management than those who stated “often or always” (50% vs 25.7%).

On the other hand, only half of the respondents (50%) believed that business management was “often or always” responsible for preparing and submitting the justification for approval. This indicates that IT management, not business

management, was usually responsible for preparing and submitting the justification for approval.

Half of the respondents (50%) believed that their current project justification process failed to identify all available benefits for a project. However, more (67.2%) believed that their current process was able to quantify the relevant benefits. Interestingly, in 26.2% of cases, the respondents openly admitted that their current process actually overstated the benefits in order to get approval. This seemed to imply that while benefits claimed were likely to be quantified and realised in practice, the process itself placed more emphasis on getting project approval than on delivering on proposed benefits. The results here seem to be different from the findings by Ward et al. (1996) which indicate that (a) 78% of their respondents failed to identify all available benefits; (b) 30% of them failed to quantify the relevant benefits; and (c) 47% overstated the benefits.

Of those respondents that felt benefits were overstated, 75% conducted post-implementation reviews (PIRs), and 50% “often or always” targeted benefits delivery as part of the post-implementation review process. This is similar to the findings by Ward et al. (1996) in which their respondents indicated 89% conducted PIRs while 56% targeted benefits delivery as part of the PIR process.

In contrast, of those that did not feel benefits were overstated to get approval, 77.1% conducted post-implementation reviews (PIRs), and 84.6% “often or always” targeted benefits delivery as part of the post-implementation reviews process. Those who did “overstate” were almost equally likely to conduct post-implementation reviews but a lot less likely to target benefits delivery as part of the post-implementation review process, perhaps to avoid embarrassment. Another possible explanation is that for many organisations the primary objective of a post-implementation review is not project improvement but to close out formally the IS/IT project (Kumar, 1990). However, according to Ward et al. (1996), whatever the reasons for overstating benefits, from a business user perspective the practice was likely to lead ultimately to a lack of confidence in the ability of IT to deliver what is promised. The findings by Ward et al. (1996) were quite interesting with 60% of the respondents conducted PIRs while only 43% targeted benefits delivery as part of the

PIR process.

Just over half of the respondents (51.5%) believed that, in general, the achievable benefits could “often or always” change during implementation, so that new benefits were identified. Of those who believed that new benefits could “often or always” be identified, most were from hierarchical (79.3%), centralised (60.7%), and divisional/functional (78.6%) structured organisations. Moreover, most of these respondents (82.4%) came from an IS/IT background.

On the other hand, only 21.5% of the respondents believed that the achievable benefits could “often or always” change so that benefits claimed became unachievable. Of those who believed that benefits claimed before could “often or always” be unachievable, most were from hierarchical (81.8%), decentralised (60%), and divisional/functional (72.7%) structured organisations. Moreover, all of these respondents (100%) came from an IS/IT background.

A survey conducted in South Africa by Sutherland (1994) showed that 62% of the CIOs use pilot studies to evaluate the benefits of an IS/IT investment. Some 86% of the UK organisations in a survey carried out by Willcocks and Lester (1993) included pilot studies among their methods. 87% employed pilot studies when implementing IS/IT in the survey conducted by Ward et al. (1996). In this Australian survey, 80.6% of the respondents conducted pilot studies when implementing IS/IT. Of these, 70.6% stated that one of the objectives of these studies was “often or always” the evaluation of technology. Having an objective of understanding the benefits available was less popular (53%), as was demonstrating how benefits might be realised (52%). Although many respondents saw evaluating technology as one of the objectives of their pilot studies, an overall implication was that the purpose in carrying out pilot studies when implementing IS/IT was not always clear, and in almost 50% of cases the primary purpose did not appear to be to obtain a better understanding of potential benefits or how to realise them. The results are largely consistent with findings from Ward et al. (1996) who claim a better understanding of potential benefits and realisation of benefits is often not the primary purpose of a pilot study.

## **5.6. Planning Benefits Realisation**

In 80.6% of cases the organisation appointed a business project manager. Of those who had, 78.6% were from hierarchically structured organisations whereas 21.4% were from flat structured organisations. In addition, most divisional/functional organisations (80.4%) appointed a business project manager, perhaps indicating that hierarchical and divisional/functional structured organisations had more need to appoint a business project manager to manage their IS/IT investments probably because the use of these systems spanned many divisions and functions.

The responses indicate that the roles for a business project manager were most often concerned with project management, coordinating resources, and control, rather than actively managing a business project in delivering actual business benefits. Several responses also stated that ensuring business ownership, business delivery, and requirements determination were other roles that a business project manager was expected to carry out. On the other hand, the survey carried out by Ward et al. (1996) indicated that the role for a business project manager was managing the interface between the IS/IT group and the business.

Nearly half of the survey respondents (47.7%) indicated that specific responsibilities for realising the business benefits claimed in the justification were not allocated to managers. This is in contrast with the survey by Ward et al. (1996) who found that 68% of the respondents indicated that responsibilities for realising benefits were not allocated to managers. Of those who allocated responsibility to managers for realising benefits, 81.6% of the responding IS/IT managers were from an IS/IT background, indicating that an IS/IT background for a IS/IT manager had a great influence on the organisations allocating benefits realisation activities for the project justification phase. In terms of organisational structure, those who allocated responsibility were mainly from hierarchical (76.9%), centralised (66.7%), and divisional/functional (89.7%) structured organisations. Moreover, these organisations were also more likely than not to outsource their IT functions (73.3%), perhaps emphasising the outsourcing supplier's responsibility for delivering benefits.

Furthermore, preparation of budgetary cost was the most mentioned action that the

responsible manager was expected to take. Benefits measurement and reporting were also mentioned by other respondents. In terms of ensuring that IS/IT projects would deliver benefits to all relevant users, user involvement, and meetings and committee processes were the means most often used by the IS/IT managers.

On the other hand, the allocation of specific responsibility to individual managers for realising business benefits claimed in the project justification occurred in only 52.3% of the cases. Responses to further questions identified that line/department managers and senior management were primarily responsible for ensuring that the benefits were delivered. Thus while there appeared to be a clear understanding of who was responsible for realising business benefits, in many cases there was no specific responsibility allocated for the responsible managers to take the necessary action. Only 43% of the respondents claimed that their organisation prepared a benefits delivery plan. Without such a plan, it was difficult to envisage how an organisation might effectively realise business benefits. The results are largely consistent with the findings from Ward et al. (1996) in which line/department managers and users were responsible for ensuring benefits delivery while only 27% of the respondents prepared a benefits delivery plan.

Of those who had prepared a benefits delivery plan, 89.3% indicated that the plan was “often or always” prepared before the approval stage. However, this was significantly and negatively correlated with organisational size in terms of both total employees and net revenue, perhaps indicating that it was more difficult for larger organisations to prepare the plan before the approval phase. In addition, most of the organisations which had prepared the plan were mainly from hierarchical (80%), centralised (61.1%), and divisional/functional (78.3%) organisations. Furthermore, these organisations were also more likely than not to outsource their IT functions (85.7%), perhaps indicating an even greater need to plan when IS/IT was outsourced.

The realisation of business benefits usually requires changes to business processes or practices in order to achieve maximum effect (Ward et al., 1996). Such changes associated with an IS/IT project were stated as “often or always” being planned after system implementation or not at all in 10.6% (process changes) and 25.9% (organisational changes) of cases. The results are consistent with findings by Ward et

al. (1996) in which process changes occurred in 16% of cases whereas organisational changes happened in 28% of cases.

Given that the central concept of this survey is that benefits are derived through business changes, one can conclude that in these cases benefits are unlikely to be realised in practice. Some 31.8% indicated that they “often or always” planned for process changes during implementation, making them difficult to realise in practice. Furthermore, the business project/business manager was the most likely person to be responsible for planning both the process and organisational changes.

## **5.7. Delivering the Benefits**

Most of the respondents (62.7%) held formal reviews of activities associated with delivering benefits during the implementation process. Furthermore, as a result of monitoring benefit-realising activities, 79.6% of the respondents made changes to either the system design or the implementation approach. Of those respondents who had made changes after monitoring benefit-realising activities, 9.7% did not hold any formal reviews of activities associated with delivering benefits.

## **5.8. Evaluating and Reviewing Results**

In few cases was there an explicit statement that an IS/IT project was considered to be successful if either the proposed benefits were delivered or objectives were met. Many respondents indicated that they would make the conclusion through some sort of post-implementation reviews, meetings, or user feedback (satisfaction). In many cases the replies were the traditional project management success criteria of “working, on time, to budget.” However, neither reviews and user feedback nor meeting deadline was any guarantee of benefits delivery. The results are consistent with findings from Ward et al. (1996) in which subjective assessment of user satisfaction and “working, on time, to budget” were the most often cited reasons for determining whether or not an IS/IT project has been successful.

A benefits management approach implies that measures of success should be developed pre-project, so that these measures can be used for post-project review

(Ward et al., 1996). It must also be conducted to ensure that the whole process is still appropriate to meet the business needs and that benefits have been obtained (Sohal and Ng, 1998). However, only 45% of the respondents indicated that measure of success was “often or always” defined before project approval, and some 44.5% stated that measure of success were “often or always” defined after implementation or “not at all”. In addition, 31% of the respondents mentioned that measure of success was “often or always” defined before implementation. While this is initially surprising, the result is consistent with the findings from Ward et al. (1996) and can be understood in the context of the findings on post-implementation reviews. That is, in terms of measuring the success before and after implementation stages, they were significantly correlated with organisational size (in terms of total employees), perhaps indicating that larger organisations were under more pressure to define the measures of success before and after implementation.

Post-implementation reviews can often provide valuable feedback on the value being achieved by expenditure on IS/IT projects (Norris, 1996). A study carried out by Tallon et al. (2000) found that organisations that make extensive use of post-implementation reviews had higher perceived payoffs from IS/IT. Although some research indicates that post-implementation reviews are not, in general, carried out by organisations (Butler Cox Foundation, 1990 in Norris, 1996; Sutherland, 1994), some 77.3% of the respondents for this survey indicated that reviews were formally conducted. This is only marginally lower than 80% reported by Willcocks and Lester (1996), but is higher than 72% and 18-48% reported by Ward et al. (1996) and Taylor and Norris (1990 in Seddon et al., 2001), respectively. The fact that 22.7% of the respondents of this survey did not conduct any post-implementation reviews was disturbing but is not inconsistent with findings from Willcocks and Lester (1993) in which 20% of their responding organisations also do not evaluate at the post-implementation stage. They found the most likely reason for not making these reviews related to lack of tools to make such calculations.

Of those who had conducted the post-implementation reviews (PIRs), technical conformance “often or always” featured in 43.8% of cases, and project management effectiveness in 53.1% of cases. In 76% of cases, benefits delivery was “often or always” an objective of these reviews, which might be reassuring if there were



stronger evidence that methods and techniques were being used to make this objective realisable. These results are very similar to the findings by Ward et al. (1996) where technical conformance (55%), project management effectiveness (66%), and benefits delivery (76%) were the objectives of the PIRs.

Thus, taking the sample as a whole, only 55.1% of the respondents “often or always” assessed benefits delivery as part of their post-implementation review process. In terms of those who always assessed benefits delivery, this figure fell to just 26.1%. However, this result is not inconsistent with a survey carried out by Sohal and Ng (1998) where 59% of the respondents did not determine whether expected benefits were being achieved during post-implementation reviews. The implication of these findings is that the objectives of post-implementation reviews are by no means clear, and that the objective in many cases is not the review of actual benefits delivery. A possible explanation is provided by Kumar (1990), who found that in the majority of cases the primary objective of a post-implementation review is not project improvement but to formally close out the IS/IT project.

Internal reviews and formal meetings were the most common ways to conduct a formal post-implementation review. Some 29.8% of the respondents indicated that the post-implementation reviews were usually held within 3 months of implementing their projects, and 23.4% of the respondents held within 6 months. The IS/IT manager was normally the most likely person to be involved in these reviews. Overall, most organisations had conducted formal post-implementation reviews and IS/IT managers were the most likely persons to conduct these reviews, usually within 3 or 6 months, and mostly with benefits delivery as the objective of these reviews.

Most respondents (86.7%) indicated that they had fed the results back to whomever approved the project after some form of benefit evaluation was conducted. Just over half of the respondents (52.3%) had a formal process to ensure that the lessons learned from successful or unsuccessful implementations were transferred to future projects. Almost half of the respondents (47.7%) did not have a formal process to learn from their past mistakes and this is consistent with findings from Willcocks and Lester (1993) in which 44% of their respondents admitted not to have learned from their mistakes. However, 71% of the respondents from the survey conducted by

Ward et al. (1996) admitted not to have learned from their mistakes. It was unclear whether those that did not learn from past implementations could ever improve their implementation processes. This is explained by Kumar (1990) who concludes that current practices may not provide the more important long term feedback improvement benefits of the evaluation process.

## **5.9. Potential for Further Benefits**

The majority of the respondents (83.1%) did not believe that it was possible to anticipate all potential benefits at the project approval stage. However, taking the sample as a whole only 18.2% of the respondents claimed to have a process for identifying further benefits after implementation. This is consistent with findings by Ward et al. (1996) in which 86% of the respondents thought that it was impossible to anticipate all potential benefits at the project approval stage and only 19% of the respondents claimed to have a formal process to identify any further benefits after implementation and took action to realise them.

The implication is that there are often more benefits to be gained after implementation, but current practices mitigate against exploring these benefits. This has been confirmed in findings from Ward et al. (1996). Furthermore, the most likely person to take any action after implementation to realise these further benefits was either an IS/IT or a business project manager.

Most respondents felt that there was significant scope for improvement in their current approach to managing IS/IT benefits. The average significant scope of improvement (on a 1 to 5 scale) was 3.7. However, there appeared to be a potential paradox between the current confidence (average = 3.9) that IS/IT was delivering benefits to the organisation and the view that there was significant scope for improvement (average = 3.7) in how benefits were being realised. This may be explained by the nature of the benefits that respondents perceived were actually delivered, and a view that much greater potential existed to deliver other types of benefits, or that only a proportion of the benefits that were readily realisable from current investments were actually delivered and that more could be delivered with a more effective process. The results are consistent with findings from Ward et al.

(1996) which the average significant scope of improvement in managing IS/IT benefits was 4.0 while the average current confidence level was 3.5.

## **5.10. Summary**

This chapter was written to present the results gathered from the survey. In-depth analysis and discussion of the survey (Chapter 5) and case study (Chapters 7 and 9) results will only be carried out in Chapter 10. Nevertheless, some basic analysis will be provided below.

As mentioned earlier, the aim of this survey is to satisfy the research objective 1 which is to establish current Australian industry and government practices and norms in managing IS/IT benefits and evaluation. In other words, it is to summarise and update our knowledge of IS/IT investment evaluation and benefits realisation practices. A detailed comparison of this survey results and the results of Ward et al. (1996) is presented in Appendix B.

In summary, a variety of formal IS/IT investment evaluation processes and techniques were used, costs and budgets were of great concern, though evaluation itself was not among the very top issues. There was a strong emphasis on cost reduction and other benefits, and a reasonable level of confidence in the delivery of these benefits. This is consistent with the literature mentioned in Chapter 2. Most organisations used a formal methodology or process for IS/IT investment evaluation. Many respondents considered their formal financially-based evaluation techniques (such as NPV and ROI) were not perfect, though they did try to incorporate intangible benefits into the process (often without reviewing them in post-implementation, unfortunately). The majority of respondents made use of pilot studies as part of their investment appraisal process. The results are mostly consistent with findings from the two case studies which will be mentioned in Chapters 7 and 9.

Perceived benefits from IS/IT investments included cost savings, process efficiency, competitive advantage and satisfying information needs. Most organisations linked these benefits to business objectives and had a relatively high confidence in delivering them, even though they felt the benefits were often overstated at project

approval stage. Further, most included intangible benefits in their project appraisal processes, but often failed to review them at a later stage.

Although most seemed to have an existing process for IS/IT evaluation and benefits management, only about one-third of organisations claimed to have a formal benefits realisation methodology. Most had a benefits delivery plan and a specific business project manager to manage their process, while some also directed responsibility for realising benefits to relevant line managers. Most had formal reviews during implementation and revised systems design as a result. Post-implementation reviews were generally also performed and were used to provide feedback to the project client. These reviews considered such aspects of the project as technical conformance and project management effectiveness, while benefits delivery was usually considered but often not explicitly measured.

One key point from the survey results was 65.7% and 32.8% of the survey respondents indicated that they had used IS/IT investment appraisal process and IS/IT benefits management methodology, respectively, with only 35.8% and 7.4% of all respondents stating that these methodologies had been widely used. However, when the results were looked at more closely, they revealed that only the financial accounting-based measures were mentioned by the respondents (e.g. NPV, cost/benefits analysis (CBA) and return on investment (ROI)). This was not surprising given that there was a focus on cost reduction. Therefore, there appeared to be a focus on service level agreements (SLAs) (see Chapters 7 and 9). No formal IS/IT investment evaluation or benefits realisation methodologies or techniques were mentioned by any of the respondents. As mentioned earlier, it was no wonder that one of the main reasons for considering their methods used to be less than very appropriate was that the respondents did not use formal approaches.

As will be shown later in Chapter 10, this result is consistent with findings from the two case studies (in Chapters 7 and 9) in which most respondents also claimed that both formal IS/IT investment evaluation and benefits realisation methodologies were used when, in fact, they were either none existent or informally deployed. Failure to adopt these methodologies had some serious ramifications (e.g. inability to manage the contracts) for the organisations concerned. The reasons for not adopting these

methodologies could be due to the cost of implementation and lack of understanding of the IS/IT investment evaluation and benefits realisation methodologies and practices by most respondents.

| Questions   | Results  | Standard Deviation |
|---|--|--------------------|
| Reasons for justifying IS/IT investments                            | 1. cost & budgets<br>2. competitive advantage<br>3. process efficiency | N/A                |
| Methods/techniques used to decide upon IS/IT investments            | 1. NPV<br>2. CBA<br>3. ROI   | N/A                |
| % of respondents use of: (Y=1; N=0)                                 |  |                    |
| ▪ Investment appraisal process                                      | 65.7%  | 0.48               |
| ▪ IS/IT BR methodology  | 32.8%  | 0.47               |
| Of those who had the methodology, % “often or always” widely used:  |  | N/A                |
| ▪ Investment appraisal process                                      | 54.5%  |                    |
| ▪ IS/IT BR methodology  | 22.7%  |                    |
| Current process: (Y=1; N=0)   |  |                    |
| ▪ Identifies all available benefits for a project                   | 50.0%  | 0.50               |
| ▪ Adequately quantifies the relevant benefits                       | 67.2%  | 0.47               |
| ▪ Overstates the benefits in order to get approval                  | 26.2%  | 0.44               |
| Methods/techniques considered to be less than “very appropriate”    | 76.6%  | N/A                |
| Prepared a benefits delivery plan (Y=1; N=0)                        | 43.0%  | 0.50               |
| Conducted PIR (Y=1; N=0)  | 77.3%  | 0.42               |
| Had a formal process to ensure that lessons were learned (Y=1; N=0) | 52.3%  | 0.50               |

Table 5.2: Key survey findings

It was also interesting to see that 50% of the survey respondents believed that their current project justification process failed to identify all available benefits for a project and (67.2%) believed that their current process was able to quantify the relevant benefits. This seems to be inconsistent. On one hand, most respondents claimed that they had used IS/IT investment evaluation and benefits realisation methodologies and were able to quantify the relevant benefits. On the other hand, no formal IS/IT investment evaluation and benefits realisation methodologies were

identified by the respondents and half of the respondents pointed out that their current project justification process failed to identify all available benefits. Some of the key findings of this survey are shown in Table 5.2 above.

| <b>Survey Results</b>   | <b>No BRM</b> | <b>BRM</b> |
|---|---------------|------------|
| • had used an IS/IT investment appraisal process  | 58.8%         | 81.8%      |
| • had a process that ensured the IS/IT projects were linked to business objectives  | 84.1%         | 95.2%      |
| • had a formal process to ensure that the lessons learned from successful or unsuccessful implementations were transferred to future projects | 47.6%         | 59.1%      |
| • believed that the methodology was effective in ensuring successful information systems  | 2.2%          | 38.1%      |
| • had prepared a benefits delivery plan   | 34.1%         | 60.0%      |
| • believed that their current process adequately quantified the relevant benefits   | 54.5%         | 90.9%      |
| • had a formal process to identify any further benefits after implementation  | 9.3%          | 36.4%      |
| • held formal reviews of activities associated with delivering benefits during the implementation process                                     | 59.1%         | 68.2%      |
| • took action after implementation to realise the benefits identified after implementation  | 4.8%          | 68.2%      |
| • felt that there was no scope for improvement in their current approach to managing IS/IT benefits   | 4.8%          | 18.2%      |
| • overstated the benefits in order to get approval  | 30.9%         | 18.2%      |
| • felt that there was scope for significant improvement in their current approach to managing IS/IT benefits                                  | 69.0%         | 50.0%      |

Table 5.3: Comparison of survey results for benefits realisation methodology usage

The table (Table 5.3) above shows some key survey results relating to the difference

between those organisations which had used a benefits realisation methodology (BRM) and those which had not:

Therefore, there was a need to conduct case studies to look at the results from the survey more closely. As mentioned in Chapter 4 (Figure 4.4), the two case studies were conducted to identify and investigate more detailed problems and issues. This issue and other results will be further elaborated in Chapter 10.

In the next few chapters (Chapters 6-9), the aim is to develop a framework based on the fit between theory and practice of IS/IT investment evaluation by large Australian organisations. The aim will be satisfied via two case studies and the results from this survey.

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# Chapter 6

## Case 1 Description

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### 6.1. Introduction

This chapter provides a brief overview of the first case study, conducted within a major state government department (hereafter referred to as the “Department”). The objective was to develop a framework based on the fit between theory and practice of IS/IT investment evaluation by large Australian organisations.

First, this chapter gives a brief introduction to the reasons for conducting this case study, then provides a short description of the Department, its three external contractors, and nine participants, before moving on to present the Department’s three major outsourcing contracts and the motives behind signing these contracts. The tendering process, IS/IT investment evaluation and benefits realisation process associated with these three contracts are also discussed.

### 6.2. The Case Study

The opportunity to conduct this case study research at a major government department (the Department) arose from a series of meetings and discussions about this PhD research between the researcher’s supervisor, and several senior executives from the Department. In the meetings, several of their senior executives raised concerns about the IS/IT investment evaluation and benefits realisation aspects relating to some of the Department’s outsourcing contracts. As their concerns were related to the researcher’s current research topic, the researcher’s supervisor sought



their permission, on behalf of the researcher, to conduct a case study in their organisation.

Following discussions and subsequent submission of a brief proposal detailing the research topic, the Department's CEO and CIO confirmed their willingness to assist the researcher in undertaking a case study in the organisation and to assist in gaining cooperation from their major external outsourcing contractors to take part in this research. The researcher was given access to several documents related to their three major outsourcing contracts (BDMW, LWD and ASD).

The case study was carried out between November, 1999 and August, 2000. In total, 10 interviews were conducted with six participants from the Department and one participant from each of the three major outsourcing contractors. A copy of the interview questions is included in Appendix D. The questions asked during the interview were related to the Department's three major outsourcing contracts, the contractual relationship between the Department and the contractors, the IS/IT investment evaluation methodology deployed, benefits realisation process used, and the management of the contract transition period. All interviews were taped and the transcripts were sent to the interviewees for validation. Only two interviewees had minor amendments to their transcripts. In cases where there were differences of opinion between participants, either follow-up interviews were conducted or emails were sent to clarify their positions. In many instances, interesting differences of opinion persisted.

### **6.3. The Organisation**

West Australian (WA) Government agencies spent more than A\$6 billion buying goods, services and works each year, with more than 40,000 individual contracts established between agencies and private sector suppliers (SSC, 2000c). There were more than 160 government agencies in Western Australia. Agencies planning to contract out their purchasing function were required to prepare a procurement strategy that addressed all strategic management and risk issues and approval had to be sought from the State Supply Commission (SSC, 1999a). The SSC functioned as policy maker, regulator and watchdog. It was responsible for setting policy in

government purchasing and contracting, accrediting and monitoring government agencies procurement practice, and providing private industry with a grievance handling facility (SSC, 2000a).

However, SSC had formally delegated, through a Notice of Delegation, contracting functions to the Department. (SSC, 1999e). Therefore, state government agencies were required to use the Department when they had purchasing requirements with a value exceeding their delegated purchasing levels (SSC, 2000a).

The Department was the central contact point for the West Australian Government agencies and suppliers on contracting matters. It was established in July 1996 by the merging of two other departments, and was a State Government department established under the Public Sector Management Act 1994 (The Department, 1999a). Its headquarters were located just next to the Perth central business district (CBD), with 14 regional offices throughout Western Australia.

The mission of the Department was to “enable West Australian public sector agencies and the private sector to gain access to expert contract and management services for Government business” (The Department, 1999a). The Department’s core business was contracting and tendering and, therefore, was responsible for providing services and goods contract development and contract management services to governmental agencies to ensure probity and integrity in contracting and achieved best value for money outcomes (The Department, 1999a). It was also responsible for establishing whole of government contracts that were accessed by other agencies and were worth about A\$250 million each year (SSC, 2000c). Furthermore, its major tasks were as follows:

- (1) Procurement as a strategic function of management.
- (2) Advice, contract development and contract management for services and goods.
- (3) Improved procurement and contracting skills across the public sector.
- (4) Advice and support to industry on the WA Government procurement.
- (5) Advice to the WA Government on strategic procurement and contracting.

(The Department, 1999a)

At the time of undertaking this research, there were several major IS/IT outsourcing contracts being managed by the Department. These included the BDMW, the LWD, and the ASD contracts (the details of which will be covered later in this chapter).

## 6.4. Major Outsourcing Contractors

The names of the contractors are not revealed for reasons of confidentiality. Instead, these three external outsourcing contractors are labelled as Contractor 1, Contractor 2 and Contractor 3 (Table 6.1).

| Contractor   | Contract |
|--------------|----------|
| Contractor 1 | BDMW     |
| Contractor 2 | LWD      |
| Contractor 3 | ASD      |

Table 6.1: The Department's three external outsourcing contractors

### 6.4.1. Contractor 1

Contractor 1 was founded in 1959. It was a global consulting and IT services company and had nearly 68,000 employees in more than 700 offices worldwide (Contractor 1, 2001). Contractor 1 had revenues of US\$10.2 billion for the twelve months ended December 29, 2000 (Contractor 1, 2001). Its Australian operation was established in 1970 and it employed about 3500 staff in the Australia and New Zealand region (Contractor 1, 1999). The wide range of offerings provided locally and globally enabled Contractor 1 to analyse an organisation's operations, make strategic recommendations and then to design, develop and implement technology-based cost-effective solutions for its customers (Contractor 1, 1999). Some of the services provided by the company included:

- (1) Electronic business strategies and technologies.
- (2) Management and IT consulting.
- (3) Systems development and integration.
- (4) Application software.
- (5) IT and business process outsourcing.

(Contractor 1, 2001)

According to its CEO and Managing Director, Contractor 1 was focusing on its customers, adding value to its business while remaining flexible (Contractor 1, 1999). The company's success was based on its culture of working collaboratively with customers to develop innovative IT strategies and solutions that addressed specific business challenges and needs (Contractor 1, 2001).

#### **6.4.2. Contractor 2**

Contractor 2 prided itself on being a leader in information technology. It was established in 1986 and was employing over 250 IT specialists throughout Perth and regional WA (Contractor 2, 1998). Recently, Contractor 2 had been purchased by another company.

One of its divisions, Enterprise Managed Services (EMS), specialised in providing an organisation with a contract for an independent firm to provide day to day management and the acceptance of overall responsibility for specific services within an organisation (Contractor 2, 1998). Benefits provided by EMS included measured service and quality against service level agreements, continuous process improvement strategies, delivery methodologies against best practice, value-added services and the reduction of Total Cost of Ownership (TCO) (Contractor 2, 1998). Total Cost of Ownership (TCO) was a model that assisted managers of Enterprise Systems to understand and manage the budgeted and unbudgeted costs incurred in owning and utilising an IT service throughout its lifecycle. TCO assisted in highlighting current issues, justifying the need for changes and delivering ongoing feedback on enterprise cost management (Contractor 2, 1998). On the other hand, the Service Level Agreement (SLA) was a contractually negotiated level of service that Contractor 2 aimed to achieve and exceed upon contract commencement on an on-going basis. Contractor 2 provided comprehensive management reports that enabled its client to assess its operational performance against the agreed service levels over the contracted term (Contractor 2, 1998).

### **6.4.3. Contractor 3**

Contractor 3 was a world leading business software company. It was founded in 1976 with 3 employees. Now it has 18,000+ employees worldwide in more than 43 countries. The mission of Contractor 3 was to provide mission-critical solutions that ran businesses and this single-minded focus had enabled the company to deliver superior software and services for all kinds of business (Contractor 3, 1999). In Australia, its focus was in both the commercial and government sectors (Contractor 3, 2000). It had enjoyed rapid growth in both its product and services business and boasted in excess of 600 staff nationally (Contractor 3, 2000). According to its Managing Director, the key to the success of Contractor 3 was strategic alliances and business partnerships that assisted the company in delivering total solutions that gave its customers the confidence it could deliver (Contractor 3, 2000).

## **6.5. Participants**

The interviews with the participants for this case study were conducted between December, 1999 and May, 2000. A total of nine participants had taken part in ten separate interviews for this case study. Six participants were from the Department, and one participant was from each of the three major outsourcing contractors. Interviews with the participants usually lasted between twenty minutes and an hour, depending upon time restrictions imposed by the participants. All participants were assured anonymity so as to promote open discussions. In each case, the participant was involved with at least one of the Department's three major outsourcing contracts (BDMW, LWD and ASD).

The profiles do not contain the names of the participants for reasons of confidentiality. The participant interviewees (Table 6.2) are labelled as P1, P2, P3, P4, P5, P6, P7, P8, and P9.

| Participant | Position                                    | Organisation   |
|-------------|---|----------------|
| P1          | Manager IS/T                                | The Department |
| P2          | Contract Coordinator                        | The Department |
| P3          | Project Coordinator/Acting Contract Manager | The Department |
| P4          | Contract Coordinator/Contract Manager       | The Department |
| P5          | CIO   | The Department |
| P6          | Delivery Manager                            | Contractor 3   |
| P7          | Site Manager                                | Contractor 2   |
| P8          | Service Delivery Manager                    | Contractor 1   |
| P9          | CEO   | The Department |

Table 6.2: Profiles of interview participants

The interviews participants' responsibilities and tasks associated with these outsourcing contracts are also listed below (Table 6.3).

| Participant | Responsibilities & Tasks  |
|-------------|---|
| P1          | <ul style="list-style-type: none"> <li>▪ Responsible for all IS/IT activities</li> </ul>  |
| P2          | <ul style="list-style-type: none"> <li>▪ Managing IS/IT contracts such as leasing contracts and software</li> <li>▪ LWD contract coordinator</li> <li>▪ Doing contract research</li> </ul>  |
| P3          | <ul style="list-style-type: none"> <li>▪ ASD project coordinator</li> <li>▪ Look after 4 or 5 major outsourcing contracts</li> </ul>  |
| P4          | <ul style="list-style-type: none"> <li>▪ Contract manager for BDMW</li> <li>▪ Doing some contract coordination work that requires liaising with the service provider for application support development and provision</li> </ul>   |
| P5          | <ul style="list-style-type: none"> <li>▪ Responsible for the management of strategic information</li> <li>▪ Responsible for developing strategic information plan</li> <li>▪ Managing the information resources, including an information centre which has got all the documents and records</li> <li>▪ Responsible for data warehousing and data management</li> <li>▪ Responsible for strategic delivery of information</li> <li>▪ Responsible for the security of information, including electronic information and information related to e-commerce functions</li> </ul> |
| P6          | <ul style="list-style-type: none"> <li>▪ Managing the ASD contract</li> <li>▪ Establishing a management framework</li> <li>▪ Doing monthly reporting as well as annual reporting and reviews</li> <li>▪ Making sure the Department plan and resource properly and report it on the overall perspective, not from the individual project perspective</li> <li>▪ Having an overall responsibility for the ASD contract</li> </ul>   |

|    |  |
|----|--|
| P7 | <ul style="list-style-type: none"> <li>Managing the LWD contract</li> </ul>  |
| P8 | <ul style="list-style-type: none"> <li>Managing the BDMW contract</li> <li>Managing the staff responsible for the BDMW contract</li> <li>Making ensure that both parties are within the budget with regard to the BDMW contract</li> </ul> |
| P9 | <ul style="list-style-type: none"> <li>Responsible for everything within the Department</li> </ul>   |

Table 6.3: Responsibilities of interview participants

The organisation chart for the Department is shown in Figure 6.1.

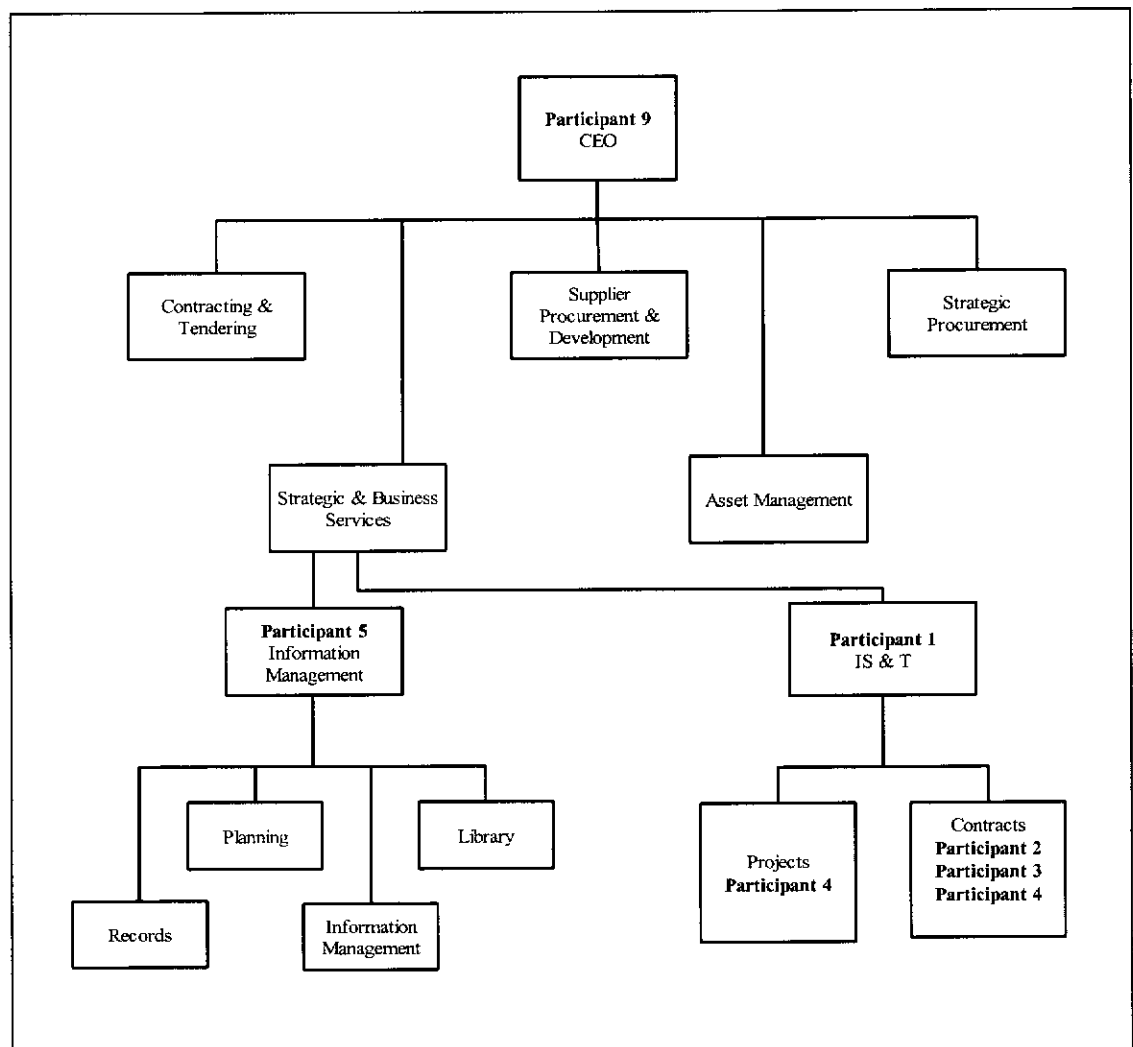


Figure 6.1: A simplified organisational chart for the Department

## **6.6. Motivation for Outsourcing**

The size and continuing growth in IT investment has caused increasing concern in organisations (Willcocks and Lester, 1996a). The recession of 1989-94 had forced many organisations, private and public, to look at different ways of cutting their cost or realising savings. Governments, in particular, have been under pressure to function more like a market-driven organisation (Kakabadse and Kakabadse, 2001). In Australia, the Commonwealth Industry Commission's report "Competitive Tendering and Contracting by Public Sector Agencies" resulted in the Government deciding that ministers should require their agency to systematically review agency activities (DoFA, 1998b). Where it was decided that an activity fell outside the Commonwealth domain, an agency should consider whether that activity was best devolved to a more appropriate level of government, outsourced to the private sector or discontinued (DoFA, 1998b). The agencies were required to follow the Commonwealth Procurement Guidelines in outsourcing their functions (DoFA, 1998a).

Similarly, a landmark West Australian report by McCarrey (1993) laid the foundation for many of the WA government agencies to outsource their IS/IT functions to external contractors. According to this report, there were opportunities for significant savings in rationalising and sharing of many government resources.

Some of the reasons given by McCarrey (1993) for recommending outsourcing of the IS/IT functions of the WA government agencies were as follows:

- (1) Administration of IS/IT contracts was poor.
- (2) There were claims by industry that they were often overlooked in the actual government purchasing decision.
- (3) It was difficult for government to ascertain how much it spent, who spent it, with whom, and on what IS/IT goods and services.
- (4) There needed to be a balance between allowing agencies to choose the most appropriate goods and services for their business needs and whole of government agendas such as efficiency, quality, best practices, and industry and regional support.



More importantly, the McCarrey report (1993) had made several significant recommendations by suggesting that the government restructured and rationalised the approach to whole of government management of information and IS/IT by separating the role of several IT functions and adopting a business unit approach by (1) combining several IT functions to form a single unit responsible for IS/IT policy and planning in government; (2) reducing staffing levels of selected units; (3) developing an IS/IT strategy to guide the State's expenditure; (4) sharing of the government agencies' IS/IT resources; and (5) identifying opportunities for achieving savings, efficiency improvements and industry development through contracting out and privatisation.

In a nutshell, the report stressed that by contracting out support services, offering them to competitive tender, or transferring the whole function to vendors which specialise in these activities, would greatly reduce the costs of the WA Government. An interpretation by many public servants and industry analysts was that the agencies should attempt to outsource their non-core activities in order to realise savings, increase efficiencies and improve services.

## **6.7. Major Outsourcing Contracts**

As mentioned in the previous section, the McCarrey report recommended to the State Government that money could be saved as a result of outsourcing non-core business functions. On 25 November, 1993, the State Premier issued Circular No. 46/93 which instructed Western Australian public sector agencies to identify and pursue opportunities for letting services to competitive tender as a way to improve efficiency and effectiveness (MOPC, 2000). Therefore, as part of the government reform strategy, the Department outsourced almost all its entire IS/IT functions to several external contractors. The only IS/IT function to be retained in-house related to strategic IS/IT planning and policy, business support and information management under the Information Services Branch. The responsibilities of Information Services Branch included:

- (1) Translation of project concepts into specifications at the highest level.
- (2) Managing the contract process.
- (3) Implementation support.

- (4) Monitoring of the quality management system.
- (5) Management of delivery environment.

This case study looked at three of the Department's several major outsourcing contracts – BDMW, LWD and ASD (Table 6.4). The external contractors for these 3 outsourcing contracts were Contractor 1, Contractor 2 and Contractor 3, respectively.

| <b>Outsourcing Contract</b> | <b>Outsourcing Contractor</b> | <b>Year Commenced</b> |
|-----------------------------|-------------------------------|-----------------------|
| BDMW                        | Contractor 1                  | 1996                  |
| LWD                         | Contractor 2                  | 1997                  |
| ASD                         | Contractor 3                  | 1998                  |

Table 6.4: The Department's three external outsourcing contracts

The focus of these contracts was to bring in a level of competition to service provision – competition both to service and in-house providers as well as the industry itself. The second focus was to break down rigid work practices in the workplace. All these things directly or indirectly had bottom-line impact. They could be a much more powerful driver than simply a one-dimensional focus on the cheapest outcome.

A long term contract would be necessary if the Department wished to receive a bigger discount. However, the Department was anxious not to have contracts which were unnecessary long, preferring shorter rather than longer contracts where possible in order to maintain a sense of expectation for further competition from the contractors. The shorter term contract gave the Department more flexibility and maintained a competitive edge in the work environment. So it was not difficult to see that the most competitive time for a contract would be at renewal time.

#### **6.7.1. The BDMW Contract**

In 1994-1995, the State Government realised under the McCarrey report that there was an opportunity for economies of scale to be gained by combining agencies with common mainframe requirements. Therefore, four state government agencies formed a consortium to combine their resources and put them into one data centre located at

Midland. Since this IS/IT function was not seen by many government agencies as a core business, they decided to outsource the function to an external contractor.

The \$24m contract was awarded to Ferntree Computer Corporation Ltd in June, 1996 for a period of 3 years with three one year options. Ferntree was later sold to GE Capital IT Solutions (GECITS) and then to Contractor 1 in October, 1999. The three one-year options were taken up after the contract expired in 1999. The original contract involved 4 agencies – the Department and three others. In 1999, 2 other agencies, including the Agency (referred to Chapter 10), joined the consortium.

The main task for the contractor was to manage a range of IT services and infrastructure, depending on the agency. For the Department, the services provided under this contract included: (a) mainframe and open system support and operations; (b) associated helpdesk; (c) system implementation; and (d) maintain knowledge of projects. In addition, 6 staff from the contractor were stationed at the Department. The contract included mainframe/Unix services, LAN and Desktop Support services. Up until June, 1998, the contract supported mainframe but currently only Unix was maintained. Since the contract was quite flexible and allowed the Department to add services as variations to the contract, LAN/Desktop/Notes Support services component were transferred from the LWD contract when that contract expired on 26 February, 2000.

For the Department and other agencies in the consortium, this contract had meant:

- (1) Transition of public sector IT staff to the contractor.
- (2) Consolidation of mainframe sites for the 4 original agencies to one site and bringing economies of scale and sharing.
- (3) Open book partnering approach which enables the agencies to have greater commercial power to obtain a competitive edge, be involved in the management of the project, and share any risks.
- (4) Technical upgrades and enhancements as competitive offerings become available.
- (5) Establishment of a state-of-the-art major data centre in Perth.

(GECITS, 1999)

This contract took almost 12 months to write. In addition, the contract was based on the SHIPO (Software, Hardware, Infrastructure, People and Other) pricing model where the Department was able to see where the cost was getting absorbed and there was a structure that rewarded and penalised the contractor for performance. The cost of the contract was mainly borne by the Department's business units.

This contract was seen by many people within the Department to be extremely successful and very well written. The Department and the contractor enjoyed an open and good contractual relationship at the local level. However, the head office of the contractor was trying to maximise its profit as it tried to charge the highest possible dollar whereas the Department was pulling in the opposite direction. Therefore, there had been some tension at the strategic management level.

According to both the Department and the contractor, the BDMW contract had achieved significant cost reductions, raised the levels of service, and created a more efficient IT environment which would continue to deliver benefits to the WA State Government (GECITS, 1999). The total overall savings to the WA Government in year 1 was 5% and in year 2, the result was 16% better than the original baseline costings (GECITS, 1999).

#### **6.7.2. The LWD Contract**

Originally the State Government had a panel contract drawn up with 14 or so different suppliers to provide LAN/Desktop/Helpdesk support. The reason behind passing the responsibilities of these services to the external contractors was that it was seen as the only way to access both the hardware and the expertise in an efficient way. At that time, there was a shortage of IS/IT expertise within the government and the easiest and most effective way to access that expertise was on an outsourced basis.

Since it was a whole of government panel contract, a government agency could select any supplier it wanted. Since Comswest Pty Ltd was the prime contractor under that panel contract, the LAN/WAN/Desktop/Notes (LWD) contract was eventually awarded by the Department to Comswest Pty Ltd and then Comswest

International for a period of 3 years with no option in February, 1997. Comswest International was later taken over by Contractor 2 in 1999.

The original Comswest contract was not acceptable to the Department. Therefore, the Department employed 2-3 people part time for 12 months and spent over \$200,000 to prepare and modify the contract. The contract was a partnering type of arrangement but not an open book contract and the cost of the contract was borne by the Department's users.

The Desktop component provided management and support services for the Department's existing desktop hardware, core and non-core software and peripherals. The LAN component provided management and support services for the Department's existing LAN communications facilities and LAN server infrastructure. The WAN component provided support and management services for the Department's existing WAN communication infrastructure. This included WAN network management systems, remote bridges, routers, gateways and remote access products, communications controllers, bandwidth managers, multiplexers and modem.

The contract originally involved WAN and Helpdesk services, with LAN and Desktop/Notes Support services being subcontracted by Contractor 2 to the Department's preferred service provider – Contractor 1. However, the LWD contract expired on 26 February, 2000, with only the WAN component continuing as normal at that stage. The Helpdesk service was later being supported by the Department internally. The Department had saved \$150,000 by doing it in-house and had tried to train some of its staff by Contractor 1 on the Helpdesk support. The LAN/Desktop/Notes Support components were transferred to Contractor 1 under the BDMW contract (Figure 6.2).

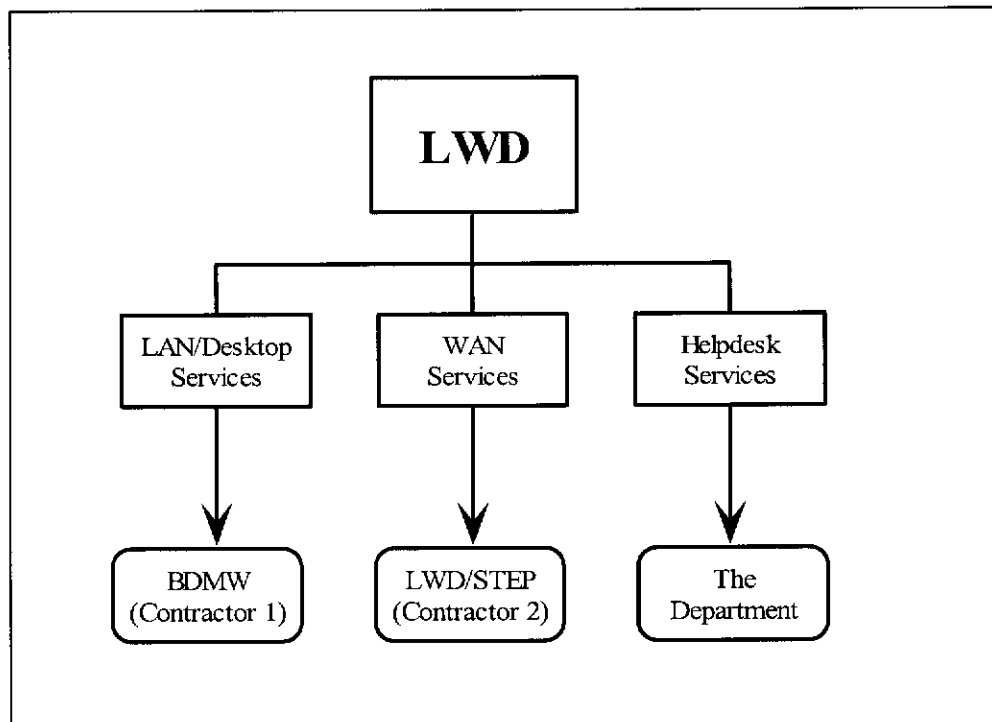


Figure 6.2: Current status of the LWD contract

At the time of writing this thesis, the contract was still carrying on as normal because the Department could not change the contract without redrafting it. However, the aim was to incorporate the WAN management component under the STEP (State Telecommunication Enhancement Program) program at significantly less cost because the LWD contractor, Contractor 2, was involved as a telecommunication provider under the STEP program.

The LWD contract did not seem to be as well managed as the other 2 main contracts because the contract was not well written in terms of contract conditions. Moreover, since some components of the contract were subcontracted to another contractor, the Department had to deal with two contractors under one contract. This had led to some difficulties in communication. Furthermore, many people within the Department felt that the Helpdesk support was only a call answering system and was not able to free up on-site people to do more remedial and pro-active technical services as first hoped. In addition, the contractor was not seen by many users within the Department to have much presence in the organisation because the WAN support component was not able to be seen physically. Therefore, many stakeholders at The

Department were not really satisfied with some aspects of the contract and the quality of some of the contractor's staff although the services provided had improved since Contractor 2 took over the contract from Comswest.

### **6.7.3. The ASD Contract**

The services provided under the Application Support and Development (ASD) contract was the very last of the IS/IT function that the Department had done internally. Similar to the LWD contract, the reason for outsourcing these services was primarily associated with gaining access to the IS/IT expertise, rather than an attempt to somehow reduce the bottom-line costs.

The ASD contract was originally awarded to Platinum Technology in June 1998 for a period of 5 years with three one year options, after 6 months of contract negotiation. Platinum Technology was later acquired by Contractor 3 in June 1999. Under the ASD contract, the contractor was responsible for the provision of all application support and development services to the Department. In addition, a partnering approach was adopted between the Department and the contractor, with both of them having agreed roles to ensure the success of the delivery of services. More specifically, the Department's role included strategic planning and policy, business support, and information management (with the option of using the contractor's staff to assist). On the other hand, the contractor's role included: (a) application management and coordination services, including system implementation; (b) application support/maintenance services, including Lotus Notes application support; and (c) application development services, including installation of off the shelf packages.

The Department in this arrangement sought to improve services to their customers by:

- (1) Reducing the overall cost of service.
- (2) Improving the flexibility in the mix of services required.
- (3) Work to a set budget with predictable costs and outcomes.
- (4) Implement best practice and continuous improvement methods as the standard way of operating the Contract.

(5) Develop application architecture with a high degree of integration.

(The Department & Platinum, 1997)

The contract was undertaken at the contractor's premises and an average of 25 staff were involved in the various support and development roles required to support the Department's business requirements. A contract management process for the ASD is shown in Figure 6.3. The following were key aspects of the management framework in undertaking the contract:

- (1) Formal contract.
- (2) Quality plan.
- (3) Partnering arrangement.
- (4) Service level agreement (SLA), including pricing model.
- (5) Monthly and annual reports.
- (6) Customer satisfaction surveys.
- (7) Work program.
- (8) Management registers, including sub-contracts, deed of confidentiality and intellectual property.
- (9) Forecasting.
- (10) Management committee and strategic review committee.

The ASD contract was modelled on the BDMW contract and the cost of the contract was borne by the Department's business units.

Generally speaking, both the Department and the contractor were happy with this contract as it worked very well to both parties. Moreover, the customer satisfaction surveys conducted by the contractor indicated that the contractor was running at "satisfied or better" on the satisfaction scale. Two advantages of the ASD contract cited by the contractor included: (1) the Department had flexibility of starting projects very quickly or with very little notice; and (2) and the Department had the ability to reduce the number of staff.

However, this contract was not without problems. There was a tendency in the first year of the contract for the Department to throw everything at the contractor. Therefore, the Department overspent its budget in the first year. Later the



Department tightened up very substantially on the way it managed the contract and the costs.

From some users' perspective, it was not an ideal situation to go through an extra person for technical support because before the Helpdesk was outsourced the users could go directly to someone who could solve their problems on the spot. If the users did not like the person they were dealing with, there was a bit of a personality problem. In addition, according to the contractor, the people involved in this contract needed to be reminded about what the contract was about and how people could access it. Although the contractor had a good relationship with the people it worked with, the contractor tended to ignore those people they had not dealt with extensively inside the Department. This was one of the areas that needed to be improved on, as acknowledged by the contractor.

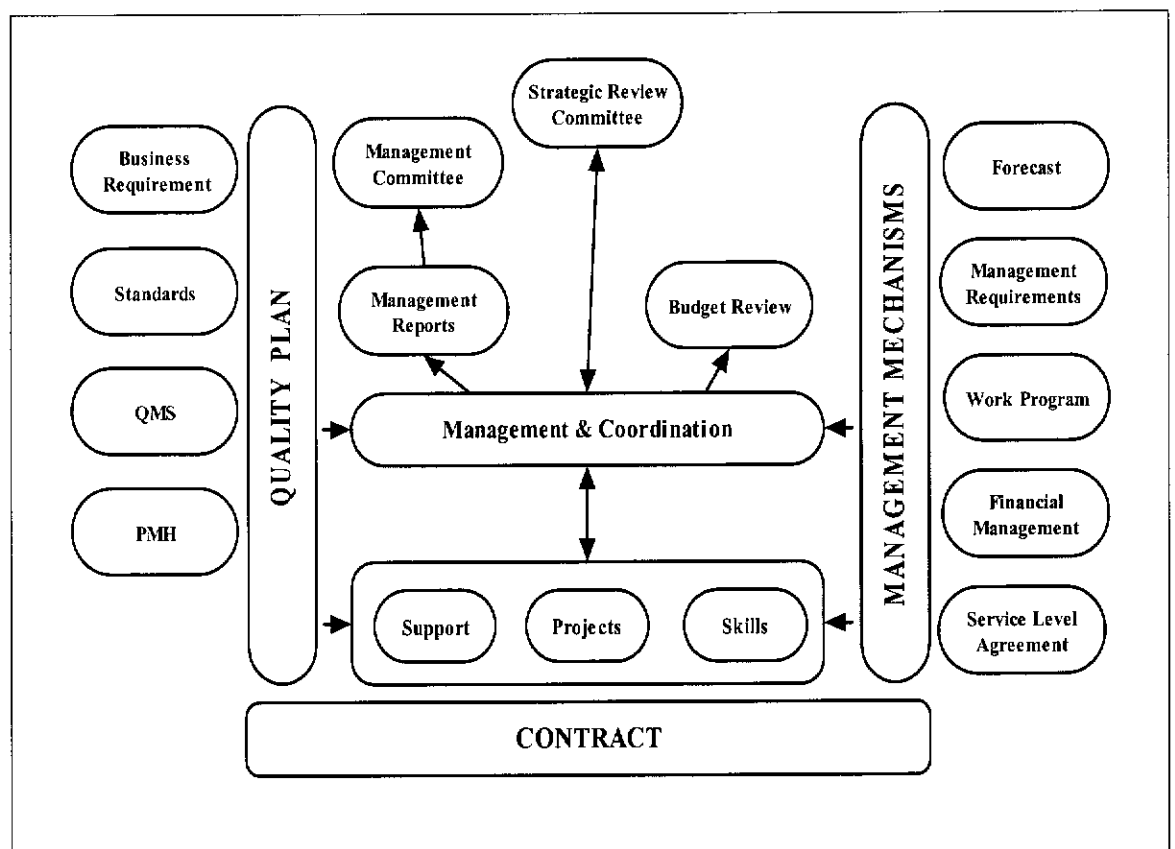


Figure 6.3: The ASD Contract Management Process

## **6.8. The Tendering Process**

The State Government's outsourcing policy was driven by value for money considerations. It was a policy which sought to find the best value for money solutions regardless of whether it was within the existing structure within the government or whether it was to be delivered from an external organisation. The stated policy was for meeting the function of the government and the market would be tested competitively through a tender process. According to a study conducted by Domberger et al. (2000), the tendering process had produced comparatively better performance although it did not result in lower prices than directly negotiated contracts.

The Department had to follow the tendering and contracting policy and guidelines drafted by the State Supply Commission (SSC, 1999c) and Australian Procurement and Construction Council (APCC, 2000a). These policy and guidelines were to provide government agencies with a logical and easy-to-use guide to government purchasing and contracting with a focus on the objective of value for money (SSC, 1999c). Furthermore, the State Government had provided some template documents such as request for tender (RFT) and general conditions of contract provisions for its agencies to follow (The Department, 1996b; 2000). The following section describes briefly the Department's typical tendering process.

### **6.8.1. The Process**

The first step in the tendering process for outsourcing IS/IT functions of the Department was to identify the particular needs of the agency. This could be, for example, outsourcing of application support service or of an entire IS/IT function. According to APCC (1997b), innovative value adding ways of procuring goods, services and infrastructure would be the competitive advantage that distinguished one organisation from another. This was essentially about balancing the risks that could arise and the severity of the impact that these could have on the Department's efficiency, costs and achievement of other business objectives, against using a complex procurement process (APCC, 1997b).

The next step was to develop a business case by researching the outsourcing

thoroughly, addressing such key issues as whether the outsourcing was necessary, what alternatives had been considered, what was the likely cost, what were the risks, what were the benefits and whether the benefits justified the costs (SSC, 1999c). More specifically, the Department had to consider whether it was really in its best interest to outsource or keep it in-house. If in-house capability was equivalent to or better than that available on the external market, there would be no incentive for the Department to outsource the IS/IT function. When it was decided that outsourcing was the way to go, it had to be verified by an independent auditor. This was to ensure that the whole process was compliant with State Government policies and guidelines and conditions outlined in the tender process as well as to validate the evaluation process used in determining a value for money outcome and ensuring a fair go to all participants involved (SSC, 1999b).

Before the Department could proceed to the next stage, approval had to be given by the executives (CEO and 5 directors). Then appropriate planning for outsourcing had to be undertaken by the Department which included the development of a formal procurement plan that included assessing the level of risk for the outsourcing contracts (SSC, 1999c). Determining the level of risk was a combination of identifying the risk and measuring the likelihood and consequences of an event occurring (SSC, 1998c). An appropriate purchase mechanism (i.e. request for tender, see Figure 6.2) had to be selected by the Department (SSC, 1999c) and appropriate selection criteria decided. This also included the selection of an evaluation methodology and evaluation committee for the tender (SSC, 1999c). The selection criteria and evaluation methodology would be developed and decided prior to each tender.

At this stage, depending on the nature of the contract, the Department was able to go through one or more of the following steps (Figure 6.4): (1) consult with industry; (2) panel contracts – to invite one or more of the suppliers from a pre-selected list of suppliers who were able to meet the requirements of a request specification to submit a proposal to carry out a specified scope of work and for the agreed rate where appropriate (The Department, 1999b); (3) expression of interest – to invite the industry suppliers to indicate their capability of delivering the service as currently defined; and (4) pre-qualification process - to identify the best-qualified suppliers to

submit competitive proposal before the calling of tenders (APCC, 1998). Again, the whole process had to be approved by the Department's executives.

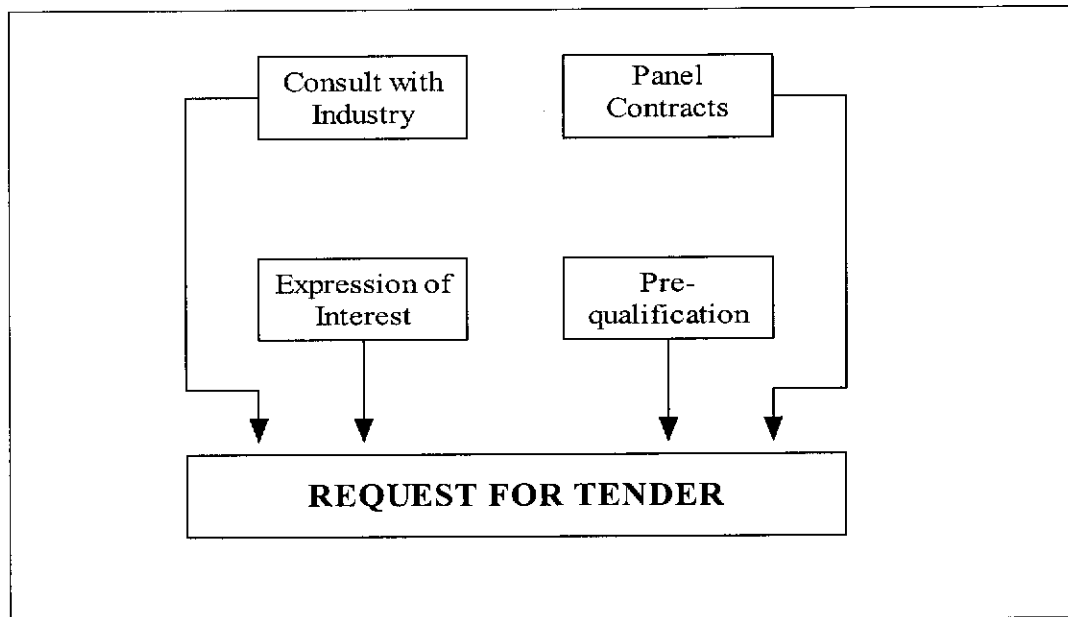


Figure 6.4: Request for Tender (RFT) (Adapted from: The Department, 1999b)

After finalising the procurement plan, the tender was developed. The tender documentation included documents issued by jurisdiction seeking responses from interested parties for the procurement of goods, services or works (APCC, 1999a). The objective was to determine the most appropriate service supplier to deliver the outcome. Then the Department would invite and receive offers by advertising the tender and provide a pre-tender briefing, if necessary. Moreover, a tendering period had to be set to ensure that the tenders were submitted on time and handled as per the conditions of tendering. A late tender would only be evaluated if it was substantiated that the circumstances of the delay were caused by the Department or Australia Post (The Department, 1996a).

The next step of the tendering process was to evaluate the offers by: (a) checking the compliance of tenders; (b) determining a shortlisting based on the advertised selection criteria; (c) requesting that shortlisted tenderers attend the interviews and make a presentation to the evaluation committee; and (d) evaluating tenders in a way that seeks to achieve the best value for money (SSC, 1999c). Each evaluation committee member would assess each offer against the stated requirements of the

tender.

Furthermore, the requirements to be followed for the tendering process by the Department when engaging private sector contractors were: (1) value for money; (2) open and effective competition - public tenders had to be called for purchases over \$50,000 (SSC, 2000b); (3) integrity and ethics – there were some guidelines set up by APCC (1999a) and SSC (1999c); (4) supporting local industry –the aim was to enhance the capacity for regional, rural and remote small and medium sized enterprises (SMEs) to compete domestically, nationally and internationally (APCC, 1999c). After negotiating with the preferred tenderers to test the understanding and assumptions made in the tender process and seek any operational refinements, a due diligence process had to be applied by the Department to undertake further verification of the preferred tenderer's bid (SSC, 1997).

In addition, partnering was adopted by all three contracts because they were appropriate for large complex projects or where strategic gains in cost and quality could be delivered (SSC, 1999c). It was adopted by almost all recent government contracts. In partnering arrangements, contractors were selected using a multi-criteria selection process based on functional and performance based specifications (SSC, 1998b). Partners were also selected on reputation, their known ability to control and improve business process, their understanding of the vision, mission, values and objectives of the public authority and for their ability to become part of a team (SSC, 1998b). It was one of the more advanced contract management techniques which embraced joint management, process measurement and improvement tools to achieve enhanced contract performance and customer service (Figure 6.5) (SSC, 1998b).

Then the Department could finalise and award the contract by issuing the letter of engagement together with the tender documents and any documentation which formed the contract to the successful tenderer after endorsement from the tender committee (SSC, 1999d). Before the contract commencement date, issues such as staffing, and transfer of software, hardware and other assets needed to be finalised. In addition, the Department also had to notify all tenderers of the name of the successful tenderer, the price and the description of goods and services. The Department had to offer a debriefing outlining why their bid was unsuccessful and any value for money

considerations involved in the decision to any unsuccessful tenderers requesting this information (SSC, 1999c).

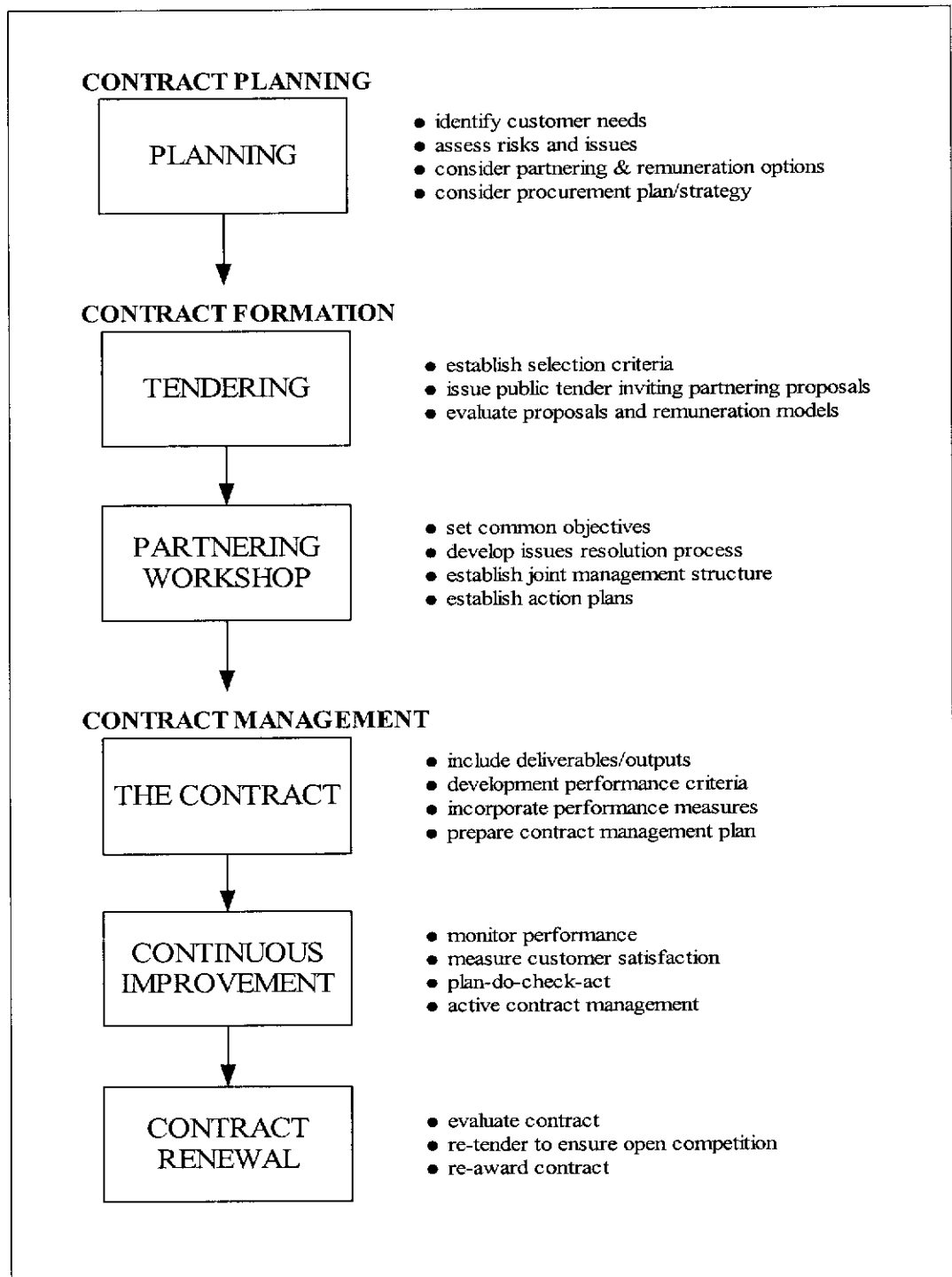


Figure 6.5: Partnering Process (SSC, 1998b)

## **6.9. The IS/IT Investment Evaluation**

As mentioned in the previous section, the selection criteria and IS/IT investment evaluation process used to evaluate the submitted offers for the Department's three major outsourcing contracts were generally developed up prior to each tender. There was no formal documented IS/IT investment evaluation methodology being formulated or used by the Department because the Department did not come across a single methodology or a set of tools that were appropriate across all the different contracts. Often, it was only by conducting an extensive process of justification and going through developing a business case, with verification from the auditors. It was only after the signing of the contract, there was some sort of a informal IS/IT investment evaluation process. The Department's informal IS/IT investment evaluation process is discussed in the following section.

### **6.9.1. The Process**

After the contract was awarded to the successful external outsourcing contractor, there was a need for the Department and the contractor to prepare a transition plan and appoint a management team to deal with change issues. This included a transition out procedure which was created at the start of the contract which could be implemented should the contract fail. There was also a transition period when the contract started in order to sort out the service level agreement (SLA) and what the Department and the contractor were actually going to do under the contract.

The transition plan also included the transition of the Department's IS/IT staff to the external contractor, and the monitoring and reporting on contract performance. This was designed to be a win-win situation for the staff involved as well as the contractor and the Department. For these three major outsourcing contracts, the transitioning process had been carefully handled by both the Department and the contractors. This was done simply to evaluate the human resources side of the outsourcing contracts as it could also determine the success or failure of the outsourcing contracts. Everything was made clear to the potential transition employees beforehand. Many workshops and interviews were held by the human resources people from both the Department and the contractors in order to minimise the fears and the uncertainty by the transitional employees. In the end, the Department had transferred out 4 people under the BDMW contract, 4 people under the LWD contract and 8 people under the ASD

contract. They were all given permanent positions by the contractors. Those who did not wish to be involved were transferred to other government departments.

After the transition period, all parties had to finalise and implement the contract management plan by identifying, monitoring and managing any problems and risks (SSC, 1999c). As part of the Department's informal IS/IT investment evaluation process, this included holding regular meetings between the Department and the contractor to monitor progress and address outstanding issues as well as measuring and reporting on contract performance against criteria which were pre-determined, agreed and clearly understood (SSC, 1999c). The goal was to seek areas for continuous improvement and ensure that the contracts had met the measures stated within the service level agreements. The extent of a contractor's commitment to continuous improvement could generally be gauged from: (a) a business plan including goals with measurable outcomes, understood by all parties and targeted to meet the Department's needs; (b) recognition of the importance of data collection; (c) a corporate plan for development and implementation of benchmarking; (d) a commitment to customer satisfaction surveys and a policy for responding to the findings of these surveys; (e) a corporate policy on research and development; and (f) evidence of a willingness to explore and pursue opportunities for the greater use of IS/IT (APCC, 1998).

Under the terms of each contract, the Department and the contractor had agreed to manage the contract using a structure of committees for the different levels of operations. Each of these committees had different agendas and purposes and as such met at different times. These committees were set up to resolve the problems arising from the outsourcing contracts as well as to monitor and evaluate the progress of these contracts. The Contract Management Committee (CMC) generally met once a month and handled more operational or day-to-day issues. Any minor changes or variations to the contracts were negotiated through these meetings. In essence, the CMC committee was responsible for: (a) monitoring whether the Department's business objectives are being met; (b) monitoring whether the partnering objectives are being met; (c) addressing all contract management issues including reviewing and monitoring progress under each contract, considering and reviewing compliance with any program established for the completion of various activities, and



coordinating the work done by the contractor; (d) monitoring the quality of the services; (e) reviewing the results of user satisfaction surveys carried out by the contractor; and (f) producing a monthly report (BDMW and Ferntree, 1996; The Department and Contractor 3, 2000). In addition, the processes of the committee were documented in the quality plan. The monthly management reports provided by the contractor under the CMC committee generally included project review, contract services, scorecard reporting for deliverables, and customer satisfaction survey reports. The participants of the CMC meetings were the IS/IT manager and contract manager from the Department, and IT manager and one or two staff from the contractor.

On the other hand, the Strategic Review Committee (SRC) met quarterly and handled issues at a higher level such as budgets and plans. It was more forward looking and tried to make sure that both parties of the contract were going in the right direction overall. Any major changes to the contracts were negotiated through the SRC meetings. The SRC committee was responsible for: (a) reviewing performance reports; (b) addressing issues identified by the CMC meetings; (c) annual contract review; (d) agreeing cost allocation mechanisms; and (e) identification of benefits to the Department (BDMW & Ferntree, 1996). In addition, the processes of the committee were also documented in the quality plan. The reports provided by the contractor under this committee generally included work program review, and technical advice and input reports. The participants of the SRC meetings were director and IS/IT manager from the Department, and state and IT managers from the contractor. For the LWD contract, the SRC meetings were not held. Instead, the strategic discussions were only held when required.

In addition, there were weekly, fortnightly and ad-hoc (informal) meetings. These were mostly meetings between the Department's contract manager/coordinator and the contractor's delivery manager. There were also annual reviews (not for LWD) to evaluate and measure all aspects of the contract. The annual reports provided by the annual reviews included work program, contract review, reconciliation of budget vs actual costs report, scorecards, benchmarks, and customer satisfaction survey reports. The customer satisfaction surveys were reported on annually to record customer satisfaction over the whole year whereas the scorecards were calculated monthly but

applied annually. Furthermore, the annual review actually translated the scorecard (not for LWD) which was linked to the performance reward/penalty. In terms of service level scoring, it was directly linked to the amount of payment and the overall service scoring and the scorecard at the 12 month period.

For the LWD contract, only one annual review was ever conducted as part of the informal IS/IT investment evaluation process. That was when the Department wanted the whole contract reviewed in late 1998. The scorecard assessment was introduced in 1999 and used for that year only. However, it was not linked to the performance reward/penalty.

There were also budget reviews and they were normally included as part of the SRC meetings. Under this review, the contractor was required to provide an annual reconciliation of budget vs actual costs based on the results of all contract services work completed on the Department's behalf. Factors such as the response time or turnaround time to a request for assistance, network downtime, customer satisfaction, performance of computers and networks, and the quality of the work done were to be measured. As part of the Department's informal IS/IT investment evaluation process, the contractors were also required to produce reports which were specified in the contracts and indicate how they had performed against the specific service levels. There were 4 aspects of the contract which forms part of the service level (scorecards): (1) meeting milestones; (2) final completion on time and budget; (3) status reporting; and (4) customer satisfaction.

For each contract, the Department knew what the contractor's costs were and so the margins were specified at a baseline level. In addition, since all the contracts were written with a view to share the pain and gain, the contractors could get bonuses or penalties for early or late completion of work. In general, each party could either share the 50% of the bonuses or penalties for early/late completion of work. If something went wrong, the party responsible had to pay the cash as a penalty. If the performance was good and the contractor performed above a certain level the contractor got rewarded for that.

In addition, the benchmarks were used to measure and assess the contractors'

performance against accepted national and international best practice, which was used as a reference point in order to emulate or exceed those standards through continuous improvement (APCC, 2000a). All three contracts deployed Total Cost Ownership (TCO) through the use of TCO Manager software and other independent local, international and best practices benchmark indicators as the benchmark test to determine the savings and performance. These benchmarks were set and agreed beforehand between the contractors and the Department.

The Department also had its own internal reviews and assessment mechanisms, as well as a risk management plan which recognised that outsourcing involves a level of risk which needs to be effectively managed through appropriate training, planning and the application of quality requirements (SSC, 1999c). These were undertaken by the respective contract managers, whose dedicated job was contract management. This normally involved monitoring of the contract's performance and liaising with external contractors.

As for the post-implementation review (PIR) process, no formal PIR process had ever been conducted for any of the these three contracts. The only possible PIR exercises were the annual reviews which included the budgetary process and other reviews such as program and contract reviews, in addition to several other internal reviews conducted by the Department.

When a contract was coming to the end of its term, the Department had a choice of either terminating or renewing/extending the contract. At this stage, it was important for the Department to identify any areas for future improvement. This commitment for future improvement were to be demonstrated by evidence of continuous improvement, excellent business practices and relationships, effective organisational systems and standards, exceptional people management policies and practices, and superior time, cost, and quality outcomes (APCC, 1997a).

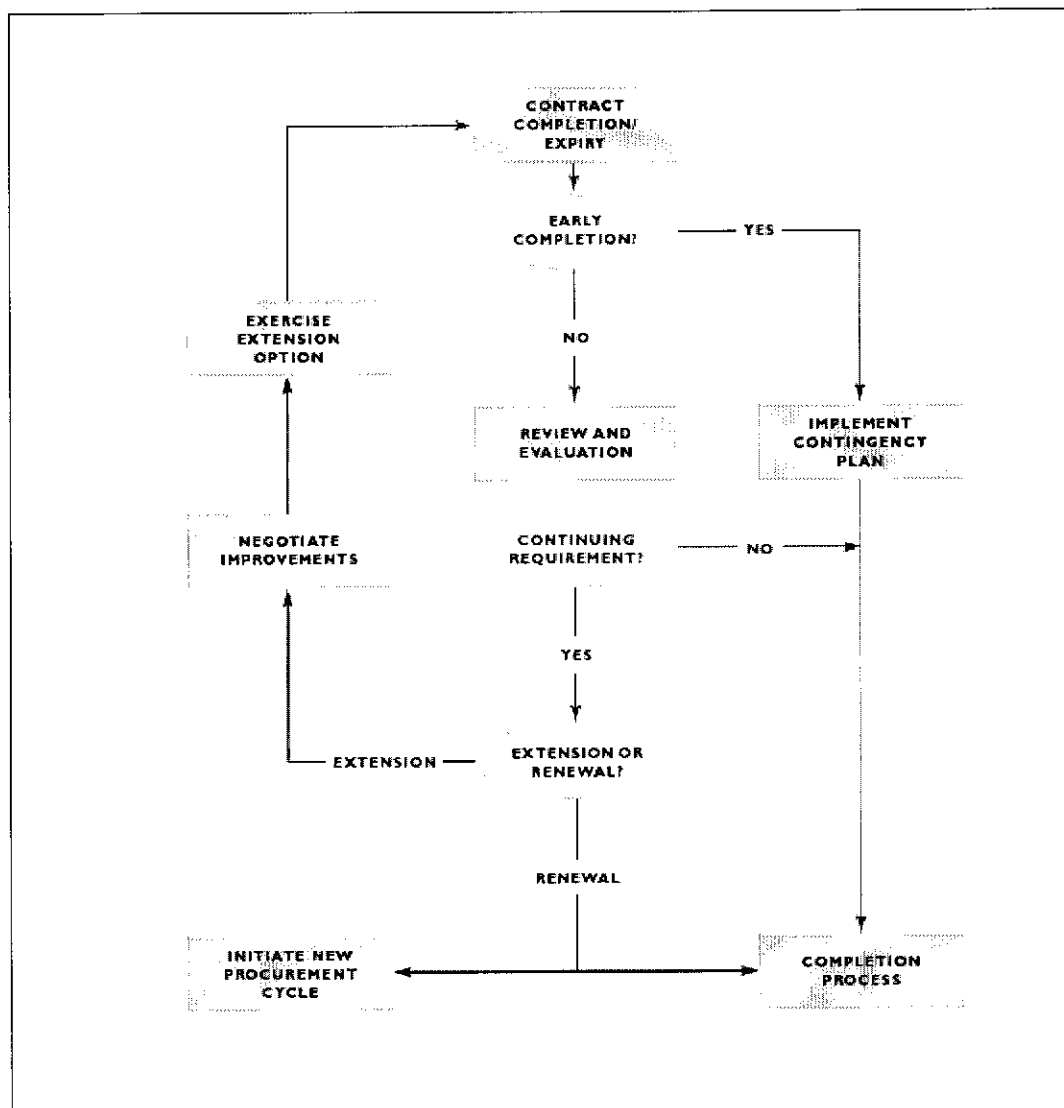


Figure 6.6: Contract renewal process (SSC, 1999f)

Furthermore, the Department had to ensure that customer satisfaction was evaluated and considered as well as to prepare a project completion report that documents outcomes against key goals (SSC, 1999c). Assessment of customer satisfaction with contractors could be based on: (a) a corporate policy for development and monitoring of progress in identifying client needs; (b) an established program for raising staff and employees' awareness of client needs; (c) an established program for discussing client needs, priorities and preferences with clients; and (d) actions taken in response to client surveys (APCC, 1998). On the other hand, implementing and actively using comparing outcomes against key goals would assist agencies to:

- (1) Measure the effectiveness and efficiency of the outsourcing contracts.

- (2) Provide comparative information for quality decision making.
- (3) Identify emerging trends and patterns.
- (4) Identify target areas and opportunities for improvements.

(SSC, 1998a)

## **6.10. The Benefits Realisation Process**

There was no formal benefits realisation process in any of the three contracts. The performance was measured but not the benefits. The reason given by the Department's CIO was that the circumstances changed very often. However, the budget had constantly been monitored and reviewed annually. The original budget was set out with a 3-year view and each year the Department would review performance against the original baseline budget and the revised budget. In addition, there was an incentive for the contractors (except under the LWD contract) to identify and share exceptional savings.

As mentioned earlier, there was some performance measurement and comparison. Performance measures formed an integral part of the monthly report submitted to the Contract Management Committee (CMC). In essence, this was to look at benefits in terms of dollar savings to government and agencies, in addition to the key factors measured such as network response time and availability under SLA.

Some of the benefits of the outsourcing contracts were often listed in the contracts but were not monitored and evaluated throughout the outsourcing periods. There were not formal process to ensure that these benefits were realised. No attempt was ever made to review these benefits and identify potential benefits.

## **6.11. Summary**

This chapter provided an overview of the first case study conducted at a major Western Australian state department. This overview included the organisation, the participants, the three major IS/IT outsourcing contracts, the three major external outsourcing contractors, as well as the tendering, IS/IT investment evaluation, and benefits realisation processes.

In the next chapter (Chapter 7), the results from this first case study will be presented and discussed. The objective for this case study is to develop a framework based on the fit between theory and practice of IS/IT investment evaluation by large Australian organisations (research objective 2).

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# Chapter 7

## Case 1 Analysis

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### 7.1. Introduction

This chapter is concerned with the analysis of the qualitative data collected from the first case study conducted at a major state government department (hereafter referred to as the “Department”). The chapter starts with a brief introduction to the case study and its research objective, before presenting the interview responses and other data collected. The ensuing sections examine the themes and issues arising from the qualitative data gathered, and finally present the outcomes and findings derived from the analysis.

The objective of the analysis for the data collected through this case study research is to develop a framework based on the fit between theory and practice of IS/IT investment evaluation by large Australian organisations. The qualitative data collected from the first case study included outsourcing contract documents, contract meeting minutes, contract reports, informal meetings, email messages, and interviews. In addition, more than 150 pages of transcripts were coded and analysed. The analysis was conducted in a cyclical manner and followed guidelines for interpretive research (i.e. multiple interpretations) set out by Klein and Meyers (1999) (for more detail please refer to Appendix C). For reasons of confidentiality, the participants and their organisations were given coded names instead of their real personal and organisational names for the purpose of this research (Table 7.1). In some cases, references were edited in order to protect the participants’ identities. However, the changes do not detract from the key objectives of this research.

| <b>Participant</b> | <b>Organisation</b> | <b>Contract(s) Involved</b> |
|--------------------|---------------------|-----------------------------|
| P1                 | The Department      | BDMW, LWD & ASD             |
| P2                 | The Department      | LWD                         |
| P3                 | The Department      | BDMW, LWD & ASD             |
| P4                 | The Department      | BDMW & ASD                  |
| P5                 | The Department      | BDMW, LWD & ASD             |
| P6                 | Contractor 3        | ASD                         |
| P7                 | Contractor 2        | LWD                         |
| P8                 | Contractor 1        | BDMW                        |
| P9                 | The Department      | BDMW, LWD & ASD             |

Table 7.1: Research participants and their organisations

## **7.2. The Participants**

Presented herewith is a synopsis of the research participants' profile. A copy of the interview questions is included in Appendix D.

### **7.2.1. Participant 1**

P1 was the manager for Information Systems and Technology Unit within the Department. He had an overall responsibility for all IS/IT activities within the Department.

### **7.2.2. Participant 2**

P2 was the Department's contracts coordinator for the LWD contract for the past 2-3 years. P2 had been working for the State Government for over 14 years. Originally, P2 was involved with the administrative side of the whole of government contracts. At the time of the interview, P2's main tasks included: (a) managing the Department's IT or IS contract such as leasing contracts and software; (b) coordinating the LWD contract; (c) managing Technology 2000 or changeover of the hardware; and (d) managing the LWD contract and doing research.

P2 was a bit hesitant to say too much during the interview as she said that she did not know whether she was allowed to say too much. She seemed to have a lot of



unpleasant experiences with the LWD contract but was afraid to say too much of it.

### **7.2.3. Participant 3**

P3 was both an acting contract manager and a project coordinator for the Department for the past 6-8 months. P3's main tasks were to look after the ASD contract as a project coordinator and other four or five major outsourcing contracts as an acting contract manager.

### **7.2.4. Participant 4**

P4 was both a contract manager and a contract coordinator for the BDMW contract for the past 2-3 years. P4's main tasks included: (a) managing the BDMW contract; and (b) coordinating some contract work that requires communicating with the Department's service provider for application support development and provision.

### **7.2.5. Participant 5**

P5 was the Chief Information Officer (CIO) of the Department and was responsible for:

- (1) the management of strategic information for the Department.
- (2) developing strategic information plan.
- (3) managing the information resources at the Department, including an information centre which has got all the documents and records.
- (4) data warehousing and data management of the Department.
- (5) delivery of strategic information.
- (6) responsible for the security of information, including electronic information and information related to e-commerce functions.

### **7.2.6. Participant 6**

P6 was a delivery manager from one of the Department's contractors, Contractor 3. P6's main tasks under the ASD contract included: (a) managing the ASD contract; (b) establishing a management framework; (c) doing monthly reporting as well as

annual reporting and reviews; (d) making sure that the Department plans and resources properly, and reports it on the overall perspective, not from the individual project perspective; and (e) having an overall responsibility for the contract.

#### **7.2.7. Participant 7**

P7 was the site manager from one of the Department's outsourcing contractor, Contractor 2. P7 was responsible for managing the LWD contract for the Department. P7 was made redundant by Contractor 2 due to a management restructure on 12 May, 2000, not long after the LWD contract expired on 26 February, 2000.

#### **7.2.8. Participant 8**

P8 was Contractor 1's service delivery manager for the BDMW contract. P8's main tasks under this contract included: (a) managing the LAN/Notes/Desktop services; (b) managing the staff responsible for the contract at the Department; and (c) ensuring that everything was within the budget with regard to the contract.

P8 had worked for Contractor 1 for four years and had been in this position for just over nine months. The Department was the second agency he had worked for under the BDMW contract. Before this, he was a 24-year public servant before being transitioned out to one of the external contractors. P8 regarded this was the best thing he ever did. He also felt that the outsourcing had worked very well for him.

P8 was a bit reluctant to be interviewed probably because of the supplier/client confidentiality agreement. He had tried to answer the questions as briefly as possible and in the process had sidestepped some of the questions and gave incorrect answers occasionally.

#### **7.2.9. Participant 9**

P9 was the Chief Executive Officer (CEO) for the Department. P9 had been in this job for about two and half years at the time of the interview, and was responsible for

everything within the Department.

### **7.3. The Themes**

This case study took an inductive approach in which individual facts are pulled together in clusters to form manageable sets of generalisation which act as theories (Burns, 1992). The case study also drew reference from published literature and linking it with the interview data, contract documents, and other relevant materials. According to Fowler and Jeffs (1998), the process of tape recordings, transcribed and subsequently validated by the participants, featured in the process, is considered to be highly appropriate as a means of developing models and framework.

A number of issues emerged from the analysis of the text data and the key issues are presented below in some detail. Some of the issues listed below were consistent with the findings in the literature and others were not mentioned in the literature. The issues included a lack of a formal IS/IT investment evaluation methodology and a lack of understanding of the evaluation approach used, a lack of any (formal and informal) benefits realisation methodology and a lack of understanding of benefits management practices, the use of an informal IS/IT investment evaluation process and a focus on quantitative IS/IT investment evaluation measures, conflicting motivations for outsourcing, different perceptions of success of the contracts by stakeholders, a conflict between motivations and success criteria for outsourcing, an IS/IT skill shortage within the organisation, an embedded contract mentality, complicated contract arrangements, over-reliance on a single contractor, lack of user involvement/participation in contract development, and general lack of commitment by contractors, restrictive government outsourcing contract guidelines, and inability to manage the outsourcing contracts without external influence and assistance.

These issues or themes were identified using the qualitative content analysis. For an example of how a theme was identified and developed please refer to Appendix E. A copy of the actual interview transcript of Participant 3 is included in Appendix I. All data (i.e. audio tapes, documents, field notes, interview transcripts and questionnaires) collected for this research was recorded in a durable and appropriately referenced form and will be held for at least five years (Appendix J).

### 7.3.1. Theme 1: Lack of formal IS/IT investment evaluation methodology

According to Sohal and Ng (1998), the objective of using a formal methodology is to reduce the risk of implementing technology by providing a standardised approach to the process of evaluation. However, the interview data suggests that there was a lack of formal IS/IT investment evaluation methodology or process on all of the three major outsourcing contracts, even though most of the participants claimed that a methodology or process was put in place for these contracts. Only P1 and P2 acknowledged that there was no formal IS/IT investment evaluation methodology or process being used for these outsourcing contracts. For example, P1 admitted that *“there wasn’t a formal structured documented methodology. It was developed up. And the approach is to be used for evaluation, the criteria to be used, the weighting etc. were all developed up and tailored for each of the contract. That was all done prior to, for instance, tender rather, that was done prior to the tender being released.”*

Seven out of nine participants claimed to have used some sort of the IS/IT investment evaluation methodology or process for these outsourcing contracts. Tendering process, quality management system, and competitive pricing which are not methodologies were cited by P4, P6, and P8, respectively, as the IS/IT investment evaluation methodology or process for these outsourcing contracts. On the other hand, more meaningful measurements or evaluation instruments such as scorecards, service level agreements, service level descriptions, and benchmarking were named by P3, P5, P7, and P9 as the IS/IT investment evaluation methodology or process used for these contracts. Although these contract control measures and mechanisms were not formal methodologies or approaches, they did, however, constitute informal IS/IT investment evaluation approaches or processes as they were used to measure and monitor contract performance. Table 7.2 below shows some of the participants’ comments on the use of the IS/IT investment evaluation methodology or process for these three major outsourcing contracts.

| Participant | Comments  |
|-------------|---|
| P3          | “.....But <i>all the contracts have a scorecard type of thing</i> ..... some of them have things like number of satisfied calls.....if 2 days is the limit, then all the jobs get done in 2 days. Then that’s 100%.” (Appendix I)     |
| P4          | “But <i>the actual technique for evaluation, I think, was probably the same with most tenders</i> . That is an evaluation process, short-listing, evaluation against the technical requirements, value for money and other criteria.” |
| P5          | “ <i>It (evaluation methodology) is all documented in the contract</i> . So you actually need to look at the service level agreements and the performance agreements.”  |
| P8          | “ <i>Evaluation really under the BDMW contract is all based on price.</i> ”   |

Table 7.2: Participants’ comments on the use of the IS/IT investment evaluation methodology or process

The lack of a formal IS/IT investment evaluation methodology or technique may also be due to the fact that there appears to be a contract mentality as many participants had indicated that there was a pre-agreed set of evaluation and control mechanisms in the Service Level Agreement (SLA) within all these three outsourcing contracts (BDMW and Ferntree, 1996; Comswest and The Department, 1997; The Department and Platinum, 1998) such as annual reviews, scorecard, monthly reports, CMC and SRC meetings, as well as customer satisfaction surveys. The standard contract documents provided by the State Government for its agencies only stated that performance measures should be specified but did not give any other details (The Department, 1996b; 1999c). Moreover, according to P8, it is important for both the contractor and the Department to adhere strictly to the contract. All measurements and evaluation mechanisms were based on the conditions or specifications within the SLA alone. None of the standard government contract documents mentioned any IS/IT investment evaluation methodology or benefits realisation methodology (The

Department, 1996b; 1999c). The Department and the contractors were left to negotiate their SLAs. For example, if service levels and performance measures (e.g., customer satisfaction) as well as more traditional IS/IT measures (e.g., network response time and availability) were met or exceeded the contractor would receive an incentive. Otherwise, the contractor would pay a penalty. This will be discussed in more detail later in this chapter.

Many participants clearly thought these contract control mechanisms were all part of the IS/IT investment evaluation methodology or process. In fact, none of the known, formal IS/IT investment evaluation methodologies, processes, or techniques (e.g., Information Economics (Parker et al., 1988 in Willcocks et al., 1992)) were mentioned by any participant. This may be because many organisations in practice pay little attention to the formal evaluation of IS/IT investment (Farbey et al., 1999).

The result is consistent with the findings of others (e.g., Ballantine et al. (1996)). For example, Ballantine et al. (1996) suggest that there is a lack of formal evaluation procedure within organisations while Taylor and Norris (1989, in Norris, 1996) have indicated in their UK survey that almost half of the responding organisations could not point to any kind of process for evaluating contribution or following up promises of benefits. According to Sohal and Ng (1998), their research findings in large Australian organisations suggest that the potential of IS/IT has not been utilised to meet the competitive challenges due to inappropriate evaluation of the IS/IT investments, and 59% of the responding Australian organisations did not determine whether expected benefits are being achieved (Sohal and Ng, 1998). The result is not really surprising given that difficulties in monitoring the performance of the outsourcing contracts is one of the most important disadvantages for outsourcing organisations (Apte et al., 1997).

### **7.3.2. Theme 2: Lack of IS/IT benefits realisation methodology**

While pre-investment appraisal and post-implementation review are important for evaluation purposes, they are insufficient in terms of ensuring that the benefits required are realised and delivered to the organisation (Ward and Griffiths, 1996). According to Ward et al. (1994), in order to determine if the desired benefits have

been achieved in practice, it is necessary to measure and evaluate post-project. Benefits can be considered as the effect of the changes, i.e. the differences between the current and proposed way that work is done (Ward et al., 1996).

About half of the research participants (P2, P3, P5 and P7) during the interviews readily admitted that there was, in fact, no formal benefits realisation methodology or process for any of the three major outsourcing contracts. Those who indicated some process existed (P1, P4, and P6) were actually referring to the contract control and evaluation mechanisms specified in the SLA within the three outsourcing contracts (BDMW and Ferntree, 1996; Comswest and The Department, 1997; The Department and Platinum, 1998). For example, annual reviews, justification and budgetary process, and benchmarking were mentioned by several participants as the IS/IT benefits realisation methodology for the outsourcing contracts. Interestingly, P8 cited value-added activities such as going outside the boundary of the contract to provide services under other projects for the Department as the benefits realisation methodology or process. P8 stated during the interview that *“there are a lot of projects that come up and I allow my staff to go out and do those projects provided we can still maintain the service level agreements under the contract.”*

However, no formal IS/IT benefits realisation methodology (such as The Cranfield Process Model of Benefit Management (Ward et al., 1996)), technique, or process was ever mentioned or specified by any of the participants or in any of the contract documents. Table 7.3 below shows the comments made by participants on the use of the IS/IT benefits realisation methodology or process.

As the benefits realisation management is always very costly (Norris, 1996), this may be one of the reasons why a formal benefits realisation methodology was not put in place for these outsourcing contracts. This may also be due to the fact that it is seldom possible to produce a definitive statement of all the benefits that an IS/IT contract or project will produce (Remenyi, 2000). In addition, P7 indicated that it was not put in place because of the way the contract had been managed. This reason is often cited in the literature as one of the main reasons for not having a benefit realisation methodology or process (Norris, 1996).

| Participant | Comments  |
|-------------|---|
| P4          | <i>"Yes. I think that (note: benefits realisation process) was part of the justification. One of the things that they are obviously looking at was the benefit in terms of dollar savings to government and agencies. And that's part of the budget process....."</i> |
| P5          | <i>"There's no formal benefits realisation assessment."</i>   |
| P6          | <i>"We certainly do (benefits realisation process). Again it's an annual thing and what we've done is we set some benchmarks."</i>  |

Table 7.3: Participants' comments on the use of the benefits realisation methodology or process

In addition, P5, who admitted that there was no formal benefits realisation methodology, stressed that since there was no formal benefits realisation methodology or technique used under any of these three major contracts, it is impossible to know whether they had saved the state government any money. Moreover, P5 felt that there has been no financial benefits for outsourcing by saying: *"I personally doubt there has been any major financial benefits to government as a whole and to the taxpayers as well. But I haven't got the figures to prove it. But given that this has been known that there's no formal benefits management or benefits realisation methodology, who would know? But certainly my gut feels that there's no real financial benefits."*

Overall, the result is consistent with the surveys conducted earlier in Australia by the researcher (in Chapter 7) and Ward et al. (1996) in the UK where the adoption rates of the benefits realisation methodology by large organisations were only 32.8% and 12%, respectively. According to Sohal and Ng (1998), their research findings in large Australian organisations indicate that 59% of the responding Australian organisations did not determine whether expected benefits are being achieved. The fact that very few organisations have a benefits management methodology or process is not really



surprising as much attention is paid to ways of justifying investments, with little effort being extended to ensuring that the benefits expected are realised (Ward and Griffiths, 1996; Willcocks, 1992b).

### **7.3.3. Theme 3: Lack of understanding of IS/IT investment evaluation methodology**

Although there is a growing need to evaluate and improve measurement of the benefits of IS/IT investments in organisations (Rai et al., 1997), there is still a lack of understanding by most organisations of the IS/IT investment evaluation and benefits realisation processes and their impact (Symons and Walsham, 1988). This assertion seems to be consistent with the interview data.

A formal IS/IT investment evaluation is defined in Chapter 2 as “the weighing up process to rationally assess, quantitatively or qualitatively, the value of any acquisition of software or hardware which is expected to improve business value of an organisation’s information systems.” However, as discussed earlier, all interview participants seemed to have a problem with understanding the exact meaning and purpose of a formal IS/IT investment evaluation methodology or process. None of the participants mentioned any formal IS/IT investment evaluation process or methodology (such as Return on Management (Strassmann, 1990 in Willcocks et al., 1992)). This may be partly due to the fact that none of the contract managers and coordinators interviewed had prior experience in managing the contracts.

Instead, several participants (P3, P5, P7, and P9) mistakenly thought contract control and evaluation mechanisms specified within the SLA (such as scorecards process, annual reviews, formal meetings or discussions, or benchmarking) constituted a formal IS/IT investment evaluation methodology or technique. For example, when asked about whether or not any formal IS/IT investment evaluation methodology or technique was adopted, P7 stated that the methodology was implemented by holding of meetings and discussions regarding the contract pricing between the contractor and the Department - *“there were also some pricing arrangements or pricing schedules in place and then they were put through depending on what the Department’s requirements were. They were put through a series of processes and*

*table and comparisons made and table for the Department to make some judgements on who they want to do business with.*” In addition, the tendering process, a proprietary quality management system, and competitive pricing were mentioned by the other participants (P4, P6, and P9) as the formal IS/IT investment evaluation methodology or process. The confusion about what constitutes a formal IS/IT investment evaluation methodology demonstrates a lack of understanding of such methodologies in the Agency. Table 7.4 shows some of the comments made by the participants on this issue.

| Participant | Comments   |
|-------------|--|
| P4          | <i>“But the actual technique for evaluation, I think, was probably the same with most tenders. That is an evaluation process, short-listing, evaluation against the technical requirements, value for money and other criteria. In addition, consideration of transition of employees was also one of the key things.”</i> |
| P5          | <i>“It (evaluation methodology) is all documented in the contract. So you actually need to look at the service level agreements and the performance agreements.”</i>   |

Table 7.4: Participants’ comments on the IS/IT investment methodology or process

The result here is generally consistent with the findings in the earlier survey conducted by the researcher (in Chapter 7) where many respondents indicate they evaluated the success of the contracts or projects through some sort of reviews, meetings, or user feedback.

#### **7.3.4. Theme 4: Existence of an informal IS/IT investment evaluation process**

Nevertheless, these contract control and evaluation mechanisms or measurements did constitute an informal IS/IT investment evaluation process. Both the Department and the outsourcing contractors knew that they needed some sort of IS/IT investment evaluation process or technique to control and monitor the performance and progress of the contracts (BDMW and Ferntree, 1996; Comswest and The Department, 1997;

The Department and Platinum, 1998). Although these informal mechanisms or measurements cannot be used to totally replace a real and robust formal IS/IT investment evaluation methodology (such as Balanced Scorecard (Kaplan and Norton, 1992)), they were, however, able to help the Department evaluate and measure, to certain extent, the performance of the outsourcing contracts. These contract control and evaluation mechanisms or measurements are largely based on the guidelines set out in the standard state government purchasing guidelines (SSC, 1999c).

The Department's current outsourcing evaluation processes may be partly explained by the six-stage evolutionary model (Figure 7.1) proposed by Nolan (1979). Judging from the Nolan model, the Department's evaluation processes for the outsourced IS/IT functions were not yet mature and resided probably at Stage 3 (Control phase). Some of the main characteristics under the evolutionary model (Gibson and Nolan, 1974) for Stage 3 are:

- (1) There are some management concerns about the cost – the number one motive for the Department to outsource its IS/IT functions was cost saving.
- (2) Some sort of methodologies/standards are enforced – there were several contract control and evaluation mechanisms (informal IS/IT investment evaluation process or technique) under the SLA for the Department and the outsourcing contractors to measure the performance of the contracts, and monitor the budget and the expenditure for the contracts.
- (3) Systems projects are expected to show a return – according to most of the participants, two of the three outsourcing contracts (BDMW and ASD) had probably resulted in some savings to the Department.
- (4) There are some dissatisfied users – there were several dissatisfied users under all three outsourcing contracts (especially the LWD contract). For example, P2 said: *“The LWD..... has cost us a lot of money with the helpdesk level because we can do it ourselves. Because it's done in such a way that it's at one level which is someone who is answering the phone when anyone can do it in here.”*

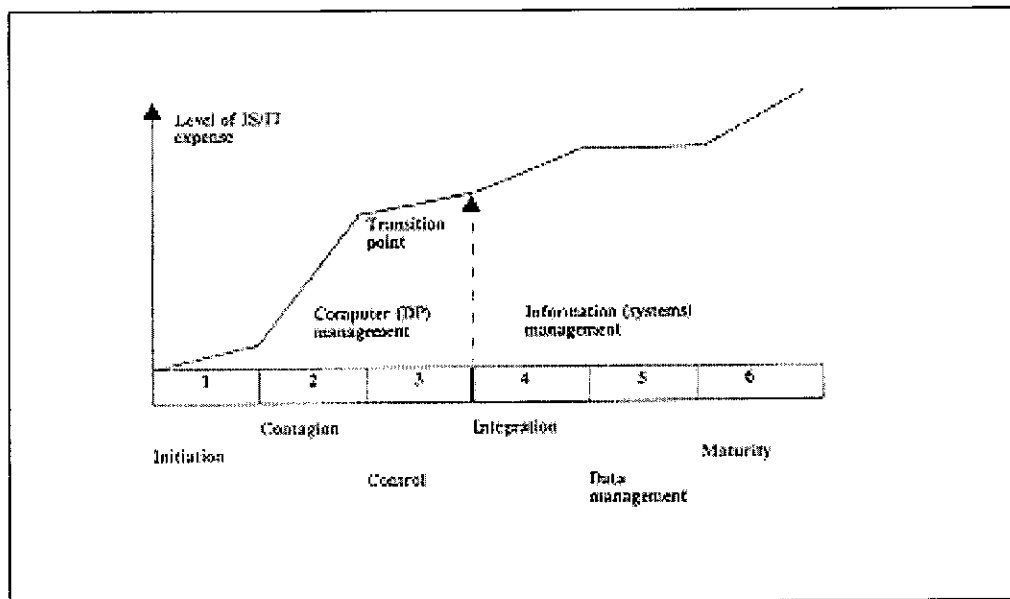


Figure 7.1. Stages of evolution of IS/IT in relation to expenditure (Nolan, 1979)

The result is consistent with findings from the survey (in Chapter 5), second case study (in Chapter 9) and other studies (e.g. Barton, 2002; Douglas, 1999; Sohal and Ng, 1998) in which only informal IS/IT investment evaluation techniques or processes were used by the organisations to assess and evaluate their IS/IT projects.

### **7.3.5. Theme 5: Lack of understanding of benefits realisation practices**

There is a widespread concern in organisations that IS/IT investment does not deliver value (Jones and Hughes, 1999) and that senior executives simply do not understand the concept of benefits realisation (Remenyi, 2000).

As mentioned previously, no benefits realisation methodology, technique or process formal or informal was utilised for any of these three major outsourcing contracts. While half of the participants readily admitted that there was no benefits realisation methodology or process being used, the other half of the participants (P1, P4, P6 and P8) disagreed and stated that benchmarking, value added activities, budgetary process, or annual reviews were used for managing benefits for these outsourcing contracts. For example, P1 pointed out that the IS/IT benefits realisation process or approach was employed but did not say how and what formal benefits realisation methodology was implemented. P1 simply said that *“the benefits will be reviewed a*

lot more closely.” Table 7.5 shows the comments made by some of these participants.

| Participant | Comments   |
|-------------|--|
| P4          | <i>“I think that (benefits realisation methodology) was part of the justification. One of the things that they are obviously looking at was the benefit in terms of dollar savings to government and agencies. And that’s part of the budget process.”</i>   |
| P6          | <i>“We certainly do (benefits realisation process). Again it’s an annual thing and what we’ve done is we set some benchmarks.”</i>   |
| P8          | <i>“It (benefits realisation process) basically works on value added..... there are a lot of projects that come up and I allow my staff to go out and do those projects provided we can still maintain the service level agreements under the contract.”</i> |

Table 7.5: Participants’ comments on the benefits realisation methodology or process

However, these contract control and evaluation mechanisms had nothing to do with “the process of organising and managing such that potential benefits arising from the use of IS/IT are actually realised” (Ward and Griffiths, 1996). Rather, as mentioned previously, these had more to do with IS/IT investment evaluation in a less formal way. Almost all of these contract control and evaluation mechanisms were focused on costs, not benefits. Furthermore, none of the participants mentioned any formal IS/IT benefits realisation process or methodology (such as Active Benefits Realisation (Remenyi et al., 1997)). Therefore, it appears that many interview participants had a problem with understanding the exact meaning and purpose of IS/IT benefits realisation methodology or process. One of the possible reasons may be due to the fact that no contract managers and coordinators had previous experience in contract management and so did probably not possess the required knowledge or technical skill in implementing formal IS/IT investment evaluation and benefits realisation methodologies or techniques. This will be discussed in more

detail later in this chapter.

This seems to be consistent with the view expressed by many researchers and academics that there is still a lack of understanding of benefits realisation methodologies or processes in most organisations (Remenyi, 2000; Truax, 1997).

### **7.3.6. Theme 6: Focus on quantitative IS/IT investment evaluation measures**

According to Willcocks (1992a), many traditional measures do not assist the process of establishing how IS/IT adds net value to an organisation. Many such measures are not always an appropriate way to evaluate IS/IT investments (Irani et al., 1997). Therefore, it may be wise to use several measures which relate IS/IT spending to things such as business volume, profitability, and key business objectives (Willcocks, 1992a).

According to Farbey et al. (1999), most organisations still use traditional (accounting based) methods, instead of employing evaluation techniques or methodologies mentioned in the literature. Similarly, for this case study, all but one (customer satisfaction survey) of the measures specified in the SLA of all three outsourcing contracts were quantitative accounting-based measures. This is probably because the quantitative measures were easier to use and define than the qualitative measures. However, without employing more qualitative measures (e.g., relationship, culture and leadership) and a formal IS/IT investment evaluation methodology or process, the use of quantitative or accounting-based measures alone would not assist in full evaluation and monitoring of the performance and status of these contracts. This is because IS/IT evaluation is “a process, or group of parallel processes, which take place at different points in time or continuously, for searching and for making explicit, quantitatively or qualitatively, all the impacts of an IT project and the program and strategy of which it is a part” (Farbey et al., 1999).

Moreover, all research participants seemed to have a SLA mentality where the main objective for measuring or evaluating performance for them was just to fulfil the requirements under the SLA within each contract. There was no attempt by either the contractors or the Department to adopt any more qualitative measures (besides the

customer satisfaction survey) or a formal IS/IT investment evaluation methodology (or even a benefits realisation methodology) because all contract rewards and penalties were tied to the fulfilment of the requirements within the SLA. For example, P6 said: “*we do have a risk sharing model for fixed price work. So basically the way that works is if we finish within time and under budget, then we can actually charge the Department for half of the difference. If we go over then we can only charge half of the amount.*” Table 7.6 shows some of the comments by other participants on this issue.

| Participant | Comments   |
|-------------|--|
| P1          | “I guess simplistically if the Unix or mainframe services are available 99.6% of the time or more during the period they get <i>maximum points</i> . Between 99-99.6% they <i>lose one point</i> and so forth. And that actually calculates out to if it’s less than the service level and the scorecard, then they are penalised financially.”  |
| P3          | “But <i>all the contracts have a scorecard type of thing.....</i> ten calls go to Contractor 1. Did they all get done in time? One of the other people you talk to might be able to tell you the time. But if 2 days is the limit, then all the jobs get done in 2 days. Then that’s <i>100%</i> . But if there are only a certain number of them, you get sort of scorecard type of arrangement like that. Other things are the amount of uptime for WAN. So if we have one of our country offices out for certain amount of time, that we mark them down on the scorecard.” (Appendix I) |

Table 7.6: Participants’ comments on the use of the traditional accounting-based measures

Furthermore, the performance and service level metrics within the SLA were mainly quantitative measures (e.g., response time, network availability). The only qualitative measure specified within the SLA, customer satisfaction surveys, was only

conducted in two of the three outsourcing contracts – BDMW and ASD. These two contracts were generally perceived as successful by all participants. The most troublesome contract out of the three outsourcing contracts, LWD, did not implement the more qualitative IS/IT metric - customer satisfaction surveys. The contractor representative (P7) involved in the LWD contract had strongly opposed the use of the surveys because the results from the surveys could lower the points on the scorecard and so penalise the contractor. The contractor did their best to argue and avoid conducting the customer satisfaction surveys and hence, the scorecard. Therefore, the real problems (e.g., unhelpful helpdesk service) of the contract were not able to be addressed by either contracting party. In the end, the scorecard system was not implemented to either reward or penalise the performance of the contractor. As a result, the LWD contract was not renewed in February, 2000.

All three outsourcing contracts were in a partnership type of arrangement, but it did not help the LWD contract. As mentioned previously, both the Department and the outsourcing contractors were following the contract strictly because both the rewards and the penalties were linked to the metrics or the mechanisms specified within the contracts. There were not much of an incentive for either party to go outside of the contracts to try to improve the measurement for the performance of the contracts. This is confirmed by the studies conducted by several researchers which concluded that a partnership-type of contract is not the most successful because the profit motive is not shared (Lacity and Hirschheim, 1994; Lacity and Willcocks, 1998) and most organisations from either private or public sector were sceptical about partnerships (Hancox and Hackney, 2000). This will be discussed in more detail later.

While there is no doubt that quantitative measures are useful for evaluating and monitoring contract performance, the performance of the LWD contract appears to imply that the use of a more qualitative measure such as customer satisfaction survey could assist in measuring things which were not measurable by more quantitative and accounting-based measures. For example, the results of the surveys could influence the perceived success (e.g., customer satisfaction and service delivery) by the stakeholders of these three outsourcing contracts. This also seems to suggest that more qualitative measures should be adopted (along with all those quantitative



measures specified within the SLA) to monitor and evaluate the performance of the three contracts in the first place. In other words, the metrics specified within the SLA were quantitatively oriented, with only one qualitative measure being adopted. These mainly quantitative metrics might not be adequate for measuring and monitoring the performance of these outsourcing contracts, without employing more qualitative measures.

The result here seems to confirm the reports about the inappropriate measurements and other problems with the Australian Federal Government's outsourcing contracts which led to constant budget blowouts, dubious savings, and user dissatisfaction (Barton, 2002; Douglas, 1999; Mitchell, 2000a). Studies conducted by Willcocks et al. (1995) also suggest that inadequate measurement systems to monitor the contractor's performance is one of the major areas of weakness in IS/IT outsourcing.

#### **7.3.7. Theme 7: Different Motivations for Outsourcing**

According to Sohal and Ng (1998), the use of IS/IT was to improve quality and adding value to products and services. In this research, several reasons were put forward by the participants as the main motivation or objectives for IS/IT outsourcing. Five out of nine participants (P1, P3, P4, P5, and P6) cited cost saving as the main motivation for the three major outsourcing contracts, although three of them (P1, P3, and P5) had doubted that IS/IT outsourcing had actually resulted in any dollar savings to the Department or the State Government. This is consistent with the surveys conducted by Lacity and Willcocks (1998), Outsourcing Interactive (2000), Willcocks et al. (1992a), Seddon et al. (2001), and the researcher (in Chapter 5), where cost saving is usually the number one reason quoted for IS/IT outsourcing.

Interestingly, only one out of three contractor representatives (P6) interviewed mentioned cost saving as one of the main reasons for outsourcing. The other two contractors (P7 and P8) simply said it was the State Government or the Department's decision to outsource and did not seem to care too much about the reasons for outsourcing. For example, P8 said: *"quite honestly that's something that you have to take up with the Department. Ok? The Department made the decision to outsource. They went to tender and we picked it up under the tender arrangements."* Moreover,

it appears that the contractors were mostly interested in satisfying the requirements under the SLA since the rewards and the penalties were tied to the fulfilment of the contract control and evaluation mechanisms under the contracts. Arguably, one of the Department's main objectives was, among other things, to reduce costs whereas the contractors' focus was possibly to make profit and keep their shareholders happy. The fact that all three outsourcing contracts were in partnership arrangements did not seem to change this situation. For example, P7 (representative of Contractor 2), during the interview, said: *"there was quite a significant increase in the number of devices that we initially said we would manage and to what we ended up managing. And I think both Contractor 2 and Contractor 1 were probably entitled to more revenue from that."* Likewise, P5 (the Department's CIO) said: *"I think we felt that ..... the Contractor 1's head office ..... is sort of to maximise their profits. So there was always a push for them to charge the highest possible dollar for whatever services they deliver to us..... So they were pushing to try to put their prices up and to get the highest returns while we were trying to give them as little as possible."* This seems to indicate that there was probably a conflicting agenda between the Department and the external outsourcing contractors. This is confirmed by studies conducted by Lacity and Hirschheim (1994) and Lacity and Willcocks (1998) where they concluded that the partnership type of contract is not always the most successful and the outsourcing contractors are not partners because the profit motive is not shared.

Increased service level and access to technical skills were also mentioned by three participants (P1, P5, and P9) as major reasons for outsourcing. Surprisingly, the CEO (P9) of the Department was the only participant who denied that cost saving was one of the main reasons for the Department's decision to outsource, despite the fact that cost saving was specifically listed as one of the major objectives to be achieved by the Department under at least two of the three contract documents, BDMW and ASD (BDMW and Ferntree, 1996; The Department and Platinum, 1998). Instead, he indicated that to: (a) access technical skills; (b) increase service level; and (c) break rigid work practices, were the major reasons for outsourcing.

As mentioned earlier, several participants (P1, P3, and P5) argued that they had doubted that the outsourcing had actually resulted in cost reduction for the

Department or the State Government. For example, P5 said: *“I personally doubt there has been any major financial benefits to government as a whole and to the taxpayers as well. But I haven’t got the figures to prove it. But given that this has been known that there’s no formal benefits management or benefits realisation methodology, who would know? But certainly my gut feels that there’s no real financial benefits.”* In other words, it is impossible for anyone to prove the benefits of IS/IT outsourcing without first adopting a formal benefits realisation methodology or process.

Furthermore, both the Department’s CIO (P5) and the ASD contractor’s representative (P6) mentioned that the purpose of the ASD contract was often not clear amongst the stakeholders. Also, several participants (P2, P4, and P7) said that the Contractor 2 (for the LWD contract) often gave the users the impression that it had no presence within the Department and hence, many users wondered why the contract was needed in the first place. For example, P7 said: *“I think because of that Contractor 2 weren’t seen to have any presence at the Department. Only a handful of people knew that Contractor 2 existed. All they saw was Contractor 1 people, because the WAN/Helpdesk was remote to the Department.”* Therefore, it was clear that the motivation and objectives for the Department’s three major IS/IT outsourcing contracts were sometimes perceived differently by the stakeholders and therefore, may have affected the way the outsourcing contracts were operated and evaluated. As motivations and objectives for outsourcing were perceived differently by the participants and the stakeholders, it would be difficult, at times, for all parties to know what to evaluate or measure for these three outsourcing contracts.

Perhaps, the Department needed to use different types of metrics to measure success of the contracts. A formal IS/IT investment evaluation methodology could be the answer since it would have allowed the Department to use many quantitative and qualitative metrics to measure success of the contracts.

The result here is generally inconsistent with other studies (e.g. Ang and Straub, 1998; Apte et al., 1997; Seddon et al., 2001) in the sense that not all participants agreed that cost saving was the primary reason for outsourcing.

### **7.3.8. Theme 8: Success of the contracts perceived differently by stakeholders**

In terms of meeting the benchmarks mentioned in the contract, the BDMW contract was seen by all research participants who were involved with the contract (P1, P3, P4, P5, P8, and P9) as successful. The same can be said about the ASD contract since this contract was based on BDMW.

As for the LWD, it was generally regarded as a poor contract. Only a few of the participants (P3 and P7) indicated that it was successful. While almost none had a view that it was a complete failure, most research participants (P1, P2, P4, P5) agreed that the LWD contract was not a well-written contract and somewhat problematic. Some of the reasons put forward by the participants included:

- (1) It was inherited from an old “whole of government contract” which was not suitable to the Department (P5).
- (2) The LWD contractor (Contractor 2) performed poorly for the Helpdesk component (P2 and P4).
- (3) Contractor 2 was not seen by users to have any presence within the Department and therefore, the users perceived it was not doing anything for them (P4).
- (4) The service level agreement was poorly written and, in particular, the service descriptions were not clearly defined (P5).
- (5) There was a problem of dealing with two contractors within a contract as Contractor 2 subcontracted part of the contract to Contractor 1 (P2).

Even the LWD contractor’s representative (P7) conceded to a certain extent that the Department had problems with his predecessor. However, some of these problems still had not been completely resolved even after P7 had taken over the position as the site manager for the LWD contract. As a result, the LWD contract was not renewed when it expired in February, 2000.

Although the degree of success of these three major outsourcing contracts, in many instances, seems to be measured in the context of the benchmarks set for it (as suggested by P5 and P9), none of the three major outsourcing contracts contained detailed descriptions about the use of the benchmarks. This may have indicated that

the measurements that were utilised to evaluate the performance and the benchmarks that were used to determine the success of the contracts could somehow be interpreted differently by various stakeholders since there was no pre-determined set of benchmarks.

Other criteria suggested by the participants to determine the success of a particular contract were cost saving (P4 and P5) to the Department, fulfilment of the contract conditions (P1 and P5), and service delivery (P1, P2, and P4). For example, while P4 and P5 indicated some of the contracts as expensive, they were largely unable to tell the researcher how they arrived at the conclusion or which methodology or approach they had used to determine this was the case. Moreover, a contract that was perceived successful in terms of one criterion did not mean it would be perceived successful in terms of another. For example, P4 said the BDMW contract was successful in terms of service delivery but at the same time it was perceived by P4 as expensive. P5 seemed to judge the success of a contract from several point of views (i.e. dollar savings and service delivery) but hinted that a current successful contract may not be viable as time goes on. On the other hand, P9 stressed that the benchmark should be used to judge the success of a particular contract.

#### **7.3.9. Theme 9: IS/IT skill shortage within the Department**

As mentioned earlier, several participants (P1, P5, and P9) stated that one of the main reasons for outsourcing was to access the required IS/IT expertise. To do so, the Department had to transfer most of its IS/IT staff to the external contractors. Although the IS/IT staff transfer process was regarded by all participants as being highly successful, many participants (P1, P2, P5, and P7) expressed their concerns about the loss of the Department's technical staff, and its ability to evaluate and manage these outsourcing contracts. The loss of IS/IT staff had later forced the Department to often rely on external opinion on its IS/IT requirements.

For example, P5 was clearly worried about the loss of the Department's technical staff when he said: *"the technical people we have are gradually drifting away. If it goes on we will end up with no technical people who are able to say well is that proposal we are getting from the contractor fair and reasonable."* P5 was also

worried about the Department's ability to manage these outsourcing contracts by revealing that *"when these contracts were first negotiated, no one internally really knew much about contract management. They started to quickly learn..... You get a dilution of skills because people who are used to be systems developers per se are now contract managers or project managers. .... Also you get natural attrition so you get people leaving and you cannot replace them."*

In other words, P5 was very concerned that the loss of the Department's technical staff had affected its ability to manage, evaluate, and monitor these outsourcing contracts. None of its contract managers and coordinators had any prior experience in contract management and coordination. This could also be the reason why the Department had only adopted an informal IS/IT investment evaluation process, instead of formal methodologies. They probably did not have the required skills to implement these formal methodologies anyway. Also without educating themselves in these methodologies, it was also difficult for them to management the contracts effectively. Since these outsourcing contracts were managed by inexperienced contract managers and coordinators, it was possible that these contracts could be even more successful if managed by more experienced IS/IT staff. Hence, this could affect the perception of success by the relevant stakeholders. However, this would not be possible without hiring more experienced IS/IT staff, and to hire more IS/IT staff the Department faced two dilemmas, as pointed out by P5: *"one is that they are very hard to attract into this organisation because we're all been outsourced and there are no longer work here. So we cannot offer them attractive perk and conditions for the salary.....the other reason is we are under these pressures to reduce costs."*

In addition, P7 (Contractor 2's representative) had a similar concern about the loss of the Department's technical staff and said: *"the Department didn't retain enough internal corporate know-hows to really challenge service providers..... they (Contractor 1) have become the major source of knowledge to the Department rightly or wrongly."* P7 had bitterly complained that Contractor 1 had unfairly influenced the Department's IS/IT policy and requirements, probably at the expense of the Contractor 2. According to P7, this may also have influenced the Department's ability to evaluate the contractors' performance. Furthermore, according to P2, the

loss of almost all of its entire IS/IT staff had caused dissatisfaction among several remaining staff within the Department and may have also cost the Department a lot of money.

The Department's inability to independently manage its outsourcing contracts is consistent with the findings of Jennings (1997) and Kakabadse and Kakabadse (2000) where the results showed that there is a need to retain an understanding of the outsourced activities as the knowledge can assist the organisation to monitor outsourcing decisions.

#### **7.3.10. Theme 10: Embedded contract mentality**

As mentioned before, there seemed to be a "contract mentality" where the operation of the contracts was all based on the specifications set out in the Service Level Agreement (SLA) within all three outsourcing contracts. All performance measurement and evaluation was done just to fulfil the specifications or requirements set out within the SLA because the rewards and penalties were all linked to the scorecards specified in the SLA. There was no incentive for either party to introduce more qualitative and formal metrics (or methodologies). For example, almost all of the participants had mentioned the use of the scorecards to determine the performance of the contractors but none of the participants had cited any formal IS/IT investment evaluation or benefits realisation methodology, technique, or process being used to evaluate the contracts. Table 7.7 below shows some of the participants' comments on this issue.

In addition, as indicated by most respondents in the survey (Chapter 5) and case studies (Chapters 7 and 9), there was a focus on cost saving. This could partly explain why there was a contract mentality within the organisations undertaking IS/IT projects. Since there was almost no qualitative measures being used by the organisations, a focus on the service level agreements (SLAs) by the respondents was inevitable.

| Participant | Comments  |
|-------------|---|
| P1          | “The ASD contract and the BDMW contract both have scorecards and monthly they are measured against. I guess simplistically if the Unix or mainframe services are available 99.6% of the time or more during the period they get maximum points. Between 99-99.6% they lose one point and so forth. And that actually calculates out to if it’s less than the <i>service level and the scorecard</i> , then they are <i>penalised financially</i> .” |
| P3          | “If they, for some reasons, take excessive amount of time to do something, then they cannot charge us for all, although charge us for <i>50% of the extra time</i> they took and things like that.” (Appendix I)  |
| P6          | “So basically the way that works is if we finish within time and under budget, then we can actually charge the Department for <i>half of the difference</i> . If we go over then we can only charge <i>half of the amount</i> . There are others in the rule around.”   |

Table 7.7: Participants’ comments on the use of the SLA

The use of the scorecards and other quantitative contract evaluation mechanisms within the SLA were generally useful in measuring, managing, and monitoring the performance of these contracts. However, in order to obtain a more balanced and clearer picture of how these contracts had performed, more qualitative measures were needed. For example, the only qualitative measure specified within the SLA, customer satisfaction surveys, was deliberately not implemented by the Contractor 2 because many users within the Department were unhappy about the LWD contract (e.g., Helpdesk services). The users’ dissatisfaction with the services provided by the LWD contract would have lowered the contractor’s points on the scorecards and so penalised the Contractor 2 financially if the surveys were conducted. Since these surveys were not implemented by the Contractor 2, the issue of unhelpful Helpdesk



remained unresolved when the LWD contract was not renewed in February, 2000.

Moreover, as mentioned previously, the use of both a formal IS/IT investment evaluation methodology and a benefits realisation methodology or technique would probably help the Department realise the benefits as well as measure these contracts' performance more accurately. By having an embedded contract mentality among the contractors and the Department, the Department was unable to (1) prove whether any benefits had actually been realised as result of these three major outsourcing contracts; or (2) get a more balanced and truthful picture of these contracts' performance, and hence, maybe resolve some of the difficult issues (e.g., the unhelpful Helpdesk in the LWD contract). The lack of more qualitative measures as well as formal IS/IT investment evaluation and benefits realisation methodologies had also directly affected the perception of success by the stakeholders in terms of several criteria such as cost saving, meeting benchmarks, and improved services delivery.

The implementation of formal methodologies or techniques by the Department may have improved the measurement and monitoring of the progress of the contracts since they would provide the organisation with more qualitative measures (i.e. customer satisfaction surveys or user satisfaction surveys). This would give the Department more flexible and meaningful measurements and assessment of the outsourcing contracts. The users and the Department would be able to increase their influence on the contractors and the contractors would not rely solely on the service level agreements. This is because that the contractors would know that they would not be paid on meeting the quantitative measures specified within the service level agreements alone. This would probably improve the actual performance of some of these contracts (e.g., the LWD contract). The result is consistent with finding by Harris et al. (1998) in which contract flexibility could increase the success of the outsourcing contracts.

#### **7.3.11. Theme 11: Complicated contract arrangements**

The contract arrangements for all three major outsourcing contracts appeared to be unnecessarily complicated (Table 7.8). Originally, the BDMW contract was for

mainframe/Unix and open systems support and operation, as well as associated helpdesk services. The ASD contract included applications support services, application development services, and application management and coordination services. The LWD contract had basically four components - LAN, WAN, Desktop services and Helpdesk services.

| Contracts                | BDMW   | LWD   | ASD   |
|--------------------------|--|---|---|
| <i>Services Provided</i> | Mainframe/Unix, and systems support & operation services | LAN* / WAN / Desktop* / HelpDesk services                               | applications support, application development, and application management & coordination services |
| <i>Contractor</i>        | Contractor 1   | Contractor 2<br>*subcontracted LAN and Desktop services to Contractor 1 | Contractor 3  |

Table 7.8: Original contract arrangements (before 26 February, 2000)

The LAN and Desktop services were later subcontracted to the company (Contractor 1) which was also managing the BDMW contract. However, after 26 February, 2000, the LWD contract was broken up into three pieces (Figure 7.2) because the contract was not perceived by many stakeholders as successful (e.g., unhelpful Helpdesk services). The Helpdesk services went back to the Department, with the support from Contractor 1. The LAN and Desktop services were formally placed under the BDMW contract. The LWD contract had only the WAN service remaining and it might be attached to another contract, the STEP program, in the near future.

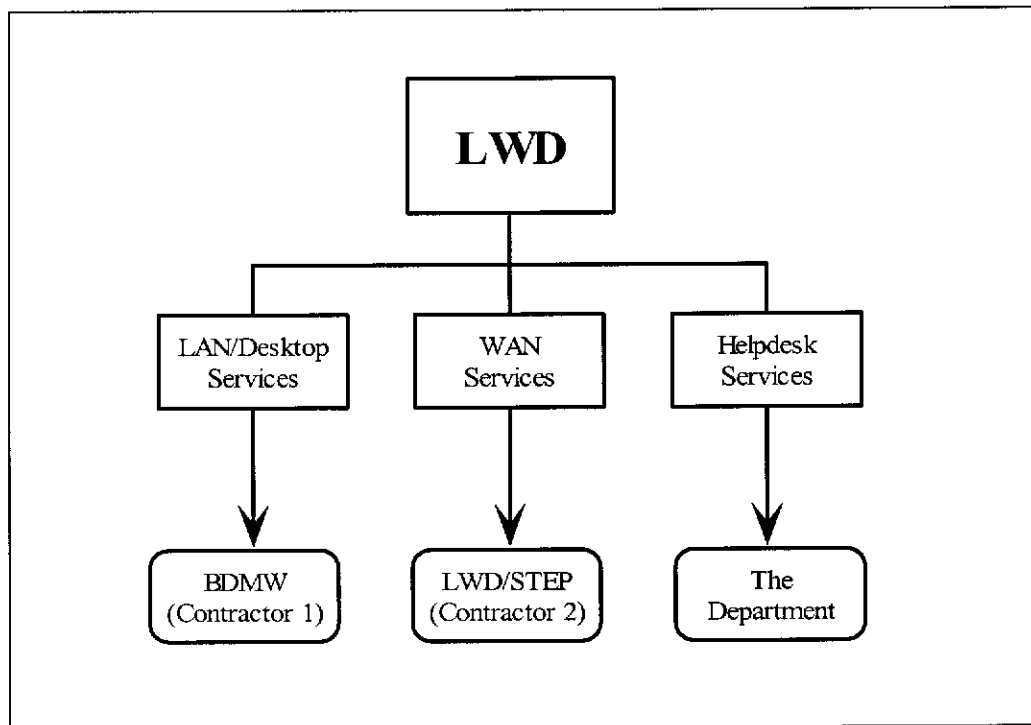


Figure 7.2: The current status of the LWD contract

Moreover, all three original outsourcing contractors were taken over by other companies at least once during the life of these three contracts (Table 7.3). For example, the original contractor (Comswest) for the LWD contract was taken over by ComsWest International initially and then Contractor 3. This sometimes had impacted on the relationship between the Department and the contractor. For example, P7 admitted: *“because it’s interpreted that damages have been done by the time Contractor 2 got involved with buying up of Comswest.....I think we’ve improved the services. We’ve improved the reporting. I think we have improved the relationships..... I think they had a problem with my predecessor..... we were disappointed that we’ve only got the WAN component now.”* In this case, the relationship between the Department and Contractor 2 had improved somewhat but not good enough for the Department to renew the LWD contract when it expired in February, 2000. Most components of the LWD contract were transferred to the BDMW contract.

| Contracts | Comments   |
|-----------|--|
| BDMW      | Ferntree --> GE Capital IT Solutions (GECITS) --> Contractor 1 |
| LWD       | Comswest --> Comswest International --> Contractor 3           |
| ASD       | Platinum Technology --> Contractor 3                           |

Table 7.9: Contractors for the three major outsourcing contracts

Furthermore, it was also possible that the loss of almost all of the Department's technical staff limited its ability to manage these contracts more successfully (especially the LWD contract) as well as to determine whether or not it was better for the Department to simplify its contract arrangements in the first place since complex contract processes can be an obstacle to outsourcing (Higginbotham, 1997). The Department may have realised later that it would have been in its interests to simplify the contract arrangements (e.g., in order to improve service delivery) by breaking up the LWD contract and placing most of its components under the BDMW contract.

#### **7.3.12. Theme 12: Over-reliance on a single contractor**

As mentioned previously in this chapter, Contractor 1 was taking over more and more of the Department's IS/IT services. This was because the BDMW contract was perceived by the stakeholders within the Department as the most successful contract in terms of meeting the benchmarks set out for them. However, some concerns were expressed by several stakeholders, including the Department and other external outsourcing companies who had been bidding for the State Government's IS/IT services. For example, P7 was bitterly disappointed that Contractor 1 was dominating the decision making for the Department's IS/IT services and needs, by saying: "*and so I think Contractor 1 ..... became the major source of knowledge to the Department rightly or wrongly.*" Similarly, P1 was not in favour of putting too many of the Department's IS/IT services under just one or a few contractors since it might not be in the Department's interest.

This issue was actually raised in one of the BDMW's SRC (Strategic Review

Committee) meetings in December, 1999 because several stakeholders had expressed concerns about a monopoly situation being created. At that time, Contractor 1 responded by assuring the stakeholders during the meeting that less than 10% of the State Government's IS/IT expenditure was through the BDMW and the BIPAC (another contract which the Contractor 1 was managing) contracts combined.

Interestingly, there were others inside the Department who felt it would be in the Department's interest to have less contractors to deal with. Communication among the contractors and the Department, according to P2 and P4, was the main problem with having several external outsourcing contractors. Table 7.10 below shows the comments made by P2 and P4 on this issue.

The LWD contract, which was generally regarded as the worst contract out of the three major outsourcing contracts within the Department, had suffered from having too many contractors. The LWD contract was awarded to Contractor 2 but some components of the contract were later subcontracted to Contractor 1. Therefore, for some services (LAN and Desktop) under the LWD contract the Department had to deal with two different contractors (Contractors 1 and 2). This sometimes had caused breakdown in communication and raised tension between the Department and the Contractor 2.

According to P2, both Contractor 1 and Contractor 2 were sometimes blaming each other for non-delivery of the services under the LWD contract. This may also be one of the reasons why the LWD contract was perceived by several participants as problematic. Furthermore, P4 also added to this argument by saying that multiple contractors would increase the number of communications the Department had to go through, and when problems occurred no one would take the responsibility.

The result here is consistent with finding from other Australian studies (e.g. Kakabadse and Kakabadse, 2001). Government-based IS/IT outsourcing has limited business opportunities for small to medium-sized outsourcing contractors in Australia (Korac-Kakabadse and Kouzmin, 1996). Contractor 1 was found to be one of the top three suppliers of Australian governments outsourcing services (Outsourcing Government.com, 2001). One of the major problems is that the large

outsourcing contractors can easily squeeze out smaller outsourcing contractors and possess too much power and influence over the governments (Offe, 1996).

| Participant | Comments   |
|-------------|--|
| P2          | <i>"If it's with one company alone, it will work quite well. But, you see, with the history of LWD contract, the helpdesk is run by the contractor and they just subcontracted the on-site to another contractor which is Contractor 1. So it is a bit like dealing with one level (LWD contract) 2 people (Contractors 1 &amp; 2). It doesn't work that well. There may be some conflicts between the 2 companies."</i>   |
| P4          | <i>"Whether or not you want to end up with a number of contracts like the Department has which actually increases the number of communication lines you have to have gone through when problems occur and you end up with finger pointing and no ownership of the problem..... The less parties you end up with the better. But being government, you have to be seen to be giving equal opportunity. That might end up in resulting in the situation where you are not actually realising the benefits in having one set of provider because you might get disagreement between service providers."</i> |

Table 7.10: Participants' comments on the number of external outsourcing contractors

### **7.3.13. Theme 13: Lack of user involvement/participation in contract development**

Studies conducted by Baroudi et al. (1986) and McKeen et al. (1994) indicate that user participation in systems development has a direct relationship with user satisfaction and system usage. Moreover, user participation has a positive influence on the successful outcome of system implementation (Lin and Shao, 2000; Tait and Vessey, 1988) and outsourcing (Lee and Kim, 1999). This implies that getting users

involved in the development process may improve their attitudes toward the system, and enhance the users' perception of the importance and relevance of the system (Lin and Shao, 2000).

However, in this case, none of the current contract managers and coordinators (P2, P3, and P4) were involved with any of the original outsourcing contracts negotiation processes. They were only brought in from other departments to manage these contracts in later years and had no prior experience in managing the outsourcing contracts. The Department seemed to have paid the price of not having enough trained staff to properly manage these outsourcing contracts when it transferred most of its technical staff.

For example, P7 stated that the Department had got rid of almost all of its entire technical staff and had no one left to properly manage the contracts by saying: *"the biggest problems in my view that the Department made was they seem to ... cut their internal branch too thin. You've got only P1 (IS/IT manager) and P5 (CIO). Those are the only ones that are really experienced. And then you fall away to P2 who is really a supply and contracts person..... P4 who I consider is a projects person used to be a programmer..... So I think there's a bit of void there in terms of the skills level of the general IT management and general IT disciplines. I think that's where they have area of weakness..... They didn't retain enough internal corporate know-hows to really challenge service providers."*

Similarly, P3 admitted that he and the other two contract managers and coordinators (P2 and P4) were relatively inexperienced by saying: *"the other two, P2 and P4, have been contract coordinator for 2-3 years. I've only come into that area in the last 6-8 months. (quoted from Appendix I)"* Since they had no prior experience in managing such contracts and had not been involved in the contract negotiation, it was not surprising that they just did their best to fulfil the requirements set out in the SLA within these three major outsourcing contracts. No attempt was made to implement any formal IS/IT investment evaluation or benefits realisation methodology. Moreover, as can be seen from the previous issues they did not try to educate themselves with these formal methodologies.

There appeared to be an “organisational memory gap” where units within the Department possessed knowledge of different sorts about the entire IS/IT systems development cycle. However, the knowledge did not seem to be shared by all units because different units participated in different stages of the cycle. Moreover, since many IS/IT staff were transferred to the external outsourcing contractors, this had decreased the Department’s shared knowledge and organisational linkages (Cormack et al., 2001). It is arguable that the Department’s whole outsourcing process would be even more successful if the participants were involved in both the original tendering and outsourcing contracts negotiation processes as well as systems development process.

By not involving the users in the original contracts negotiation process the stakeholders may not have perceived these outsourcing contracts as successful as it could be in terms of user satisfaction, user attitude, and systems usage. For instance, a recent report commissioned by the Australian Federal Government had found that the lack of a consistent manager who could be held responsible was one of the main reasons for IS/IT project failures (Barton, 2002). Therefore, as mentioned previously user participation or involvement in the contract development process is important because it has a positive influence on the successful outcome of system implementation (Lin and Shao, 2000; Tait and Vessey, 1988).

#### **7.3.14. Theme 14: General lack of commitment by contractors**

According to the guidelines set out by the State Supply Commission (SSC, 1998b), partnership can help both parties to: (a) share the risks and benefits between the outsourcers and the contractors; (b) translate their individual objectives into common objectives; and (c) strive to achieve the same goals.

However, this did not seem to be the case for these three major outsourcing contracts despite the fact that all of them were in partnership arrangements. For instance, P7 (representative for Contractor 2) had fiercely opposed the use of the surveys because the results from the surveys could decrease the points on the scorecard and hence, penalise the contractor financially. P7’s response to the use of the customer satisfaction surveys was - *“most customer surveys are very hard sometimes to get a*



*sample of viable response. I don't know whether I or even the Department themselves would really want to sort of put a lot of weight on the credibility of the survey as relate to financial benefit or penalty..... we very strong questioned the validity of that."* This probably had demonstrated that the Contractor had not first tried to improve its ratings on the surveys (e.g., by improving Helpdesk services) but to avoid them all together in order to stave off the financial penalty. This is clearly a case of the contractor defending its interest at the expense of the Department.

Another example of the conflicting motives between the contractor and the Department was raised by P5 (the Department's CIO). P5 admitted that even partners could have different motives – *"I think we felt that ..... the Contractor 1 head office.....is sort of to maximise their profits. So there was always a push for them to charge the highest possible dollar for whatever services they deliver to us. But we were pulling in the opposite directions. So they were pushing to try to put their prices up and to get the highest returns while we were trying to give them as little as possible. So there has been a little bit of tension."* Again, this is an example of the Department doing its best to serve its interest over the interest of the contractor.

This result appears to confirm the studies conducted by several researchers which indicate that not only are many organisations from the private or public sector sceptical about partnerships (Hancox and Hackney, 2000), but also the partnership type of contract is not the most successful because the profit motive is not shared (Lacity and Hirschheim, 1994; Lacity and Willcocks, 1998). According to Kakabadse and Kakabadse (2000), contractor's commitment is dependent on periodic assessment. Their findings had implied that formal evaluation techniques such as formal IS/IT investment evaluation and benefits realisation methodologies can be useful in ensuring commitment by the contractors.

#### **7.3.15. Theme 15: Conflict between motivations and success criteria for outsourcing**

There appeared to be a conflict between the Department's motivations for outsourcing (in theme 7) and the criteria for determining the success of the contracts (in theme 8). While more than half of the participants (P1, P3, P4, P5 and P6) cited

cost saving as one of the main motivations for outsourcing, only two participants (P4 and P5) mentioned cost saving as one of the criteria for determining the success of the outsourcing contracts.

It appeared that the participants probably had different expectations regarding the outsourcing as a whole and the outsourcing contracts. It is possible that either the participants felt that the outsourcing contracts had already saved the Department some money or the saving could not be made and, therefore, should not be used as one of the criteria for determining the success of the outsourcing contracts.

#### **7.3.16. Theme 16: Restrictive government outsourcing contract guidelines**

All state departments (including the Department) must follow the contract management and outsourcing guidelines set out by the State Supply Commission (SSC, 1999c; 1999f). This was one of the reasons why the Department failed to adopt formal IS/IT investment evaluation and benefits realisation methodologies. These guidelines are quite general in nature and specify numerous principles, steps, and procedures for state departments to follow when managing the outsourcing contracts and dealing with external contractors.

Unfortunately, these guidelines did not suggest what formal IS/IT investment evaluation and benefits realisation methodologies a state department should adopt. They simply gave detailed guidelines for drafting service level agreements and outsourcing contract documents. As a result, most participants mistakenly perceived these government guidelines as formal IS/IT investment evaluation and benefits realisation methodologies. For instance, when asked about the formal IS/IT investment methodology P5 said: *“it (evaluation methodology) is all documented in the contract. So you actually need to look at the service level agreements and the performance agreements.”*

The restrictive nature of the government guidelines was also the reason why there was an embedded “contract mentality” within the Department. As mentioned in theme 10, the operation of the contracts was all based on the specifications set out in the SLAs within the outsourcing contracts. As the guidelines specify the use of the

SLAs, many participants thought that they formed part of the IS/IT investment evaluation and/or benefits realisation methodologies and should be strictly followed. For example, P1 stated that: *“the ASD contract and the BDMW contract both have scorecards and monthly they are measured against. I guess simplistically if the Unix or mainframe services are available 99.6% of the time or more during the period they get maximum points. Between 99-99.6% they lose one point and so forth. And that actually calculates out to if it’s less than the service level and the scorecard, then they are penalised financially.”*

Therefore, the state government’s outsourcing contract guidelines may be one of the reasons why the Department failed to adopt formal IS/IT investment evaluation and benefits realisation methodologies and had an embedded “contract mentality.” The number of the recent failed government IS/IT contracts and projects were indicative of the restrictive nature of the government outsourcing contract guidelines (e.g. Barton, 2002; Douglas, 1999; Mitchell, 2000a).

#### **7.3.17. Theme 17: Inability to manage the outsourcing contracts without external influence and assistance**

As mentioned in Theme 9, in order to obtain the external technical expertise and skills, the Department had outsourced some of its IS/IT functions and transferred some of its IS/IT staff to Contractor 1. However, like many other outsourcing organisations (e.g. Earl, 1996; Currie and Willcocks, 1998), the Agency appeared to be unable to manage its outsourcing contracts internally without external influence or assistance.

Despite the fact that the IS/IT staff transfer process was regarded by all participants within the Department as being highly successful, many participants (P1, P2, P5, and P7) expressed their concerns about the loss of the Department’s technical staff, and its ability to evaluate and manage these outsourcing contracts. The loss of IS/IT staff had later forced the Department to often rely on external opinion on its IS/IT requirements. For instance, P5 was very worried when asked about the loss of the Department’s technical staff: *“.....the technical people we have are gradually drifting away. If it goes on we will end up with no technical people who are able to*

*say well is that proposal we are getting from the contractor fair and reasonable.” P5 was also worried about the Department’s ability to manage these outsourcing contracts by saying that “when these contracts were first negotiated, no one internally really knew much about contract management……. You get a dilution of skills because people who are used to be systems developers per se are now contract managers or project managers.”*

P5 was clearly very concerned that the loss of so many technical staff affected the Department’s ability to manage the outsourcing contracts. The problem was compounded by the fact that none of the Department’s contract managers and coordinators had any prior experience in contract management and coordination. This could also be the reason why the Department was not able to use formal IS/IT investment evaluation and benefits realisation methodologies. They probably had no required skills in implementing these formal methodologies anyway.

Contractor 2’s representative, P7, had a similar concern about the loss of the Department’s technical staff. P7 was clearly not happy about the fact that Contractor 1 was influencing the Department’s decision-making process by saying: *“the Department didn’t retain enough internal corporate know-hows to really challenge service providers…… they (Contractor 1) have become the major source of knowledge to the Department rightly or wrongly.”*

Therefore, it appeared that the Department had probably lost too many IS/IT staff and was unable to manage its outsourcing contracts independently. In this situation, Contractor 1 was probably the ideal choice for the Department to turn to when it required some external technical opinions and assistance. As mentioned in Theme 9, the Department’s inability to independently manage its outsourcing contracts is consistent with the findings by Jennings (1997) where the author stressed that there is a need to retain an understanding of the outsourced activities and technologies in order to assist the organisation to monitor outsourcing decisions.

## 7.4. Summary

This chapter was not intended to provide detailed analysis and discussion of the case study results. In-depth analysis and discussion of the survey (Chapter 5) and case study (Chapters 7 and 9) results will follow in Chapter 10. Instead, a brief analysis of the results was offered in this chapter and themes arising from this case study included:

- A lack of a formal IS/IT investment evaluation methodology and a lack of understanding of the evaluation approach used.
- A lack of any (formal and informal) benefits realisation methodology and a lack of understanding of benefits management practices.
- The use of an informal IS/IT investment evaluation process and a focus on quantitative IS/IT investment evaluation measures.
- Conflicting motivations for outsourcing.
- Different perceptions of success of the contracts by stakeholders.
- A conflict between motivations and success criteria for outsourcing.
- An IS/IT skill shortage within the organisation.
- An embedded contract mentality, complicated contract arrangements, over-reliance on a single contractor, lack of user involvement and participation in contract development, and general lack of commitment by contractors.
- Restrictive government outsourcing contract guidelines.
- Inability to manage the outsourcing contracts without external influence and assistance.

While the above issues were mostly negative, the organisation continued to operate fairly successfully. However, the mostly negative issues shown above indicated weaknesses in the way the organisation dealt with the level of formality in applying the methodologies. The problems mentioned in Themes 6-17 were mostly caused by the lack of attention to the IS/IT investment evaluation (as mentioned in Themes 1

and 3) and benefits realisation (as mentioned in Themes 2 and 5). For example, if both formal methodologies were adopted by the Department, more qualitative measures may have been used to evaluate the outsourcing contracts (and would have avoided the problem in Theme 6: a focus on quantitative IS/IT investment evaluation measures). This, in turn, may allow the Department to realise some of the problems (e.g. Theme 10: embedded contract mentality) existed within the organisation and invested in appropriate amount of time and efforts to reduce or eliminate at least some of the problems.

Therefore, there was a need to conduct another case study to see whether an organisation with either a formal IS/IT investment evaluation process or a formal benefits realisation methodology would overcome some of the problems faced by the Department. As we will see in the next case study (Chapter 9), the adoption of a formal benefits realisation methodology enabled the organisation (the Agency) to overcome some of the problems (e.g. Theme 17: inability to manage the outsourcing contracts without external influence and assistance) faced by the Department.

Therefore, it could be seen that the adoption of a formal methodology would be beneficial to the organisation. Then why did the Department fail to adopt both the IS/IT investment evaluation and benefits realisation methodologies? The government regulation and the costs were most likely the main reasons. Would a formal IS/IT investment evaluation and benefits realisation methodology help the Department in getting rid some of the problems or issues mentioned above? The Agency with a formal benefits realisation methodology was chosen as an ideal organisation to assist the researcher in answers some of the questions listed above. These issues will be further elaborated in Chapter 9.

Many of the issues arising from this case study confirmed prior non-Australian research, the survey (in Chapter 5) and case study 2 (in Chapter 9). As mentioned earlier, the case study 2 was conducted to further investigate these revised problems and issues before a framework based on the fit between theory and practice of IS/IT investment evaluation by large Australian organisations was developed (research objective 2). These two case studies had revealed factors which would lead to success in managing the IS/IT investment evaluation and benefits realisation.

In the next chapter (Chapter 8), a brief overview of the second case study conducted within another major state government department will be provided. Then the results from the survey and case studies 1 and 2 were analysed and the framework was developed in Chapter 10 (Research Findings and Discussion). Finally, the conclusion will be presented in the final chapter (Chapter 11).

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# Chapter 8

## Case 2 Description

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### 8.1. Introduction

This chapter provides a brief overview of the second case study, which was conducted within a major Western Australian State Government agency (hereafter referred to as the “Agency”). The objective of this case study was to develop a framework based on the fit between theory and practice of benefits realisation by large Australian organisations by investigating an organisation that did employ a known, formal benefits realisation methodology.

The chapter is organised by first giving a short description of the Agency, then providing a brief introduction to the Agency’s Delta Program, two major external contractors, and eight participants interviewed, then presenting the Agency’s two major contracts. The rationale and application of IS/IT investment evaluation and benefits realisation process by the Agency will also be discussed.

### 8.2. The Case Study

The opportunity to conduct this case study research at an important Western Australian State Government agency (the Agency) arose from a series of discussions about this PhD research between the researcher’s supervisor and a senior executive from one of the Agency’s external contractors. During one of several conversations, the senior executive had revealed that a formal benefits realisation methodology had just been adopted by the contractor to provide the Agency with an accurate picture of



the potential benefits of its outsourcing contracts and IS/IT investments and to identify all the initiatives and changes that need to be put in place to realise these benefits. As the organisation in the first case study failed to adopt any benefits realisation methodology or technique, this would be a good opportunity for comparison. Therefore, the researcher's supervisor sought and was granted the permission, on behalf of the researcher, to conduct a case study in the organisation.

Following discussions and subsequent submission of a brief proposal detailing the research topic, a senior manager in the Agency confirmed his willingness to assist the researcher in undertaking a case study research in the organisation and to assist in gaining cooperation from their two major external contractors to take part in this research.

The case study was carried out between March and May, 2001. In total, seven interviews (with eight participants) were conducted with four participants from the Agency and two participants from each of the two major external contractors. The questions asked during the interview were related to the formal benefits realisation methodology used by the Agency, major outsourcing contracts, contractual relationship between the Agency and the contractors, and IS/IT investment evaluation methodology or technique deployed. All interviews were taped and the transcripts were sent to the interviewees for validation. None of the interviewees had any amendment to their transcripts. In cases where there were differences of opinion between participants, either follow-up telephone interviews were conducted or emails were sent to clarify their positions. In some instances, interesting differences of opinion persisted.

### **8.3. The Organisation**

The Agency was responsible for providing an important public service within Western Australia. It had the world's largest single jurisdiction and covers an area of 2.5 million square kilometres (The Agency, 2000b). It had more than 6200 employees, with a structure comprising 4 regions, 15 districts and 160 offices (The Agency, 2000b). In 1999-2000, the State Government had provided more than A\$465 million to the Agency to provide services to the community of Western

Australia (The Agency, 2000b). The mission of the Agency was to create a safer and more secure Western Australia by providing quality services (The Agency, 2000a).

The Agency's five main functions were as follows:

- (1) Prevention and control of crime - to reduce the incidence of crime, to maximise the apprehension rate of offenders, and to promote community awareness of a contribution to crime prevention programs.
- (2) Maintenance of the peace - to preserve public order and promote a sense of security in the community.
- (3) Traffic management and road safety - to minimise traffic crashes, and to identify, develop, promote as well as maintain new or alternative methods of traffic management and road safety.
- (4) Emergency management coordination - to coordinate the development and implementation of state-wide emergency management arrangements and provide coordination among combat authorities during major emergencies.
- (5) Assisting members of the community in times of emergency and need - to provide a 24 hour service which was responsive to individual needs and to act as a willing and effective first point of call.

(The Agency, 1998)

Consistent with its mission and five main functions, the Agency's statement of common values and eight strategic intentions defined the desired style and positioning of the organisation and provided direction on its approach to service delivery. The statement of common values put forward the Agency's commitment towards ethics, customers, people, service, equality, courtesy, victims, creativity, accountability, and integrated teamwork (the Agency, 1998). These values supported the eight strategic intentions of the Agency which were as follows:

- (1) Customer focus - understanding and meeting community needs through communication and consultation.
- (2) Community leadership - initiating and coordinating community-wide efforts aimed at enhancing community safety and security.
- (3) Localised service delivery - ensuring the services provided by the

Agency are localised to meet the differing needs of local communities.

- (4) Problem solving - through greater use of information and intelligence, be more pro-active by applying innovation and creativity in the development of solutions.
- (5) Strategic partnerships - developing purposeful partnerships with the community and other organisations to ensure the input and contribution of others on matters of safety and security.
- (6) Managerial accountability - ensuring all individuals act with the highest level of professionalism and integrity and be responsible and accountable for their decisions and actions.
- (7) Effective management of resources - allocating and utilising resources in the most efficient and effective manner, in keeping with community priorities.
- (8) Commitment to developing and motivating our people - providing staff with the knowledge, confidence and ability to make decisions. Empowering staff, encouraging innovation and imagination, rewarding and recognising the contributions of individuals and teams.

(The Agency, 1998)

#### **8.4. The Delta Program**

Since September 1994, the Agency had undertaken a program called the Delta Program which was a continuous organisational change process aimed at applying best practices in all facets of management and operations (The Agency, 2001). The objective of the Delta Program was to transform the Agency's *Style, Standards, Structure and Systems* (4 phases) to ensure the safety and security needs of the community by providing quality service (The Agency, 2001). Moreover, the Delta Program was a focused, structured reform of the Agency with the intended goal of creating a template exemplifying world class service by:

- (1) Redefining its core business.
- (2) Adopting a new fresh approach/style to the delivery of its service.
- (3) Adopting a more strategic/problem solving approach to the management of its business.

- (4) Establishing the standards and common values upon which the Agency will function.

(The Agency, 2001)

Furthermore, the Delta Program was a holistic transformation of the Agency to bring about profound, radical and lasting change (The Agency, 2001). It was launched after an extensive process of consultation with the community, key stakeholders, management and employees of the Agency was undertaken, with full support of the Western Australian Government (The Agency, 2001). This had also resulted in the development of the Agency's new mission statement (see above). Finally, the Agency's mission statement, five main functions, eight strategic intentions, and the statement of common values formed the basis of the Agency's purpose and direction (The Agency, 2001). It was the blueprint for the Delta Program and the profound transformation of the Agency (The Agency, 2001).

There were two major projects being undertaken by the Agency under the Delta Program - DCAT and CADCOM. Three areas of the Agency, in particular, had important roles to play under the Delta Program - Board of Management, Major Projects Unit (MPU), and Value Management Office (VMO). The details of these two projects as well as the functions and responsibilities of these three areas will be further elaborated in the subsequent sections.

#### **8.4.1. The DCAT Project**

Although a large component of the Delta Program had been completed, the Agency was persevering along the path of transformation and continuous improvement (The Agency, 2001). The last phase (*Systems*) of the Delta Program, known as the Delta Communications and Information Technology Project (DCAT) was being prepared in order to define the information needs for the future and to review the operational and administrative processes (The Agency, 2000a).

As part of the Western Australian State Government's A\$170 million commitment for total business re-engineering within the organisation, the Agency signed a five-year partnership contract with a contractor to deliver its DCAT project in December

1998 (Dearne, 2001). It comprised a number of components designed to streamline the Agency's processes, and improve efficiency as well as effectiveness (The Agency, 2000a).

The aim of the DCAT project was to supply frontline applications for operational officers, and involved a total overhaul of the Agency's processes and systems (Dearne, 2001). It had been systematically implemented over five years in three stages that:

- (1) Allowed the current systems to stay in business and transcend the Year 2000.
- (2) Supplied frontline applications for operational staff.
- (3) Enhanced interfaces between the community and the Agency .

(The Agency, 2000a)

In addition, the DCAT project comprised a number of components designed to support the re-engineering of its processes and systems to deliver increased operational effectiveness and efficiency:

- (1) The network infrastructure upgrade project - provided the organisation with standardised up-to-date computers, associated equipment and the latest levels of business software in order to deliver future applications as well as to support across a range of platforms including LAN, WAN and desktop.
- (2) Satellite based services - provided network services utilising satellite technology to country stations and would also be used to support the new applications being progressively deployed as part of DCAT.
- (3) The "of interest" system - provided a single focal point of information enabling officers to quickly identify and view all known information about an entity and its links to other persons, vehicles, locations property and incidents.
- (4) The incident management system - recorded details of all incidents that are of interest to the Agency or require some action.
- (5) The incident pattern analysis system - automated the production of incident statistics and mapping so the Agency's employees can have access to operationally useful incident pattern information plus other

related details such as people, vehicles, locations and property.

- (6) The administration of justice system - covered brief preparation, legal reference and custody.

(The Agency, 2000a)

The DCAT project was expected to provide the following benefits to the Agency:

- (1) Consolidate effective work processes.
- (2) Improve work performance and productivity.
- (3) Provide more effective use of resources.
- (4) Provide greater customer satisfaction.
- (5) Increase the Agency's employees safety.
- (6) Enhance exchange of inter-agency information.

(The Agency, 2000a)

#### **8.4.2. The CADCOM Project**

Another major project was CADCOM (Call Talking, Computer Aided Dispatch and Related Communications Project). In February, 2001, BAE Systems won the contract to build the CADCOM services with Simoco Pacific providing the radio expertise, Printrak the computer-aided dispatch and communications functionality, Cerulean the switching systems, while John Holland Constructions was building a huge centre to house the facility (Dearne, 2001). The cost of the project was around A\$46 million (Dearne, 2001).

Basically, the CADCOM project sought to replace the core communications technology of the Agency operations. The agency intended to equip its service with modern standards compliant communications and operations infrastructure with the capability and functionality to meet requirements for 10 years from the date of practical completion of the CADCOM system (The Agency, 2000a). Some of the expected benefits of the CADCOM project included the following:

- (1) Improved public safety through improved response.
- (2) Improved Agency's safety, productivity and performance.
- (3) Improved Agency's resource and emergency management.
- (4) Expandable and flexible operations.

- (5) Integration with Emergency Service Organisations.
- (6) Improved security of information.

(The Agency, 2000a)

#### **8.4.3. Board of Management**

The Board of Management consisted of the Agency's most senior executives and had the overall responsibility for the Delta Program. The organisational role of the Board of Management to manage benefits under the Delta Program was as follows:

- (1) To decide which programs to invest in based on value cases and balance of risk.
- (2) To monitor progress on budget/schedule, changes to business case assumptions, and delivered results.
- (3) To provide necessary funding.
- (4) To cancel or refocus programs when required.

(Contractor 4, 2000c)

#### **8.4.4. Major Projects Unit (MPU)**

The Major Projects Unit (MPU) was created under the Delta Program. It was established with about 80 employees to coordinate all major projects within the Agency to ensure that all new systems introduced meet the administrative and operational needs of the organisation and that the Agency was ready for the changes that these projects would bring.

MPU had the main responsibility for managing, implementing, and identifying the IS/IT benefits. MPU also had to make sure that the benefits the Agency wished to obtain were realisable and in line with the government's best practice. One of the objectives of the MPU was to implement the IS/IT benefits realisation process across the entire organisation, so the Agency's Board of Management could make decisions about which projects to fund.

There were approximately 80 candidate projects that formed the Program of Works which spanned 5 years. These candidate projects were all subject to funding and had

to compete with one another and pass through a rigorous process before they were accepted. They were all managed by MPU. Of those, DCAT and CADCOM were two of the most important ones.

#### **8.4.5. Value Management Office (VMO)**

The Value Management Office (VMO) was created as part of the DCAT project and is part of the Major Projects Unit (MPU). It was established to: (a) assist the MPU to identify and prioritise projects based on their respective costs, benefits, and risk (investment management); and (b) assist the Agency in the tracking and reporting of the actual benefits arising from the implementation of these projects (benefits management) (Contractor 4, 2000b).

Its main functions included:

- (1) To assist project sponsors with developing value cases, and benefits realisation plans and their reporting.
- (2) To coach project teams in benefits management.
- (3) To solve problems and make the whole process easier for the stations and districts.
- (4) To implement changes and review the outcomes to make sure that its evaluation metrics were correct.
- (5) To narrow the gap between day-to-day operational/tactical needs and strategic needs of the business.
- (6) To modify and streamline the reporting process when required.
- (7) To coach operational staff so they understand the management drivers better.
- (8) To report to the business system owners and other stakeholders regarding the current status of the applications that have been rolled out; and
- (9) To make sure the benefits are actually realised at the local level (districts).



## 8.5. Major External Contractors

At the time of undertaking this research, the Agency had two major contractors for its outsourced IT functions. The names of the contractors are not revealed for reasons of confidentiality. Instead, these two major external contractors are labelled as Contractor 1 and Contractor 4 (Table 10.1). Please note that Contractor 1 won the BDMW contract, as mentioned earlier in Chapter 6, and was providing IS/IT services to both the Department (Case 1) and the Agency in Case 2.

| Contractor   | Contract Components   |
|--------------|---|
| Contractor 1 | <ul style="list-style-type: none"><li>• BDMW<ul style="list-style-type: none"><li>▪ General infrastructure</li><li>▪ Mid-range support</li><li>▪ RMIS SAP support</li><li>▪ Network infrastructure</li><li>▪ Mainframe and Mid-range support services</li></ul></li></ul> |
| Contractor 4 | <ul style="list-style-type: none"><li>• Partnership<ul style="list-style-type: none"><li>▪ Benefits realisation</li><li>▪ Change management</li></ul></li></ul>   |

Table 8.1: The Agency's two major external contractors

### 8.5.1. Contractor 1

Contractor 1 was same Contractor 1 of Case 1. (Please refer to Chapter 6 for more detail.)

### 8.5.2. Contractor 4

Contractor 4 was a leading global provider of e-consulting services and business solutions to Fortune 1000 companies as well as to Internet start-ups (Contractor 4, 2000a). Its mission was to help its clients achieve tangible business results from their information technology investments (Contractor 4, 2000a).

A strategic member of the Fujitsu family of companies, Contractor 4 employed over 9000 highly trained professionals in 65 offices worldwide (Contractor 4, 2000a). Contractor 4 had 27 years of experience in managing large-scale systems development and electronic integration projects, combined with expertise in

management consulting and emerging technologies. Its annual revenue was close to US\$900 million for 2000 (Contractor 4, 2000a).

At the centre of Contractor 4's service offering was an innovative and unique Benefits Realisation Approach. Based on its proprietary ResultStation, an integrated suite of methods, techniques and tools developed by Contractor 4 itself, it provided its clients with an accurate picture of the potential benefits of their business and IS/IT investments, and identified all the initiatives and changes that needed to be put in place to achieve these benefits (Truax, 1997). According to Contractor 4, at the heart of this process was a customer-tested approach for identifying all business benefits clearly, along with the conditions, change processes and management actions required to achieve them (Truax, 1997).

| <b>Participant</b> | <b>Position</b>               | <b>Organisation</b> |
|--------------------|-------------------------------|---------------------|
| P10                | Project Director              | The Agency          |
| P11                | Associate Consulting Director | Contractor 4        |
| P12                | Deputy Director               | The Agency          |
| P13                | Business Manager              | The Agency          |
| P14                | Director                      | The Agency          |
| P15                | Project Manager               | Contractor 4        |
| P16                | Systems and Network Manager   | Contractor 1        |
| P17                | Service Delivery Manager      | Contractor 1        |

Table 8.2: Profiles of interview participants

## **8.6. Participants**

As mentioned earlier, the interviews with the participants for this case study were conducted between March and May, 2001. A total of eight participants took part in seven separate interviews. Four participants were from the Agency, and two participants were from each of the two major external contractors. Interviews with the participants usually lasted between twenty minutes and an hour, depending upon time restrictions imposed by the participants. All participants were assured of anonymity so as to promote open discussions. In each case, the participant was involved with at least one of the Agency's two major contracts.

The profiles do not contain the names of the participants for reasons of confidentiality. The participant interviewees (Table 8.2 above) are labelled as P10, P11, P12, P13, P14, P15, P16, and P17).

The interviews participants' responsibilities and tasks associated with these external contracts are also listed below (Table 8.3).

| <b>Participant</b> | <b>Responsibilities &amp; Tasks</b>  |
|--------------------|--|
| P10                | <ul style="list-style-type: none"> <li>• To bring the business perspective to the Value Management Office (VMO) and work in conjunction with P11</li> </ul>  |
| P11                | <ul style="list-style-type: none"> <li>• Is a business partner in the delivery of the Delta Change Program</li> <li>• To specifically focus on IT investments</li> <li>• Is a manager of Contractor 2, reporting to P10</li> <li>• To manage the Architecture Office which is the IT direction of the Agency</li> </ul>  |
| P12                | <ul style="list-style-type: none"> <li>• To manage projects that run concurrently</li> <li>• To develop potential project for inclusion in the program of works, using VMO type processes</li> </ul>   |
| P13                | <ul style="list-style-type: none"> <li>• Is a new role currently evolving</li> <li>• Is a business system manager for Major Projects Unit (MPU)</li> <li>• To help the Agency get ready for the change that's about to come on-board</li> </ul>  |
| P14                | <ul style="list-style-type: none"> <li>• Is in charge of the outcome and delivery of the various projects undertaken by the Major Projects Unit (MPU)</li> </ul>   |
| P15                | <ul style="list-style-type: none"> <li>• Has an over-arching contract management role (operational aspect rather than delivery aspect) which looks after: <ul style="list-style-type: none"> <li>▪ Network and desktop server infrastructure</li> <li>▪ Application support &amp; maintenance</li> <li>▪ Mid-range infrastructure</li> </ul> </li> <li>• To facilitate with the contractors and making sure, not just they're delivering their SLAs but also they are pro-active and delivering value for money to the organisation</li> </ul> |
| P16                | <ul style="list-style-type: none"> <li>• Is responsible for complete network team- WAN &amp; LAN</li> <li>• Is responsible for assistance support team- all services throughout the Agency</li> </ul>  |
| P17                | <ul style="list-style-type: none"> <li>• To ensure that the infrastructure services are delivered to the Agency on time and on budget</li> </ul>   |

Table 8.3: Responsibilities of interview participants

A simplified organisation chart for the Agency is shown in Figure 8.1 below.

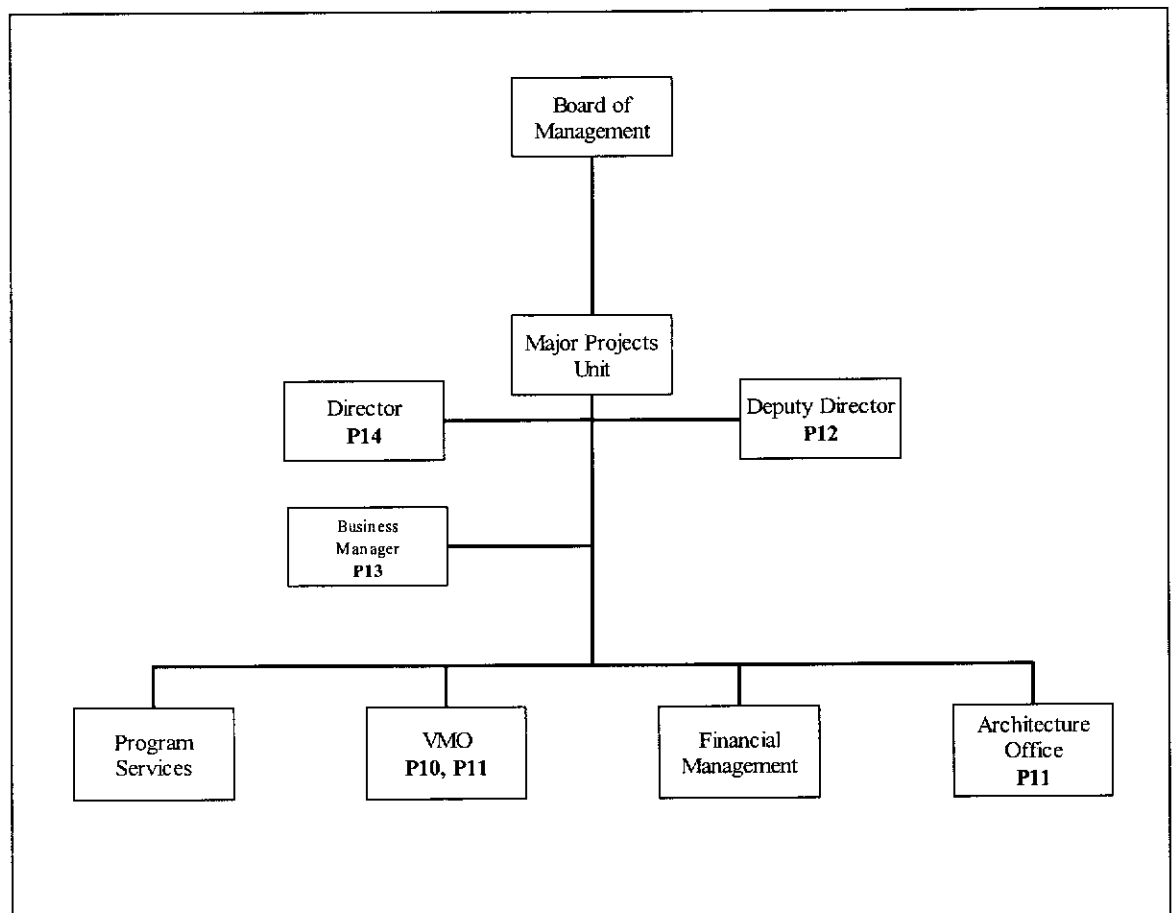


Figure 8.1: A simplified organisational chart for the Agency

## **8.7. Major Outsourcing Contracts**

As mentioned in Chapter 6, the landmark West Australian report by McCarrey (1993) laid the foundation for many of the WA State Government agencies to outsource their IS/IT functions. The McCarrey report suggested to the State Government that money could be saved as a result of outsourcing non-core business functions.

Therefore, as part of the government reform strategy, the Agency outsourced most of its IS/IT functions to Contractor 1. In addition, a five year partnership was entered with Contractor 4 to support the business re-engineering of the Agency's processes

and systems, and to ensure that the benefits expected to be realised from the implementation of new projects were actually realised and reinvested.

This second case study looked at the Agency's two main external contracts – BDMW and Partnership (Table 8.4). The contractors for these 2 major contracts were Contractor 1 and Contractor 4.

| <b>External Contract</b> | <b>External Contractor</b> | <b>Year Commenced</b> | <b>Due to Complete</b> |
|--------------------------|----------------------------|-----------------------|------------------------|
| BDMW                     | Contractor 1               | 1999                  | June, 2002             |
| Partnership              | Contractor 4               | 1998                  | December, 2003         |

Table 8.4: The Agency's two main external contracts

There were several motivations for the Agency's outsourcing policy. These included:

- (1) To reduce cost or save money over a period of time - In Western Australia, independent surveys conducted during the first three years following the introduction of competitive tendering and contracting (outsourcing) reported average savings of between 20% and 24% (MOPC, 2000).
- (2) To access IS/IT expertise that was not available within the Agency.
- (3) To find the best solutions, rather than contracting out for the sake of it - the choice between retention of an in-house service and contracting out was based on which option was better for customers and for the government as a whole (MOPC, 2000).
- (4) To free up more resources to concentrate on core duties.
- (5) To follow the State Government's outsourcing policy.

At the time of writing the thesis, only mainframe, operations and applications services were still retained in-house and the Agency was likely to outsource them in the next few years. The only IS/IT function which would not be outsourced was related to the in-house security provision.

### 8.7.1. The BDMW Contract

All of the Agency's external outsourcing contracts with Contractor 1 were part of BDMW consortium contract arrangement (BDMW contract) - "Contract for the Provision of Mainframe, Server Network and Application Support Services." As mentioned previously, the BDMW consortium contract arrangement involved 6 state departments – the Department, Department of Land Administration, Main Roads WA, Water Corporation WA, Ministry of Justice, and the Agency. The BDMW contract provides different services for each of the six state departments.

The Agency originally signed the contract with another external contractor, GE Capital IT Solutions (GECITS), in 1999. However, GECITS was taken over by Contractor 1 six months after signing of the contract. In total, five individual outsourcing arrangements under the BDMW contract were signed between the Agency and Contractor 1. Four of them were signed in 1999 and one in 2000. All of these arrangements were due for renewal on 30 June, 2002 (Figure 8.2).

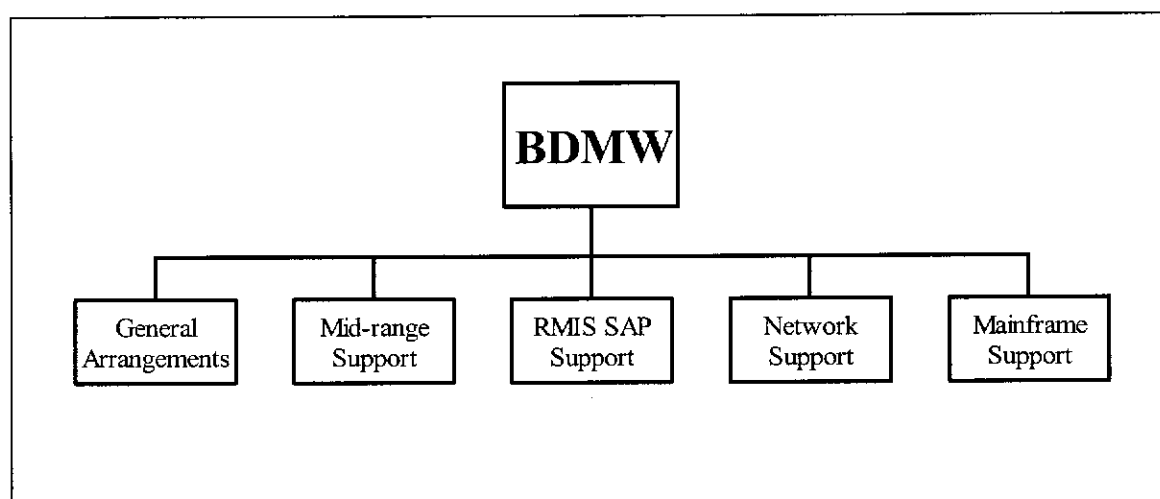


Figure 8.2: Components of the BDMW contract

The services provided under the Agency's BDMW contract included main administration, general system application, network support and maintenance, service support, desktop support, helpdesk maintenance, technology development, SOE (standard operating environment, and mid-range system (Unix & NT services). The services provided under the BDMW contract were expected to give the Agency the ability to: (1) inquire on cases from district to district; (2) communicate with

anyone in the Agency via email; (3) shift files quickly from station to station; (4) move staff more easily and quickly; and (5) set up new task force more quickly.

After signing the BDMW contract, four of the Agency's IT staff were transferred to Contractor 1. One resigned very quickly because he moved into a too senior level position but the other three seemed to be happy within Contractor 1. Those who were not taken by Contractor 1 had remained within the Agency but were not given permanent responsibilities.

### **8.7.2. The Partnership Contract**

As mentioned earlier in this chapter, the Agency entered into a five-year partnership with Contractor 4 in December 1998 in order to facilitate the implementation of the DCAT project. The Contractor 4's benefits realisation methodology was implemented for all projects. The Agency expected to work with Contractor 4 on BPR, developing new IT systems, overseeing the change processes, and helping the Agency to reap the benefits. The Partnership contract was expected to bring the Agency the following benefits:

- (1) Reduction in staff numbers to run the local operation centre.
- (2) Increase in efficiency because staff were expected to do a number of roles (rather than just one) utilising new technology.
- (3) Increase in productivity by operational officers because they could file reports quickly from a mobile terminal inside their vehicles.

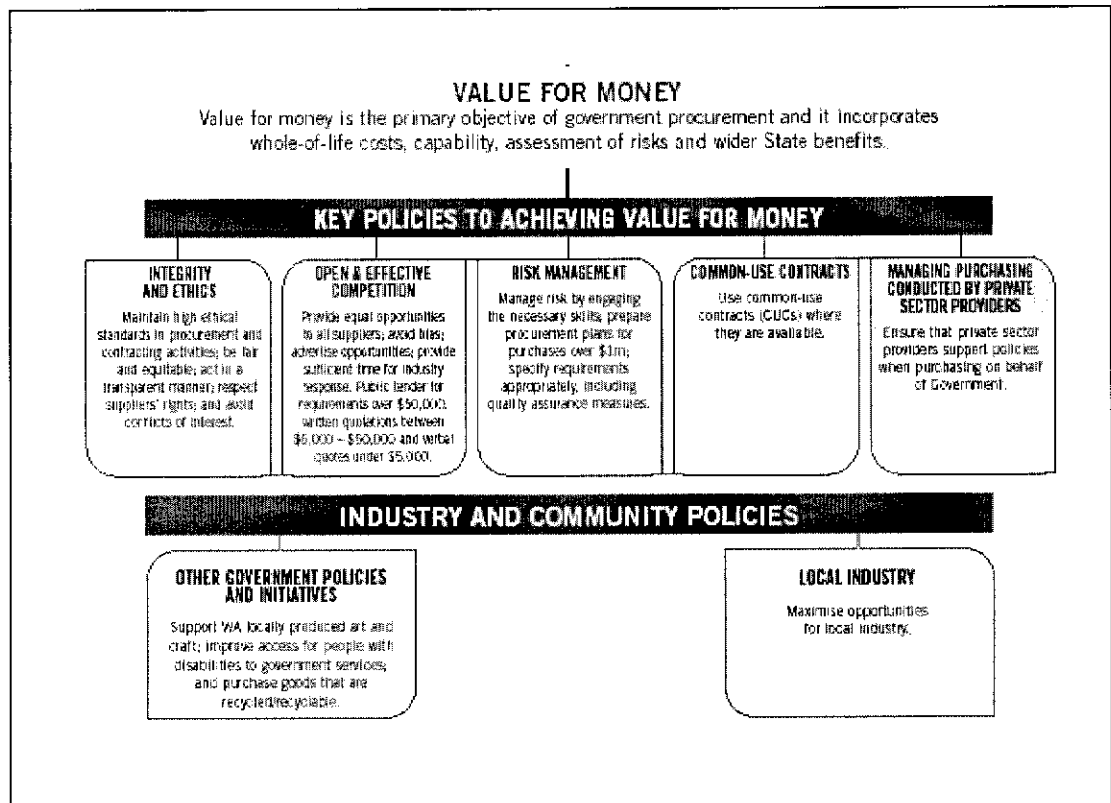
The delivery phase of the early DCAT projects was commenced, and the Agency began to achieve the business benefits that underpin DCAT projects.

## **8.8. The Tendering Process**

As mentioned in Chapter 6, the State Government's outsourcing policy was driven by value for money considerations (Figure 8.3). It was a policy which sought to find the best value for money solutions regardless of whether it was within the existing structure within the government or whether it was to be delivered from an external organisation. The stated policy was for meeting the function of the government and

the market could be tested competitively through a tender process. The tendering process would tend to produce comparatively better performance although it probably would not result in lower prices than directly negotiated contracts (Domberger et al., 2000).

The tendering and contracting policy and guidelines were drafted by the State Supply Commission (SSC, 1999c) and Australian Procurement and Construction Council (APCC, 2000a) to provide government agencies a logical and easy-to-use guide to government purchasing and contracting with a focus on the objective of value for money. It was under the policy and guidelines that the BDMW and the Partnership contracts were put out for tender by the Agency in 1998.



**Figure 8.3: Key policies to achieving value for money (Source: SSC, 1999e)**

### 8.8.1. The Process

As mentioned earlier, the Agency's tendering process involved an extensive process of justification and going through developing a business case, with verification from



the auditors. The whole tendering process for both the BDMW and the Partnership contracts was very similar to the process described in Chapter 6. They all had followed the guidelines for outsourcing, contracting, and partnering set out by the State Supply Commission (SSC, 1998b; 1999c; 2000c) and best practice guidelines published by Australian Procurement and Construction Council (APCC, 1999b). The process is shown in Figure 8.4 below.

As mentioned in Chapter 6, the four major requirements to be followed for the tendering process by any State Government agency when engaging external contractors were: (1) value for money; (2) open and effective competition; (3) integrity and ethics; and (4) supporting local industry. The aim was to enhance the capacity for regional, rural and remote small and medium sized enterprises (SMEs) to compete domestically, nationally and internationally (APCC, 1999c).

Also mentioned in Chapter 6 was that partnering was more likely to be appropriate for large complex projects or where strategic gains in cost and quality could be delivered (SSC, 1999c). It was adopted by many recent government contracts, including the Agency's Partnership contract with Contractor 4. Partnering arrangement was one of the more advanced contract management techniques which embraced joint management, process measurement and improvement tools to achieve enhanced contract performance and customer service (refer to Figure 6.5) (SSC, 1998b). Effectively, both the Agency and its contractors shared the risk and there were service level bonuses and penalties for the contractor (GECITS, 1999). This encouraged aggressive cost management and achievement of agreed performance goals (GECITS, 1999).

In essence, the Agency's partnering relationship with the contractors was established according to the following principles set out by State Supply Commission (SSC, 1998b): (1) commitment: cost savings may come from greater efficiencies in processes; (2) common objectives: identified and supported each other's objectives; (3) open communication: established principles and systems for the timely and accurate exchange of information to develop trust and efficient management; (4) ethical behaviour: fundamental to partnering; (5) teamwork: was essential and laid the foundations for continuous improvement; and (6) reduction of total "life-cycle"

cost: value for money and total process costs were continually measured, controlled and reduced.

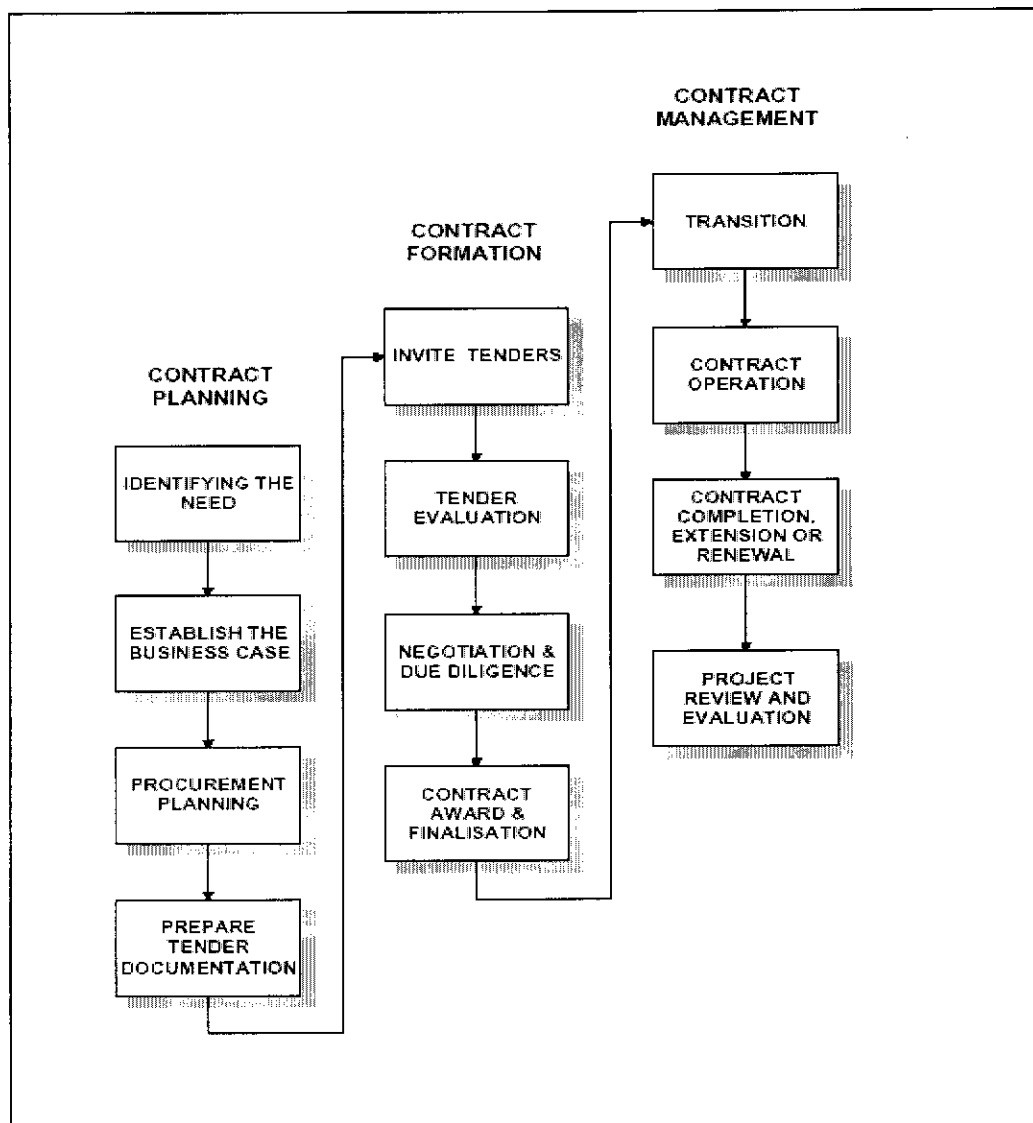


Figure 8.4: Key Steps in Contracting (Source: MOPC, 2000)

## 8.9 The IS/IT Investment Evaluation

There was no formal documented IS/IT investment evaluation methodology being formulated and used by the Agency before and after the contracts were signed. Instead, the Agency was required to follow the policy and guidelines for outsourcing or procurement of IS/IT services published by State Supply Commission (SSC, 1999c). SSC provided guidelines and template documents to help the Agency to outsource its IS/IT functions. This had provided a fair bit of rigour for the Agency in

determining which particular contractor(s) would get a contract as the whole process was all documented, stored and recorded for later retrieval or scrutiny by external bodies. Therefore, this was actually an informal IS/IT investment evaluation process.

#### **8.9.1. The Process**

Before the contracts were signed, the salespersons from the contractors and the project managers from the Agency were generally responsible for negotiating the measures within the SLA. The Agency basically described in the documents the business outcomes that they needed from the contractors. After signing the contract, the service delivery managers from the contractors were responsible for service delivery quality and communication with their operational managers. On the other hand, contract managers from the Agency were responsible for making sure that each individual contract was in conformity with the guidelines drafted by SSC (1999c).

After the contract was awarded to the successful external outsourcing contractor, there was a need for the Agency and the contractor to prepare a transition plan and appointed a management team to deal with change issues (Figure 8.5). This included a transition out procedure which was created at the start of the contract which can be implemented should the contract fail. There was also a transition period to get into the contract when the contract started in order to sort out the service level agreement (SLA) and what the Agency and the contractor were actually going to do under the contract.

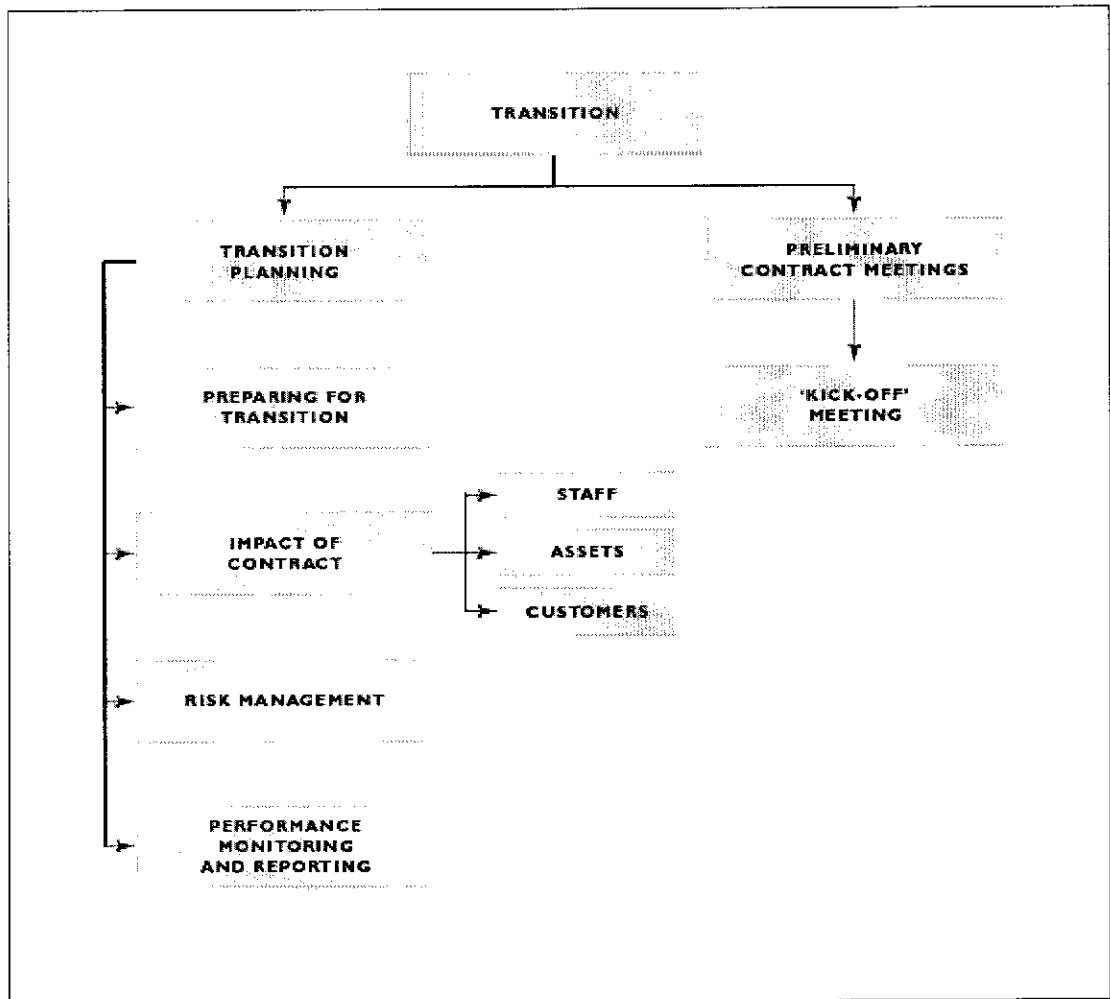


Figure 8.5: Contract transition process (Source: SSC, 1999f)

Once the contract had transitioned successfully, all parties had to finalise and implement the contract management plan by identifying, monitoring and managing any problems and risks (SSC, 1999c). The service level agreements (SLAs) were monitored and assessed by both the Agency and the contractors. Moreover, there was a series of guidelines which were introduced by the State Government - continuous improvements and best practice standards on contract management. The best practice standard ensured that business processes and methods were currently achieving the best overall outcomes for projects, nationally or internationally (APCC, 2000a). External contractors were, therefore, expected to be monitored, reviewed and/or audited during the contract period (APCC, 1997a) by the Agency. Post-contract analysis of performance may also be undertaken by either the contractors or the Agency (APCC, 1997a). In addition, best practice embraced: (1) excellent business

relationships and practices; (2) effective organisational and information systems and standards; (3) exceptional employee and workplace management policies and practices; (4) innovation and new technologies; and (5) superior time, cost, quality, and service outcomes (APCC, 1999b).

## **8.10. The Benefits Realisation Process**

Unlike the Department in the first case study, the Agency had adopted a formal benefits realisation methodology. It was the DMR Benefits Realisation Approach. The Approach basically incorporates two key features in the field of benefits realisation - (1) a documented process for identifying all benefits clearly, along with the conditions and management actions required to achieve them (including change management); and (2) a tool to allow organisations to begin by painting an accurate picture of all potential benefits that could be associated with an investment and all the actions needed to realise them (Truax, 1997). Moreover, the DMR Benefits Realisation Approach established the means of carrying out active management of benefits of the Agency in four main areas:

- (1) Business ownership - placing responsibility and accountability at the appropriate level within the business.
- (2) Change management plan - ensuring the Agency understood what needed to be done to fully exploit the capabilities provided by new technology. Driving process re-engineering through changes in an organisation was identified by the APCC (2000c) as being critical to the successful take up of IT.
- (3) Benefits tracking - ensuring benefits were realised.
- (4) Benefits reporting - ensuring agreed re-investment of time savings being applied as expected.

(Contractor 4, 2000b)

The DMR Benefits Realisation Approach firstly helped the Agency to map project strategic outcomes (e.g. reduced crime rates). This had created a very easy to understand visual tool for all involved. Then benefits realisation plans were developed at the local level and it involved buy in, confirmation of the quantum, and the commitment by the stakeholders. Furthermore, benefits realised needed to be

reported as people would try to hang on to the savings and not release them to the organisation. Finally, benefits harvested by the Agency (eg. full time equivalent (FTE) savings) could be reapplied strategically elsewhere in the organisation (reinvest the savings). At all stages of SDLC, benefits realisation needed to be considered.

The business owners (eg. senior management) were responsible for drafting the goals of the Agency. Then MPU would identify the benefits and made sure that the business processes were appropriate to the existing technology. The operational field area and the government were responsible for delivering the benefits. The supervision for delivery was through the executive command down at the Agency's headquarter. Initially, identifying benefits was done within the DCAT program. Then, MPU had to sit down with the business area and confirmed whether those benefits were achievable and measurements were right.

In terms of delivering the benefits, benefits plans were developed at local level and responsibilities were put on the officer in charge of the local station or district to drive the change and to reap the benefits. So the prime responsibility was at the local level where the change was occurring. Moreover, local central office in the VMO had people to track that and helped the line managers in actually reaping the benefits. Then the business owners and the operational groups produced monthly reports. The districts were also expected to report to Value Management Office (VMO) and VMO consolidated all of the district's reporting and produced a summary report at the program level. Therefore, at a program level the reporting was against the program benefits.

Under the DMR Benefits Realisation Approach, the expected benefits may include time savings for the Agency personnel that were defined within the business case. Then the values were refined and confirmed prior to roll-out by project team and target values were agreed by outcome (Contractor 4, 2000b). The DMR Benefits Realisation Approach also allowed the Agency to keep reminding itself what it started off as being the benefits and where it was currently at and what it intended to deliver in the end. Moreover, the benefits realisation enabled the Agency to go back and revisited the document and then started to see if there was a bit of a widening

gap between planned and realised benefits. It focused on the benefits throughout the delivery of the projects and making sure that at the end of the delivery cycle that the Agency was continuously monitoring those benefits and was actually reaping those rewards. The organisation was affected by the approach in the way that it implemented the benefits realisation process and had criteria for investment decision making process.

The key thing was to make sure that SLAs were delivered in such a way that they supported the business outcomes. This was measured progressively throughout the project to see if the benefit emerged and tracked it when it was released and was on track. There were two types of benefits - qualitative and quantitative. If it was qualitative then the local business area could retain that benefit. If it was quantitative (eg.. man hours saved) then there was a new direction given at a higher level as to where those hours would be applied (e.g. more traffic patrols or investigations).

Every project had an Agency's staff member who was a project director and a Contractor 4 partner who was a project manager. Every project was owned by someone outside the Major Projects Unit (MPU) and the project owner would be the most appropriate operational senior executive. Responsibilities of the Agency's contract manager or project director may include:

- (1) Implementing a contract management plan for the project.
- (2) Maintaining a contract buyer's guide outlining conditions of operation and access.
- (3) Reviewing the contract management process (including the plan) on a regular basis.
- (4) Monitoring the ongoing contract arrangements including any variations and extensions.
- (5) Monitoring the contractor's continuing performance against contract obligations.
- (6) Monitoring and reporting on contract expenditure including regular value for money assessment of the services provided under the maintenance agreement.

(SSC, 2000e)

In addition, the Agency agrees/directs how time savings would be used to:

- (1) Re-direct activities to other key management issues (eg. time saved on administrative duties by staff members to be re-directed to focus on road safety).
- (2) Re-deploy full time equivalents (FTEs) (eg. to redeployment pool and to under-resourced areas of the business).
- (3) Ensure districts and branches report on re-investment or re-deployment through their monthly benefits progress reports.

(Contractor 4, 2000b)

Since Contractor 4's Benefits Realisation Approach was an end-to-end process, the approach may be adapted and changed slightly to suit the organisation that is in. By adopting the approach, the Agency did not need to change the methodology although it had been customised slightly by changing the process steps (streamlining reporting process) in order to fit into the Agency's DCAT project. Also, since the Agency's contract with Contractor 4 was a partnership contract, Contractor 4 was bringing in some experience in IT type projects for the projects that the Agency developed over a number of sites over many years and the Agency was taking Contractor 4's organisational wisdom and using it in the organisation.

Moreover, by adopting the approach, the Agency had not changed much of its way of doing things. However, the approach had introduced some new ways (new skill set, comparing projects, ranking projects according to criteria) of evaluating the Agency's IS/IT projects. The approach had changed the way the Agency did things because it gave the Agency a more structured way of carrying out his work and a more conscious awareness of record management in relation to key decisions. This involved looking at the initiatives that came from within the business and then going through a fairly rigorous process whereby there was a for and against a whole range of criteria so that they could make a fairly high level candidate investment submission to see whether the projects could go into the program of works. This had affected the organisation in the way that it brought in a level playing field for all investment initiatives and making people think corporately.



## **8.11. Summary**

This chapter provided an overview of the second case study conducted at another important Western Australian state department. The overview included the descriptions of the organisation, the motivation for outsourcing, the participants, the two major IS/IT outsourcing contracts, the two major external outsourcing contractors, as well as the contract tendering, IS/IT investment evaluation, and benefits realisation processes.

In the next chapter (Chapter 9), the results from this second case study will be presented and discussed. As mentioned earlier, the main aim for the case study 2 is to further investigate the problems and issues from the case study 1 and then to develop a framework based on the fit between theory and practice of IS/IT investment evaluation by large Australian organisations (research objective 2).

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# Chapter 9

## Case 2 Analysis

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### 9.1. Introduction

This chapter is concerned with the analysis of the qualitative data collected from the Agency. The chapter starts by giving a brief introduction of the case study and its research objective, before examining the interview responses and other data collected. The ensuing sections examine the themes and issues arising from the qualitative data gathered, and presents the outcomes and findings derived from the analysis.

As mentioned earlier, the main aim for the case study 2 was to further investigate problems and issues from the case study 1 and then to develop a framework based on the fit between theory and practice of IS/IT investment evaluation by large Australian organisations (research objective 2). To satisfy this objective, semi-structured interviews, observation, and document reviews were used to gain a deeper understanding of issues surrounding current government practices and norms.

The qualitative data collected from this case study included outsourcing contract documents, annual reports, government contract documents, interviews, and other relevant outsourcing documents. Around 80 pages of interview transcripts were coded and analysed. The analysis was conducted in a cyclical manner and followed guidelines (ie. multiple interpretations) set out by Klein and Meyers (1999) (for more detail please refer to Appendix C). For reasons of confidentiality, the participants and their organisations were given coded names (Table 9.1). In some cases, references were edited in order to protect the participants' identities. However, the results did

not detract from the key objectives of this research.

| <b>Participant</b> | <b>Organisation</b> | <b>Contract(s) Involved</b> |
|--------------------|---------------------|-----------------------------|
| P10                | The Agency          | BDMW & the Partnership      |
| P11                | Contractor 4        | The Partnership             |
| P12                | The Agency          | BDMW & the Partnership      |
| P13                | The Agency          | BDMW & the Partnership      |
| P14                | The Agency          | BDMW & the Partnership      |
| P15                | Contractor 4        | The Partnership             |
| P16                | Contractor 1        | BDMW                        |
| P17                | Contractor 1        | BDMW                        |

Table 9.1: Profiles of interview participants

As mentioned in Chapter 7, the mostly negative issues shown in this first case indicated weaknesses in the way the Department dealt with the level of formality in applying the methodologies, especially the benefits realisation methodology. Therefore, this second case study aimed to investigate what may be considered a successful application of a benefits realisation methodology within another major state government agency (hereafter referred to as the “Agency”).

## **9.2. The Participants**

Eight participants were interviewed for this case study (Table 9.1). Presented below is a brief synopsis of these research participants’ profile (P10 - P17). Please note that participants P1 through to P9 were involved in the first case study (see Chapter 7) whereas P10 through to P17 participated in this (second) case study.

### **9.2.1. Participant 10**

P10 was the project director for Value Management Office (VMO) within the Agency. P10’s main task was to bring the business perspective to the VMO. In addition, P10 worked in conjunction with the external contractors.

#### **9.2.2. Participant 11**

P11 was the associate consulting director from Contractor 4. P11 was also the business partner in the delivery of the Agency's Delta Change Program which specifically focused on IT investment. In addition, P11 managed the Architecture Office which provided the IT direction of the Agency and reports to P10.

#### **9.2.3. Participant 12**

P12 was the deputy director of the Agency's Major Projects Unit (MPU) which undertook the organisation's major IS/IT projects. P12's main tasks were to: (1) manage the Agency's major projects that run concurrently; and (2) develop potential projects for inclusion in the program of works, using VMO type processes.

#### **9.2.4. Participant 13**

P13 was a senior business manager of the Major Projects Unit (MPU) within the Agency. As P13 had just been transferred to the MPU recently, P13 was still learning the benefits realisation methodology that was being managed by the Unit. P13's main task was to get the Agency ready for the change that was about to happen. At the time, P13 was responsible for implementing the Agency's CADCOM (Call Talking, Computer Aided Dispatch and Related Communications) project.

#### **9.2.5. Participant 14**

P14 was the director of the MPU (since December, 2000). P14 was in charge of the outcome and delivery of the various projects undertaken by the Unit.

#### **9.2.6. Participant 15**

P15 was a DCAT (Delta Communications and Information Technology) project manager from Contractor 4. P15 was responsible for facilitating with the other contractors and making sure that they were delivering both their SLAs and value for

money to the Agency. Moreover, P15 had an over-arching contract management role which basically looked after:

- (1) Network and desktop server infrastructure.
- (2) Application support & maintenance.
- (3) Mid-range infrastructure.

#### **9.2.7. Participant 16**

P16 was the systems and network manager for Contractor 1 and had been in this position for the past 18 months. P16 was responsible for 2 teams which were involved in the BDMW contract (please refer to Chapter 6):

- (1) Complete network team- WAN & LAN.
- (2) Assistance support team- all services throughout the Agency.

#### **9.2.8. Participant 17**

P17 was Contractor 1's service delivery manager for the BDMW contract. P17's main task was to ensure that the infrastructure services were delivered to the Agency on time and on budget.

### **9.3. The Themes**

Similar to the first case study, this case study also took an inductive approach and drew reference from published literature and linking it with the interview data, outsourcing contract documents, and other relevant materials. The process of tape recordings, manual transcription, and validation by the research participants is considered to be highly appropriate as a means of developing models and frameworks (Fowler and Jeffs, 1998).

A number of issues emerged from the analysis of the text data and the key issues are presented below in some detail. Some of the issues listed below were consistent with the findings in the literature and others were not mentioned in the literature. The issues included a lack of a formal IS/IT investment evaluation methodology and a lack of understanding of the evaluation approach used, the use of a formal benefits

realisation methodology and a good understanding of benefits management practices, the use of an informal IS/IT investment evaluation process and a focus on quantitative IS/IT investment evaluation measures, conflicting motivations for outsourcing and different perceptions of success of the contracts by stakeholders, better control over the IS/IT skill shortage within the organisation, an embedded contract mentality, lack of user involvement/participation in contract development, conflict between motivation of outsourcing and criteria for determining the success of the outsourcing contracts, general lack of commitment by contractors, restrictive government guidelines, rigorous benefits realisation process, and the ability to manage the outsourcing contracts without external influence and assistance.

These issues or themes were identified using the qualitative content analysis. For an example of how a theme was identified and developed please refer to Appendix E.

#### **9.3.1. Theme 1: Lack of formal IS/IT investment evaluation methodology**

According to Seddon et al. (2001), successful use of evaluation methodology or practices and good IT performance go hand in hand. In this case study, most participants claimed that some sort of formal methodology or process was put in place for evaluating these contracts. However, closer examination of the participants' responses reveals that what was described did not constitute a formal IS/IT investment evaluation methodology. Participants wrongly considered various contract control mechanisms as a formal IS/IT investment evaluation methodology or process. Responses to the formal methodology question included:

- (1) Measurements or evaluation instruments such as service level agreements (SLAs), monthly reports, standard contract management, standard project management methodology, and the guidelines provided by the state government (four participants).
- (2) Requests for tender (RFTs), requests for quotes (RFQs), requests for proposals (RFPs), and evaluation of RFTs (two participants).

Of these, only P13 and P15 actually acknowledged that they did not know whether a formal methodology or process was used to evaluate these outsourcing contracts because they were not involved with the initial outsourcing process or IS/IT

investment evaluation process.

Six out of eight participants (P10, P11, P12, P14, P16, and P17) claimed to have used some sort of the IS/IT investment evaluation methodology or process for these outsourcing contracts. Measurements or evaluation instruments such as service level agreements (SLAs), monthly reports, standard contract management, standard project management methodology, and the guidelines provided by the state government were mentioned by P10, P11, P14, and P16 as the IS/IT investment evaluation methodology or process used for the outsourcing contracts. Although these contract control measures and mechanisms were not formal methodologies or approaches, they did, however, constitute informal IS/IT investment evaluation approaches or processes as they were used to measure and monitor contract performance. Surprisingly, requests for tenders (RFTs), requests for quotes (RFQs), requests for proposals (RFPs), and evaluation of RFTs were cited by P12 and P17, respectively, as the IS/IT investment evaluation methodology or process for these outsourcing contracts. Table 9.2 below shows some of the participants' comments on the use of the IS/IT investment evaluation methodology or process for these outsourcing contracts.

| Participant | Comments   |
|-------------|--|
| P14         | "It's done in accordance with the Australian Quality Assurance through the Department. <i>It's a standard government model set..... there is a standard on contract management and evaluation of them.</i> It includes value for money. Government includes purchasing conditions.....So there is a series of guidelines which are introduced at the local levels which are also best practice standard on contract management." |

|     |  |
|-----|--|
| P11 | <p>“If you actually have an outsourcing contract, you actually have management contract service level agreement in place. All service levels are monitored..... with full monthly report to be submitted by the outsourcing contractors. <i>In regard to what has been measured on, their service levels are against those metrics and also areas of improvement.....</i> So not only they will report against the agreed metrics but they will be making recommendations for improvements as well. <i>And that’s standard project management methodology.....</i> So you know what your service levels are.....how many calls have been put through, the number of machines that need to be replaced, and the average time to replace them. So you actually build up your metrics when you’re actually talking about the type of service that an outsourcing organisation would supply to you..... <i>It’s a standard contract management that is applied.</i>”</p> |
| P12 | <p>“Yes, we do. <i>We use request for tenders, request for quotes (RFQ), that type of thing.</i> And we basically describe in a document the business outcomes that we need from an outsourcer. And from that, ahead of time, we’ve developed the criteria for evaluation.”</p>  |
| P16 | <p>“.....we have put in monthly reports and in there we have developed SLAs results, which shows how we are progressing, how we’re managing the calls, and whether we are meeting our contract obligations.”</p>   |
| P17 | <p>“Contractor 1 do have their own methodology for deciding whether a contract (RFTs) is worth taking or not.”</p>   |

Table 9.2: Participants’ comments on the use of the IS/IT investment evaluation methodology or process

The content analysis of the interview data also revealed that the lack of a formal IS/IT investment evaluation methodology may be due to the fact that there appeared



to be a “contract mentality.” Several participants had indicated that there was a pre-agreed set of evaluation and control mechanisms in the Service Level Agreement (SLA) within the outsourcing contracts. These included monthly reports, reviews, and regular meetings. Several participants clearly thought these contract control mechanisms were all part of the IS/IT investment evaluation methodology or process (see Table 9.2).

Therefore, it could be said that no formal IS/IT investment evaluation methodology, process, or technique (such as Information Economics (Parker et al., 1988 in Willcocks et al., 1992)) was mentioned by any participant. In fact, many organisations in practice pay little attention to the formal evaluation of IS/IT investment (Farbey et al., 1999). In addition, none of the standard government contract documents or guidelines mentioned any IS/IT investment evaluation methodology or benefits realisation methodology (SSC, 1999c; 1999f). The Agency and the contractors were left to negotiate their own SLAs. According to P16, *“it’s quite a standard thing within the industry to have a SLA. It’s a standard”*. P14 also stated that: *“it’s a standard government model set.”*

The result is consistent with findings of others (e.g., Ballantine et al. (1996)) who suggest that there is a lack of formal evaluation procedure within organisations. Taylor and Norris (1989, in Norris, 1996) indicated in their UK survey that almost half of the responding organisations could not point to any kind of process for evaluating contribution or following up promises of benefits. Apte et al. (1997) have concluded that difficulties in monitoring the performance of the outsourcing contracts is one of the most important disadvantages for outsourcing organisations (Apte et al., 1997). Sohal and Ng (1998) found in large Australian organisations that the potential of IS/IT had not been utilised to meet the competitive challenges due to inappropriate evaluation of the IS/IT investments, and 59% of the responding Australian organisations did not determine whether expected benefits were being achieved.

### **9.3.2. Theme 2: A formal IS/IT benefits realisation methodology was used**

Every participant was aware that a formal IS/IT benefits realisation methodology was

being used by the Agency for its outsourcing contracts and projects. The DMR Benefits Realisation Approach was used as an end-to-end process to assist the Agency in: (1) providing a rigorous process to select the right projects to implement; (2) placing responsibility and accountability at the appropriate level within the organisation; (3) driving process re-engineering through changes in the organisation; (4) ensuring benefits were realised; and (5) ensuring agreed re-investment of time savings applied as expected. Table 9.3 below shows some of the participants' comments on this issue.

| Participant | Comments  |
|-------------|---|
| P12         | <i>"The methodology is an end-to-end process..... the benefits realisation process, is development of plans at the local level..... So it involves their buy in and they confirm the quantum, the amount of saving and almost commit to it. .... Another aspect is the reporting. Unless you have sort of scrutiny, what occurs is no guarantee that savings will actually be ever released.....We also have another aspect which is to do with harvesting where.....we actually take those savings and reapplying them strategically elsewhere in the organisation. So the harvesting has a fair bit of rigour to it."</i>                                     |
| P14         | <i>"The methodology is basically both quantitative and qualitative. And it's designed to harvest the time saved through an improved technological product from a business process while we are doing business now..... There is an assessment done of the current work output needs and the way we're doing and then the potential investment of the benefits realised within the new replacement IT, replacement program. And of course, that is measured progressively throughout the project to see if the benefits emerge, and track it certainly when it's released and is on track. Now actually harvesting the benefits goes to a higher level....."</i> |

|     |   |
|-----|---|
| P15 | <p>“In terms of benefits for the organisation.....then making sure that at the end of the process or at the end of the delivery cycle that you are actually monitoring those benefits, that you are, in fact, reaping those rewards and refining the things to make sure that you constantly reaps those sort of rewards. <i>Contractor 4 has a methodology that the benefits realisation approach which, is as I have said, encapsulated in our whole macroscope life cycle there which allows them to, I suppose, do that in an proven manner.</i>”</p> |
|-----|---|

Table 9.3: Participants’ comments on the use of the benefits realisation methodology or process

As can be seen from Table 9.3 above, the participants indicated that a formal benefits realisation methodology was used for the Agency’s projects. In fact, almost every participant was able to describe the methodology in some detail.

Furthermore, the DMR Benefits Realisation Approach was introduced by the Agency as a formal benefits realisation methodology and it contained some processes which were helpful for the Agency’s IS/IT investment evaluation process. However, it did not constitute a formal IS/IT investment evaluation methodology.

The Agency was clearly in the minority on this issue when one considers the surveys conducted by the researcher (in Chapter 5) earlier in Australia and Ward et al. (1996) in the UK where the adoption rates of a benefits realisation methodology by large organisations were only 32.8% and 12.0%, respectively. Similarly, Sohal and Ng (1998) indicated that 59% of the responding Australian organisations did not determine whether expected benefits were achieved.

### **9.3.3. Theme 3: Lack of understanding of IS/IT investment evaluation methodology**

None of the participants mentioned any formal IS/IT investment evaluation process

or methodology (e.g. Return on Management (Strassmann, 1990 in Willcocks et al., 1992)). Instead, things like RFTs, RFQs, RFPs, SLAs, monthly reports, standard contract management, and state government guidelines were cited by the participants as the formal IS/IT investment evaluation methodology or process. The confusion indicated in Theme 1 about what constituted a formal IS/IT investment evaluation methodology demonstrated a lack of understanding of such methodologies in the Agency.

For example, when asked about the existence of a formal IS/IT investment evaluation within the Agency P12 stated that: *“Yes, we do (have formal IS/IT investment evaluation methodology). We use request for tenders, request for quotes (RFQ), that type of thing. And we basically describe in a document the business outcomes that we need from an outsourcer. And from that, ahead of time, we’ve developed the criteria for evaluation.”* Similarly, P11 also mistakenly thought SLAs form part of a formal IS/IT investment evaluation methodology or process by saying: *“if you actually have an outsourcing contract, you actually have management contract service level agreement in place. All service levels are monitored..... with full monthly report to be submitted by the outsourcing contractors. In regard to what has been measured on, their service levels are against those metrics and also areas of improvement..... So not only they will report against the agreed metrics but they will be making recommendations for improvements as well.”*

Therefore, it appeared that while the participants had a very good understanding of the benefits realisation methodology, the same could not be said for IS/IT investment evaluation. This may be because no formal IS/IT investment evaluation methodology was introduced by the Agency. The Agency (like other state departments) was required to follow the state government’s outsourcing guidelines (MOPC, 2000; SSC, 1999f). These guidelines, at best, constituted only an informal IS/IT investment evaluation process because they were too simplistic. However, almost all participants mistakenly thought these guidelines represented a formal IS/IT investment evaluation methodology. The result here is generally consistent with the findings of the researcher’s survey where most respondents mistakenly thought that traditional accounting-based measures such as NPV and ROI constituted a formal IS/IT investment evaluation methodology.

#### 9.3.4. Theme 4: Existence of an informal IS/IT investment evaluation process

Despite the fact that no formal IS/IT investment evaluation methodology or process was used by the Agency, the contract control and evaluation mechanisms or measurements specified within the SLAs or government guidelines did represent an informal IS/IT investment evaluation process. Although these informal mechanisms or measurements could not be used to totally replace a real and robust formal IS/IT investment evaluation methodology such as Balanced Scorecard (Kaplan and Norton, 1992), they did, however, assist the Agency in evaluating and measuring the performance of the outsourcing contracts. These contract control and evaluation mechanisms or measurements were largely based on the guidelines set out by the standard state government contract process and purchasing guidelines (SSC, 1999c; 1999f).

The Agency's current outsourcing evaluation processes could be partly explained by the six-stage evolutionary model (Figure 9.1) proposed by Nolan (1979). Judging from Nolan's model, the Agency's evaluation processes for the outsourced IS/IT functions may have just passed the Stage 3 (Control phase) for the following reasons:

- (1) Cost saving was not the only motive for the Agency to outsource its IS/IT functions. Access to IS/IT expertise, state government policy, and concentration on core business were other important motives for the Agency in outsourcing its IS/IT functions. For example, when asked about the motive for outsourcing P14 pointed out that *"one is it was consistent with government policy at the time. Secondly, there was a recognition especially in the IT field that the skill level changes so much..... So effectively to maintain the skilled product, you really do have to outsource..... whereas if you've got it in-house you face the chance of becoming obsolete"*.
- (2) A formal benefits realisation methodology (Contractor 4's Benefits Realisation Approach) had been implemented since 1998, before the BDMW contract was signed in 1999. This may have enabled the Agency to handle the tendering and IS/IT investment evaluation processes better than without the use of a formal methodology. For

example, P12 stated that the methodology had “..... *the rigour that is introduced in the decision-making, in reporting and in harvesting of benefits. So rigour is the key thing*”.

- (3) The Agency had expected all projects to show a return in terms of efficiency and/or effectiveness. For example, P15 said that the methodology was employed to “.....*get a handle on the return on investment*.” At that time, all projects implemented were progressing well and showing signs of improvement in efficiency and/or effectiveness.
- (4) The Agency’s formal benefits realisation methodology could assist in change management. As with any change, there were some dissatisfied users. However, with the help of the methodology, the Agency’s VMO seemed to have handled the user resistance well so far. For example, P10 pointed out that “.....*in the initial phase of program there’s resistance. But resistance backs down when they have an understanding of why they are doing the reporting, why we are using this methodology. We are finding that the more we are doing it the more mature the agency is coming with the whole methodology*”.

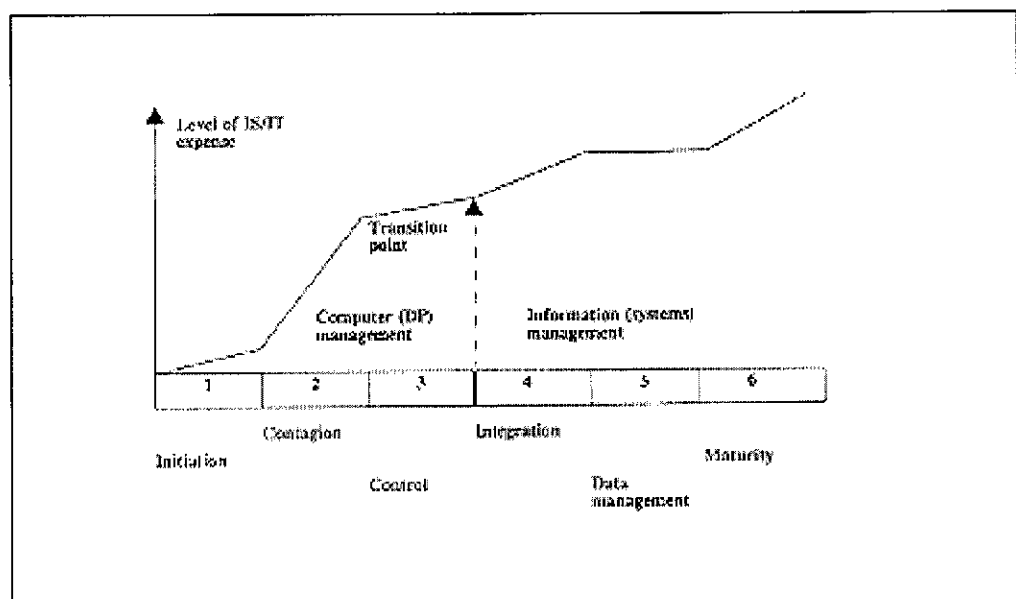


Figure 9.1. Stages of evolution of IS/IT in relation to expenditure (Nolan, 1979)

The Agency's IS/IT evaluation process probably fits Stage 4 (Integration phase). Some of the main characteristics under the evolutionary model (Gibson and Nolan, 1974) for Stage 4 which apply to the Agency were:

- (1) There had been considerable expenditure on integrating (via database) existing systems – this was one of the motives for adopting the Contractor 4's methodology. For example, P14 mentioned that *“trigger for using the methodology, quite simply, one of the reasons when it was back in 1994 when we examined all the data systems in the Agency and there were previously 257 islands with information. They were not efficient. They were not relational. Therefore, what we wanted to do is to make sure that we gain some benefits from actually using IT”*.
- (2) User accountability for systems had been established - the methodology had placed ownership and accountability of projects upon senior staff members within the Agency and expected them to overcome problems arising from the projects. For example, P14 mentioned that *“.....every project is owned by someone outside the MPU [Major Projects Unit]. So what we do is to look at the closest, most appropriate operational manager..... And they actually own it. And then it's up to regular meetings at that level to identify the issues as they arise..... And once the project is delivered back out to the operational field, the district and regional managers must report back on the benefits they are obtaining in using the new product. And of course, that is reported to the executive level. So there is an accountability factor introduced here”*.
- (3) Services were provided to users (not just solutions to problems) - projects implemented by the Agency were designed to provide solutions to some of the existing problems as well as improve users' productivity. For example, one of the Agency's projects, CADCOM, was intended to equip the organisation with modern standards compliant communications and operations infrastructure with the capability and functionality to meet users' requirements.

As can be seen from the above, an informal IS/IT investment evaluation process had

been adopted by the Agency for its outsourcing contracts and projects. The Agency's failure to adopt a formal IS/IT investment evaluation process could be partly explained by Nolan's (1979) six-stage evolutionary model (Figure 9.1). Overall, the Agency's IS/IT systems development process (IS/IT investment evaluation and benefits management processes) was probably at Stage 4 (Integration), and had not yet reached the last stage (Maturity). For example, P12 stated that *"we are an organisation that is starting to understand the process. So we have pockets in our organisation that understand it and a lot of other areas that don't. So until they get to hear what process is about, how it helps them as managers, how it would actually position them to argue projects down the track ..... but that's the change process for us."* Therefore, the Agency, as a whole, did not exhibit a good understanding of the IS/IT systems development process (in particular, the investment evaluation process) and the importance of using a formal IS/IT investment evaluation methodology.

The result is consistent with findings from the survey (in Chapter 5), first case study (in Chapter 7) and other studies (e.g. Barton, 2002; Douglas, 1999; Sohal and Ng, 1998) in which only informal IS/IT investment evaluation methods were used by the organisations to evaluate their IS/IT projects.

### **9.3.5. Theme 5: Good understanding of benefits realisation practices**

DMR Benefits Realisation Approach was introduced by Contractor 4 to the Agency before the outsourcing of its IS/IT functions because there was a concern within the organisation that IS/IT investments did not deliver value, which may have jeopardised the state government's future IS/IT funding for the Agency. For example, P12 revealed that *".....the key trigger for this agency was the external interest in what we do. Our government provides considerable funding for business process re-engineering and they, too, are looking for returns on investment..... So they want to know that the Agency is actually investing and achieving significant change in productivity improvements and where there are savings, grabbing hold of them and strategically re-investing them. .... so the externals are very interested in what we do. So they are probably the key driver to having this rigour."*

In order to ensure that the IS/IT investments delivered the promised value and



benefits as well as brought the focus back to the Agency's main business, a large internal change program was required by the organisation. For example, P14 said: *".....what we wanted to do is to make sure that we gain some benefits from actually using IT. There was an original focus like a lot of industry had in the early days that computer was simply a nice tool to have. And what they were doing was they were actually influencing in business as distinct from being business solutions. And of course through examination of why we do business the reporting process makes we realise you're going to have 180 degrees switch around the focus. So that's why we are using the benefits realisation....."*

Moreover, as indicated by P11, *"the Agency decided a number of years ago to undergo a significant change program..... The Agency recognised they were good at doing things they did. But they didn't necessarily have the business experience to manage a large change program. And what they did was they went out to tender to look for a partner who not only had a proven methodology, an end-to-end methodology to be able to identify initiatives to be able to build the initiatives with other partners, third parties, suppliers etc. but also the ability to harvest the benefits..... So the decision to introduce the methodology was the direct consequence of the Agency making a decision to introduce corporate change."* Unlike its understanding of the IS/IT investment evaluation process, the Agency had determined in the very beginning that a formal benefits realisation methodology was needed for the organisation.

Since the Agency had no technical expertise to undertake a large scale internal change program, it was important for the organisation to search for a formal benefits realisation methodology. As a result, the DMR Benefits Realisation Approach was chosen to assist the Agency to manage the change program as well as to realise the benefits from the IS/IT projects undertaken by the organisation.

However, the success of the methodology depended largely on the acceptance of the change program and understanding of the principle of the benefits realisation by the users within the Agency as a whole. This was because, as indicated by P10, *"..... some of benefits would be, as I've mentioned before, the maturity of the whole process and that's bringing about organisational change. .... I think what we are*

*after is organisational change. And we see the IT projects as the enablers. So the whole methodology is bringing about organisational change.”*

Many within the organisation had found the methodology to be very useful. For example, P13, a senior manager within the Agency, who had only recently been introduced to the methodology said: *“I’ve noticed the project that I’m working on at the moment got a little bit muddled up in relation to what we started off as being the benefits and as where we’re currently at and what we intend to deliver come October. I think I’ve found the benefits realisation very handy in that you can go back and revisit the document and then start to look at what we are getting the organisation ready to take on this change. And we start to see there is a bit of widening gap between what’s really proposed and what we are going to deliver. And it sets up some triggers for me in relation to the lowest time to back out the business and to start to communicate...I’ve found the main benefits in this methodology is that you continually go back and revisit the original business plan of what you have been telling people so in 2 years’ time when you do deliver you keep promises, unlike politicians.”*

The Agency had tried to sell and educate the principle of the methodology to everyone within the Agency. It was expected that almost all of the Agency’s staff members would understand the benefits realisation process in the not too distant future. For example, P12 stated that *“in 3, 4, 5 years’ time we’ll have an organisation which across the board particularly at the senior levels fully understands this benefits realisation process, the VMO process. And probably we will embrace it as they see it as being objective assessment, fair bit of rigour to help them actually achieve what they want to achieve. At the moment, we are not there. We are an organisation that is starting to understand the process.”*

At the same time, the Agency was trying to minimise the user resistance while maintaining the pressure for them to comply with the Agency’s change program. For example, P10 pointed out that *“.....some of the push backs we are getting in an organisation like the Agency is that the reporting mechanism that we have can be viewed as a bit of a burden on operational tasks. They are very much under pressure out there now. But we’re rolling out various applications and we’re asking them to*

*report on their agreed benefits realisation plans..... Also where the project is going to the business to formulate these benefits realisation plans, they're having to bring together various people within the district for the workshops. So they can agree on what benefits they will report on, what are the targets, that sort of thing..... We (VMO) have been seen as almost a secretariat whereby we're coaching the districts in their benefits realisation plans and their reporting..... if there are problems then we're trying to handle them, trying in some way to make it easier for them. But if there are issues then I'll talk to the various district heads and people who are involved in the reporting to try to boost them along and bring them along."* The Agency's Value Management Office (VMO) was set up not only to educate the users about the benefits realisation methodology but also to minimise the users resistance of the implementation of the methodology. This clearly demonstrated the resolve of the Agency to implement the methodology as well as ensure its acceptance.

The Agency seemed to have invested quite heavily in the methodology. The aim, as put it by P12, was not so much of *"..... a matter of changing the way we do things. It's probably introducing new ways. Contractor 4's methodology enables us to compare projects, a number of projects and to rank them according to any criteria we choose. Now as an organisation, I don't think we have that level of maturity, if that's the word, prior to Contractor 4. So the methodology is a new skill set for us."*

In summary, the Agency had discovered the need for adopting a formal benefits realisation methodology within the organisation. This was followed by selection and implementation of the DMR Benefits Realisation Approach. Furthermore, the Agency had spent a lot of resources and effort to make sure that the organisation, as a whole, understood and accepted the methodology. As mentioned previously, the Agency was in the minority on this issue when one considers the Sohal and Ng (1998) survey which indicated that 59% of responding Australian organisations did not determine whether expected benefits were being achieved.

### **9.3.6. Theme 6: Focus on quantitative IS/IT investment evaluation measures**

Many traditional accounting-based measures do not assist in measuring how IS/IT adds net value to an organisation (Willcocks, 1992a). According to Shaw and

Fairburst (1997), an exclusive use of hard and quantitative approaches could miss some of the important subtleties of performance or measurement. Similarly, the Agency's measures for investment evaluation appeared to be quantitative and traditional accounting-based. This was probably because the quantitative measures were easier to use and define than the qualitative measures. However, without employing more qualitative measures (e.g., relationship, culture and leadership) and a formal IS/IT investment evaluation methodology or process, the use of quantitative or accounting-based measures alone would not assist in full evaluation and monitoring of the performance, and status of these contracts. This is because IS/IT evaluation is "a process, or group of parallel processes, which take place at different points in time or continuously, for searching and for making explicit, quantitatively or qualitatively, all the impacts of an IT project and the program and strategy of which it is a part" (Farbey et al., 1999). Moreover, all research participants seemed to have a SLA mentality and the main objective for measuring or evaluating performance was just to fulfil the requirements under the SLA within each contract. These measures specified within the SLAs appeared to be traditional accounting-based measures. Table 9.4 below shows some of the comments by the participants on this issue.

| Participant | Comments   |
|-------------|--|
| P11         | <p>"You may talk about things like desktop maintenance..... you might have an agreement with the organisation like IBM that within 3-4 hours they would remove/replace the machine.....what you're expecting someone like IBM whoever may be, equipment supplier to actually respond each month with a number of hardware faults, <i>how many calls have been put through, the number of machines that need to be replaced, and the average time to replace them. So you actually build up your metrics when you're actually talking about the type of service that an outsourcing organisation would supply to you.</i> So it's not necessarily a methodology as such. It's a standard contract management that is applied.."</p> |

|     |   |
|-----|---|
| P16 | “.....we have put in monthly reports and in there we have developed SLAs results, which shows how we are progressing, how we’re managing the calls, and whether we are meeting our contract obligations.” |
|-----|---|

Table 9.4: Participants’ comments on the use of the traditional accounting-based measures

The result here in a state government agency seemed to echo the reports about inappropriate measurements and other problems with the Australian Federal Government’s outsourcing contracts which had led to constant budget blowouts, dubious savings, and user dissatisfaction (Barton, 2002; Douglas, 1999; Mitchell, 2000a). Studies conducted by Willcocks et al. (1995) also suggest that inadequate measurement systems to monitor the contractor’s performance is one of the major areas of weakness in IS/IT outsourcing.

### **9.3.7. Theme 7: Different Motivations for Outsourcing**

Several reasons were put forward by the participants as the main motivations or objectives for IS/IT outsourcing. Six participants (P10, P11, P12, P13, P14, and P17) indicated access to the required technical expertise as one of the main reasons for outsourcing. Four out of eight participants (P10, P11, P12, and P17) cited cost saving as one of the main motivations for outsourcing. This is consistent with the surveys conducted by Lacity and Willcocks (1998), Pinnington and Woolcock (1997), and Seddon et al. (2001) where cost saving and access to the required technical expertise or technology were cited as the top two reasons for outsourcing.

Government policy (P10, P11, and P14) and concentrating on core functions (P10, P11, and P17) were quoted by three participants each. Only two of the four contractor representatives (P11 and P17) cited access to the required technical expertise as one of the Agency’s reasons to outsource. Interestingly, two other contractor representatives (P15 and P16) either did not know the main reason for the Agency’s outsourcing or did not respond to the question. For example, P15 said: *“I don’t actually know why the Agency outsourced. So no, I cannot tell you anything on*

*that.*” This was surprising given that P15, as the Contractor 1’s project manager, should have been familiar with the benefits and motivation of outsourcing mentioned in the contract document. Alternatively, this may indicate that the contractors did not generally care much about the Agency’s motivation for outsourcing.

All of the Agency’s participants (P10, P12, P13, and P14) mentioned access to the required technical expertise as one of the main reasons for the Agency to outsource some of its IS/IT functions. For example, P14 stated that *“there was a recognition especially in the IT field that the skill level changes so much..... there’s a great demand for skilled staff. So it’s very difficult to keep them in the first place..... So effectively to maintain the skilled product, you really do have to outsource that because at least you know there’s rejuvenation of that industry and they are contracted to provide an outcome based product whereas if you’ve got it in-house you face the chance of becoming obsolete. Aligned to a particular way of thing, you don’t normally get the spread of the best product.”*

Therefore, it could be said that the Agency’s motivation for outsourcing was perceived somewhat differently by the contractors. Access to the required technical expertise was perceived by the Agency’s participants as their number one motivation for outsourcing. However, the contractors either did not know (or care?) why the Agency outsourced, or mentioned several reasons including cost saving, access to the required technical expertise, and concentrating on core functions. They could not agree on a single reason for outsourcing. This result was not really unexpected, given that virtually all contractors are in business to maximise their profit (Grover and Teng, 1993). This could run counter to the Agency’s interests and so one could not expect the contractors to be able to perceive correctly the Agency’s real motivation for outsourcing .

Therefore, the Agency probably needed to use different types of metrics to measure success of the contracts. A formal IS/IT investment evaluation methodology could allow the Agency to use many different quantitative and qualitative metrics to measure success of the contracts.

The result here is generally inconsistent with other studies (e.g. Ang and Straub,

1998; Apte et al., 1997; Seddon et al., 2001) in the sense that not all participants agreed that cost saving was the primary reason for outsourcing.

### **9.3.8. Theme 8: Success of the contracts perceived differently by stakeholders**

Several criteria for determining the success of the outsourcing contracts were put forward by the participants. Customer satisfaction (P16 and P17), achieving the contractor's projected revenue (P16 and P17), bringing value/benefits to the organisation (P13 and P14), and meeting the SLA provisions (P13 and P14) were mentioned by two participants each. Other criteria mentioned by the Agency's participants include technical competence to deliver what was required, risk factors, contractors' experience in a relevant area, and business continuity of the contractors.

Interestingly, both representatives (P16 and P17) from Contractor 1 mentioned achieving the projected revenue for themselves and satisfying customers as their only criteria for determining the success of their outsourcing contracts with the Agency. For example, P16 revealed that: *"one of the main things is obviously revenue. Ok, I believe we are meeting or coming close to our targets. Secondly, it's customer satisfaction. I say secondly but really they go hand-in-hand. We want to keep our customers. So customer satisfaction is probably the higher one. But obviously to keep the contract you need to make a profit as well. You don't want to keep a contract that isn't profitable. So they go hand-in-hand but they are the 2 key factors."* This may indicate that Contractor 1's aim was to maximise the profit while maintaining a certain level of customer satisfaction.

However, participants from the Agency seemed to have used different criteria for determining the success of the outsourcing contracts. Bringing value/benefits to the organisation, meeting the SLA provisions, and pricing/cost were mentioned by P12, P13, and P14. For example, P13 said: *"the criteria would be along the line as what do you expect your service measures when we signed the contract in relation to service provision. .... So we try and keep a close eye on that. Whether a contract is successful or not.....depending on what's worded in the service contract, we would like a service contract that not only has key performance indicators and expected service measures but during the terms of that service they have value as well."*

Similarly, P14 stated that :” *effectively it has got to be fit for purpose. It’s got to meet the contractual ..... effectively what happens is contract has specific outcomes attached to it and you simply got to meet those outcomes. If it doesn’t meet them, it is not successful.*”

From the above, it was not difficult to see that the Agency and the contractors, especially Contractor 1, had different agendas in mind despite the fact that these contracts were all the partnership type of arrangement. Contractor 1’s criteria for success seemed to be maximisation of profit/revenue while keeping the customers satisfied. This was confirmed by P14: “*Contractor 1 is more of a commercial arrangement, not so much a partnership. It is very much a commercial product on their part. Therefore, they are commercially motivated to maximise their profit out of it, as distinct from working on a win-win situation with us because there is no commercial benefit for them to invest more than they have to with us.*” On the other hand, the Agency was trying to maximise the value/benefits to the organisation while keeping costs down and to ensure that the contractors fulfil their SLA obligations.

The result here is confirmed by Lacity and Hirschheim (1994) and Lacity and Willcocks (1998) who concluded that the partnership type of contract is not always the most successful and the outsourcing contractors are not really partners because the profit motive is not shared.

#### **9.3.9. Theme 9: Better control over the IS/IT skill shortage within the organisation**

As mentioned earlier, access to the required technical expertise was the most often cited reason for outsourcing. It was mentioned by six out of eight participants (P10, P11, P12, P13, P14, and P17) because the Agency did not have the required IS/IT expertise to implement a major internal change program and outsource some of its IS/IT functions. For example, P14 stated: “*because the IT industry is still a very immature organisation, there’s a great demand for skilled staff. So it’s very difficult to keep them in the first place. And the ones we do keep aren’t necessarily the ones you want to keep. So effectively to maintain the skilled product, you really do have to outsource.....*”



In order to obtain the required technical expertise and skills from outside, the Agency had to transfer some of its IS/IT staff to Contractor 1. According to most of the participants, those who went across to Contractor 1 were quite happy about the whole process.

However, the Agency did not seem to lose the ability to manage and assess its own IS/IT needs after relinquishing the control of some of its IS/IT functions and staff, as had happened in many outsourcing organisations previously (e.g. Earl, 1996; Currie and Willcocks, 1998). This may have been because:

- (1) only a small percentage of the Agency's IS/IT staff were transferred to Contractor 1.
- (2) Contractor 4 was prohibited under the Partnership contract from recruiting any further staff from the Agency.
- (3) most of the Agency's staff were required to understand the DMR Benefits Realisation Approach.
- (4) Contractor 4 assigned at least one experienced staff member to every one of the Agency's projects under the Partnership contract. For example, P14 revealed: *"every project has an Agency staff who is a project director and has a Contractor 4 partner who is a project manager....."* and *"..... it's a breach of the contract if they do. Contractor 4 are not allowed to employ the Agency staff. That was one of the problems we could have faced because we're aware in the other organisation when the consultants come in they see the benefits of some highly skilled staff and they say why don't you come and work for us. Then the organisation..... when the contractors move out, they've lost half of the skill level."*

Unlike other outsourcing organisations, the Agency was able to manage its outsourcing contracts through its own staff without undue external influence or assistance. This was done by transferring as few IS/IT staff to Contractor 1 as possible while learning some of the required IS/IT skills and expertise from Contractor 4 under the Partnership contract. The result here is consistent with the findings by Jennings (1997) and Kakabadse and Kakabadse (2000) in which the

researchers indicated that there is a need to retain a progressive understanding of the outsourced activities and technologies because the knowledge possessed can assist the organisation to monitor outsourcing decisions and their revisions.

#### **9.3.10. Theme 10: Embedded contract mentality**

As mentioned earlier, there seemed to be a “contract mentality” as the operation of the contracts was all based on the specifications set out in the SLAs within the outsourcing contracts. Several participants clearly indicated that there was a pre-agreed set of evaluation and control mechanisms in the SLAs within the outsourcing contracts such as metrics, monthly reports, reviews, and regular meetings. Moreover, half of the participants thought these contract control mechanisms were all part of the IS/IT investment evaluation methodology or process. For example, when asked about the IS/IT investment evaluation methodology P16 said: “.....*we have put in monthly reports and in there we have developed SLAs results, which shows how we are progressing, how we’re managing the calls, and whether we are meeting our contract obligations.*”

Moreover, as indicated by most respondents in the survey (Chapter 5), the Department (Chapter 7) and the Agency (Chapter 9), there was a focus on cost saving. This could partly explain why there was a contract mentality within the organisations undertaking IS/IT projects. Since there was almost no qualitative measures being used by the organisations, a focus on the service level agreements (SLAs) by the respondents was inevitable.

The use of both a formal IS/IT investment evaluation methodology and a formal benefits realisation methodology would probably help the Agency measure these contracts’ performance more accurately and hence, realise the projected benefits. However, only a formal benefits realisation methodology (Contractor 4’s Benefits Realisation Approach) was adopted by the Agency. A formal IS/IT investment evaluation methodology was not employed. This was probably due to the fact that the Agency, as a state department, had to follow the contract guidelines set out by the state government (SSC, 1999c; 1999f). As a result, it might not have been easy for the Agency to adopt a formal IS/IT investment evaluation methodology and follow

the guidelines set out by the state government.

Nevertheless, an embedded contract mentality among the participants of the contractors and the Agency meant that the Agency was unable to get a more balanced and truthful picture of these contracts' performance. However, the implementation of a formal IS/IT investment evaluation methodology by the Agency could have improved the measurement and monitoring of the progress of the contracts since they would provide the organisation with more qualitative measures (e.g. customer satisfaction surveys or user satisfaction surveys). This would give the Agency more flexible and better measurements and assessment of the outsourcing contracts. The users within the Agency would be able to impose their influence on the contractors and the contractors would not rely solely on the service level agreements. This is because the contractors would know that they would not be paid on meeting the quantitative measures specified within the service level agreements alone. This would probably improve the actual performance of some of these contracts. The result is consistent with finding by Harris et al. (1998) in which contract flexibility could increase the success of the outsourcing contracts.

#### **9.3.11. Theme 11: Lack of user involvement/participation in contract development**

According to Tait and Vessey (1988), user participation has a positive influence on the successful outcome of system implementation. Similarly, Lee and Kim (1999) has found that user participation is a key predictor of outsourcing success. This implies that getting users involved in the development process may improve their attitudes toward the system, and enhance the importance and relevance users perceive about the system (Lin and Shao, 2000).

However, in this case, none of the participants was involved with any of the original tendering or outsourcing contracts negotiation processes which were handled by other units within the Agency. For example, P13 stated that he was not involved with any of the contract negotiation and development processes by saying: “.....*again, it's before my time. I really haven't had anything to do with it.*”

There appeared to be an “organisational memory gap” where units within the Agency possessed knowledge of different parts (e.g. investment evaluation and benefits realisation) of the IS/IT systems development cycle. However, the knowledge did not seem to be shared by all units because different units participated in different stages. It was arguable that the Agency’s whole outsourcing process would be even more successful if the participants were involved in both the original tendering and outsourcing contracts negotiation processes as well as benefits realisation process (Lee, 2001). For example, a report commissioned by the Australian Federal Government had found that there was a lack of managers who could manage the IS/IT projects throughout the whole systems development life cycle and thus could be held responsible (Barton, 2002). This was mentioned as one of the main reasons for IS/IT project failures in government’s IS/IT projects (Barton, 2002). Therefore, it can be said that user involvement in the contract development process is important because it has a positive influence on the successful outcome of system implementation (Lin and Shao, 2000; Tait and Vessey, 1988).

#### **9.3.12. Theme 12: Conflict between motivations and success criteria for outsourcing**

There appeared to be a conflict between the Agency’s motivations for outsourcing and the criteria for determining the success of the contracts. As mentioned earlier in theme 7, access to the required technical expertise was cited by six out of the eight participants as one of the motivations for outsourcing. For example, P12 stated that: *“.....another driver is the difficulty in retaining IT people. If you had someone who is good at what they do, they will do a short time in the Agency and move on to something and somewhere else easy for a lot more money. So it’s hard for us to retain competency in-house without paying a lot of money. So to get an economy of scale, it’s probably better for us to actually outsource it and let someone else to carry that risk. It’s what we have outsourced.”* This clearly showed that retaining and obtaining the required technical expertise was probably the number one reason why the Agency decided to outsource some of its IS/IT functions. In addition, cost saving was mentioned by four participants.

Therefore, one could expect that getting the required expertise and cost saving should

be mentioned by at least half of the participants as their criteria for determining the success of the outsourcing contracts. However, this was not the case. None of the participants mentioned this. Cost saving was not clearly mentioned by any participant, although obtaining value/benefits to the organisation was cited by two participants.

It appeared that the participants probably had different expectations regarding the outsourcing as a whole and the outsourcing contracts. Alternatively, the participants may have felt that the outsourcing contracts had already brought in the required technical expertise and therefore, should not be used as one of the criteria for determining the success of the outsourcing contracts.

### **9.3.13. Theme 13: General lack of commitment by contractors**

A partnership type of arrangement, according to the State Supply Commission (SSC, 1998b), should help both the outsourcing organisation and the contractors to: (a) share risks and benefits between the outsourcers and the contractors; (b) translate their individual objectives into common objectives; and (c) strive to achieve the same goals.

However, this did not seem to be the case for the Agency's outsourcing contracts despite the fact that all of them were in partnership arrangements. For instance, when asked about the criteria to determine the success of the outsourcing contracts P16 said: *"one of the main things is obviously revenue. Ok, I believe we are meeting or coming close to our targets.....obviously to keep the contract you need to make a profit as well. You don't want to keep a contract that isn't profitable."*

As mentioned earlier in theme 8, it was not difficult to see that the Agency and the contractors, especially Contractor 1, had different agendas in mind. Contractor 1's criterion for determining the success of the outsourcing contracts seemed to be maximisation of profit/revenue while keeping the customers satisfied. P14 frankly admitted that *"Contractor 1 is more of a commercial arrangement, not so much a partnership. It is very much a commercial product on their part. Therefore, they are commercially motivated to maximise their profit out of it, as distinct from working on*

*a win-win situation with us because there is no commercial benefit for them to invest more than they have to with us.”*

The contractors' lack of commitment could also be demonstrated by the fact that they either did not know (or care?) why the Agency outsourced, or could not agree on a single reason for outsourcing. On the other hand, the participants from the Agency all agreed that access to the required technical expertise was one of the reasons for outsourcing.

This result appeared to confirm the studies conducted by several researchers which indicate that not only are many organisations from the private or public sector sceptical about partnerships (Hancox and Hackney, 2000), but also the partnership type of contract is not the most successful because the profit motive is not shared (Lacity and Hirschheim, 1994; Lacity and Willcocks, 1998). According to Kakabadse and Kakabadse (2000), contractor's commitment is dependent on periodic assessment. Their findings had implied that formal evaluation techniques such as formal IS/IT investment evaluation and benefits realisation methodologies can be useful in ensuring commitment by the contractors.

#### **9.3.14. Theme 14: Restrictive government outsourcing contract guidelines**

All state departments (including the Agency) had to follow the contract tendering and outsourcing guidelines set out by the State Supply Commission (SSC, 1999c; 1999f). This may have been one of the reasons why the Agency failed to adopt a formal IS/IT investment evaluation methodology. The state government guidelines were quite general in nature and specified numerous principles, steps, and procedures for state departments to follow when dealing with external contractors. However, they did not give any clue as to what formal IS/IT investment evaluation methodology a state department could use. As a result, most participants mistakenly perceived the guidelines as a formal IS/IT investment evaluation methodology. For instance, when asked about the formal IS/IT investment methodology P14 said: *“it's done in accordance with the Australian Quality Assurance through the Department. It's a standard government model set. I'm not familiar with the actual AS standards but there is a standard on contract management and evaluation of them. It includes*

*value for money. Government includes purchasing conditions.....So there is a series of guidelines which are introduced at the local levels which are also best practice standard on contract management.”*

The restrictive nature of the government guidelines was also the reason why there was an embedded “contract mentality.” As mentioned in theme 10, the operation of the contracts was all based on the specifications set out in the SLAs within the outsourcing contracts. As the guidelines specified the use of the SLAs, many participants thought that they formed part of the IS/IT investment evaluation methodology and had to be strictly followed.

Therefore, the state government outsourcing contract guidelines may have been one of the reasons why the Agency failed to adopt a formal IS/IT investment evaluation methodology and had an embedded “contract mentality.” The number of the recent failed government IS/IT contracts and projects had probably indicated that the government outsourcing contract guidelines were too restrictive and inflexible (e.g. Barton, 2002; Douglas, 1999; Mitchell, 2000a).

#### **9.3.15. Theme 15: Benefits realisation methodology provides rigorous processes**

As mentioned earlier in theme 2, the Benefits Realisation Approach provided the Agency with rigorous processes for:

- (1) Selecting the right projects to implement.
- (2) Placing responsibility and accountability at the appropriate level within the organisation.
- (3) Driving process re-engineering through changes in the organisation.
- (4) Ensuring benefits were realised and, hence, justifying for future government funding.
- (5) Ensuring agreed re-investment of time savings applied as expected.

For instance, when asked about the benefits of using the approach P12 said: *“the key one for me is the rigour that is introduced in the decision-making, in reporting and in harvesting of benefits. So rigour is the key thing.”* Furthermore, P15 also revealed that: *“.....so really it is just trying to remedy that situation basically and get a handle on*

*where it is going. I think a key benefit in terms of the agency's executives is being able to justify to treasury and things like that. Ok, here is what we wanted to deliver, this is what it is going to cost, here is the benefits, and they can clearly articulate to treasury: this is what we are going to do and this is the cost of doing so and here is the tangible benefits and sort of put in a very clear and succinct sort of perspective."*

These processes were not in existence inside the Agency prior to the introduction of the Benefits Realisation Approach. Table 9.5 below shows some of the comments made by the participants on this issue.

| Participant | Comments   |
|-------------|--|
| P11         | "In older days, fairly crude methods were used. <i>And the crude methods that we used were invariably budget cuts</i> in the area that might get an allocation of \$1m this year and next year might get an allocation of \$800,000. So benefits in regard to the financial were actually imposed upon areas."   |
| P12         | "I think <i>in the past the organisation would have had projects statements presented to it which talked about benefits in general terms</i> . And I think it's fair to say there wasn't a degree of rigour around harvesting them. No one would ever be made accountable for delivering the benefits. We would have, for example, the project sponsor being asked to come in and say well show me where your project is at, you've promised these benefits, demonstrate to me how you would achieve those benefits. That rigour has been there. So I think previously it was just broad statements of what we think will happen as a consequence but nobody ever sat across to make sure we did." |



|     |   |
|-----|---|
| P14 | <p>“.....what we have done is rather than trying to realise <i>benefits we made an activity survey to identify what people do</i> but that’s not really harvesting the benefits. That’s simply saying that what they did was report to executives on what the survey said the Agency’s staff were doing during their daily functions and it gave the organisation a basic indication of where they should be reapplying their resources and the support for the particular activity we want to performance. It’s a quality survey. It wasn’t really efficient. This new method is going to be very explicit. And you know the surveys are fine but shouldn’t be done in isolation.”</p> |
| P15 | <p>“.....<i>why it (the benefits realisation methodology) was implemented in the first place is just not being able to track the previous investments, how have they been realised and things like that.</i>”</p>   |

Table 9.5: Participants’ comments on the processes and techniques used by the Agency to realise benefits

As can be seen from Table 9.5 above, the Agency had not used a formal benefits realisation methodology in the past. Instead, some crude methods had been used in an attempt to realise benefits within the organisation. These methods included budget cuts, projects statements presentations, and activity surveys. The introduction of the Contractor 4’s Benefits Realisation Approach provided the Agency with rigorous processes to realise benefits.

According to Ward and Murray (1997), benefits realisation is “the process of organising and managing such that the potential benefits arising from the use of IT are actually realised.” Unlike the Contractor 4’s Benefits Realisation Approach, the crude methods used by the Agency in the past did not exhibit the characteristics of the benefits realisation which “aims to be a whole life-cycle approach to getting beneficial returns on IS/IT investment” (Ward and Murray, 1997).

### **9.3.16. Theme 16: Ability to manage the outsourcing contracts without external influence and assistance**

As mentioned previously, in order to obtain the external technical expertise and skills, the Agency had to outsource some of its IS/IT functions and transferred some of its IS/IT staff to Contractor 1. However, unlike other outsourcing organisations (e.g. Earl, 1996; Currie and Willcocks, 1998), the Agency appeared to be able to manage its outsourcing contracts internally without much external influence or assistance. This was probably due to the fact that the Agency had transferred as few IS/IT staff to Contractor 1 as possible and, at the same time, benefited from Contractor 4's IS/IT technical expertise obtained under the Partnership contract. For example, P14 said: *"every project has an Agency staff who is a project director and has a Contractor 4 partner who is a project manager ..... and Contractor 4 are not allowed to employ the Agency staff. That was one of the problems we could have faced because we're aware in the other organisation when the consultants come in they see the benefits of some highly skilled staff and they say why don't you come and work for us. Then the organisation..... when the contractors move out, they've lost half of the skill level."*

The result here is consistent with the findings by Jennings (1997) in which the author pointed out that there is a need to retain adequate knowledge and understanding of the outsourced activities and technologies as they can assist the organisation to monitor outsourcing decisions.

## **9.4. Summary**

As mentioned earlier, this chapter was not intended to provide detailed analysis and discussion of the case study results. In-depth analysis and discussion of the survey (Chapter 5) and case study (Chapters 7 and 9) results will be done in Chapter 10.

Many of the issues arising from this case study confirmed the survey (Chapter 5) and first case study (Chapter 7) results and prior non-Australian research in the literature. Some analysis of the results was offered in this chapter and themes emerged from this case study included:

- a lack of a formal IS/IT investment evaluation methodology and a lack of

understanding of the evaluation approach used.

- the use of a formal benefits realisation methodology and a good understanding of benefits management practices by the Agency as a whole.
- the use of an informal IS/IT investment evaluation process and a focus on quantitative IS/IT investment evaluation measures.
- conflicting motivations for outsourcing.
- different perceptions of success of the contracts by stakeholders.
- conflict between motivation of outsourcing and criteria for determining the success of the outsourcing contracts.
- better control over the IS/IT skill shortage within the organisation.
- an embedded contract mentality.
- lack of user involvement/participation in contract development.
- general lack of commitment by some contractors.
- restrictive government guidelines and rigorous benefits realisation process.
- the ability to manage the outsourcing contracts without external influence and assistance.

While the Agency appeared to operate without any major problems, the mostly negative issues shown above indicated weaknesses in the way the organisation dealt with the level of formality and integration in applying the methodologies. The problems mentioned in Themes 6 –8 & 10-13 were mostly caused by the lack of attention to the IS/IT investment evaluation (as mentioned in Themes 1, 3, and 4). For example, if formal IS/IT investment evaluation was adopted by the Agency, more qualitative measures may have been used to evaluate the outsourcing contracts (Theme 6: a focus on quantitative IS/IT investment evaluation measures).

So why did the Agency fail to formally evaluate its IS/IT investments? One possible explanation was that the restrictive nature of the state government's outsourcing contract guidelines (Theme 14) made it difficult or almost impossible for the Agency to implement a formal IS/IT investment evaluation methodology. Another explanation was that none of the IS/IT staff (even the senior management) was familiar with the formal IS/IT investment evaluation process and hence possessed an

“embedded contract mentality” (Theme 10) by following simply the conditions set out within the SLAs. Seddon et al. (2001) provided another possible explanation which is that, under some circumstances, the cost of conducting formal evaluations of the IS/IT portfolio, individual projects, or the IS function must seem likely to exceed the benefits. Furthermore, developing a capability to recognise the resourcing requirements for the different phases of various outsourcing (or systems development) initiatives is seen as particularly challenging by many organisations (Kakabadse and Kakabadse, 2001).

On the other hand, several positive issues (Themes 9, 15, and 16) from this case study indicated that the use of a benefits realisation methodology by the Agency enabled it to have greater control over and better manage its outsourcing contracts than the organisations (e.g. the Department) without a formal methodology.

Finally, with the completion of the analysis of the second case study (plus the survey and the first case study conducted earlier), an attempt will be made to construct a framework based on the fit between theory and practice of IS/IT investment evaluation by large Australian organisations (research objective 2). This framework will be presented in Chapter 10.

In the next chapter (Chapter 10), survey and case study findings from Chapters 5, 7, and 9 will be examined and discussed in more detail. Some guidelines and recommendation for outsourcing will also be proposed. As indicated earlier, this will be followed by a framework for IS/IT investment evaluation and benefits realisation (research objective 2). The conclusion, the limitation of the research, and future research directions will be presented in Chapter 11.

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# **Chapter 10**

## **Research Findings & Discussion**

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### **10.1. Introduction**

The main aims of this chapter are to: (1) present the summary of survey and case studies research findings and discuss the results; and (2) satisfy the research objective 2, which is to develop a framework based on the fit between theory and practice of benefits realisation and IS/IT investment evaluation by large Australian organisations. This framework will be useful for the organisations in general as well as outsourcing organisations.

This chapter will begin by highlighting the key survey and case studies outcomes described in the previous chapters (5, 7, and 9) and discuss other significant findings which may have arisen from the analysis of the combined results. Some comparison of surveys and case studies findings will also be made. Moreover, the analysis of the two case studies using Galliers and Sutherland's Model (1991) will be presented. Furthermore, the critique of the three formal benefits realisation methodologies mentioned in Chapter 2 will be discussed, followed by a list of several useful guidelines for IS/IT investment evaluation and benefits management. Finally, an IS/IT investment evaluation and benefits realisation processes framework will be constructed and considered based on the outcomes and findings from Chapters 5, 7, and 9.

### **10.2. Discussions of Research Findings**

Some research findings related to the survey and case studies are discussed below.

### 10.2.1. Survey

As described in Chapter 5, this survey was sent to the CIOs or IS/IT managers of the largest 500 Australian organisations. The aim was to investigate issues such as IS/IT investment evaluation methodology, benefits management methodology, benefits structures and identification, benefits realisation planning, and benefits delivery processes. The responses from the received questionnaires were entered into SPSS software for analysis. The comments from the survey were recorded verbatim and also used for analysis. Some of the key findings of this survey are shown in Table 10.1.

| Questions   | Results  | Standard Deviation   |
|---|--|----------------------|
| Reasons for justifying IS/IT investments  | 4. cost & budgets<br>5. competitive advantage<br>6. process efficiency | N/A                  |
| Methods/techniques used to decide upon IS/IT investments  | 4. NPV<br>5. CBA<br>6. ROI   | N/A                  |
| % of respondents use of: (Y=1; N=0)<br>▪ Investment appraisal process<br>▪ IS/IT BR methodology   | 65.7%<br>32.8%   | 0.48<br>0.47         |
| Of those who had the methodology, % “often or always” widely used:<br>▪ Investment appraisal process<br>▪ IS/IT BR methodology  | 54.5%<br>22.7%   | N/A                  |
| Current process: (Y=1; N=0)<br>▪ Identifies all available benefits for a project<br>▪ Adequately quantifies the relevant benefits<br>▪ Overstates the benefits in order to get approval | 50.0%<br>67.2%<br>26.2%  | 0.50<br>0.47<br>0.44 |
| Methods/techniques considered to be less than “very appropriate”  | 76.6%  | N/A                  |
| Prepared a benefits delivery plan (Y=1; N=0)  | 43.0%  | 0.50                 |
| Conducted PIR (Y=1; N=0)  | 77.3%  | 0.42                 |
| Had a formal process to ensure that lessons were learned (Y=1; N=0)   | 52.3%  | 0.50                 |

Table 10.1: Key survey findings

Overall, a variety of formal IS/IT investment evaluation processes and techniques were used, costs and budgets were of great concern, though evaluation itself was not among the very top issues. There was a strong emphasis on cost reduction and other benefits, and a reasonable level of confidence in the delivery of these benefits. Many respondents considered their formal financially-based evaluation techniques (such as NPV and ROI) were not perfect, though they did try to incorporate intangible benefits into the process (often without reviewing them in post-implementation, unfortunately). Although most seemed to have an existing process for IS/IT evaluation and benefits management, only about one-third of organizations claimed to have a formal benefits realisation methodology. Most had a benefits delivery plan and a specific business project manager to manage their process, while some also directed responsibility for realising benefits to relevant line managers. Most had formal reviews during implementation and revised systems design as a result. Post-implementation reviews were generally also performed and were used to provide feedback to the project client. These reviews considered such aspects of the project as technical conformance and project management effectiveness, while benefits delivery was usually considered but often not explicitly measured.

The survey results also indicated that the usage of formal IS/IT investment evaluation and benefits realisation methodologies by the respondents was quite low. Although 65.7% and 32.8% of the survey respondents indicated that they had used IS/IT investment appraisal process and IS/IT benefits management methodology, respectively, only 35.8% and 7.4% of all respondents stated that these methodologies had been widely used.

When the results were looked at more closely, they revealed that the respondents had ranked NPV, cost/benefits analysis (CBA) and return on investment (ROI) as their top 3 IS/IT investment evaluation methods or techniques (Table 10.1). These methods or techniques represented traditionally accounting-based measures and were not formal IS/IT investment evaluation methodologies. Similarly, as mentioned in Chapter 5, it was also uncertain whether those who indicated benefits realisation methodology (BRM) usage were actually using a formal benefits realisation methodology. It appeared that not too many organisations had used either the IS/IT investment evaluation methodology or the benefits realisation methodology. It was

no wonder that 76.6% of the respondents indicated that they considered their methods or techniques to be less than very appropriate. According to the respondents, one of the main reasons for considering their methods used to be less than very appropriate was that they did not have formal approaches.

While the usage of the formal and/or informal IS/IT investment evaluation methodology (65.7%) by the survey respondents looked somewhat reasonable, this was definitely not the case for the usage of the formal and/or informal benefits realisation methodology (32.8%). It was surprising that only 32.8% of the respondents had used a benefits realisation methodology at all. It was even more surprising that only 7.4% of the respondents had widely used the methodology.

As can be seen from Table 10.2 below, those who indicated benefits realisation methodology (BRM) usage were more likely to carry out IS/IT investment evaluation activities such as ensuring learning processes as well as making sure that IS/IT projects were linked to business objectives. Those who had used benefits realisation methodology were also more likely to carry out benefits realisation activities such as preparing benefits delivery plans and holding formal reviews of activities associated with delivering benefits during the implementation process. Therefore, it was not too surprising to see that these respondents were less likely to feel that there was scope for significant improvement in their current approach to managing IS/IT benefits. Some of these issues will be further elaborated later in this chapter.

The following table (Table 10.2) shows some key survey results relating to the difference between those organisations which had used a benefits realisation methodology (BRM) and those which had not:



| <b>Survey Results</b>   | <b>No BRM</b> | <b>BRM</b> |
|---|---------------|------------|
| • had used an IS/IT investment appraisal process  | 58.8%         | 81.8%      |
| • had a process that ensured the IS/IT projects were linked to business objectives  | 84.1%         | 95.2%      |
| • had a formal process to ensure that the lessons learned from successful or unsuccessful implementations were transferred to future projects | 47.6%         | 59.1%      |
| • believed that the methodology was effective in ensuring successful information systems  | 2.2%          | 38.1%      |
| • had prepared a benefits delivery plan   | 34.1%         | 60.0%      |
| • believed that their current process adequately quantified the relevant benefits   | 54.5%         | 90.9%      |
| • had a formal process to identify any further benefits after implementation  | 9.3%          | 36.4%      |
| • held formal reviews of activities associated with delivering benefits during the implementation process                                     | 59.1%         | 68.2%      |
| • took action after implementation to realise the benefits identified after implementation  | 4.8%          | 68.2%      |
| • felt that there was no scope for improvement in their current approach to managing IS/IT benefits   | 4.8%          | 18.2%      |
| • overstated the benefits in order to get approval  | 30.9%         | 18.2%      |
| • felt that there was scope for significant improvement in their current approach to managing IS/IT benefits                                  | 69.0%         | 50.0%      |

Table 10.2: Comparison of survey results for benefits realisation methodology usage

### **10.2.2. Case studies**

Some of the key results from the two case studies conducted by the researcher are presented below.

### **Case study 1 (The Department)**

As described in Chapters 6 and 7, this case study was conducted at a major state government department (the Department). In total, 10 interviews were conducted with six participants from the Department and one participant from each of the three major outsourcing contractors. The questions asked during the interview were related to the Department's three major outsourcing contracts, contractual relationship between the Department and the contractors, IS/IT investment evaluation methodology deployed, benefits realisation process used, and contract transition period management. All interviews were taped and the transcripts were sent to the interviewees for validation. Other data collected included some of the actual contract documents, planning documents and some minutes of relevant meetings. More than 150 pages of transcripts were coded and analysed. The analysis was conducted in a cyclical manner and followed guidelines (i.e. multiple interpretations) set out by Klein and Meyers (1999) (please refer to Appendix C). Table 10.3 below shows the key findings from the first case study.

The Department continued to operate fairly successfully despite the fact that the above issues were mostly negative. However, this possibly indicated weaknesses in the way the Department dealt with the level of formality in applying the methodologies. For instance, the problems mentioned in Themes 6-17 were mostly caused by the lack of attention to the IS/IT investment evaluation (as mentioned in Themes 1 and 3) and benefits realisation (as mentioned in Themes 2 and 5). Therefore, there was a need to conduct another case study to see whether an organisation with either a formal IS/IT investment evaluation process or a formal benefits realisation methodology would overcome some of the problems faced by the Department. Some of the key issues listed below will be discussed further later in this chapter.

| <b>Case Study 1 Key Issues</b>  |
|---|
| <ul style="list-style-type: none"> <li>• a lack of a <u>formal</u> IS/IT investment evaluation methodology and a lack of understanding of the evaluation approach used</li> </ul>                   |
| <ul style="list-style-type: none"> <li>• a lack of any (<u>formal</u> and <u>informal</u>) benefits realisation methodology and a lack of understanding of benefits management practices</li> </ul> |
| <ul style="list-style-type: none"> <li>• the use of an informal IS/IT investment evaluation process and a focus on quantitative IS/IT investment evaluation measures</li> </ul>                     |
| <ul style="list-style-type: none"> <li>• conflicting motivations for outsourcing</li> </ul>   |
| <ul style="list-style-type: none"> <li>• different perceptions of success of the contracts by stakeholders</li> </ul>   |
| <ul style="list-style-type: none"> <li>• a conflict between motivations and success criteria for outsourcing</li> </ul>   |
| <ul style="list-style-type: none"> <li>• an IS/IT skill shortage within the organisation</li> </ul>   |
| <ul style="list-style-type: none"> <li>• an embedded contract mentality</li> </ul>  |
| <ul style="list-style-type: none"> <li>• complicated contract arrangements</li> </ul>   |
| <ul style="list-style-type: none"> <li>• over-reliance on a single contractor</li> </ul>  |
| <ul style="list-style-type: none"> <li>• lack of user involvement/participation in contract development</li> </ul>  |
| <ul style="list-style-type: none"> <li>• and general lack of commitment by contractors.</li> </ul>  |
| <ul style="list-style-type: none"> <li>• restrictive government outsourcing contract guidelines</li> </ul>  |
| <ul style="list-style-type: none"> <li>• inability to manage the outsourcing contracts without external influence and assistance</li> </ul>   |

Table 10.3: Key issues for case study 1

### **Case study 2 (The Agency)**

As described in Chapters 8 and 9, this second case study was conducted at another major state government department (the Agency). In total, seven interviews were conducted with four participants from the Agency and two participants from each of the two major external contractors. The questions asked during the interview were related to the formal benefits realisation methodology used by the Agency, major outsourcing contracts, contractual relationship between the Agency and the contractors, and IS/IT investment evaluation methodology or technique deployed. All interviews were taped and the transcripts were sent to the interviewees for validation. The qualitative data collected from this case study also included outsourcing contract

documents, annual reports, government contract documents, interviews, and other relevant outsourcing documents. Table 10.4 below lists the key issues from the second case study.

While the Agency appeared to operate without any major problems, the mostly negative issues shown above possibly indicated weaknesses in the way the organisation dealt with the level of formality and integration in applying the methodologies. As discussed in Chapter 9, the problems mentioned in Themes 6 –8 & 10-13 were mostly caused by the lack of attention to the IS/IT investment evaluation (as mentioned in Themes 1, 3, and 4). For instance, if formal IS/IT investment evaluation was adopted by the Agency, more qualitative measures may have been used to evaluate the outsourcing contracts (Theme 6: a focus on quantitative IS/IT investment evaluation measures). On the other hand, several positive issues (Themes 9, 15, and 16) from this case study indicated that the use of a benefits realisation methodology by the Agency enabled it to have greater control over and better manage its outsourcing contracts than the organisations (e.g. the Department) without a formal methodology. Some of these issues (Table 10.4) will be further elaborated later in this chapter.

### **Comparison of case 1 and case 2**

Tables 10.5 and 10.6 below compare the results of case studies 1 and 2. As can be seen from Table 10.5 below, both cases had many similar key issues such as lack of understanding of the evaluation approach used and embedded contract mentality.

| <b>Case Study 2 Key Issues</b>   |
|--|
| <ul style="list-style-type: none"> <li>• a lack of a <u>formal</u> IS/IT investment evaluation methodology and a lack of understanding of the evaluation approach used</li> </ul>                  |
| <ul style="list-style-type: none"> <li>• the use of a <u>formal</u> benefits realisation methodology and a good understanding of benefits management practices by the Agency as a whole</li> </ul> |
| <ul style="list-style-type: none"> <li>• the use of an <u>informal</u> IS/IT investment evaluation process and a focus on quantitative IS/IT investment evaluation measures</li> </ul>             |
| <ul style="list-style-type: none"> <li>• conflicting motivations for outsourcing</li> </ul>  |
| <ul style="list-style-type: none"> <li>• different perceptions of success of the contracts by stakeholders</li> </ul>  |
| <ul style="list-style-type: none"> <li>• conflict between motivation of outsourcing and criteria for determining the success of the outsourcing contracts</li> </ul>                               |
| <ul style="list-style-type: none"> <li>• better control over the IS/IT skill shortage within the organisation</li> </ul>   |
| <ul style="list-style-type: none"> <li>• an embedded contract mentality</li> </ul>   |
| <ul style="list-style-type: none"> <li>• lack of user involvement/participation in contract development</li> </ul>   |
| <ul style="list-style-type: none"> <li>• general lack of commitment by some contractors</li> </ul>   |
| <ul style="list-style-type: none"> <li>• restrictive government guidelines and rigorous benefits realisation process</li> </ul>  |
| <ul style="list-style-type: none"> <li>• ability to manage the outsourcing contracts without external influence and assistance</li> </ul>  |

Table 10.4: Key issues for case study 2

| <b>Case Study 1 Key Issues</b>   | <b>Case Study 2 Key Issues</b>  |
|--|---|
| <ul style="list-style-type: none"> <li>• a lack of a <u>formal</u> IS/IT investment evaluation methodology</li> </ul>  | <ul style="list-style-type: none"> <li>• a lack of a <u>formal</u> IS/IT investment evaluation methodology</li> </ul> |
| <ul style="list-style-type: none"> <li>• a lack of understanding of the evaluation approach used</li> </ul>            | <ul style="list-style-type: none"> <li>• a lack of understanding of the evaluation approach used</li> </ul>           |
| <ul style="list-style-type: none"> <li>• the use of an <u>informal</u> IS/IT investment evaluation process</li> </ul>  | <ul style="list-style-type: none"> <li>• the use of an <u>informal</u> IS/IT investment evaluation process</li> </ul> |
| <ul style="list-style-type: none"> <li>• a focus on quantitative IS/IT investment evaluation measures</li> </ul>       | <ul style="list-style-type: none"> <li>• a focus on quantitative IS/IT investment evaluation measures</li> </ul>      |
| <ul style="list-style-type: none"> <li>• conflicting motivations for outsourcing</li> </ul>                            | <ul style="list-style-type: none"> <li>• conflicting motivations for outsourcing</li> </ul>                           |
| <ul style="list-style-type: none"> <li>• different perceptions of success of the contracts by stakeholders</li> </ul>  | <ul style="list-style-type: none"> <li>• different perceptions of success of the contracts by stakeholders</li> </ul> |
| <ul style="list-style-type: none"> <li>• conflicts between motivations and success criteria for outsourcing</li> </ul> | <ul style="list-style-type: none"> <li>• conflicts between motivation and success criteria for outsourcing</li> </ul> |
| <ul style="list-style-type: none"> <li>• an embedded contract mentality</li> </ul>                                     | <ul style="list-style-type: none"> <li>• an embedded contract mentality</li> </ul>                                    |
| <ul style="list-style-type: none"> <li>• lack of user involvement/participation in contract development</li> </ul>     | <ul style="list-style-type: none"> <li>• lack of user involvement/participation in contract development</li> </ul>    |
| <ul style="list-style-type: none"> <li>• general lack of commitment by contractors</li> </ul>                          | <ul style="list-style-type: none"> <li>• general lack of commitment by some contractors</li> </ul>                    |
| <ul style="list-style-type: none"> <li>• restrictive government outsourcing contract guidelines</li> </ul>             | <ul style="list-style-type: none"> <li>• restrictive government outsourcing contract guidelines</li> </ul>            |

Table 10.5: Similar key issues for case studies 1 and 2

The major difference was in the use of the formal benefits realisation methodology (Table 10.6). The adoption of a formal benefits realisation methodology allowed the Agency (case 2) as a whole to have a good understanding of benefits realisation practices as well as having a greater and better control of its outsourcing contracts. It was possible that the adoption of a formal IS/IT investment evaluation methodology would either eliminate or minimise most of the problems faced by both the Department and the Agency.

| <b>Case Study 1 Key Issues</b>   | <b>Case Study 2 Key Issues</b>   |
|--|--|
| ○ <i>a lack of any (<u>formal</u> and <u>informal</u>) benefits realisation methodology</i>      | ○ <i>the use of a <u>formal</u> benefits realisation methodology</i>                           |
| ○ <i>a lack of understanding of benefits management practices</i>                                | ○ <i>a good understanding of benefits management practices</i>                                 |
| ○ <i>an IS/IT skill shortage within the organisation</i>   | ○ <i>better control over the IS/IT skill shortage within the organisation</i>                  |
| ○ <i>complicated contract arrangements</i>   |  |
| ○ <i>over-reliance on a single contractor</i>  |  |
|  | ○ <i>rigorous benefits realisation process</i>   |
| ○ <i>inability to manage the outsourcing contracts without external influence and assistance</i> | ○ <i>ability to manage the outsourcing contracts without external influence and assistance</i> |

Table 10.6: Different key issues for case studies 1 and 2

As mentioned earlier, the two case studies were conducted to look at the difference between an organisation that had not adopted a formal benefits realisation methodology and an organisation that had. Many interesting differences between the

organisation (the Agency) which had used the benefits realisation methodology and the organisation (the Department) which had not adopted the methodology were discovered. The findings from these two case studies can be further analysed. The following table (Table 10.7) shows some key differences between the case studies 1 and 2.

| <b>Case Study Results</b>   | <b>Case 1<br/>No BRM</b> | <b>Case 2<br/>BRM</b> |
|---|--------------------------|-----------------------|
| • better understanding of benefits realisation practices  | n                        | y                     |
| • training of staff for benefits realisation concepts   | n                        | y                     |
| • rigorous benefits realisation process   | n                        | y                     |
| • considers qualitative benefits  | n                        | y                     |
| • complicated contract arrangements   | y                        | n                     |
| • over-reliance on a single contractor  | y                        | n                     |
| • ability to manage the outsourcing contracts without external influence and assistance   | n                        | y                     |
| • change of contractors because of poor performance   | y                        | n                     |
| • success of the major outsourcing contracts  | 2/3                      | 2/2                   |
| • partnership is actually acting like a real partnership  | n                        | y                     |
| • poor internal decision-making process and internal communication problems, sections don't relate to each other's requirements | y                        | n                     |
| • keeping as many technical people as possible  | n                        | y                     |
| • high expectation of cost saving   | n                        | y                     |
| • formal process for making objective decision for funding  | ?                        | y                     |

Table 10.7: Comparison of case study results for cases 1 and 2

As can be seen from Table 10.7 above, the Agency (case 2) which had used formal benefits realisation methodology (BRM) had better understanding of benefits realisation practices and also enjoyed more rigorous benefits realisation process which included the consideration of qualitative benefits. In addition, the Agency had



trained its staff for benefits realisation practices and concepts.

On the other hand, the Department (case 1) had internal communication and decision-making problems as well as problems with external contractors. Moreover, it had lost almost all of its entire IS/IT staff. Unlike the Agency (case 2), the Department (case 1) did not have a very high expectation of cost savings and most of its IS/IT outsourcing contracts were not perceived as very successful.

However, one of the main differences appeared to be the ability of the organisation to effectively manage its outsourcing contracts without undue external assistance and influence. The case 1 organisation (the Department) did not seem to be able to effectively manage its outsourcing contracts without relying on its first contractor's advice. This was possibly because the Department did not employ a formal benefits realisation methodology for its outsourcing projects. Without a benefits realisation methodology, the Department simply did not know it was important for the organisation as a whole to retain much of its original internal skills and resources to manage the outsourcing contracts properly. As a result, most IS/IT staff were outsourced to the external contractors. Therefore, the Department had to rely on the first contractor for advice on many of its IS/IT requirements. The Department's second contractor complained bitterly about this probably because the Department had, in many instances, favoured the first contractor.

On the other hand, the case 2 organisation (the Agency) was able to manage its outsourcing contractors without undue external assistance and influence. The use of the benefits realisation methodology under its Partnership contract was very important to the organisation. It provided the Agency with integrated tools and processes to re-engineer its processes and systems, and to ensure that the benefits expected to be realised from the implementation of new projects were actually harvested and reinvested. This included, among other things, benefits realisation education to all the Agency's staff members and the required technical training to certain staff. Moreover, the setting up of the Value Management Office (VMO) required under the Partnership contract had also helped to provide the direction and leadership the Agency needed in order to successfully realise benefits. Furthermore, the organisation knew that it was important to retain its skilled IS/IT staff, in addition

to adopting a formal benefits realisation methodology. This enabled the Agency to manage its outsourcing contracts effectively.

Other major differences such as lack of benefits realisation process, lack of understanding of benefits management, complicated contract arrangement, and over-reliance on a single contractor were all or partly due to whether or not the organisation had used a formal benefits realisation methodology. The adoption of a formal benefits realisation methodology by the Agency, for example, seemed to have largely overcome or minimised many of these problems by re-engineering the business processes of the organisations and ensuring the delivery of the proposed benefits.

### 10.2.3. Outsourcing and benefits realisation practices

The tables below (Tables 10.8, 10.9 & 10.10) show the combined results for the survey and two case studies. These tables compare the organisations which employed a benefits realisation methodology (BRM) and those organisations that did not use a BRM. As mentioned in Chapter 2, these tables are significant because the researcher has, so far, not been able to locate any literature which discusses the linkage between IS/IT outsourcing and the use of IS/IT investment evaluation and benefits realisation methodologies. Table 10.8 below shows results relating to survey and case study organisations' IS/IT outsourcing and benefits realisation practices.

| Issues   | Survey |      | Case 1 | Case 2 |
|--|--------|------|--------|--------|
|  | No BRM | BRM  | No BRM | BRM    |
| • had a rigorous benefits realisation process                | 0%     | 7.4% | x      | √      |
| • had a good understanding of benefits realisation practices | -      | -    | x      | √      |

|  |       |       |   |   |
|--|-------|-------|---|---|
| • believed that the methodology (BRM) was effective in ensuring successful information systems               | 2.2%  | 38.1% | ? | √ |
| • had prepared a benefits delivery plan  | 34.1% | 60.0% | x | √ |
| • believed that their current process adequately quantified the relevant benefits                            | 54.5% | 90.9% | x | √ |
| • had a formal process to identify any further benefits after implementation                                 | 9.3%  | 36.4% | x | √ |
| • held formal reviews of activities associated with delivering benefits during the implementation process    | 59.1% | 68.2% | x | √ |
| • took action after implementation to realise the benefits identified after implementation                   | 4.8%  | 68.2% | x | √ |
| • felt that there was no scope for improvement in their current approach to managing IS/IT benefits          | 4.8%  | 18.2% | ? | x |
| • overstated the benefits in order to get approval   | 30.9% | 18.2% | ? | x |
| • felt that there was scope for significant improvement in their current approach to managing IS/IT benefits | 69.0% | 50.0% | ? | √ |
| • had a better understanding of benefits realisation practices   | -     | -     | x | √ |
| • provided training for staff for benefits realisation concepts  | -     | -     | x | √ |
| • considered qualitative benefits  | 88.9% | 77.3% | ? | √ |

Table 10.8: Survey and case study organisations' IS/IT outsourcing and benefits realisation practices

As can be seen from Table 10.8 above, those organisations which had benefits realisation methodology (BRM) were more likely: (1) to have more confidence in the benefits realisation practices and activities as well as in their effects to their organisations; (2) not to overstate the benefits in order to get approval for their IS/IT projects; and (3) to have better understanding of the benefits realisation concepts and undertake benefits realisation activities within their organisations.

#### 10.2.4. Outsourcing and IS/IT investment evaluation practices

Table 10.9 below shows results relating to survey and case study organisations' IS/IT outsourcing and investment evaluation practices.

| Issues  | Survey |       | Case 1 | Case 2 |
|---|--------|-------|--------|--------|
|   | No BRM | BRM   | No BRM | BRM    |
| ▪ had used a formal or informal IS/IT investment appraisal process  | 58.8%  | 81.8% | √      | √      |
| ▪ did not have a good understanding of the IS/IT investment evaluation method used  | √      | √     | √      | √      |
| ▪ had a process that ensured the IS/IT projects were linked to business objectives  | 84.1%  | 95.2% | ?      | √      |
| ▪ had a formal process to ensure that the lessons learned from successful or unsuccessful implementations were transferred to future projects | 47.6%  | 59.1% | ?      | √      |
| ▪ had kept as many technical people as possible in order to manage the outsourcing contracts  | -      | -     | x      | √      |
| ▪ had a formal process for justifying and making objective decision for funding   | -      | -     | x      | √      |

Table 10.9: Survey and case study organisations' IS/IT outsourcing and investment evaluation practices

As can be seen from Table 12.9 above, those organisations which had adopted formal benefits realisation methodology (BRM) were more likely: (1) to have adopted formal or informal IS/IT investment evaluation methodology; (2) to have used some formal processes for their investment evaluation activities; (3) to ensure that the lessons were learned; and (4) to have kept as many IS/IT staff as possible in order to evaluate and manage their outsourcing contracts.

#### 10.2.5. Outsourcing and contract management practices

Table 10.10 below shows results relating to survey and case study organisations' IS/IT outsourcing and contract management practices.

| Issues  | Survey |     | Case 1 | Case 2 |
|---|--------|-----|--------|--------|
|   | No BRM | BRM | No BRM | BRM    |
| ▪ had better control over the IS/IT skill shortage  | -      | -   | x      | √      |
| ▪ had no user involvement/participation in contract development process   | -      | -   | √      | √      |
| ▪ had no general commitment by some contractors   | -      | -   | √      | √      |
| ▪ had restrictive government outsourcing contract guidelines  | -      | -   | √      | √      |
| ▪ had complicated contract arrangements   | -      | -   | √      | x      |
| ▪ was over-reliant on a single contractor   | -      | -   | √      | x      |
| ▪ had the ability to manage the outsourcing contracts without external influence and assistance                                       | -      | -   | x      | √      |
| ▪ had a poor internal decision-making process and internal communication problems, sections don't relate to each other's requirements | -      | -   | √      | x      |

|   |       |       |     |     |
|---|-------|-------|-----|-----|
| ▪ had kept as many technical people as possible for the outsourcing contracts | -     | -     | x   | √   |
| ▪ had high expectation of cost saving   | -     | -     | x   | √   |
| ▪ viewed cost saving as one of the main motivations for IS/IT investment      | √     | √     | √   | √   |
| ▪ changed contractors because of poor performance                             | -     | -     | √   | x   |
| ▪ perceived success of the contracts  | 70.0% | 68.2% | 2/3 | 2/2 |
| ▪ viewed cost saving as one of the main success criteria for IS/IT investment | √     | √     | √   | √   |
| ▪ had genuine partnership relationship  | -     | -     | x   | √   |
| ▪ appreciated and supported the necessary organisational changes              | -     | -     | x   | √   |

Table 10.10: Survey and case study organisations' IS/IT outsourcing and contract management practices

From Table 10.10 above, it is possible to state that those organisations who had benefits realisation methodology (BRM) were more likely: (1) not to have complicated contract management issues; (2) to have greater control over their outsourcing contracts; (3) to have better control over IS/IT their skill shortage; and (4) to support and undertake necessary organisational changes.

As can be seen from the above 3 tables (Tables 10.8, 10.9, & 10.10), many additional issues arose from the two case studies. This happens quite regularly with case studies as it enables the capture of “reality” in considerably greater detail, as it employs multiple data collection techniques, than is possible with most of the other approaches such as postal survey (Burns, 1994; Yin, 1984). One interesting result from one of the above tables (Table 10.8) is that 30.9% of the organisations without a benefits realisation methodology (BRM) and while only 18.2% of the organisations with a BRM overstated the benefits in order to get the projects approved. This seemed to imply that the organisations without a BRM placed more emphasis on getting project approval than those organisations which had a BRM. Perhaps, the

organisations without a formal BRM were more desperate in justifying and getting project approval since they did not have a formal process (i.e. BRM) to back them up. This may have also indicated that the processes within a benefits realisation methodology had made it more difficult for organisations to overstate the benefits in order to get projects approval. Potentially, this is one of the major benefits for adopting a formal BRM.

#### **10.2.6. Similarities between survey and case studies**

In terms of similarities, it could be said that the survey, and case studies were closely related in terms of:

- Lack of benefits realisation methodology and lack of understanding of benefits realisation practices (Table 10.8) - IS/IT benefits realisation methodology was adopted by only 32.8% of the survey respondents (12% in Ward et al., 1996). The methodology was not used at all (formally or informally) by the participants of case study 1. However, the participants in case study 2 are in the minority here as the methodology was employed within the Agency and most of the participants within the Agency had good understanding of the benefits realisation practices.

The finding here is generally consistent with studies carried out in the literature. The fact that very few organisations have a benefits management methodology is not surprising as much attention is turned to ways of justifying investments, with little effort being extended to ensuring that the benefits expected are realised (Ward and Griffiths, 1996; Willcocks, 1992b).

- Lack of formal IS/IT investment evaluation methodology and lack of understanding of the investment evaluation method used (Table 10.9)
  - the survey conducted by the researcher indicated 65.7% of respondents used IS/IT investment evaluation methodology (60% in Ward et al.). However, when asked about the specific methods/technique used to decide upon IS/IT investments, the traditional financially oriented evaluation techniques such as net

present value (NPV) and cost/benefit analysis (CBA) were the most commonly mentioned techniques by the survey respondents. Likewise, most of the participants from case study 1 and case study 2 claimed formal IS/IT investment evaluation methodologies or processes were used for evaluating the outsourcing contracts. However, closer examination of the participants' responses revealed otherwise (i.e. SLAs within the contracts). Only informal IS/IT investment evaluation processes were used. However, Hochstrasser (1990) indicated that indirect human and organisational costs might be four times as high as direct costs. Therefore, it is imperative to use a formal IS/IT investment evaluation methodology in order to measure the indirect costs and benefits.

The survey and case studies participants showed, somewhat, the lack of understanding of the IS/IT investment evaluation methodology by indicating that a formal methodology was used. This was despite the fact that only an informal methodology was used in both case studies.

- Cost saving as one of the major reasons for IS/IT investments (Table 12.10) - according to the survey respondents the top three reasons for IS/IT investments were cost/budgets, competitive advantage and process efficiency. Case study 1 participants ranked cost saving, increased service level, and access to technical expertise as their top 3 motivations while case study 2 participants had access to technical expertise, cost saving, and government policy/concentrating on core functions as their top two reasons for outsourcing. The focus on cost saving could also partly explain why there was a contract mentality within the organisations undertaking IS/IT projects. Since there was almost no qualitative measures being used by the organisations, a focus on the service level agreements (SLAs) by the respondents was inevitable.

Although the participants from the survey and two case studies had not been able to agree on the reasons for organisations' IS/IT



investment and outsourcing, cost saving was often mentioned as one of the major reasons by most participants.

### 10.2.7. Summary

Therefore, it is possible now to conclude that those organisations which employed a benefits realisation methodology (BRM) were more likely to: (a) use formal processes for their investment evaluation and benefits realisation activities; (b) be more confident about what they do in their IS/IT activities; (c) have better integration of their IS/IT functions; and (d) manage their projects or contracts to achieve better results and with less problems (Figure 10.1).

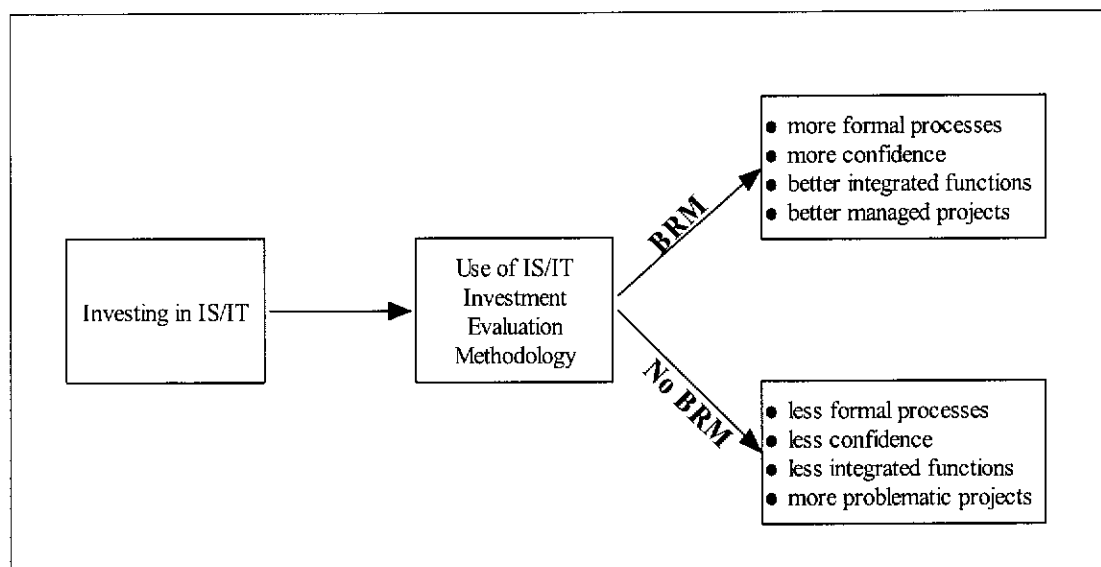
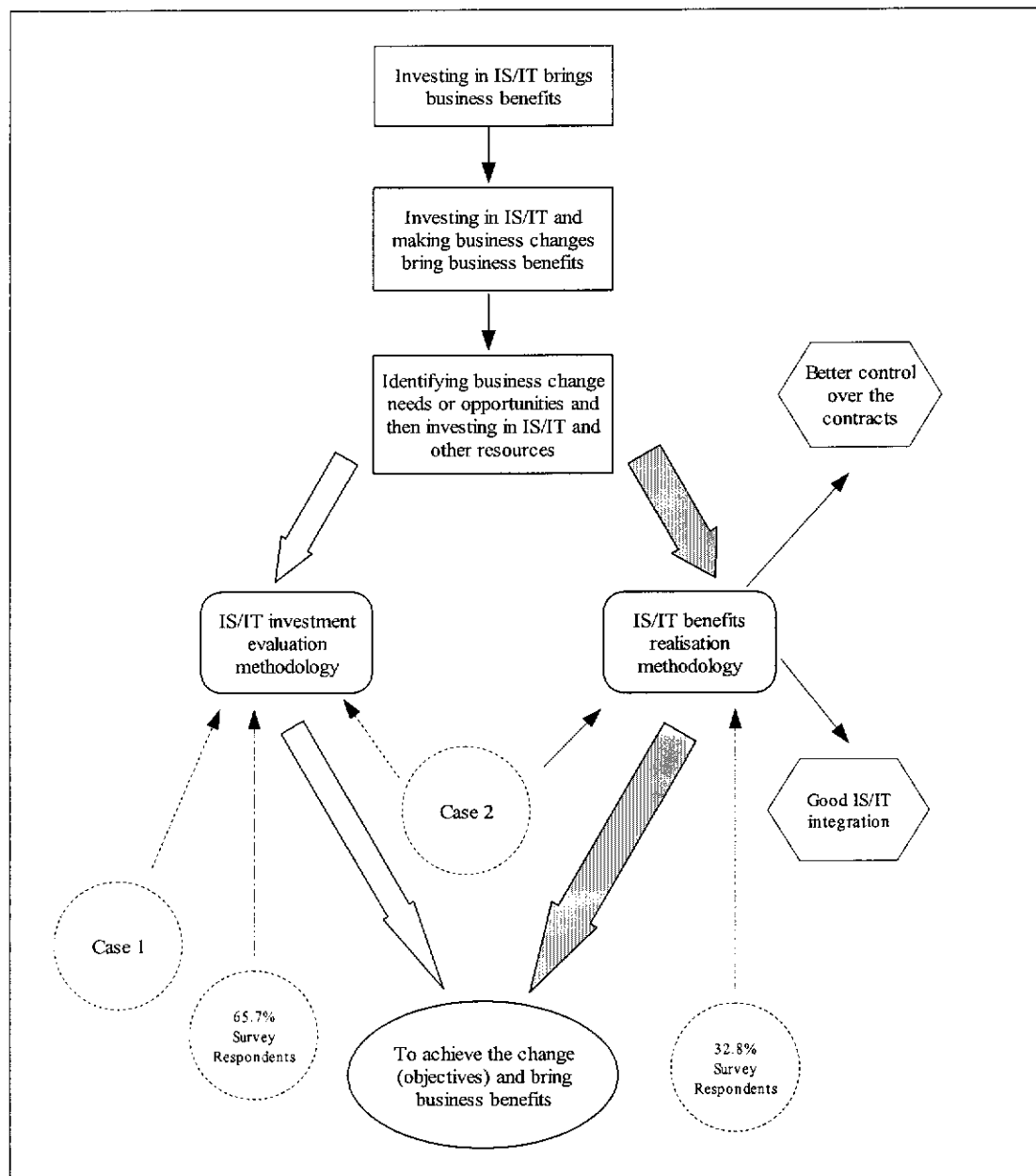


Figure 10.1: Key research findings: BRM vs no BRM

Figure 10.2 below shows the usage of IS/IT investment evaluation and benefits realisation methodologies. Figure 10.2 is based on Earl's (1992) model. Earl's (1992) model basically shows that in the past organisations invested in IS/IT in order to bring business benefits. Then, organisations started to undertake business changes and to invest in IS/IT in order to bring business benefits. Nowadays, most organisations know that one has to identify business change needs or opportunities before investing in IS/IT and other resources in order to bring business benefits.

As indicated by the research results, in order to identify business change needs or opportunities the organisations need to implement IS/IT investment evaluation and benefits realisation methodologies. Figure 10.2 below shows that while most

responding organisations had used some sort of IS/IT investment evaluation methodology, only a small percentage of organisations had employed benefits realisation methodology. For example, case 2 organisation which had used a formal benefits realisation methodology experienced greater control over its outsourcing contracts and better IS/IT integration within the organisation than case 1 organisation which had no formal or informal benefits realisation methodology. Please note that although the top three boxes were from Earl (1992), the model represented below in Figure 10.2 arises substantially from this research.



**Figure 10.2: Key research findings**

### **10.3. Stages of Growth Model**

The research findings shown in Figures 10.1 and 10.2 above can be further examined by using Galliers and Sutherland's (1991) revised stages of growth model (see Table 2.5). As mentioned in Chapter 2, the Galliers and Sutherland's (1991) Model allows organisations to determine their IS/IT maturity level. Moreover, seven perspectives form the backbone of their model: (1) strategy; (2) structure; (3) systems; (4) staff; (5) style; (6) skills; (7) superordinate goals. The two case studies conducted by the researcher will be discussed under these 7 perspectives within the model in order to highlight the differences between the organisations which had adopted a BRM and those which did not.

#### **(1) Strategy**

The main strategy for both organisations (case 1 and case 2) was to actively seek opportunities for the strategic use of IT, to cut costs, and to increase service delivery. The Department (case 1) used an informal IS/IT investment evaluation approach whereas the Agency (case 2) adopted both an informal IS/IT investment evaluation approach and a formal benefits realisation methodology. Furthermore, the use of a formal benefits realisation methodology had enabled the Agency to undertake organisational changes and ensured benefits delivery. However, there were few assessments, especially post-implementation review (PIR), by either organisation for their outsourcing contracts.

The Department was possibly at stage 4 of Galliers and Sutherland's model whereas the Agency was probably at stage 5.

#### **(2) Structure**

There were separate IT and business units within both organisations. The IT function was well-defined and well-organised in both organisations. However, there seemed to be better integration within the Agency (case 2). Within the Department (case 1), there was a separate strategic and business services unit which was responsible for IS/IT information and contract management. CIO and IS/IT managers were also appointed within the unit. The IS/IT structure within the Agency (case 2) was similar to the Department. It had a unit called Major Projects Unit (MPU) for managing the

IS/IT projects. One of the most visible differences was that a Value Management Office (VMO) was formed within the Agency to oversee the implementation of organisational change and benefits realisation process. The VMO was set up as part of the Agency's benefits realisation methodology under the Partnership contract.

Furthermore, there seemed to be more senior management support and control within the Agency. The IS/IT requirements within the Agency was imposed by the senior executives (top-down management) whereas the individual areas within the Department had to ask the senior management for their IS/IT requirements (bottom-up management). Maybe as a law enforcement agency the people within the Agency were used to following orders from their superiors.

The Department was possibly at stages 3/4 of Galliers and Sutherland's model whereas the Agency was probably at stages 4/5.

### **(3) Systems**

Both organisations' IS/IT were used in an attempt to increase efficiency and improve service. Most of the new systems and projects were basically decentralised but with proper central control and co-ordination by their CEO or senior executives. But there was still a lack of control over the data as well as skilled people to maintain the existing systems and to develop new systems. That was why many IS/IT functions were outsourced to external contractors to improve their services and capabilities. Both organisations' IS/IT also attempted to embark on inter-organisational systems with suppliers, customers, and other government departments. However, the Agency (case 2) had adopted a formal benefits realisation methodology to help them manage the IS/IT projects as well as to ensure the benefits expected out of these projects were actually delivered.

More importantly, the Department (case 1) adopted the strategy of total outsourcing whereas the Agency (case 2) selectively outsourced some of its IS/IT functions. The Agency was still considering what other functions to outsource but had decided that they would never outsource their security function. The benefits realisation methodology had aided the Agency to make informed decisions as to which functions to outsource. It was possible that the Agency's decision to outsource was

determined by the “value for money” policy while the Department’s had been determined by a political process (Kakabadse and Kakabadse, 2001). As mentioned earlier in Chapter 6, some state government departments were forced to outsource almost all of their IS/IT functions because of the government policy (i.e. a political process ) (McCarrey, 1993).

The Department was possibly at stage 4 of Galliers and Sutherland’s model while the Agency was at stage 5.

#### **(4) Staff**

Both organisations had traditional staff such as business analysts, designers, programmers, and other skilled IS/IT personnel before outsourcing. The Department (case 1) had a CIO and also had a strategic planning unit under the CIO. However, the Department had outsourced almost its entire IS/IT staff to external contractors. On the other hand, the Agency (case 2) had a senior Project Director and its board of senior executives was heavily involved in its IS/IT decision-making process. The Agency’s board of senior executives seemed to have taken a more active role than the Department’s senior management in making important IS/IT outsourcing decisions and in managing the IS/IT investments.

Therefore, the Agency (case 2) was probably at stage 5 whereas the Department (case 1) was at stage 4 of the Galliers and Sutherland’s model.

#### **(5) Style**

Both organisations were under pressure from the state government to become more efficient and effective in their use of IS/IT. In the past, no proper measurements and/or methodologies were used to justify their spending. That was why some IS/IT functions were outsourced to external contractors. Also, discussion was initiated and established throughout the organisation for all IS/IT-related issues. The Head of IT seemed to be under pressure and was deliberately chosen as being a person who could ensure that IS/IT worked in conjunction with, and to the benefit of, the rest of the organisation. Both organisations had product champions who had tried to push their projects or systems but such systems were hard to justify on standard cost-benefit analysis basis. They needed very powerful members of the organisations to

ensure that they were implemented. Both organisations had used an informal IS/IT investment evaluation process to help them prioritise and assess their IS/IT needs. The Agency's senior management went a step further by adopting a formal benefits realisation methodology to undertake organisational changes and making sure that expected benefits were delivered at the end of each project. The benefits realisation methodology also allowed the senior management of the Agency to deal with user resistance and forced users acceptance.

Therefore, the Agency (case 2) was probably at stage 5 whereas the Department (case 1) was at stage 4 of the Galliers and Sutherland's model.

#### **(6) Skills**

Both organisations seemed to possess IS/IT staff who had some good project management and business skills. Organisational IS/IT integration appeared to be the major challenge for both organisations. Many IS/IT staff were unable to handle the skills required to implement some of the new IS/IT projects. This was probably one of the reasons why some IS/IT functions were outsourced by both organisations. The Department did not employ any formal methodologies (IS/IT investment evaluation and benefits realisation), only an informal IS/IT investment evaluation process or approach was used. In addition, it had outsourced almost its entire IS/IT staff to external outsourcing contractors. Therefore, it had to rely heavily on the technical expertise from external contractors.

On the other hand, the senior executives at the Agency (case 2) seemed to have more advanced knowledge in this area than the Department (case 1). They knew that it was good for the organisation to implement a benefits realisation methodology and to train many of its users regarding the benefits realisation and other IS/IT practices. More importantly, the Agency had retained much of its technical skills by keeping most of its IS/IT staff and functions within the organisation.

The Department was at stage 3/4 while the Agency was probably at stage 5/6.

#### **(7) Superordinate goals**

Under pressure by the state government, both organisations' senior management

were concerned about the amount of money being invested into IS/IT. They were justifiably worried about whether they would see an adequate return on their investments. Their goals were the same - to efficiently and effectively utilise their IS/IT and at the same acquired required technical skills and achieved cost savings. All areas within the both organisations were working towards these goals. However, only the Agency which had adopted a benefits realisation methodology was able to identify and act on the opportunity for strategic advantage. Everyone within the Agency was educated about the benefits realisation practices, at least to certain extent, and encouraged to undertake the organisational changes.

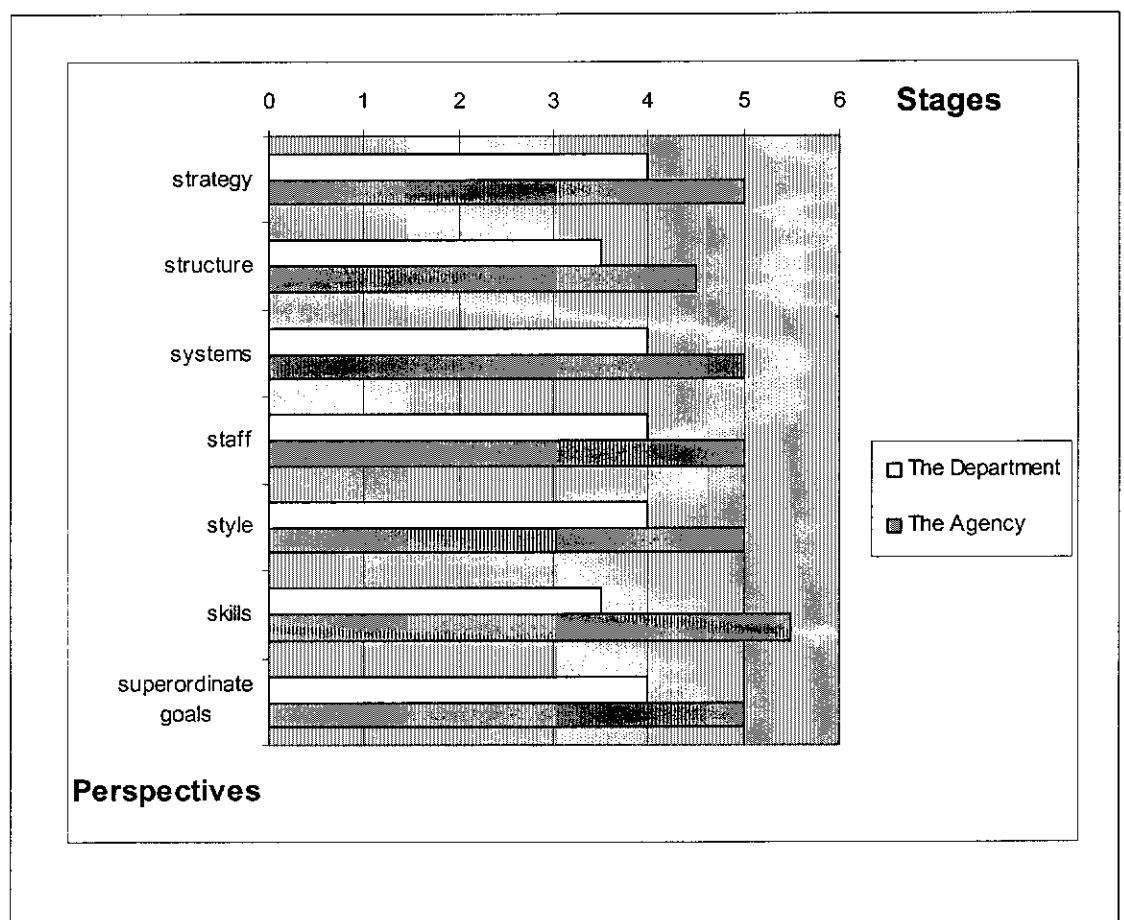


Figure 10.3: The Department and the Agency's growth stages in terms of 7 perspectives in the context of the Galliers and Sutherland's Model

The Department was probably at stage 4 of Galliers and Sutherland's model while the Agency was at stage 5.

The outcomes described in terms of the Galliers and Sutherland's Model for the Department (case 1) and the Agency (case 2) are summarised in Figure 10.3. As can be seen from Figure 10.3 below, the Department's seven perspectives were lower than the Agency's. The Department's seven perspectives were at around stages 3 and 4 (mostly at stage 4) whereas the Agency's were mostly at around stages 4 and 5 (mostly at stage 5). Although the Agency seemed to be a more mature organisation than the Department, both organisations were not fully mature organisations (at stage 6). This issue will be elaborated further later in this chapter.

#### **10.4. Critique of the three benefits realisation models**

As mentioned before, both the Department and the Agency had encountered some problems when they outsourced all or some of their IS/IT functions. However, it was a bit surprising to see that while the Agency had adopted a formal benefits realisation methodology the organisation itself still could not resolve all of its problems (e.g. embedded contract mentality). Therefore, it might be worthwhile to examine the benefits realisation methodologies themselves to determine why this was the case.

The purpose of this section is to critique these benefits realisation models in terms of the unresolved problems and issues within the Agency using the data collected and analysed in survey and case studies. It is not the researcher's intention to discuss the pros and cons of these benefits realisation models. For a detailed discussion on these methodologies please refer to Chapter 2. In addition, the Galliers and Sutherland's model will be used to explain why the Agency's problems could not be resolved completely by a formal benefits realisation methodology.

Three well-known formal benefits realisation models were described in Chapter 2 – the DMR Benefit Realisation Approach, Cranfield Process Model of Benefits Management, and Active Benefit Realisation (ABR). These three methodologies will be the subject of the analysis and discussion in terms of the problems and issues faced by the Agency.

##### **10.4.1. The DMR Benefits Realisation Approach**

The cornerstones of the DMR Benefits Realisation Approach (hereafter referred to as



the “Approach”) are program management, change management, portfolio management, and full cycle governance – measurements and accountability (Thorp, 2001). As mentioned in Chapter 2, the Approach is generally applied in four phases: (1) business cases for investment programs; (2) methods of investment program management; (3) benefits realisation modelling; and (4) measurement systems and accountabilities (Truax, 1997).

The implementation of the DMR Benefits Realisation Approach enabled the Agency (case 2) to have a rigorous benefits realisation process within the organisation and avoided the problems such as complicated contract arrangements and over-reliance on a single contractor as evident in the case 1 organisation (the Department). Moreover, the Approach allowed the Agency to have better control over the IS/IT skills shortage within the organisation and the ability to manage the outsourcing contracts without external interference, influence and assistance.

However, the adoption of the DMR Benefits Realisation Approach did not enable the Agency to solve all of its problems. For example, the Approach did not seem to have any solution to completely overcome some of the problems such as embedded contract mentality and focus on quantitative IS/IT investment evaluation measures, arising from the restrictive nature of outsourcing guidelines set out by the government.

Another example is that the adoption of the Approach was not able to change some of the Agency’s external outsourcing contractors’ commitment to their contracts. The contractors’ main motivation seemed to be to maximise their profits. The Approach did not seem to have any effective strategy for dealing with this type of problem.

Moreover, the Approach’s change management did not seem to go far enough to educate the stakeholders’ perceptions on the motivation for and criteria for determining success of the outsourcing contracts. Not only did the stakeholders have different perceptions about the motivation for and criteria for determining success of the outsourcing contracts but also the perceptions of both were not the same. Access to technical expertise and cost saving were mentioned by many of the Agency’s stakeholders as the main motivation for outsourcing. However, the stakeholders

seemed to have different perceptions about the criteria for determining success of the outsourcing contracts. In order to increase the Agency's success of the benefits realisation and outsourcing processes, it was important for its stakeholders to have similar perceptions about the criteria for determining success of the outsourcing contracts.

Lack of user involvement and participation in contract development was yet another problem for the Agency. These problems were not resolved by the Approach. In addition, the Approach did not mention any solution for keeping the knowledge of the contract development from start to finish within the Agency in order to avoid an organisational memory gap.

Furthermore, since the DMR Benefits Realisation Approach is a proprietary methodology, a lot of actual and finer details about the Approach are probably hidden away from the public. Therefore, it is hard to determine whether or not some solutions are in fact included in the methodology to resolve the above-mentioned problems.

In addition, it might also be time consuming and expensive to implement the methodology as organisations have to rely on DMR to provide the service.

However, it was highly likely that the occurrence of the above-mentioned problems and issues was largely due to the fact that no formal IS/IT investment evaluation methodology was implemented by the Agency. It was unlikely that any formal benefits realisation methodology (including those two which will be mentioned below) alone would resolve these problems and issues. Both IS/IT investment evaluation and benefits realisation methodologies needed to be adopted together by the Agency (and the Department) in order to ensure that such problems would not occur so that the IS/IT outsourcing contracts would be successfully implemented.

#### **10.4.2. Cranfield Process Model of Benefits Management**

The Cranfield Process Model of Benefits Management (hereafter referred to as the "Model") was developed from other models of planned business improvement such as total quality management (Ward et al., 1996). It consists of five stages: (1)

identifying and structuring benefits; (2) planning benefits realisation; (3) executing the benefits realisation plan; (4) evaluating and reviewing results; and (5) potential for further benefits (Ward et al., 1996). In addition, the Model has placed good emphasis on implementation of a change program.

Similar to the difficulties faced by other methodologies, the Cranfield Process Model of Benefits Management does not seem to offer any solution to completely overcome some of the problems arising from the restrictive nature of outsourcing guidelines set out by the government.

Another example is that the Model has not mentioned how to deal with outsourcing contractors' commitment to their contracts. Naturally, one of the main motivations of a contractor is to maximise profits, and the outsourcing organisation's main motivation is to reduce cost and/or improve service delivery. The Model does not seem to offer any effective strategy or guidelines for dealing with this type of problem.

It is also unclear as to whether or not the Model's change program would ensure that the stakeholders or users would have same perceptions on motivation for outsourcing and criteria for determining the success of outsourcing contracts. Furthermore, the Model does not seem to mention any solution for keeping the knowledge of the contract development from start to finish within the Agency (i.e. organisational memory gap), and the need for keeping the same personnel for managing the entire systems development cycle.

Again, it is hard to determine whether or not some solutions are in fact included in the methodology to resolve the above-mentioned problems because the critique is based on a paper published in 1996 (Ward et al., 1996). Also, the Model can be time consuming and expensive to implement, as indicated by the authors (Ward et al., 1996).

Finally, as mentioned earlier, a formal benefits realisation methodology alone can not be expected to be very effective in terms of making sure that the IS/IT projects are successful. Both IS/IT investment evaluation and benefits realisation methodologies

have to be adopted together by the organisations (e.g. the Agency and the Department) to ensure that the problems mentioned would be minimised or eliminated completely and the benefits expected are realised. This is because a formal benefits realisation methodology is probably not designed to overcome some of the problems faced by the Agency (e.g. embedded contract mentality). It has to be adopted in conjunction with a formal IS/IT investment evaluation methodology.

#### **10.4.3. Active Benefit Realisation (ABR)**

According to Remenyi and Sherwood-Smith (1998), the Active Benefit Realisation process (hereafter referred to as the “ABR”) is an iterative process based on the evaluation of progress, a review to make sure that the systems development is on course to realise business benefits, and an agreement to proceed. As mentioned in Chapter 2, the ABR process can be divided into three main phases: (1) setting the course – developing a set of precise requirements; (2) formative evaluation – assessing the progress of the project; and (3) moving forward – providing feedback loop (Remenyi et al., 1997).

One of the main problems with the ABR process is that it relies on the assumption that the agreements to proceed from the stakeholders can be obtained easily before the development process begins. Sometimes it is not possible to get all the stakeholders to understand the process and agree to cooperate before the benefits realisation and outsourcing processes begin. User resistance has to be carefully dealt with during the process as it might not have surfaced in the beginning of the systems development process.

Another likely problem is that the ABR process does not seem to offer any effective guidelines for dealing with external outsourcing contractors and their commitment to their contracts. Similar to the problems faced by DMR Benefits Realisation Approach, the ABR process may not be able to effectively deal with problems such as conflicting motivations for outsourcing and different perceptions of criteria for determining success of outsourcing. The steps for dealing these problems seem to be missing from the published ABR process.

One thing it does well is that it involves users or stakeholders in developing their

requirements. However, the ABR process does not appear to offer any solutions to ensure that same stakeholders are involved for the entire systems development process, nor does it have any steps or guidelines for dealing with the external outsourcing contractors and the problems arising from the ineffective service level agreements (i.e. the Department's LWD contract). For the Agency, this had caused problems such as focus on quantitative IS/IT investment evaluation measures.

Again, the researcher wishes to point out that it is difficult to confirm whether or not some solutions are in fact included in the methodology to resolve the above-mentioned problems because the critique is based on the papers published by the methodology's authors (Remenyi et al., 1997; Remenyi and Sherwood-Smith, 1998). Moreover, as with many other methodologies, the ABR process may be time consuming and expensive to implement as indicated by the authors (Remenyi and Sherwood-Smith, 1998).

Finally, a formal benefits realisation methodology alone cannot be expected to ensure that the IS/IT projects are successfully implemented without other methodologies or techniques such as a formal IS/IT investment evaluation methodology (Willcocks and Lester, 1997). The above critique of the three formal benefits realisation methodologies served not to criticise these methodologies but to highlight: (1) the deficiency of relying on only a formal benefits realisation methodology (BRM); and (2) the importance of adopting a formal IS/IT investment evaluation methodology (IEM) with a formal BRM. Both IEM and BRM are important for the organisations to eliminate or minimise the problems or issues they are facing. As mentioned earlier, it is unlikely that any formal benefits realisation methodology alone would resolve the problems and issues faced by the Agency.

#### **10.4.4. Summary**

While it is beneficial for an organisation to use a formal benefits realisation methodology at any stage, the methodology might be most effective when an organisation is at a very mature stage. This is because no benefits realisation methodology is perfect. They all have their weaknesses. It is possible that by the time an organisation reaches a very mature stage (Stage 6) most of the problems or weaknesses within the methodologies as mentioned earlier would be resolved by the

organisation itself (e.g. by other means including the adoption of a formal IS/IT investment evaluation methodology). Similarly, when an organisation is at an earlier stage, many problems faced by an organisation may not be resolved entirely by a formal benefits realisation methodology alone.

Moreover, a benefits realisation methodology alone is probably not enough to push the organisation to a mature stage. Both formal IS/IT investment evaluation and benefits realisation methodologies have to be adopted in order for organisations to push themselves to a higher stage and resolve the problems and issues they face.

From the data collected for this research, one of the major problems faced by most organisations was that they did not realise a formal IS/IT investment evaluation methodology had not been adopted nor did they understand much about IS/IT investment evaluation concepts and practices. The lack of the understanding of these practices and concepts presented a grave danger to the organisations involved. Even the participants within the Agency which had adopted a formal benefits realisation methodology did not know much about IS/IT investment evaluation practices and concepts! Therefore, there is a need to develop some sort of guidelines for the organisations undertaking IS/IT projects to follow. For example, risk analysis should be built into the IS/IT projects to identify and assess the risks in terms of their probability and impact to the organisations since these projects introduce many high risks. As risks will change over time these risk assessments have to be an on-going process (Griffiths and Willcocks, 1994). Normally, the risk analysis should form part of any formal methodology and guidelines for the organisations. The suggested guidelines will be discussed later in this chapter.

### **10.5. Guidelines for Practice Arising from the Research**

From the findings discussed earlier in this chapter, it is now possible to give some general guidelines or practical advice to managers and practitioners to aid them during their IS/IT outsourcing, investment evaluation, or benefits realisation processes. In addition, some of the following guidelines for outsourcing organisations can also be used to improve the effectiveness of the above-mentioned benefits realisation methodologies.

**Problem:** Lack of understanding of the IS/IT investment evaluation practices and concepts.

**Suggestion:** Use a formal IS/IT investment evaluation methodology to increase the understanding of investment evaluation practices in order to carry out proper evaluation of investment risks and benefits.

According to Willcocks et al. (1995), there are four areas of weakness in the evaluation of IS/IT projects in organisations: (1) failure to establish adequate measurement of the pre-existing in-house performance; (2) limitations in the economic assessment of vendor bids; (3) failures in contracting in sufficient detail; and (4) inadequate attention to setting up measurement systems to monitor vendor performance. These often can affect the level of success or failure of the projects involved. In addition, Hochstrasser (1990) indicated that indirect human and organisational costs might be four times as high as direct costs. It is important to use a formal IS/IT investment evaluation methodology in order to measure the indirect costs and benefits.

All IS/IT projects should be guided by an explicit methodology (Outsourcing Interactive, 2000). Therefore, a formal IS/IT investment evaluation methodology should be adopted by the organisations involved in the IS/IT outsourcing and systems development processes. Not only would this provide proper evaluation of investment risks and benefits but also enhance the understanding by the organisations of investment evaluation and its importance during the IS/IT outsourcing and systems development processes. As mentioned earlier, even the Agency with a formal benefits realisation methodology without a formal IS/IT investment evaluation methodology was unable resolve many problems and issues faced.

In addition, the education of the users within the organisation regarding the practices of benefits realisation and IS/IT investment evaluation is extremely important. The results from the survey and case studies for this research indicate that many people within the organisations did not understand the concepts of IS/IT investment evaluation and benefits realisation. For example, many survey respondents and case study participants mistakenly thought that the NPV or the service level agreement

was a formal IS/IT investment evaluation methodology.

**Problem:** Lack of understanding of the benefits realisation practices and concepts.

**Suggestion:** Use a formal benefits realisation methodology to increase the understanding of benefits realisation practices in order to manage benefits and ensure the delivery of proposed benefits.

A case study conducted by Serafeimidis and Smithson (2000) concluded that the failure to appreciate and support the necessary organisational changes can lead to failure in adopting more appropriate IS/IT evaluation techniques. Therefore, a formal IS/IT benefits realisation methodology should be adopted, whenever possible, by the organisations involved in the organisational changes, IS/IT outsourcing, and systems development processes. Not only would this ensure the delivery of the proposed benefits but also enhance the organisations' understanding of benefits realisation practices and its importance during the IS/IT outsourcing and systems development processes. More importantly, the adoption of a benefits realisation methodology is crucial in determining the success of an outsourcing contract because it can constantly remind the organisation of its goals and objectives. This can also encourage the organisation to support and carry out the necessary changes within the organisation.

For example, one participant in case study 2 (the Agency) said: "it (Benefits Realisation Approach) clearly highlights to you what was proposed in the first place ..... why the project was commenced..... I've found the main benefits in this methodology is that you continually go back and revisit the original business plan of what you have been telling people so in 2 years' time when you do deliver you keep promises, unlike politicians." On the other hand, the participants in case study 1 (the Department) did not know anything or care about the benefits realisation concepts and practices. The participants in the Department were generally less enthusiastic about the IS/IT contracts than the participants from the Agency. This is consistent with the finding by Marshall and Walsh (1998) that if the overall goals of the outsourcing are not communicated properly throughout the organisation it will be



difficult for the individuals within the organisation to react positively to the outsourcing.

**Problem:** IS/IT skill shortage and technical knowledge within the organisations.

**Suggestion:** Avoid outsourcing too many IS/IT staff, especially the experienced ones. Skills in IS/IT systems planning, as well as contract and project management should be kept in-house in order to retain necessary technical capabilities and avoid the organisational memory gap.

In order to prevent IS/IT skill shortages, the organisations should determine which IS/IT staff to retain and which ones to outsource. Risk analysis should also be carried out to determine the needs of the organisations (Griffiths and Willcocks, 1994). If the organisations allow most of their IS/IT staff to leave, an organisational memory gap can occur (Cormack et al., 2001). This applies especially to those staff who possess important skills in IS/IT systems planning, contract and project management, and outsourcing (Marshall and Walsh, 2001).

The Department (Case 1) was a good example of this, where it had outsourced almost its entire IS/IT staff. As a result, the Department was not able to manage its outsourcing projects without external assistance. It had to rely on one of the contractors for its IS/IT advice. This had also caused some resentment from other contractors who were not consulted. On the other hand, the Agency (Case 2) had retained much of its skilled IS/IT staff and therefore, had enough left to manage its outsourcing projects without external assistance. Another important factor was that the Department adopted a strategy of total IS/IT outsourcing whereas the Agency selectively outsourced only a portion of their IS/IT functions. As a result, the Department outsourced almost their entire IS/IT staff to the contractors. This issue will be further elaborated later in this chapter.

**Problem:** Lack of user involvement and participation in contract development.

**Suggestion:** Use a formal process to retain organisational knowledge

and assign the right people and necessary resources to run the contract development and management process. The people who negotiate the contracts should become the contract managers.

Continuity of staff on both sides of outsourcing contracts is very important if an organisational memory gap is to be avoided (Marshall and Walsh, 2001). People involved in the original contract negotiation process should be included in the contract and project management process. More importantly, key users should also be included in the original contract negotiation process in order to minimise users resistance. According to Tait and Vessey (1998) and Lee and Kim (1999), user involvement and participation have a positive effect on the successful outcome of system development and outsourcing. This implies that getting users involved in the development process may enhance the importance and relevance users perceive about the system development process (Lin and Shao, 2000).

Furthermore, communication amongst the key people is critical to successful IS/IT investment evaluation and benefits realisation processes. Keeping key people informed every step of the way and working out a deal perceived as fair for them is important (Outsourcing Interactive, 2000). Individuals who feel that they have been mistreated will have the power to bring systems down (Outsourcing Interactive, 2000). For example, the communication was perceived to be poor in the Department and its participants were generally more unhappy with IS/IT projects than the participants from the Agency which had better communication amongst key people.

Finally, a formal benefits realisation methodology needs to be implemented in the very beginning with a formal IS/IT investment evaluation methodology and to be managed by the same key personnel throughout the whole systems development and contracts process. If this is not possible, there should be a process where the knowledge gained by the staff members involved in the earlier processes is passed on to the staff members involved in the later processes.

**Problem:** Embedded contract mentality.

**Suggestion:** Use more qualitative measures as well as formal IS/IT investment evaluation and benefits realisation methodologies.

To avoid an embedded contract mentality, both formal IS/IT investment evaluation and benefits realisation methodologies should be adopted by organisations. The formal methodologies tend to include more qualitative measures. It would be much harder for individuals within the organisation to just fulfil the terms specified within the SLAs if some formal methodologies are adopted. It is also important to convey to the stakeholders within the organisations the overall goals and objectives of the outsourcing decision. To avoid an embedded contract mentality, the organisation must have a mechanism to determine when it is not feasible for the managers and contractors to follow the terms of the contracts alone. For example, a customer or user satisfaction survey can be used to influence the behaviour of the managers and contractors.

As mentioned earlier in Table 10.7, the organisations without a benefits realisation methodology were more likely to overstate the benefits in order to get the projects approved. This seems to imply that the organisations without a benefits realisation methodology placed more emphasis on getting project approval than those organisations which had a benefits realisation methodology. Perhaps it is easier for the organisations without a benefits realisation methodology to overstate the benefits and manipulate the measures.

Finally, not only the performance measures have to be objective and collectable at a reasonable cost, they also have to be enforceable. For example, the contractor for the LWD contract (for the Department) had successfully thrown out a scorecard measurement because it could not meet this measurement criterion. As a result, the LWD was perceived as the most unsuccessful IS/IT outsourcing contract by the Department.

**Problem:** Lack of commitment by contractors.

**Suggestion:** Have a genuine partnership and involve both sides throughout the whole process. Establish a relationship management structure and process as part of the contract and be careful about the terms and conditions of contracts.

To minimise the lack of commitment by contractors, genuine partnership and an open book relationship should be struck. A study by Lee and Kim (1999) indicates that partnership quality may serve as a key predictor of outsourcing success. Partnership quality was found to be positively influenced by factors such as participation, communication, information sharing, and top management support, and negatively affected by age of relationship and mutual dependency (Grover et al., 1996; Lee and Kim, 1999). An Australian study by Beaumont and Costa (2002) also found that the factors most associated with successful IS/IT outsourcing were the cultural match between the contractor and the outsourcing organisation, and the nature of the contractual arrangements – partnerships. It is also important to check contractors' reputation as it also has a positive effect on IS/IT outsourcing success (Wang, 2002).

For the Department (case 1), there was a mutual dependency between the Department and the Contractor 1 under BDMW (one other contractor mentioned that the Department depended heavily on the advice of the Contractor 1 for its IS/IT requirements at the expense of other contractors) and there was a lack of:

- (1) Participation - contract coordinators and managers were not involved in the original tendering and contract negotiation process with the contractors.
- (2) Communication – one contractor noted that branches or units within the Department did not communicate well and there seemed to be some communication problems between the contractors and the Department from time to time.
- (3) Top management support – the CIO mentioned that the Department's senior management treated IS/IT as an overhead (not an expense).
- (4) Information sharing – since contract coordinators and managers were not involved in the original tendering and contract negotiation process and almost its entire IS/IT staff were outsourced to external contractors, there appeared to be a organisational memory gap or lack of information sharing within the organisation.

For the Agency (case 2), there was good top management support (the senior executives were the ones responsible for making the decision to adopt a formal

BRM), but there was a lack of:

- (1) Participation - contract coordinators and managers were not involved in the original tendering and contract negotiation process.
- (2) Information sharing – since contract coordinators and managers were not involved in the original tendering, there appeared to be a organisational memory gap or lack of information sharing within the Agency.

Therefore, it was not difficult to see from the above that the partnership quality for the Department and the Agency was not good at all. Involvement by both contracting parties throughout the whole outsourcing process is critical. It can affect the participation and information sharing activities within the organisations. The adoption of IS/IT investment evaluation and benefits realisation methodologies can also help to minimise the lack of commitment by contractors by providing fair and rigorous processes for both sides to follow. The methodologies would also enable the organisations to help all parties to communicate effectively with each other and to continuously monitor and assess the progress of the outsourcing contracts. In addition, the methodologies should assist the organisations in providing better processes for contract communication and developing appropriate management structures.

Furthermore, the organisations should gain top management and stakeholder support before committing to a contract or project. The organisations should avoid long-term contracts and heavy dependency on a few external contractors.

Finally, negotiation skills are also needed to help the Department and the Agency to negotiate a win-win situation with contractors from the very beginning. It is extremely important to have a good communication channel with the contractors. Therefore, training in negotiation and communication skills should form part of any methodology. This can be done by having a formal relationship management structure linking the organisations and contractors in the contract. This structure typically takes the form of joint management teams which have responsibility for day-to-day, tactical, and strategic aspects of the relationship (Outsourcing Interactive, 2000).

**Problem:** Inability to manage the outsourcing contracts without external influence and assistance.

**Suggestion:** Consider selective outsourcing instead of total outsourcing.

The Department (case 1) adopted the strategy of total outsourcing. According to the Department's CIO, the only IS/IT function left was the IS/IT management unit within the organisation. Financially, the Department was not able to hold on to most of its technical staff and most of them were outsourced to the external contractors. In addition, the second contract, LWD, was almost terminated because of its poor performance. Helpdesk went back to the Department and the rest were transferred to another contract (the BDMW). Thus, total outsourcing can lead to trouble a few years into the contract (Lacity et al., 1996). This is evident in the poor performance of the Department's LWD contract.

On the other hand, the Agency (case 2) adopted a strategy of selective outsourcing which was less risky. Only some IS/IT functions were outsourced and this also led to fewer technical staff being outsourced as well. The board of senior executives were still considering what other functions to outsource but had decided that they would never outsource their security function as this was one of their core functions. The benefits realisation methodology aided the Agency to make informed decisions as to which functions to outsource.

Selective outsourcing is generally more successful than total outsourcing (Lacity and Willcocks, 1995). According to Lacity et al. (1998), selecting which IS/IT activities to outsource and which to retain in-house requires treating IS/IT as a portfolio. Moreover, successful outsourcing begins with an analysis of the business contribution of various IS/IT activities (Lacity et al., 1998). Finally, it is possible that the Agency's decision to outsource was determined by the "value for money" policy while the Department's had been determined by a political process (Kakabadse and Kakabadse, 2001). Again, the adoption of a formal IS/IT investment evaluation methodology would probably ensure that both the Department and the Agency's IS/IT functions were outsourced for the right reasons.

**Problem:** Conflicting perceptions of the stakeholders.

**Suggestion:** Educate the stakeholders about not only the organisational goals but also the motivations for outsourcing as well as criteria for determining success of the outsourcing contracts.

Organisations have to make sure that they not only educate the stakeholders and users about the concepts of benefits realisation but also other organisational goals and objectives such as motivations for outsourcing and criteria for determining success of the outsourcing contracts. There are potential disadvantages for not adopting a formal IS/IT investment evaluation methodology and therefore causing conflicting perceptions about the reasons for outsourcing amongst the stakeholders. These include outsourcing for the wrong reasons, losing control of the resource, losing staff who have been trained in the organisation's particular business practices and have become a critical part of the organisation, and the risk that the outsourcing contractors may not be able to achieve the desired benefits or may fail in providing critical services (Outsourcing Interactive, 2000). The LWD contract for the Department was a good example of not having a clear objective for outsourcing and, as a result, having conflicting motivations for outsourcing and criteria for determining success of the contracts. In the end, the LWD contract failed and was terminated by the Department.

In summary, several suggested guidelines for improving IS/IT investment evaluation and benefits realisation practice were presented in this section. These included the use of formal methodologies, understanding of IS/IT investment evaluation and benefits realisation practices, keeping skilled IS/IT staff, management of organisation memory, user involvement and participation in contract development, adoption of partnership and open book outsourcing contract, adoption of selective outsourcing instead of total outsourcing, and education of users about the motivations for outsourcing. These guidelines were intended to help the managers in solving some of the problems encountered during their outsourcing processes.

## **10.6. A Benefits Realisation and Investment Evaluation Framework**

The discussions on the critique of the three benefits realisation methodologies, the application of the Galliers and Sutherland's Model on two case studies, and the suggested guidelines given above, combined with the analysis of the data from the survey and case studies have enabled the researcher to build a conceptual framework for the benefits realisation and IS/IT investment evaluation.

### **10.6.1. Stages of growth**

As mentioned earlier, the use of a formal benefits realisation methodology can be beneficial to an organisation during its outsourcing process. However, when an organisation is not yet a mature entity the methodology alone may not be able to resolve all the problems the organisation is facing. As can be seen in the second case study (the Agency), some problems remained within the organisation even after a formal benefits realisation methodology was implemented, despite the fact that the Agency seemed have less problems than case 1 (the Department). One possible explanation is that a formal IS/IT investment evaluation methodology was not adopted by the Agency for its outsourcing process and so it was unable to push the organisation towards a more mature stage. As indicated by the survey results, the greater usage of the IS/IT investment evaluation methodology tended to result in greater success of the implementation of information systems.

Another possible explanation can be due to the fact that the Agency was undergoing some organisational change and outsourcing processes and was not yet a fully mature organisation (at stage 6). Further, it would take some time for the Agency to reach such a mature stage. By adopting a benefits realisation methodology (BRM) and maybe later a formal IS/IT investment evaluation methodology (IEM), the Agency may hopefully accelerate towards a more mature stage.

Figure 10.3 above shows that the Agency was at a higher stage than the Department. All of the Department's seven perspectives were mostly at stage 4 whereas the Agency's seven perspectives were mostly at stage 5. However, neither of the



organisations was at stage 6.

Figure 10.4 below is a 2x2 matrix plotting the existence of a formal BRM methodology (yes or no) against maturity stage (middle or advanced). It shows the Department (case 1) was located in quadrant 1 with only an informal IS/IT investment evaluation methodology (IEM) whereas the Agency (case 2) was located in quadrant 4 with an informal IEM and a formal benefits realisation methodology (BRM). The Department was at a middle stage (stage 4) while the Agency was at a more advanced stage (stage5).

How did the Agency arrive at a more advanced stage (in quadrant 4) from a middle stage (quadrant 1 or 2)? There were two possible routes here. One was from quadrant 2 and another one was from quadrant 3. Another important question would be how the Agency could go from here (in quadrant 4) to a mature stage and possibly resolve most of the problems it was facing. Figure 10.4 below does not seem to offer much answer here.

|                        |     | Stages   |  |
|------------------------|-----|--|--|
|                        |     | Middle   | Advanced   |
| Formal BRM Methodology | No  | ①<br><b>Case 1</b><br>no BRM &<br>informal IEM | ③  |
|                        | Yes | ②  | ④<br><b>Case 2</b><br>formal BRM &<br>informal IEM |

Figure 10.4: A basic stages vs formal BRM methodology matrix

### **10.6.2. Road to the maturity**

An expanded figure is constructed by the researcher to show the relationship between the maturity stage (extended to Middle, Advanced or Mature) and the use of the benefits realisation methodology (Figure 10.5). As shown in Figure 10.5 below, the Department (case 1) was in Area A with no BRM while the Agency was in Area D with BRM. The maturity stage is the stage 6 of the Galliers and Sutherland's Model.

For any organisation, arguably the ultimate goal is to go to Area F – a mature stage, with both formal BRM and formal IEM. Organisations which reside in Area D in the advanced stage and Area E in mature stage are probably not yet fully mature organisations. Organisations under these two areas possibly have not yet adopted both formal IEM and formal BRM together. It is preferable that an organisation should adopt a formal IEM before a formal BRM. Alternatively, an organisation can adopt both methodologies at the same time although it is probably unrealistic as adopting a formal methodology requires substantial investment in time and money.

It is also arguable here that it would be almost impossible for an organisation to reach these semi-mature areas (D and E) without at least one formal BRM and one informal IEM or vice versa. Similarly, it would also be extremely difficult for an organisation to reach an advanced stage in Area D without adopting a formal BRM with a formal or informal IEM.

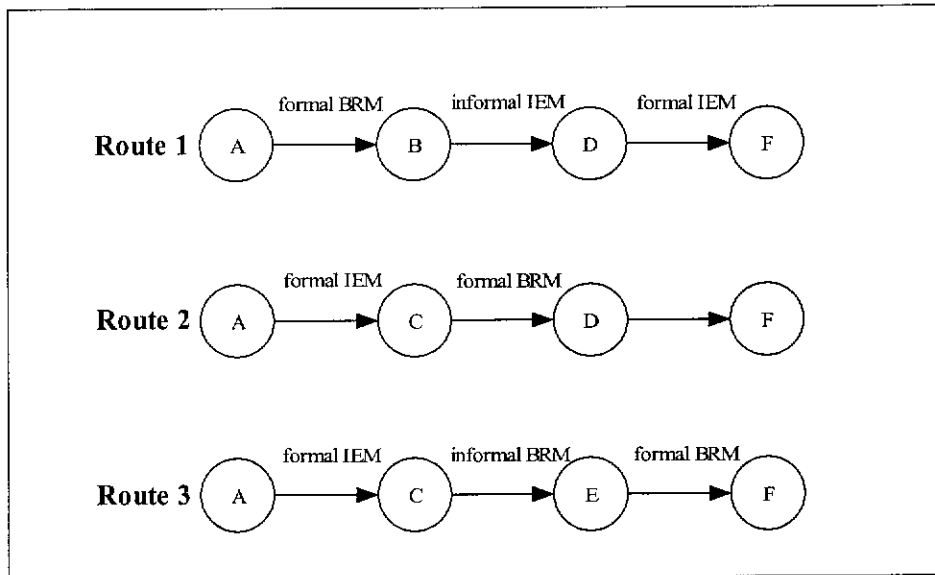
Figures 10.5 and 10.6 are only intended to be used as tools or guidelines for an organisation to determine how to reach the maturity stage of the Galliers and Sutherland's Model. Similarly, the methodologies required to be implemented for each route are only mentioned as the possible tools to achieve the goal of reaching a higher stage or area.

|                        |     | Stages                            |  |  |
|------------------------|-----|-----------------------------------|--|--|
|                        |     | Middle                            | Advanced   | Mature   |
| Formal BRM Methodology | No  | (A)<br><br>no BRM &<br>no IEM     | (C)<br><br>no BRM &<br>formal IEM                                      | (E)<br><br><b>Semi-ideal</b><br>informal BRM<br>& formal IEM |
|                        | Yes | (B)<br><br>formal BRM &<br>no IEM | (D)<br><br><b>Semi-ideal</b><br>formal BRM &<br>informal/formal<br>IEM | (F)<br><br><b>IDEAL</b><br>formal BRM &<br>formal IEM        |

Figure 10.5: Stages vs formal BRM methodology matrix with maturity stage

For an organisation (such as the Department) to go from Area A (a middle stage) to Area F (a mature stage), there are basically three possible routes as shown in Figure 10.6 below. The first route is to go to Area D via Area B by possibly implementing a formal BRM, an informal IEM and a formal IEM, respectively. Of course, it is possible that an organisation could decide to implement both an informal IEM and a formal BRM before reaching Area D. The Agency probably took this route to reach Area D (Area A --> Area B --> Area C). Alternatively, an organisation could also decide to implement a formal IEM and a formal BRM before reaching Area D (note that the Department already had an informal IEM when it arrived at Area A).

The second route is to go to Area D via Area C, before progressively evolving to reach Area F. A formal IEM is suggested here to be implemented in order to reach Area C while a formal BRM is recommended for an organisation to push to Area D from Area C.



**Figure 10.6: Routes to the mature stage**

The third route is a more unusual route as a formal BRM is not implemented until an organisation arrives at Area E. A formal IEM and an informal BRM are recommended to push the organisation to Areas C and D, respectively. Routes 2 and 3 are preferable as the organisations are able to adopt a formal IEM before a formal BRM. Also, Route 2 is preferable to Route 3 because a formal BRM is adopted earlier in Route 2. This will enable the organisations to progress more quickly to Area F.

According to the Galliers and Sutherland's Model (1991), it is not possible for an organisation to jump straight from an early stage to a very advanced stage (i.e. Middle stage to Mature stage). For example, an organisation with a centralised end-user computing system at the Galliers and Sutherland's Stage 3 needs to go through several stages before it can transform itself into an organisation with a decentralised end-user computing system at Stage 6. The organisations have to evolve from one early stage to a later stage progressively, even if the transition is very brief. The organisations need to train the stakeholders (i.e. about the processes of IS/IT investment evaluation and benefits realisation) and manage the required change before it can go to the next stage.

Similarly, this is the reason why this framework assumes only vertical and horizontal paths. As suggested by the data collected by this research, it takes time for an organisation to implement a methodology (i.e. the DMR Benefits Realisation Approach) or even a process (i.e. government outsourcing contract guidelines). Therefore, it is not possible that an organisation can go from Area A directly to Area D or even Area F.

Therefore, it would be impossible for the Department to go to Area D straight from Area A without first going to Area B or Area C. Furthermore, it is quite possible that it will take a while for the Department to go from Area A to Area B or from Area C to Area D as it has to implement a formal benefits realisation methodology. As for the Agency, the last lag of the first route seems to be the best and the only route to take in order to achieve the goal of arriving at the mature stage by adopting a formal IEM.

### **10.6.3. Back to the basics**

This framework (Figure 10.7) is not complete without covering the early stages (1-3) of the Galliers and Sutherland's Model (1991).

Every organisation has to start from a very early stage with basic tools and capability to run its day-to-day operation. In Figure 10.7 below, the early stage refers to the stages 1 to 3 of the Galliers and Sutherland's Model (1991). The organisation in Area X is likely to be either at stage 1 or stage 2 whereas the organisation in Area Y is likely to be at stage 3.

When an organisation is in Area X, the organisation is unlikely to have implemented a formal BRM or a formal IEM. The organisations at the early stage generally are not ready to implement formal BRM or IEM as they don't normally possess much knowledge about the IS/IT investment evaluation and benefits realisation concepts and practices. This phenomenon can be explained by Maslow's Hierarchy of Needs (Maslow, 1943) where "higher" needs become activated only when "lower" needs become satisfied. In this case, the organisations at the early stage would try to survive ("lower" needs) and only when they reach the end of the early stage or the middle stage would they think about how to implement the benefits realisation and

IS/IT investment evaluation methodologies (“higher” needs).

|                        |     | Stages                            |                                   |  |  |
|------------------------|-----|-----------------------------------|-----------------------------------|--|--|
|                        |     | Early                             | Middle                            | Advanced   | Mature   |
| Formal BRM Methodology | No  | (X)<br><br>no BRM &<br>no IEM     | (A)<br><br>no BRM &<br>no IEM     | (C)<br><br>no BRM &<br>formal IEM                                      | (E)<br><br><b>Semi-ideal</b><br>informal BRM<br>& formal IEM |
|                        | Yes | (Y)<br><br>formal BRM &<br>no IEM | (B)<br><br>formal BRM &<br>no IEM | (D)<br><br><b>Semi-ideal</b><br>formal BRM &<br>informal/formal<br>IEM | (F)<br><br><b>IDEAL</b><br>formal BRM &<br>formal IEM        |

Figure 10.7: The complete stages vs formal BRM methodology matrix

The organisations in Area X (early stage) could either go to a middle stage by going to either Area A without using any formal methodology or Area Y by adopting a formal BRM. It is arguable that the organisation in Area Y would not stay there for long as a formal BRM would push the organisation towards Area B very quickly. Figure 10.8 below shows four possible routes for the organisation to evolve towards the mature stage.

Note that it is extremely unlikely for an organisation to go from Area Y back to Area X, Area B back to Area A, Area D back to Area C, or Area F back to Area E. This is because once an organisation has adopted a BRM (or a IEM), it is very difficult to undo the methodology and “forget” about the benefits realisation concepts and/or investment evaluation practices. It would simply be too costly for an organisation to go back the previous stages.

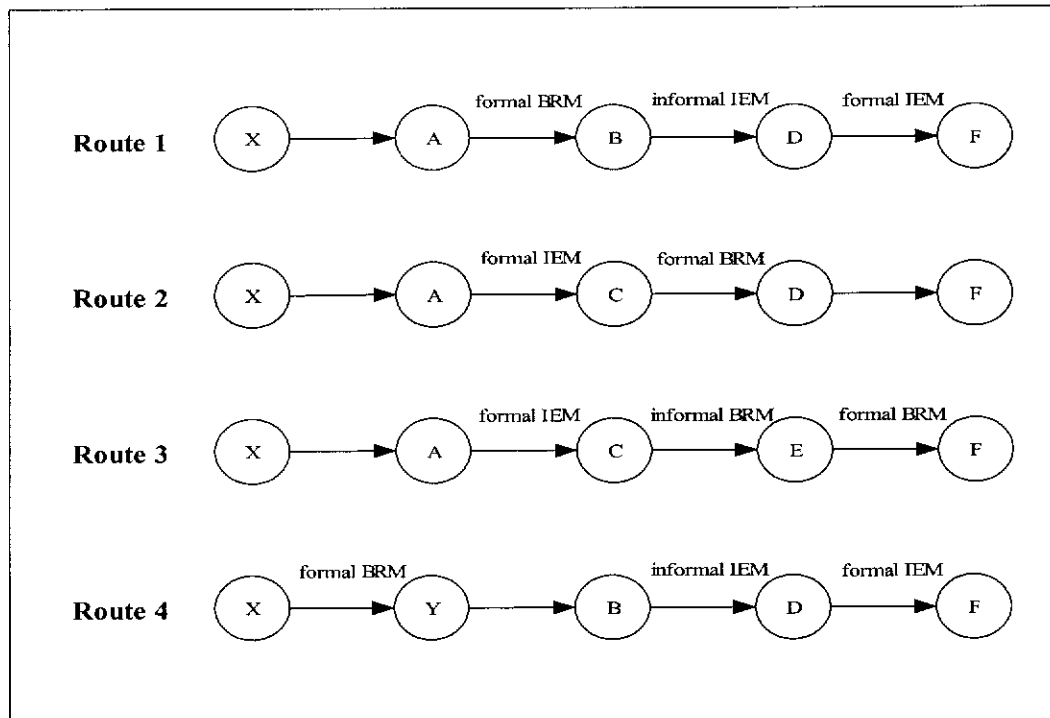


Figure 10.8: Four routes to the mature stage

The Agency was at Area D and seemed to have taken the fourth route. The organisation could have taken a long time travelling from Area X to Area Y by adopting a formal BRM. However, once the BRM was implemented successfully the Agency seemed to have evolved quickly and arrived at Area D in a relatively short amount of time. The next thing for the organisation to do is possibly to adopt a formal IEM and move towards Area F, the mature stage. A formal IEM was really needed by the Agency to reach the mature stage as their very basic understanding of the investment evaluation practices came from the government outsourcing contracts guidelines. However, these guidelines could not replace a formal IS/IT investment evaluation methodology (such as Information Economics by Parker et al. (1988)). Like the majority of the participants in the Department and most survey respondents, almost no one within the Agency knew much about the IS/IT investment evaluation concepts and practices. Many outdated and/or quantitative measures were mistakenly thought by most case study participants and survey respondents as their formal IS/IT investment evaluation methodology.

On the other hand, the Department was at Area A, possibly coming straight from

Area X. The Department could take route 1, 2, or 3 to get to Area F, the mature stage. It does not really matter what route the Department is going to take. The main problem was that the Department did not know much about the benefits realisation and IS/IT investment evaluation concepts and practices. Its main priority should be to adopt at least either a formal IEM or a formal BRM immediately in order to progress to an advanced stage.

Note that Routes 2 and 3 are preferable to Routes 1 and 4 as organisations are able to adopt a formal IEM before a formal BRM. Also, Route 2 is preferable to Route 3 because a formal BRM is adopted earlier in Route 2. This will enable the organisations to progress more quickly to Area F. Route 4 is preferable to Route 1 because a formal BRM is adopted earlier in Route 4 (although it is possible that an organisation is not ready to implement a formal BRM at such an early stage). Therefore, the order of the preference for the four possible routes for the framework is: Route 2, Route 3, Route 4 and Route 1.

#### **10.6.4. The framework**

So now the framework is complete (Figure 10.7). Four possible routes are also shown in Figure 10.8. In an ideal situation, the organisations which are at a mature stage should possess both a formal BRM and a formal IEM. The organisations at the advanced stage should possess at least one formal methodology (BRM or IEM). Although these organisations would probably have faced some problems in their IS/IT or outsourcing processes they are at least ready for a final push towards the mature stage by adopting a formal BRM or a formal IEM.

On the other hand, the organisations which are at the early stage probably would not have any know-how to adopt a formal IEM or a formal BRM. Their main concerns are probably not how or when to use the BRM or IEM. Rather, their main objective in their early stages is probably to ensure that their organisations survive the early stages or satisfy their “lower” needs (Maslow’s (1943) Hierarchy of Needs). Only when they survive the early stages will they be able to think about how to make the organisations more effective and efficient or satisfy their “higher” needs (e.g. by outsourcing of IS/IT functions). This can be achieved by using, for example, a formal IEM or a formal BRM.



Furthermore, it is likely that when the organisations are nearing the end of the early stage either an informal or a formal methodology would have to be used to push it towards the middle stage. Similarly, when the organisations are at the middle stage the use of a formal methodology would push the organisations towards the advanced stage. At this stage, some IS/IT functions might have been outsourced already. Finally, when the organisations reach the mature stage both the formal BRM and formal IEM would have been implemented already.

#### **10.6.5. The application of the framework**

The literature does not seem to specifically address the issue of utilising a benefits realisation and investment evaluation framework as the guidelines for organisations in general (e.g. undertaking major IS/IT projects) as well as outsourcing organisations to: (1) achieve organisational objectives and overcome or minimise possible problems arising from IS/IT projects as mentioned earlier in this chapter; (2) determine organisations' IS/IT maturity level; (3) decide when is probably the best time to use the benefits realisation methodology; (4) decide when is probably the best time to employ the IS/IT investment evaluation methodology; (5) determine how organisations can progress towards the next stage; (6) determine when organisations can progress to the next stage; and (7) show them some possible routes to achieve the above.

There is no reason why this framework could not be applied to any organisation (with or without outsourcing of the IS/IT functions) before it reaches the mature stage and considers the use of the benefits realisation and IS/IT investment evaluation methodologies. As mentioned in Chapter 2, many organisations had encountered difficulties in their IS/IT investment evaluation practices and many of these problems were identified by researchers and academics (e.g. Ballantine et al., 1996; Willcocks 1992a; 1992b). The use of this framework will reinforce the need for organisations to undertake one of the routes suggested above. This will ensure that an appropriate methodology is implemented in order to overcome or minimise some of the problems that have been or may be encountered.

For example, if an immature organisation has encountered some problems as

identified in Chapter 2, the organisation can apply the Galliers and Sutherland's Model (1991) to determine its stage of growth (IS/IT maturity) and then implement the relevant route recommended in the framework which incorporates the use of formal IS/IT investment evaluation (IEM) and benefits realisation (BRM) methodologies. The implementation of this framework will enable organisations to reduce the extent of concealment and overstatement of costs of IS/IT investments. In addition, the framework will assist organisations in identifying and assessing the qualitative costs and benefits of their IS/IT investments.

Furthermore, the framework can be used to assist in achieving the seven IS/IT investment evaluation objectives mentioned by several researchers and academics in the literature (in Chapter 2). This framework is especially useful for organisations which have adopted a balanced scorecard approach (e.g. Kaplan and Norton's (1996a) Balanced Scorecard Approach mentioned in Chapter 2) in measuring the performance of their IS/IT investments. These objectives can be measured through well-chosen indicators. The balanced scorecard approach can be used in conjunction with any IS/IT investment evaluation methodology or benefits realisation methodology. The framework can help organisations in achieving these and other organisational objectives and goals which are included as part of their balanced scorecard approaches by determining: (1) organisations' IS/IT maturity; and (2) then the best time to implement IS/IT investment evaluation and benefits realisation methodologies.

In summary, used in conjunction with the Galliers and Sutherland's Model (1991), this framework may prove to be useful not only in clarifying the location of the organisation in IS/IT maturity terms, but also in providing insights into how and when the formal benefits realisation and IS/IT investment evaluation methodologies should be used. Hopefully, this framework can enable organisations to focus on managing information systems and achieve business objectives.

#### **10.6.6. The implication arising from the framework**

The framework may force the senior management to rethink their understanding and use of the benefits realisation and IS/IT investment evaluation practices. As indicated by the results from the survey and two case studies, the majority of participants did

not know much about the IS/IT investment evaluation and benefits realisation concepts and practices. Many of them even thought that some outdated techniques (such as budgetary process) or mainly quantitative techniques (such as NPV) constituted their formal IS/IT investment evaluation methodology. Only a small minority of the survey respondents had implemented a benefits realisation methodology.

Furthermore, this framework is devised to alert the senior management that both the IS/IT investment evaluation and benefits realisation practices are important for the success of the organisation's outsourcing or systems development processes. The IS/IT investment evaluation methodology may improve the decision-making process for IS/IT investments while the benefits realisation methodology is likely to help the organisations to ensure that the benefits claimed for those investments are realised. Finally, the framework developed is more about learning and maturity (using IEM and BRM as its means of measurement) than about the right way to do IEM and BRM.

## **10.7. Summary and Conclusion**

Significant results from the survey and two case studies were analysed and discussed in more detail in this chapter. The researcher had then paid some attention to the issue of IS/IT maturation. It is maturation, that the researcher demonstrated in this chapter (e.g. Figure 10.7), that enables or is enabled by the existence of an IS/IT benefits realisation methodology and an IS/IT investment evaluation methodology. An IS/IT investment evaluation and benefits realisation processes framework was then developed and considered based on the results analysed and discussed.

A brief summary and conclusion will be given in the next chapter. This will be followed by a discussion of the limitations of this research and future research directions.

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# Chapter 11

## Conclusion

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### 11.1. Summary and Conclusion

In the previous chapter, some key findings from the survey and case studies were highlighted and discussed. The results show that many survey respondents and case study participants knew very little about the IS/IT investment evaluation and benefits realisation concepts and practices. In most cases, both IS/IT investment evaluation and benefits realisation methodologies were not adopted by organisations.

Galliers and Sutherland's Model (1991) was used to examine the two case studies in more detail regarding the maturity of both organisations. The results show that both organisations were not yet mature and despite the adoption of a formal benefits realisation methodology (BRM) some problems still remained within the Agency.

This had led to the critique of the three benefits realisation methodologies mentioned in Chapter 2. The available information from the published literature regarding the three methodologies indicates that they are not perfect and some modification needs to be made to these methodologies in order for them to be more effective in dealing with organisations which are not yet mature. Some suggested guidelines were put forward by the researcher to assist in resolving some of the problems encountered in the survey and two case studies. These suggested guidelines should also form the basis for possible improvements of the three benefits realisation methodologies mentioned in Chapter 2.

Finally, a benefits realisation and investment evaluation framework was constructed after the analysis of the survey and case study data. As mentioned earlier, it has been shown that IS/IT investments in many organisations are huge and increasing rapidly every year, yet there is still a lack of understanding of the impact of the proper IS/IT investment evaluation processes and practices in these organisations. At the same time, the issue of expected and actual benefits realised from IS/IT investments has also generated a significant amount of debate in the IS/IT literature amongst the researchers and practitioners. The framework has tried to fill the gap by suggesting to the senior managers when and how the IS/IT investment evaluation and benefits realisation methodologies should be adopted. Four possible routes to the maturity stage were also mentioned as part of the framework.

The final outcome of this research is to provide guidelines which relate to when, in terms of the organisation's maturity, it will be possible in practice to meaningfully deploy benefits realisation and financial evaluation. This framework does and can reveal when such deployment will begin to assist the organisation to learn and further mature.

## **11.2. Limitations of the Research**

Every piece of research has undoubtedly its own weaknesses and limitations as a "perfect" and complete research project does not really exist, and this research is no exception.

This research was centred around evaluation and benefits management of IS/IT investments in large Australian organisations. The limitations in the research methodology for this research are well recognised. According to Sohal and Ng (1998) and Tull and Hawkins (1993), the views expressed in the questionnaire are of a single individual from the responding organisation and only those interested in the research topic are likely to complete and return the questionnaire. Possibly those replying were more likely to carry out evaluation and be satisfied with their evaluation processes than the average non-respondent (Tull and Hawkins, 1993; Weiers, 1988; Willcocks and Lester, 1996a). These limitations have been recognised by other researchers who have conducted similar research (Sohal and Ng, 1998).

There are probably other limitations that would affect the generalisability of the results of this research. Firstly, securing adequate response rates has been one of the major limitation of using a postal survey (Armstrong and Overton, 1977; Church, 1993; Pinsonneault and Kraemer, 1993). The response rate (13.8%) for this postal survey was low although it is comparable to other studies.

However, the issue here concerns not just the number or proportion of non-respondents, but also the possibility of bias (Oppenheim, 1992). It is important to find out whether the reasons for the non-response are somehow connected with the topic of this research (Oppenheim, 1992). Although the distribution of respondents was fairly close to that of the original sample, the results from this study may not be as generalisable as having a very high response rate for the questionnaire. This poor response rate is particularly troublesome for descriptive survey research because its usefulness lies in its capacity to generalise the findings to a population with high confidence (Armstrong and Overton, 1977; Church, 1993; Weiers, 1988). Therefore, in order to secure higher response rate, the researcher had consciously undertaken several strategies as suggested by several researchers in the past (Church, 1993; Fox et al, 1988; Jankowicz, 1991; Oppenheim, 1992; Tull and Hawkins, 1993; Weiers, 1988; Yammarino et al, 1991).

Secondly, as the questionnaire was adapted from Ward (1996) it was not pre-tested under the Australian context (although it is arguable that the Australian context is not much different from the UK context). The questionnaire adapted from Ward (1996) has only been used in UK only. This may also affect the final outcome of the research. However, the results of this survey matched with the results from other Australian surveys (e.g. Sohal and Ng, 1998), Ward et al. (1996) and other studies mentioned in Chapter 5.

Thirdly, the same argument of bias can be put forward to the use of case study on just two organisations. This may lead to the identification of a biased group of subjects. Moreover, due to the time constraints and busy schedules of some subjects, there were limits placed on the number of people who could be accessed for interviews, and the amount of time they had available.

Fourthly, the behaviour of the subjects under observation and the users during the case studies may have changed due to the presence of the researcher and the tape recorder. This had also raised the issue of the effect of the presence of the researcher in face-to-face interviews between the subjects and the researcher and whether this constrained or altered the nature of the responses given.

Fifthly, it is quite possible that some managers in organisations that were finding conditions difficult were unlikely to bare all to the researcher (Beaumont, 1998). Some organisations evidently and rationally did not want staff to waste time talking to the researcher (Beaumont, 1998). On the other hand, some managers felt a duty to cooperate, and others welcomed a chance to have a broad ranging conversation whose topic is their achievements (Beaumont, 1998).

Furthermore, in most cases, the researcher was unable to go back to the research subjects for further meetings due to the time constraints on all parties as well as other unexpected events beyond the control of the researcher. Nonetheless, the researcher would argue that this research had provided useful insights into the processes and practices of IS/IT evaluation and benefits management from many organisations.

Sixthly, the specific structure developed in the proposed framework is time-based in that it aids the progress of the organisation through various stages of maturity. For this reason either longitudinal (Miller and Friesen, 1982) or historical (Mason et al., 1997a; 1997b) methods may have improved the quality of this research. However, both of these methods require significant amounts of time for observation and data collection which are usually beyond the scope of a PhD research project. Further, this need (arising from the framework) could not necessarily have been anticipated by the researcher. However, it is possible that a future follow-up survey may be conducted to test organisations' IS/IT maturity against the use of methodologies in order to compare their expected and actual IS/IT maturity levels.

Finally, the inexperience and personal bias of the researcher may also be of concern to the findings of this research. Given the time constraints of this research (as it does to all other researchers), some unexpected events, and the fact that over 1500 pages

of interviews and observation data, contract documents, questionnaire materials and other relevant documents were gathered for this research, the ability of the researcher to put together the findings from such a large amount of information had been sorely tested. It is possible that different findings and conclusions may be made with more experience and more time given.

### **11.3. Future Research Directions**

This PhD thesis is merely one research program addressing the usage of benefits realisation and investment evaluation practices in large Australian organisations. There is considerable scope for further research in this area. As mentioned earlier, a benefits realisation and investment evaluation framework was developed in the previous chapter. This framework needs further testing and refinement before it can be of significant benefit to organisations which are struggling with their benefits management and investment evaluation activities.

With the findings of this research in mind, perhaps an in-depth investigation examining the reasons which may have prevented the organisations from adopting a formal IS/IT investment evaluation or benefits realisation methodology would provide more comprehensive and richer understanding of the IS/IT investment evaluation practices. An investigation involving several case studies (eg. 4 to 8 case studies) would make the results more generalisable.

Moreover, as mentioned earlier, longitudinal (Miller and Friesen, 1982) and historical (Mason et al., 1997a; 1997b) methods may enable the researcher to obtain a better understanding of the organisations and hence improve the quality of the research. They may put the researcher in a better position to establish causal relationships and to take into account the most important variables and conditions (Miller and Friesen, 1982). Further, they may help the researcher to understand the sources of contemporary problems and how they arose and how their characteristics unfolded through time, and to identify the solutions that worked in the past and those that did not (Mason et al., 1997a; 1997b).



As pointed out by Davies and Myers (1994), until a large body of knowledge is developed of many situations, it is difficult to develop more general models of the meaningful contexts of various aspects of information systems development (ISD) and applications. Hopefully, this piece of research will make a significant contribution to the relevant body of knowledge.

Undoubtedly, the future research directions are very broad. There is still a lot to be learned in the area of IS/IT investment evaluation and benefits realisation processes and practices. It is the hope of the researcher that the findings from this research study will benefit other researchers in the IS field and the business community as a whole.

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# Appendix A

## Profile of the Responding Organisations

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The followings were some of the background information collected from the responding organisations for the postal survey. The distribution of respondents was fairly close to that of the original sample.

| Range                          | Frequency | Percent (%) |
|--------------------------------|-----------|-------------|
| <b>(a) Industry sectors</b>    |           |             |
| Manufacturing                  | 16        | 23.2        |
| Financial Services             | 8         | 11.6        |
| Mining                         | 8         | 11.6        |
| Construction                   | 4         | 5.8         |
| Education                      | 4         | 5.8         |
| Insurance                      | 4         | 5.8         |
| Retailing or Distribution      | 4         | 5.8         |
| Utility                        | 4         | 5.8         |
| Transport                      | 3         | 4.3         |
| Entertainment                  | 2         | 2.9         |
| Health                         | 2         | 2.9         |
| Wholesale                      | 2         | 2.9         |
| Agriculture                    | 1         | 1.4         |
| Banking                        | 1         | 1.4         |
| Government                     | 1         | 1.4         |
| Hospitality                    | 1         | 1.4         |
| Imports & Exports              | 1         | 1.4         |
| IS Integration                 | 1         | 1.4         |
| Services                       | 1         | 1.4         |
| Statutory Marketing            | 1         | 1.4         |
| Other                          | 0         | 0.0         |
| <b>Total (valid responses)</b> | <b>69</b> | <b>100</b>  |

| Range                                | Frequency | Percent (%) |
|--------------------------------------|-----------|-------------|
| <b>(b) Net revenue (ASm)</b>         |           |             |
| < 50                                 | 0         | 0.0         |
| 50-250                               | 11        | 17.5        |
| 251-500                              | 24        | 38.1        |
| 501-1000                             | 12        | 19.0        |
| 1001-2000                            | 10        | 15.9        |
| 2001-8000                            | 6         | 9.5         |
| 8001 and above                       | 0         | 0.0         |
| <b>Total (valid responses)</b>       | <b>63</b> | <b>100</b>  |
| <b>(c) Total number of employees</b> |           |             |
| <30                                  | 0         | 0.0         |
| 30-500                               | 17        | 24.6        |
| 501-2000                             | 24        | 34.8        |
| 2001-4000                            | 17        | 24.7        |
| 4001-35000                           | 11        | 15.9        |
| 35000 and above                      | 0         | 0.0         |
| <b>Total (valid responses)</b>       | <b>69</b> | <b>100</b>  |
| <b>(d) CIO's IS/IT Background</b>    |           |             |
| Yes                                  | 54        | 78.3        |
| No                                   | 15        | 21.7        |
| <b>Total (valid responses)</b>       | <b>69</b> | <b>100</b>  |
| <b>(e) Organisational structure</b>  |           |             |
| Hierarchical                         | 40        | 78.4        |
| Flat                                 | 11        | 21.6        |
| <b>Total (valid responses)</b>       | <b>51</b> | <b>100</b>  |
| Centralised                          | 30        | 60.0        |
| Decentralised                        | 20        | 40.0        |
| <b>Total (valid responses)</b>       | <b>50</b> | <b>100</b>  |
| Divisional/functional                | 47        | 81.0        |
| Cross-functional                     | 11        | 19.0        |
| <b>Total (valid responses)</b>       | <b>58</b> | <b>100</b>  |



| Range  | Average            |
|--|--------------------|
| <b>(f-1) Size of projects implemented last year (A\$m)</b>                             |                    |
| <1   | 16.3               |
| 1-10   | 2.4                |
| >10  | 1.2                |
| <b>(f-2) Size of projects to be implemented next year (A\$m)</b>                       |                    |
| <1   | 16.6               |
| 1-10   | 3.1                |
| >10  | 0.7                |
| <b>(g) Reporting Level between the IS/IT Head and the chief executive office (CEO)</b> | 0.9                |
| (i.e. the IS/IT Head is an average 1.9 levels below the CEO)                           |                    |
| <b>(h) The proportion for each of the following function outsourced (%)</b>            | <b>Percent (%)</b> |
| a) systems development   | 49.1               |
| b) user support  | 27.4               |
| c) telecommunication/networking  | 39.4               |
| d) operation   | 24.1               |
| e) project management  | 18.2               |
| f) IS/IT planning  | 3.2                |

# Appendix B

## Survey Results

The table below compares the results between this survey and the survey conducted by Ward et al. (1996).

| Questions   | This Survey  | Ward et al. (1996)   |
|---|--|--|
| Response rate   | 13.8%  | 24%  |
| No. of industry sectors included                              | 20   | 14   |
| Respondents who have IS/IT background                         | 78.3%  | 73.3%  |
| No. of IS/IT projects implemented in the last 12 months       | <ul style="list-style-type: none"> <li>▪ &lt;A1m 16.3</li> <li>▪ A\$1-10m 2.4</li> <li>▪ &gt;A\$10m 1.2</li> </ul>   | <ul style="list-style-type: none"> <li>▪ &lt;1m pounds 14.6</li> <li>▪ 1-10m pounds 1.2</li> <li>▪ &gt;10m pounds 0.1</li> </ul>   |
| No. of IS/IT projects plan to implement in the next 12 months | <ul style="list-style-type: none"> <li>▪ &lt;A1m 16.6</li> <li>▪ A\$1-10m 3.1</li> <li>▪ &gt;A\$10m 0.7</li> </ul>   | Similar to the above   |
| 3 most serious current issues                                 | <ol style="list-style-type: none"> <li>1. cost &amp; budgets</li> <li>2. Y2k</li> <li>3. Staff retention &amp; training</li> </ol>   | <ol style="list-style-type: none"> <li>1. strategy</li> <li>2. change</li> <li>3. cost &amp; budgets</li> </ol>  |
| Types of benefits perceived by senior managers                | <ol style="list-style-type: none"> <li>1. competitive advantage</li> <li>2. process efficiency</li> <li>3. satisfying info needs</li> <li>4. cost reduction</li> <li>5. improved sys applications</li> <li>6. productivity</li> <li>7. business necessity</li> </ol> | <ol style="list-style-type: none"> <li>1. cost reduction</li> <li>2. management info</li> <li>3. process efficiency</li> <li>4. enable change</li> <li>5. competitive advantage</li> <li>6. business necessity</li> <li>7. communications</li> </ol> |

|  |   |   |
|--|---|---|
| Reasons for justifying IS/IT investments                         | <ol style="list-style-type: none"> <li>1. cost &amp; budgets</li> <li>2. competitive advantage</li> <li>3. process efficiency</li> <li>4. service quality</li> <li>5. business necessity</li> </ol> | <ol style="list-style-type: none"> <li>1. cost reduction</li> <li>2. process efficiency</li> <li>3. service quality</li> <li>4. enable change</li> <li>5. business necessity</li> </ol> |
| Confidence level for benefits delivery (1-5 scale)               | 3.9   | 3.5   |
| Reasons for low confidence in benefits delivery                  | <ol style="list-style-type: none"> <li>1. selection of wrong projects</li> <li>2. lack of formal approaches</li> <li>3. inability to achieve the intended cost savings</li> </ol>                   | <ol style="list-style-type: none"> <li>1. lack of post-implementation measurement of benefits</li> <li>2. confusion regarding success criteria &amp; delivery of benefits</li> </ol>    |
| Success criteria for project delivery                            | ▪ on time, working, to budget   | ▪ on time, to budget, user satisfaction   |
| Use of:  |   |   |
| ▪ SD methodology   | 49.3%   | 52%   |
| ▪ PM methodology   | 43.3%   | 52%   |
| ▪ Investment appraisal process                                   | 65.7%   | 60%   |
| ▪ IS/IT BR methodology   | 32.8%   | 12%   |
| “often or always” widely used:                                   |   |   |
| ▪ SD methodology   | 63.6%   | 45%   |
| ▪ PM methodology   | 55.2%   | 52%   |
| ▪ Investment appraisal process                                   | 54.5%   | 36%   |
| ▪ IS/IT BR methodology   | 22.7%   | ?   |
| Methods/techniques used to decide upon IS/IT investments         | <ol style="list-style-type: none"> <li>1. NPV</li> <li>2. CBA</li> <li>3. ROI</li> </ol>  | <ol style="list-style-type: none"> <li>1. CBA</li> <li>2. ROI</li> </ol>  |
| Mentioned formally recognised methods/techniques                 | 54%   | >50%  |
| Methods/techniques considered to be less than “very appropriate” | 76.6%   | 82%   |

|   |   |   |
|---|---|---|
| Reasons for considered the methods used to be less than “very appropriate”  | <ol style="list-style-type: none"> <li>1. unable to select the right projects</li> <li>2. did not have formal approaches</li> <li>3. could not achieve the intended cost savings</li> </ol> | <ul style="list-style-type: none"> <li>▪ unable to take account of potential benefits (especially intangible benefits)</li> </ul> |
| Consequences for the above problem  | <ol style="list-style-type: none"> <li>1. incorrect decisions made</li> <li>2. selection of wrong projects</li> <li>3. goals not consistently achieved</li> </ol>                           | <ul style="list-style-type: none"> <li>▪ wrong projects approved</li> </ul>   |
| Intangible benefits included in the project appraisal process   | 84.7%   | 73%   |
| “often or always” took steps to review these benefits later   | 32.1%   | 25%   |
| Current process: <ul style="list-style-type: none"> <li>▪ Identifies all available benefits for a project</li> <li>▪ Adequately quantifies the relevant benefits</li> <li>▪ Overstates the benefits in order to get approval</li> </ul> | 50.0%<br>67.2%<br>26.2%   | 28%<br>30%<br>47%   |
| Those who felt benefits were overstated: (often or always) <ul style="list-style-type: none"> <li>▪ Conducted PIR</li> <li>▪ Targeted benefits delivery as part of PIR</li> </ul>   | 75%<br>50%  | 89%<br>56%  |
| Those who didn’t feel benefits were overstated: (often or always) <ul style="list-style-type: none"> <li>▪ Conducted PIR</li> <li>▪ Targeted benefits delivery as part of PIR</li> </ul>  | 77.1%<br>84.6%  | 60%<br>43%  |
| Conducted pilot studies when implementing IS/IT   | 80.6%   | 87%   |
| Objectives of the pilot study (often or always): <ul style="list-style-type: none"> <li>▪ To evaluate technology</li> <li>▪ To understand the benefits available</li> <li>▪ To demonstrate how to realise the benefits</li> </ul>       | 70.6%<br>53.0%<br>52.0%   | 48%<br>38%<br>40%   |

|  |  |   |
|--|--|---|
| Appointment of a business project manager  | 80.6%  | 80%   |
| Roles of business project manager  | <ol style="list-style-type: none"> <li>1. project management</li> <li>2. coordinate resources</li> <li>3. control</li> </ol>   | <ul style="list-style-type: none"> <li>managing the interface between the IS/IT group &amp; the business</li> </ul>                     |
| Failed to allocate specific responsibility to managers for benefits realisation      | 47.7%  | 68%   |
| Who's responsible for benefits realisation   | <ol style="list-style-type: none"> <li>1. line/department managers</li> <li>2. senior management</li> </ol>  | <ol style="list-style-type: none"> <li>1. line/department managers</li> <li>2. users</li> </ol>   |
| Prepared a benefits delivery plan  | 43%  | 27%   |
| IS/IT project process changes planning (often or always):                            |  |   |
| <ul style="list-style-type: none"> <li>During implementation</li> </ul>              | 31.8%  | 24%   |
| <ul style="list-style-type: none"> <li>After systems implementation</li> </ul>       | 10.6%  | 16%   |
| <ul style="list-style-type: none"> <li>Not at all</li> </ul>                         | 25.9%  | 28%   |
| Conclusion for successful or unsuccessful IS/IT projects                             | <ol style="list-style-type: none"> <li>1. reviews</li> <li>2. post-implementation review (PIR)</li> <li>3. meetings</li> <li>4. user feedback</li> <li>5. working, on time, to budget</li> </ol> | <ol style="list-style-type: none"> <li>1. subjective assessment of user satisfaction</li> <li>2. working, on time, to budget</li> </ol> |
| Measures of success normally defined (often or always):                              |  |   |
| <ul style="list-style-type: none"> <li>Before project approval</li> </ul>            | 45.0%  | 37%   |
| <ul style="list-style-type: none"> <li>Before implementation</li> </ul>              | 31.0%  | 28%   |
| <ul style="list-style-type: none"> <li>After implementation or not at all</li> </ul> | 44.5%  | 45%   |
| Conducted PIR  | 77.3%  | 72%   |
| Objectives of PIR reviews (often or always):   |  |   |
| <ul style="list-style-type: none"> <li>Technical conformance</li> </ul>              | 43.8%  | 55%   |
| <ul style="list-style-type: none"> <li>Project management effectiveness</li> </ul>   | 53.1%  | 66%   |
| <ul style="list-style-type: none"> <li>Benefits delivery</li> </ul>                  | 76.0%  | 76%   |
| Had a formal process to ensure that lessons were learned                             | 52.3%  | 29%   |

|   |       |     |
|---|-------|-----|
| Did not believe it is possible to anticipate all potential benefits at the project approval stage | 83.1% | 86% |
| Had a formal process to identify any further benefits & realise them after implementation         | 18.2% | 19% |
| Scope for further improvement in managing IS/IT benefits (1-5 point scale)                        | 3.7   | 4.0 |

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# Appendix C

## Seven Principles for Evaluating Interpretive Field Studies

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Klein and Myers (1999) have proposed a set of principles for conducting and evaluating interpretive field studies in information systems. Their seven principles are discussed in reference to the interpretive part of the postal survey and two case studies conducted as part of this PhD research.

### **The Hermeneutic Circle**

This is the foundation of Klein and Myers's other six principles for conducting and evaluating interpretive studies. This principle suggests that we come to understand a complex system by iterating between considering the interdependent meanings of parts and the whole that they form. The idea of the hermeneutic circle is applied in this PhD research in two ways. Firstly, this principle assists in understanding of the research topic by iterating between the particular case study or survey and the research objectives. This facilitates theory building. In addition, the understanding from the later case study can be used to re-examine the transcripts (or qualitative data in the survey) of the earlier case study and survey. Secondly, the framework developed expresses the researcher's pre-understanding and can be used as a preliminary understanding for the future research.

### **Contextualisation**

This principle involves setting the research in its historical and social context in order for the intended audience to see how the current situation under examination emerged. The importance of the social and organisational context to information

systems research was the primary motivation for devising the case studies. The case studies involve the study of the benefits realisation and investment evaluation processes and practices in real-life social and organisational situation rather than in a laboratory setting. The historical factors that influenced the research setting were included as part of the case study research.

### **Interaction between the Researchers and the Subjects**

This principle requires the researchers to place themselves and the subjects into a historical perspective. The process of constructing the data through the interaction between the researcher and participants was constantly examined throughout this research. The data collection methods were planned to provide access to the participants' views on benefits realisation and investment evaluation issues. However, as mentioned in Chapter 3, this also reflects the researcher's selection of analysis tools rather than the research method itself.

### **Abstraction and Generalisation**

This principle requires abstraction or generalisation of concepts to be linked to the data collected from the research field so that the process can be examined and analysed by the audience. As stated in Chapter 4, this research involves some abstraction while still retaining close links to observation from the field. This is done through the consideration of the literature and the insights of experts such as the researcher's supervisors so the research findings may be related to other existing theories, concepts, and findings. This, in turn, led to the development of the framework.

### **Dialogical Reasoning**

This principle requires the researchers to come to grips with their preconceptions that led the original research design with the data that emerge through the research process. As stated throughout the PhD thesis, the research design was influenced by the researcher's own preconceptions. Moreover, at the end of each research phase, the data gathered was reviewed and revised. This included reflecting on and seeking alternative interpretations of research design and findings from the literature and the insights of experts including the researcher's supervisors.



### **Multiple Interpretations**

This principle requires the researchers to be sensitive about the possible differences in interpretation among the participants. Therefore, seeking multiple sources of information within a research setting is an important characteristic of well-grounded research. In this research, multiple sources of information and data were sought for each case study. Where some participants' accounts did not reflect other participants' accounts or the researcher's own observation and understanding, alternative explanations were sought from the participants themselves. The transcripts were then re-examined and deeper interpretation of observation was produced. In addition, alternative explanations from the literature and the insights of experts also played an important role in detecting and resolving contradictions. This reflection had encouraged researcher to confront the effects of the contradictions on his preconceptions.

### **Suspicion**

This principle requires the researchers to be vigilant about the possible biases and distortion from the participants. In this research, it was not unusual for the participants from the opposing sides to express different view points. Where the different view points arose, the alternative explanations were sought from the literature, the organisation and contract documents, and the insights of experts. In addition, the researcher had attempted to gain deeper understanding of the whole situation by re-examining the transcripts.

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# Appendix D

## Interview Questions

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The following is an usual set of interview questions for the case study. The questions asked during the actual semi-structured interviews were not limited to the questions listed below. The questions listed below were only used as an interview guide. Please note that some names were modified for reasons of confidentiality.

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### **Interview Questions for Participant x** (for 1<sup>st</sup> Interview)

#### **Standard Questions:**

- your name
- your job title
- your responsibilities and tasks

#### **Investment Evaluation:**

- please begin by telling me about the Department's outsourcing story – for example, when did you decide to outsource, what process did you go through, what was the outcome?
- what functions were outsourced?
- please tell me about the Department's contractual relationship with Contractor 1, Contractor 2, and Contractor 3?
- what was the justification process for going ahead with these contractual arrangements?
- what were the methods and techniques used for evaluating these contractual arrangements or contracts?

- what were the perceptions and attitudes of the stakeholders involved in these contractual arrangements?
- what are the main contractual issues and what are the other key things that I need to know?

### **Benefits Realisation:**

- please tell me about the Department's post-implementation review process for these contracts and who is responsible for conducting these reviews?
- please tell me about the Department's benefits realisation process – how did you ensure that benefits were realised?
- What improvements were made and lessons learned?

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### **Follow-up Questions for Participant x** (for 2<sup>nd</sup> Interview)

- What's the main goal for (1) BDMW; (2) LWD; (3) ASD?
- SRC (Strategic Review Committee) and CMC (Contract Management Committee) – are here for all three outsourcing contracts? (especially LWD)
- What are the methods and techniques used for evaluating (1) BDMW; (2) LWD; (3) ASD (before and after the contract) (you said no documented method and all developed up prior to each contract)? (why, what, how)
- Who is responsible for using the methods or techniques?.....
- If you walked out from any of the contract, what's the cost for the vendor (Contractor 1, Contractor 2, and Contractor 3)?
- Benefits realisation process – what is the process for 3 contracts? (+ follow-up questions)

- Improvements made and lessons learned from (1) BDMW; (2) LWD; (3) ASD (besides realising true costs) after reviewing the contract?
- What did you outsource?
- What haven't you outsourced?
- Do you have any major IS/IT activity which is not outsourced?
- How do you compare the insourcing and outsourcing projects?
- Can I have review targets, milestones, scorecards (contract review) documents and reports?

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# Appendix E

## Qualitative Content Analysis

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Qualitative content analysis was chosen to identify themes, concepts and meaning from the data collected for this PhD research (e.g. case study interview transcripts and postal survey open-ended answers). The following is an example of how an issue was developed from the interview transcripts by the researcher. The steps taken below have followed largely the guidelines set out in Miles and Huberman (1994).

### **Step 1: Identify themes**

According to Burns (1994), the purpose of analysing the data is to find full meanings in the data and this has to be organised so that contrasts, comparisons, and insights can be made. In this case, the researcher had to look for themes from the interview transcripts. These themes formed basic units of analysis which were useful to this research.

Two main themes were identified initially. These included the IS/IT investment evaluation practices and benefits realisation practices. More themes would be identified later on.

### **Step 2: Develop a list of coding categories**

This step involved the classifying of each category. This enabled the researcher to focus on major categories for further analysis.

For example, a question about the usage of a formal IS/IT investment evaluation methodology was put forward to all participants. The following pieces of interview

transcripts from the first case study gave the researcher some useful clues as to whether the Department had used a formal IS/IT investment evaluation methodology (Table Appendix E.1 below).

| Participant | Comments  |
|-------------|---|
| P1          | "I guess there wasn't a formal structured documented methodology."  |
| P2          | "Not with LWD..... "  |
| P3          | ".....But all the contracts have a scorecard type of thing....."<br>(see Appendix I)  |
| P4          | "But the actual technique for evaluation, I think, was probably the same with most tenders. That is an evaluation process, short-listing, evaluation against the technical requirements, value for money and other criteria." |
| P5          | "It (evaluation methodology) is all documented in the contract. So you actually need to look at the service level agreements and the performance agreements."   |
| P6          | "It's part of our quality management system. And it's a formal process in there for reviewing risk basically."  |
| P7          | "There were a standard set of services and services descriptions covering all those areas including helpdesk and the management overall."   |
| P8          | "Evaluation really under the BDMW contract is all based on price."  |
| P9          | "It has benchmarks for savings and performance targets."  |

Table Appendix E.1: The usage of IS/IT investment evaluation methodology

In addition, the researcher had also read through the contract documents, government guidelines, and other relevant documents to confirm that no formal IS/IT investment evaluation methodology was ever mentioned in those documents.

As the result, one major category was identified initially – the usage of an IS/IT

investment evaluation methodology. For example, Table Appendix E.1 below gave the researcher an important clue that the usage of the IS/IT investment evaluation methodology was a useful category and required further analysis.

### **Step 3: Code the units of analysis**

Several units of analysis (themes) were identified for different categories. As for the usage of IS/IT investment evaluation methodology, two themes were identified initially - the lack of formal IS/IT investment evaluation methodology and lack of understanding of IS/IT investment evaluation methodology. The comments made by the case study participants in Table Appendix E.1 above indicated that not only the Department did not adopt a formal IS/IT investment evaluation methodology but also that almost none of the participants really understood the concepts and practices of the formal IS/IT investment evaluation. Table Appendix E.2 below gave a list of the investment evaluation techniques that were thought by the participants to have been used by the Department.

| <b>Participant</b> | <b>Use of IS/IT investment evaluation methodology?</b> |
|--------------------|--|
| P1                 | None   |
| P2                 | None   |
| P3                 | Scorecards   |
| P4                 | Tendering process                                      |
| P5                 | Service level agreements                               |
| P6                 | Quality Management System                              |
| P7                 | Service level descriptions                             |
| P8                 | Competitive pricing                                    |
| P9                 | Benchmarking   |

Table Appendix E.2: IS/IT investment evaluation techniques mentioned by the participants

Then the researcher had to go back to Step 1 many times to identify more themes or units of analysis.

#### **Step 4: Group together all similarly coded data**

This step was done only after the initial coding of all transcripts was completed. During this step, most of the themes for case study 1 were already identified. After all similarly coded data were group together, the researcher had to go back to Step 1 several times to identify more themes.

#### **Step 5: Draw preliminary conclusion**

The themes identified were needed later on by the researcher to gain deeper understanding of the case and assist in satisfying the research objective 2 which is to develop a framework based on the fit between theory and practice of benefits realisation and IS/IT investment evaluation by large Australian organisations.

The basic process of qualitative content analysis is shown in Table Appendix E.3 below.

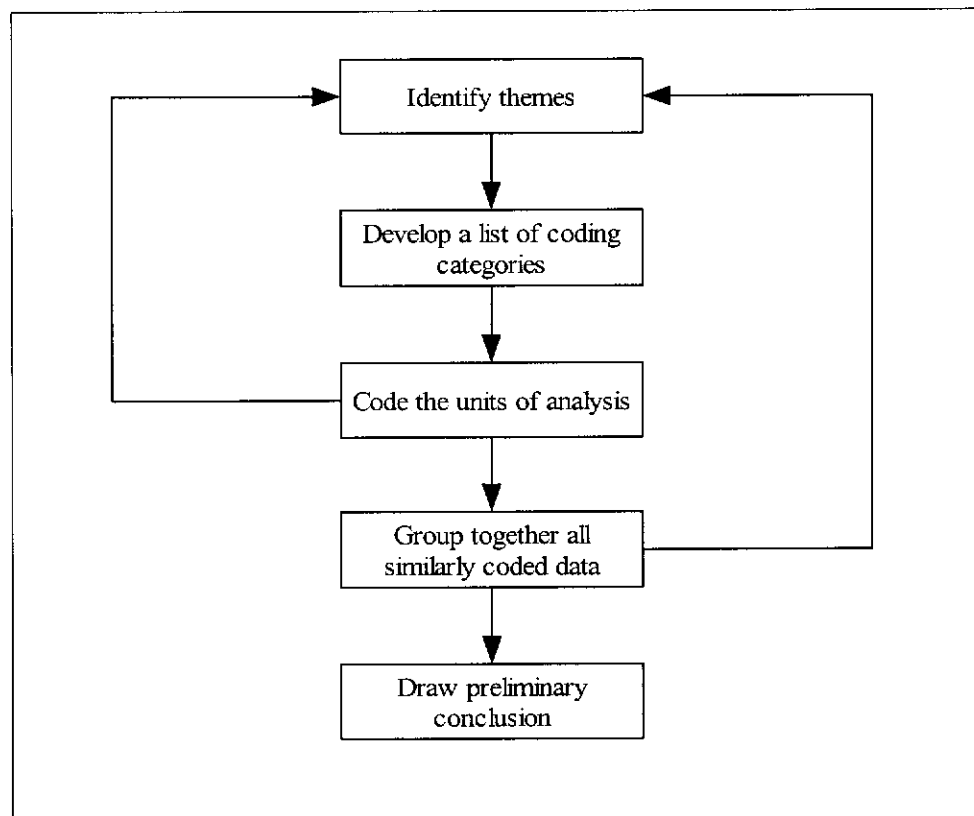


Figure Appendix E.1: The basic process of qualitative content analysis (modified from Miles and Huberman (1994))



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# Appendix F

## Questionnaire

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### IS/IT BENEFITS MANAGEMENT SURVEY

School of Information Systems

CURTIN UNIVERSITY OF TECHNOLOGY

#### SURVEY QUESTIONNAIRE

##### General Instructions

- Please answer all the questions  
(it should take 20 to 30 minutes, depending on the detail of the replies)
- Please add any comments about the questionnaire at the end

**WE GUARANTEE THAT ALL RESPONSES WILL BE TREATED IN  
CONFIDENCE AND THAT NO PARTICIPANTS WILL BE IDENTIFIED**

**Thank you for participating in this survey**

**Please use the enclosed envelope to send your completed  
questionnaire and any queries by 13 September, 1999.**

## CORPORATE BACKGROUND INFORMATION

|  |  |   |
|--|--|---|
| 1) Which industry is your organisation primarily in (i.e. manufacturing, mining, retailing)? |  |   |
| 2) What is the size of your organisation in terms of net revenue (ASm)?                      |  |   |
| 3) What is the size of your organisation in terms of total employees?                        |  |   |
| 4) Would you describe your organisation as:  |  | a multinational <input type="checkbox"/> OR a national only <input type="checkbox"/> organisation |
| 5) How would you best describe your organisational structure?                                | a) Hierarchical <input type="checkbox"/> OR Flat <input type="checkbox"/> (choose one)<br>b) Centralised <input type="checkbox"/> OR De-centralised <input type="checkbox"/> (choose one)<br>c) Cross-Functional <input type="checkbox"/> OR Divisional/Functional <input type="checkbox"/> (choose one) |   |

## BACKGROUND INFORMATION

|  |                |  |
|--|----------------|--|
| 6) Do you come from an IS/IT background?   |                | Yes <input type="checkbox"/> No <input type="checkbox"/>   |
| 7) What is the position, in your organisation, of the Head of the IS/IT department relative to the Chief Executive, i.e. how many reporting levels are there between the IS/IT Head and the Chief Executive? (choose one only) |                | Direct Link <input type="checkbox"/><br>One Level <input type="checkbox"/><br>Two Levels <input type="checkbox"/><br>Three or more Levels <input type="checkbox"/> |
| 8) What are the three most serious issues currently concerning you in your role as an IS/IT manager?   | 1.<br>2.<br>3. |  |
| 9) Which of the following categories would you describe IS/IT applications as fulfilling in your organisation?   |                |  |
| a) IS/IT provides a support role which is not critical to everyday operations  |                | a) Yes <input type="checkbox"/> No <input type="checkbox"/>  |
| b) IS/IT provides key operational process which are essential to everyday operations   |                | b) Yes <input type="checkbox"/> No <input type="checkbox"/>  |
| c) IS/IT is of strategic importance to the organisation  |                | c) Yes <input type="checkbox"/> No <input type="checkbox"/>  |
| d) IS/IT is used to develop processes which may become important in the future   |                | d) Yes <input type="checkbox"/> No <input type="checkbox"/>  |
| 10) Are any of your organisation's IT functions outsourced?  |                | Yes <input type="checkbox"/> No <input type="checkbox"/>   |
| 11) If yes, please indicate the appropriate proportion for each of the following outsourced:   |                |  |
| a) systems development   |                | a) ____% outsourced  |
| b) user support  |                | b) ____% outsourced  |
| c) telecommunication / networking  |                | c) ____% outsourced  |
| d) operation   |                | d) ____% outsourced  |
| e) project management  |                | e) ____% outsourced  |
| f) IS/IT planning  |                | f) ____% outsourced  |
| g) other   |                | g) ____% outsourced  |

## GENERAL QUESTIONS

|   |  |  |
|---|--|--|
| 12) What types of benefits do your senior managers perceive are being provided by IS/IT?                                  |  |  |
| 13) How confident are you that IS/IT is actually delivering these benefits to your organisation?                          |  | (Not at all) 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> (Very) 5 <input type="checkbox"/> |
| 14) Please explain why do you think this is the case?   |  |  |
| 15) About how many IS/IT projects of the following size has your organisation implemented in the last 12 months?          |  | a) < AS1 million? ____ projects<br>b) AS1-10 million? ____ projects<br>c) > AS10 million? ____ projects<br>d) none? ____ projects                          |
| 16) About how many IS/IT projects of the following size is your organisation planning to implement in the next 12 months? |  | a) < AS1 million? ____ projects<br>b) AS1-10 million? ____ projects<br>c) > AS10 million? ____ projects<br>d) none? ____ projects                          |

|  |   |   |
|--|---|---|
| 17) Does your organisation have:                                       |   | a) Yes <input type="checkbox"/> No <input type="checkbox"/> |
| a) a systems development methodology (such as SSADM)?                  |   | b) Yes <input type="checkbox"/> No <input type="checkbox"/> |
| b) a project management methodology (such as PRINCE)?                  |   | c) Yes <input type="checkbox"/> No <input type="checkbox"/> |
| c) a formal IS/IT investment appraisal process?                        |   | d) Yes <input type="checkbox"/> No <input type="checkbox"/> |
| d) an IS/IT benefits management methodology?                           |   |   |
| 18) How widely are they used?  | (Not at all)<br>(Extensively)   |   |
| a) systems development methodology?                                    | a) 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> |   |
| b) project management methodology?                                     | b) 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> |   |
| c) formal IS/IT investment appraisal process?                          | c) 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> |   |
| d) IS/IT benefits management methodology?                              | d) 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> |   |
| 19) How effective are they in ensuring successful information systems? | (Not at all)<br>(Extensively)   |   |
| a) systems development methodology?                                    | a) 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> |   |
| b) project management methodology?                                     | b) 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> |   |
| c) formal IS/IT investment appraisal process?                          | c) 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> |   |
| d) IS/IT benefits management methodology?                              | d) 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> |   |

### IDENTIFYING AND STRUCTURING BENEFITS

|   |   |                            |                            |                            |  |
|---|---|----------------------------|----------------------------|----------------------------|--|
| 20) What are the underlying issues that drive your organisation's investment in IS/IT?        |   |                            |                            |                            |  |
| 21) Do you have a process that ensures that IS/IT projects are linked to business objectives? | Yes <input type="checkbox"/> No <input type="checkbox"/>    |                            |                            |                            |  |
| 22) If yes, please outline this process   |   |                            |                            |                            |  |
| 23) What types of benefits do you consider when planning IS/IT projects?                      |   |                            |                            |                            |  |
| 24) Do you include intangible benefits in your IS/IT project appraisal process?               | Yes <input type="checkbox"/> No <input type="checkbox"/>    |                            |                            |                            |  |
| 25) What methods and techniques does your organisation use to decide upon IS/IT investments?  |   |                            |                            |                            |  |
| 26) How appropriate do you consider them to be?   | (Not at all)  | 1 <input type="checkbox"/> | 2 <input type="checkbox"/> | 3 <input type="checkbox"/> | (Very) 4 <input type="checkbox"/> 5 <input type="checkbox"/> |
| 27) If you ticked a box less than 5, what do you think are the problems with the approach?    |   |                            |                            |                            |  |
| 28) Describe any particular consequences of these problems?                                   |   |                            |                            |                            |  |
| 29) Who is primarily responsible for preparing and submitting the justification for approval? | Never Rarely Sometimes Often Always                         |                            |                            |                            |  |
| a) IT management?   | a) <input type="checkbox"/>                                 | <input type="checkbox"/>   | <input type="checkbox"/>   | <input type="checkbox"/>   | <input type="checkbox"/>                                     |
| b) business management?   | b) <input type="checkbox"/>                                 | <input type="checkbox"/>   | <input type="checkbox"/>   | <input type="checkbox"/>   | <input type="checkbox"/>                                     |
| c) others (please specify)  | c) Who?   |                            |                            |                            |  |
| 30) Do you believe that your current process:   |   |                            |                            |                            |  |
| a) identifies all available benefits for a project?   | a) Yes <input type="checkbox"/> No <input type="checkbox"/> |                            |                            |                            |  |
| b) adequately quantifies the relevant benefits?   | b) Yes <input type="checkbox"/> No <input type="checkbox"/> |                            |                            |                            |  |
| c) overstates the benefits in order to get approval?  | c) Yes <input type="checkbox"/> No <input type="checkbox"/> |                            |                            |                            |  |
| 31) Does your organisation currently use pilot studies when implementing IS/IT?               | Yes <input type="checkbox"/> No <input type="checkbox"/>    |                            |                            |                            |  |



## DELIVERING THE BENEFITS

|   |  |                          |                          |                          |                          |  |
|---|--|--------------------------|--------------------------|--------------------------|--------------------------|--|
| 44) Who is primary responsible for ensuring that the benefits which have been identified are delivered:   |  | Never                    | Rarely                   | Sometimes                | Often                    | Always   |
| a) senior management?   |  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>                                 |
| b) line/departmental managers?  |  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>                                 |
| c) users?   |  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>                                 |
| d) IS/IT specialists?   |  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>                                 |
| e) other? (please specify who)  |  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>                                 |
| 45) During the implementation process, do you hold formal reviews of activities associated with delivering benefits?                              |  |                          |                          |                          |                          | Yes <input type="checkbox"/> No <input type="checkbox"/> |
| 46) As a result of monitoring benefit-realising activities, would any changes be made to either the system design or the implementation approach? |  |                          |                          |                          |                          | Yes <input type="checkbox"/> No <input type="checkbox"/> |

## EVALUATING AND REVIEWING RESULTS

|   |    |   |
|---|----|---|
| 47) How do you currently conclude whether or not an IS/IT project has been successful?  |    |   |
| 48) At what stage in the process are any measures of success normally defined:  |    | Never Rarely Sometimes Often Always   |
| a) before project approval?   |    | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>  |
| b) before implementation?   |    | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>  |
| c) after implementation?  |    | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>  |
| d) measures not defined?  |    | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>  |
| 49) Are intangible benefits ever regarded as a major success criteria?  |    | Never Rarely Sometimes Often Always<br><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| 50) Does your organisation conduct any formal post-implementation project reviews?  |    | Yes <input type="checkbox"/> No <input type="checkbox"/>  |
| 51) If yes:   |    |   |
| a) what form do they take?  | a) |   |
| b) how long after implementation are they held?   | b) |   |
| c) If yes, who is normally involved in these reviews?   | c) |   |
| 52) If yes, what are the objectives of these reviews:   |    | Never Rarely Sometimes Often Always   |
| a) technical conformance?   |    | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>  |
| b) project management effectiveness?  |    | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>  |
| c) benefits delivery?   |    | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>  |
| d) other? (please specify)  |    | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>  |
| 53) Do you take steps to review any intangible benefits that were claimed at the justification stage?   |    | Never Rarely Sometimes Often Always<br><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| 54) If you do conduct some form of benefit evaluation, are the results fed back to whoever approved the project?  |    | Yes <input type="checkbox"/> No <input type="checkbox"/>  |
| 55) Do you have a formal process to ensure that the lessons learned from successful (or unsuccessful) implementations are transferred to future projects? |    | Yes <input type="checkbox"/> No <input type="checkbox"/>  |

### POTENTIAL FOR FURTHER BENEFITS

|  |   |   |                          |                                     |                            |   |   |    |                          |                          |                          |                          |                          |    |                          |                          |                          |                          |                          |
|--|---|---|--------------------------|-------------------------------------|----------------------------|---|---|----|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|----|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 56) Do you believe that it is possible to anticipate all potential benefits at the project approval stage?   | Yes <input type="checkbox"/> No <input type="checkbox"/>  |   |                          |                                     |                            |   |   |    |                          |                          |                          |                          |                          |    |                          |                          |                          |                          |                          |
| 57) Do you believe that, in general, the achievable benefits can change during implementation so that:<br>a) new benefits are identified?<br>b) benefits claimed become unachievable?  | <table border="0"> <tr> <td></td> <td>Never</td> <td>Rarely</td> <td>Sometimes</td> <td>Often</td> <td>Always</td> </tr> <tr> <td>a)</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>b)</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </table> |   | Never                    | Rarely                              | Sometimes                  | Often   | Always  | a) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | b) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|  | Never   | Rarely  | Sometimes                | Often                               | Always                     |   |   |    |                          |                          |                          |                          |                          |    |                          |                          |                          |                          |                          |
| a)   | <input type="checkbox"/>  | <input type="checkbox"/>                              | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>   |   |   |    |                          |                          |                          |                          |                          |    |                          |                          |                          |                          |                          |
| b)   | <input type="checkbox"/>  | <input type="checkbox"/>                              | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>   |   |   |    |                          |                          |                          |                          |                          |    |                          |                          |                          |                          |                          |
| 58) Do you have a formal process to identify any further benefits after implementation?  | Yes <input type="checkbox"/> No <input type="checkbox"/>  |   |                          |                                     |                            |   |   |    |                          |                          |                          |                          |                          |    |                          |                          |                          |                          |                          |
| 59) Do you normally take any action after implementation to realise these further benefits?  | Yes <input type="checkbox"/> No <input type="checkbox"/>  |   |                          |                                     |                            |   |   |    |                          |                          |                          |                          |                          |    |                          |                          |                          |                          |                          |
| 60) If you do, who is responsible for this action?   |   |   |                          |                                     |                            |   |   |    |                          |                          |                          |                          |                          |    |                          |                          |                          |                          |                          |
| 61) Given the increasing demand from senior managers for value for money from IS/IT, and taking your previous answers into consideration, what is the scope for improvement in your current approach to managing IS/IT benefits? | <table border="0"> <tr> <td>(No improvement needed)</td> <td></td> <td>(Scope for significant improvement)</td> </tr> <tr> <td>1 <input type="checkbox"/></td> <td>2 <input type="checkbox"/> 3 <input type="checkbox"/></td> <td>4 <input type="checkbox"/> 5 <input type="checkbox"/></td> </tr> </table>   | (No improvement needed)                               |                          | (Scope for significant improvement) | 1 <input type="checkbox"/> | 2 <input type="checkbox"/> 3 <input type="checkbox"/> | 4 <input type="checkbox"/> 5 <input type="checkbox"/> |    |                          |                          |                          |                          |                          |    |                          |                          |                          |                          |                          |
| (No improvement needed)  |   | (Scope for significant improvement)                   |                          |                                     |                            |   |   |    |                          |                          |                          |                          |                          |    |                          |                          |                          |                          |                          |
| 1 <input type="checkbox"/>   | 2 <input type="checkbox"/> 3 <input type="checkbox"/>   | 4 <input type="checkbox"/> 5 <input type="checkbox"/> |                          |                                     |                            |   |   |    |                          |                          |                          |                          |                          |    |                          |                          |                          |                          |                          |

# IS/IT BENEFITS MANAGEMENT SURVEY

School of Information Systems

CURTIN UNIVERSITY OF TECHNOLOGY

## SUPPLEMENTARY SHEET

Please complete this sheet or enclose your business card if you would like to receive summary results from this survey. You may either:

- return this sheet or enclose your business card with questionnaire (in reply-paid envelope); or
- return this sheet or enclose your business card separately (see below for the address).

IN ANY CASE, WE GUARANTEE THAT ALL RESPONSES TO THE MAIN SURVEY FORM WILL BE TREATED IN CONFIDENCE AND THAT NO PARTICIPANTS WILL BE IDENTIFIED

YOUR NAME:

COMPANY:

ADDRESS:

TELEPHONE NUMBER:

Please send me a summary of the survey results:

Yes ☐ No ☐

Please use the enclosed envelope to send your completed questionnaire and any queries by 13 September, 1999. If you decide to send your business card or any queries separately, please address these to:

Professor Graham Pervan  
School of Information Systems  
Curtin University Of Technology  
GPO Box U1987  
Perth, Western Australia 6845

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# Appendix G

## Publications Arising from this Research

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1. **Lin, C.** and Pervan, G. (2003) The Practice of IS/IT Benefits Management in Large Australian Organizations, Information and Management. (in press)
2. **Lin, C.**, Pervan, G.P. and McDermid A Survey of IS/IT Investment Evaluation Practices in Australia: Some Preliminary Results, Journal of Research and Practice in Information Technology, (accepted, under revision).
3. **Lin, C.** and Pervan, G. (2003) A Public Sector Case Study On Evaluating and Managing the Benefits IS/IT, In Davis, C. K. (Ed.), Technologies & Methodologies for Evaluating Information Technology in Business, Idea Group Publishing, Hershey, USA.
4. **Lin, C.**, Pervan, G., and McDermid, D. (2002) A Framework on Evaluating and Managing the Benefits of IS/IT, The 6<sup>th</sup> Pacific Asia Conference on Information Systems (PACIS 2002), Tokyo, Japan, 2-4 September.
5. **Lin, C.** and Pervan, G. (2002) Research on IS/IT Investment Evaluation and Benefits Realization in Australia, In Van Grembergen, W. (Ed.), Information Systems Evaluation Management, Chapter 15, Idea Group Publishing, Hershey, USA.
6. **Lin, C.** and Pervan, G. (2002) A Public Sector Case Study On Evaluating and Managing the Benefits IS/IT, Information Resources Management Association International Conference (IRMA 2002), Seattle, WA, USA, 19-22 May.
7. **Lin, C.** and Pervan, G. (2001) IS/IT Investment Evaluation and Benefits Realisation Issues in a Government Organisation, Proceedings of the Twelfth Australasian Conference on Information Systems (ACIS 2001), Coffs Harbour, NSW, Australia, 5-7 December.



8. **Lin, C.** and Pervan, G. (2001) Issues in IS/IT Investment Evaluation, Benefits Realisation, and Outsourcing in Australian Organisations: Results from a Case Study, Proceedings of the 4<sup>th</sup> Western Australian Workshop on Information Systems Research (WAWISR 2001), The University of Western Australia, Western Australia, 26 November.
9. **Lin, C.** and Pervan, G. (2001) IS/IT Investment Evaluation, Benefits Management and Outsourcing Issues in an Australian Government Agency, 8<sup>th</sup> European Conference on Information Technology Evaluation (ECITE 2001), Oriel College, Oxford, U.K. 17-18 September, 2001.
10. **Lin, C.** and Pervan, G. (2001) Issues in the Application of IS/IT Investment Evaluation and Benefits Realisation in Organisations: Preliminary Results from a Case Study, School of Information Systems Working Paper Series, Curtin Business School, Curtin University of Technology, Perth, Number 0001, May.
11. **Lin, C.** and Pervan, G. (2001) A Review of IS/IT Investment Evaluation and Benefits Management Issues, Problems and Processes, In Van Grembergen, W. (Ed.), Information Technology Evaluation Methods and Management, Chapter 1, Idea Group Publishing, Hershey, USA.
12. **Lin, C.** and Pervan, G. (2000) Realising the Benefits of IS/IT Investments in Australian Organisations, Proceedings of the Eleventh Australasian Conference on Information Systems (ACIS 2000), Brisbane, Australia, 6-8 December.
13. **Lin, C.** and Pervan, G. (2000) Issues in the Application of IS/IT Investment Evaluation and Benefits Realisation in Organisations: Preliminary Results from a Case Study, Proceedings of the 3<sup>rd</sup> Western Australian Workshop on Information Systems Research (WAWISR 2000), Edith Cowan University, Western Australia, 27 November.
14. Pervan, G. and **Lin, C.** (2000) IS/IT Benefits Realisation and Management in Large Australian Organisations, School of Information Systems Working Paper Series, Curtin Business School, Curtin University of Technology, Perth, Number 0002, June.
15. **Lin, C.**, Pervan, G., and McDermid, D. (2000) Research on IS/IT Investment Evaluation and Benefits Realization in Australia, Proceedings of the 11<sup>th</sup> International Conference of the Information Resources Management Association (IRMA 2000), Anchorage, Alaska, USA, 21-24 May.
16. **Lin, C.**, Pervan, G., and McDermid, D. (2000) A Survey of IS/IT Investment Evaluation Practices in Australia: Some Preliminary Results, School of Information Systems Working Paper Series, Curtin Business School, Curtin University of Technology, Perth, Number 0001, March.

17. **Lin, C.** and Pervan, G. (1999) A Program of Research on IS/IT Investment Evaluation and Benefits Realization in Australia, Proceedings of the 2<sup>nd</sup> Western Australian Workshop on Information Systems Research (WAWISR 1999), Murdoch University, Western Australia, 22 November.

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# **Appendix H**

## **Galliers and Sutherland's (1991) Model**

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Galliers and Sutherland's (1991) revised stages of growth model can be represented as six stages. These stages are described in some detail in Figure Appendix H.1 below. Please note that each of the stages in the Galliers and Sutherland's (1991) Model uses each of the Seven "Ss" (see Table 2.4) as a basis for the description.

## **APPENDIX H: Galliers and Sutherland's (1991) Model**

**Note: For copyright reasons, Appendix H (p. 408-409 of this thesis) has not been reproduced.**

**(Co-ordinator, ADT Project (Bibliographic Services), Curtin University of Technology, 20/08/03)**

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# Appendix I

## Interview Transcript - Participant 3

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*C = the researcher*

*A = Participant 3 (P3)*

C: What's your name?

A: Participant 3 (P3).

C: What's your job title?

A: At the moment, I'm the acting manager of the information contracts.

C: What are your responsibilities and tasks?

A: I look after .. We have got 4... 1, 2, 3. We have got 4 or 5 major contracts which deals with our internal IT area. We've got the BDMW and the ASD which is application support and development. We have one for \_\_\_\_\_ graphics. And we have..... Well, we are just changing the other one now... we are breaking one of our major contracts into 2 contracts. So there are those five contracts. I'm in charge of looking after the people who look after them. So there are 2 contract coordinators. That's P4 and P2 who you are going to talk to. And I'm in charge of overseeing them. But at the same time I personally look after the ASD, application support and development contract we have with Contractor 3.

C: Can you begin by telling me about the reasons behind the Department's outsourcing policy for these 3 contracts, BDMW, ASD and LWD?

A: Ok. The Department, many years back, 4 or 5 years back, made up their mind that they are going to outsource all the doing roles. So anybody who had a job which just meant servicing other people within the Department.... What they tried to do was to outsource that and put it out to the private sector, so they can do it. Now the ones that went outside, the ones who had at the moment is the BDMW. They are looking after all of our IT equipment. That come under the BDMW contract. So we've got equipment in the basement. We have got service in the basement. We've got all the desktop on all the people's workstation and that sort of stuff. We've got a server farm at Midland which runs a couple of applications out there. That's Unix server farm. So that's the thing. So that's the BDMW. That was set up at the time for the purpose, as I've said, to take away the doing role for what we were doing at the moment. The ASD, which is application support and development .... Any programs gets written or anything like that in a system etc, they all go through the ASD contract. Now we've broken .... We had a contract previously which did look after all of our equipment. That was helped by Contractor 2. And they subcontracted that through the GECITS. Now what actually happened is that the contract is now being broken up into 2 parts. Contractor 1 still look after the desktop and our local area network. Contractor 2 now only look after our WAN. And that only happened about 2 or 3 weeks ago. And we've now also taken the helpdesk. So we've got people to work for helpdesk. That's coming away from being part of what Contractor 2 do for us and we do that internally now. So that one sort of come back into the place and that sort of thing.

C: Can you tell me about the Department's contractual relationship with Contractor 3?

A: The method under which we associate Contractor 3 is that they do our application support and development. And it is a sort of, I don't know the exact word for it. I do know the word, but I can't think of it. But it's a partnering arrangement whereby what we attempt to do .... We have frequent meetings with the chap from down there. And what we do is ..... nothing has resulted in contractual dispute because it is sorted out before it gets there. And what we also tried to do is .... The way the contract is written if they do a particularly good job ... so we give them a particular job to do, they do a particularly good job of it then they basically charge us a little bit more for it. Because we pay on the time it takes so if it's going to be, say, a six

months job to do, and they complete it in 4 months, we might sort of pay them, I don't know whether this is exactly the figure, we might pay them 4.5 months worth of it and that sort of thing. It works for the other way as well. If they, for some reasons, take excessive amount of time to do something, then they cannot charge us for all, although charge us for 50% of the extra time they took and things like that. That's the relationship we have with them as far as that sort of thing goes. There is a chap there called P6 who is actually a relationship manager. So that's what he does. He just makes sure that we're happy and the same thing as the job I do. I sort of make sure that he's happy with the relationship between the 2 parties and that sort of thing. So it's a bit different from the normal one you have where there's a sort of fixed amount of changes every year for some reason. But this is ... What this does is actually that we work on principles of ... if things have been done correctly then we both benefit one way or another. If they do things faster we benefit. Then at the same time we say well you have done a good job so we give you a little extra or two. You know that sort of things.

C: Do you think your relationship with Contractor 3 is good?

A: Excellent really. Yeah. In fact, it is one of better ones we have. They do all our work internally. So any type of application support and development they do. We have got another group upstairs who is doing the web development and all of these type of things. Now occasionally, they in the past have got other people who have done it but they gradually sort of fall under our things of using Contractor 3. Theoretically, all of our work, any job less than \$250,000 in value is supposed to go to Computer Associates. And yeah we do have a very good relationship with them.

C: How about your contractual relationship with Contractor 1?

A: Contractor 1 they .. this is the one that got broken into 2 halves, right? Previously, this is Contractor 2 one. Contractor 2 help the whole contract. Contractor 1 now is taken over and they do our desktop support and our LAN support. And that's the part they actually look after as far as it goes. Once again, we have the Contractor 1 technicians they sat 20m down. Roger is one of them, right? He sits down just down from us there. Brent Sexton is the manager of the group that sits down there. And yeah, you know, the relationship is good. There is no sort of .... It's not the same as Contractor 3. It's not the partnering type of arrangement. But at the same time, you

know, there is rarely any problem with contractual nature of the thing, that sort of thing, because they all know what they're supposed to do. We all know what we are supposed to know. It just works that way and things get directed very well in that direction. So not a problem there. No. None.

C: How about Contractor 2?

A: Contractor 2 is very much the same. We had the original contract and it was with Contractor 2. And they subcontracted to Contractor 1. Now what happened is now that contract has been broken up into 2 halves. They look after the LAN. No. Contractor 2 look after the WAN. And the other group look after the LAN and that sort of the things. And that's excellent as well. We have frequent meetings. We have meetings with both Contractor 1 and Contractor 2. We have a meeting about once a month. They are just sort of the working parties. But at the same time, there is a meeting every 6 months or something with sort of a higher level. You know, like our director might come along. The manager from down there would come along just to discuss anything we are not sorting between ourselves and that sort of things. But normally, no problem at all as far as those sort of things go.

C: Can you tell me about the justification process for going ahead with BDMW?

A: The reason we have it?

C: Yeah.

A: As I've said government policy number 1. Government policy, is which you're aware, is that under the Liberal Government as much work as possible is outsourced to the private sector. That's the number 1 reason for it. Number 2 is that there's a thought of you do save an amount of money from it. I doubt that one a little bit. But at the same time, I don't think that it makes much difference. Basically, what happened is that we have 5 people on the floor doing something, then we take those 5 people away and 5 Contractor 1 technicians here instead. It balances itself up very well as far as it goes. But the other thing is, of course, if we have 5 people here then we need a sixth person here to supply for annual leave, sickness or that sort of thing. So you need an extra person all the time. So rather than having 5, we'll have 6. Contractor 1, of course, they've got several other customers around town. If they need that sixth person, they'll just pull it from another site where he might just be an



extra man there. Or they've a floating leave person if you know what I meant. He just comes in here and does our work for us. And then the next week he is on to another, you know, he's moved to another group, that sort of thing. So you get that benefit of having sort of backing from a big organisation behind you. So the people you've got and the same for training like they can pull people off and they can do training and that sort of thing whereas if we were to be doing that we have to be ringing somebody to replace.

C: Who made the decision for having the BDMW contract?

A: Who made the decision for us?

C: Yeah.

A: As I've said it's government policy. That's the Liberal Government policy to outsource as much as possible. Yeah. It's just one of these things happened I think more than anything else. I don't think there is any distinction. We are going to do this. It's just happened as a matter of course, you know, that the things had decided that it was going to happen as far as they went.

C: How about the justification process for LWD?

A: They're almost very much the same. Same sort of thing. Same reasons. I meant at one stage the IS branch on the 5<sup>th</sup> floor used to occupy from the lift shaft right back to the whole thing. And in some cases there were people sitting on people. You know, I meant you have 2 or 3 people in an office size. There were huge number of people. And the idea of course is to not to have to support that amount of people, not to have to worry about training for them, not to worry about leave for them, sickness and all those of things. You don't have to worry about that entire infrastructure. There are about 5 of us sit alone there now. And what we do is ... my another title is project coordinator which is what I normally do. And what happens is that we get project that comes to us and we say this is the project. We'll need a little bit of work from Contractor 1 to do that. Because it's close to the country, it will need WAN. So therefore we'll get one of the groups there and then we will need some programs. So we will get another group and then you will get them all together. You work out what you need to do, you know, to plan all out and that sort of thing. And then we just go and say to them that we need 2 programmers. So we go to Contractor 3 and we get 2

programmers. Then we say right we need some sort of infrastructure put in place. It might be a WAN thing. So you know we sort of go to Contractor 2 for that. And then we need some work done on the machine. So Contractor 1 do that. We get them all together and then we go and do it and that sort of thing. And the thing is then that you don't have to have that grouping of people all the time just sitting and waiting for somebody to do something because they are on other jobs. They are doing other jobs for other companies as well. That's so much of GECITS techno because they tend to have some 5 or 6 people here. But the Contractor 3 people they might be working, you know, for Ministry of Justice for one day and then working for us for another day. So that's the potential of how it works.

C: Is this also applied to the ASD contract?

A: Yeah. And the other thing, of course too, is that we have got a project going up on the 10<sup>th</sup> floor now. I think the last time I was there, there were about 13 or 14 people. Now that project cranked up in about 2 weeks. We said to Contractor 3 that we need 10 people in the next 3 months. Now if you imagine you are trying to do or suddenly trying to crank up a project like that inside a company or something and you have to say that we wouldn't have those people available. So we're going to hire them all. Get them all in and get them all set up. Whereas with Contractor 3, you just say we need 10 people next Monday and that's their job to get them. You don't have to worry about it. We don't have to take control of those things. That's the theory of the outsourcing. It's to get all of those responsibility type of things out there. And then our responsibility is just to worry about the delivery of the product or what they come up with.

C: What were the techniques or methods used for evaluating BDMW?

A: Whether they are successful or not and what they do?

C: Yeah.

A: I don't know about the one with Contractor 3. But all the contracts have a scorecard type of thing. There are a whole swag of things and I am not even going to try to tell you about all of them. But there are a whole swag of things made up of scorecards. But some of them have things like number of satisfied calls. So ten calls go to Contractor 1. Did they all get done in time? One of the other people you talk

might be able to tell you the time. But if 2 days is the limit, then all the jobs get done in 2 days. Then that's 100%. But if there are only a certain number of them, you get sort of scorecard type of arrangement like that. Other things are the amount of uptime for WAN. So if we have one of our country offices out for certain amount of time, that we mark them down on the scorecard. That's how we keep track of how they're going as far as that goes for the scorecard type of arrangement. With the Contractor 3, there's no such thing as scorecard. That's not the thing. There's another mechanism whereby all we do is we sort of say because Contractor 3 one is a partnering arrangement so what we do is at some stage to get a checklist of the things we go through and we say we have a meeting once a month we go through the checklist and we say is this a problem for, you know, the work being done outside the contract, the relationship problem between users and programmers. We go through them and we say that's fine, that's fine, and that's fine. We tick off about 14 of them and we go through all of them. We just tick them all off to make sure they are all fine. And if they're all fine then it's not the problem. If there's a problem, that's when it can get escalated and that would go to somebody else. That's not a penalty type of thing or anything like that. All that happen as far as that goes is that it get solved at a higher level. And then it comes back through us again. For the other ones, there are financial penalties etc that can be imposed. I don't know if I've ever seen any of them being imposed. They are more just like a check type of thing. Just to make sure that people are keeping in front of what they should be doing.

C: Who were responsible for implementing this....

A: The contracts themselves?

C: Yeah.

A: The people who used to sit in this office before me (note: contract manager). Terry Jones is one of the people up on the floor and above. Largely, we have got a contract group up there. Because what we also do as well as .... This is our internal contracts. We have got a lot of whole of government contracts. What they do is that we have got contracted for, say, supply of various things. You know, like BDMW, for instance, that's a contract for 4 or 5 government departments. Now we have put it together and these departments have sort of signed it. We sort of have acquired ownership of it. We sort of keep it going and direct it. But these other groups have

equal input into what happens. I think the Agency is part of it. I don't remember the other ones. But there are various other groups being part of BDMW. That's the principle of ... there is BDMW and I cannot think of the other one now. But there are 2 major contracts and they are 2 major IT infrastructure contracts. So if you want to do away with all your own computing equipment, you can just go to them like server farm at Midland. That's actually governed by the BDMW contract. And they look after it. They supply the machines. They supply the operators. They supply the actual rooms and that sort of things and air conditioning. All of the things that would go there they supply. All we do is to buy service of them. So for \$100,000 a year or something, we just say we'll use those machines. We'll use as much of their machines as we need. If we start to use more, we just say we need more. Then they'll charge more. And if we put another system out there, that will mean we have 3 systems. We need a little more space. How much space do you need? We tell them how much more computing power we need. They will charge us more for it. And that's the principle of all of these things. That's to buy the service rather than own the service itself.

C: So what were the perception and attitude of the stakeholders involved in these 3 contracts? For example, what were their feelings when you have to transitioned some of your IT staff?

A: When the IT staff disappeared?

C: Yeah.

A: What actually happened particularly in the ASD, all the displaced staff or most of the displaced staff actually went to work with Contractor 3 as part of the thing. We have a transitioned out policy. So when Contractor 3 came along they interviewed everybody. And I think in all cases they took the staff. And the staff went. And then gradually some of them left. I meant like Sharon I have dealt with on daily basis. She's an ex-Department employee. She used to work for the Department. When ASD went outside she went with it. And she actually works out there. So in most cases given they weren't going to have a job here, which is unfortunate, they've got a job outside. And I know in certain cases and I know in Sharon's case, she's doing hell a lot better than she was doing here. She's certainly getting more money in the pocket.

C: Were they happy about it when they first learned the news?

A: I would say not. As I've remembered, there was sort of .... You can imagine that you join the public service and you got look out from the point of view that a lot of people join the public service for the security of tenure. You know you've got a job and you know you're going to stay there. I think there was a bit of worry. You know you've been uprooted from what you did do before and now you have been put over there. The same thing has actually happened with LWD because the guys from here actually went there as well. I think initially there was a bit of worry. But I don't think you would find too many of them who would be unhappy about the fact that they did go. Some of the GECITS guys or Contractor 1 guys as they are now ... George Law looks after the Lotus Notes network. He seems more than happy with what he's in. In all cases I think being in private industry they progress as well because they've got a lot more training. They try to keep them in forefront of what they're doing. I think they are a lot happier with what they've done.

C: How did you overcome their initial fears?

A: I wasn't really part of that. So I couldn't say. I know they interviewed all of them. It was not so much of an interview. It was a sharing of thoughts. So like Sharon, for instance, she sat in the office with them. And what they did was they sort of said this is what we intend to do and she asked all the questions. And then there was sort of are you happy with that or do you want to do it in a different way, all those sort of things. So it was a very warm little thing. They did it very well. They managed very well as far as that went. I certainly didn't hear any major rumbling or anything like that. They all knew it was going to happen. There was not much really choice about it. Either they went there or they had to find another job. It was almost the way it was. I think some people didn't take it. And I think basically what the Department did was to keep them anyway and just to put them into other positions. So certainly no one was dismissed or anything like that. It was more based on the fact if you didn't want to go there then they sort of found somewhere for you to go to. One chap I know went to Department of Agriculture, for instance. Guys didn't want to leave public service got moved into other departments.

C: Do you have any post-implementation review process for BDMW?

A: Once again not having being part of that, I don't know the true answer to that. But I would suggest there was because I've seen some of the things in that. Not only there is post-implementation review but it's constant review. As I've said we have monthly meeting with all of these groups on a monthly basis. At all time, everything is under review all the time. So we've made various modification to the contracts over that time. At the moment I've got one sitting around the table for the Contractor 3 thing. We want to change. They've got scorecard method they have in there which is to do with what percentage they can increase their rates by. Contractor 3 has taken over Platinum and Platinum is a local company. The infrastructure part of it used to come into this percentage increase type of thing up and down of what they could charge us. Now they've being taken over by Contractor 3 which is an Australia-wide company. There's sort of different mix of the money that should change hand, like a lot of office work gets done in Eastern states. We used to pay for the office work that got done here. Now it's gone over there. It's changed. The relationship is changed. So these sort of things come up. We have the monthly meeting. P6 is the chap we deal down there. P6 says this is changed. We are doing something differently here. What do we do? We say right we'll put that on the list and we'll have a review of how that should work. And then we work out how we want to work. We take to the contract people upstairs. Or when there's a contract manager, he looks at it. If he's in that role, he's doing that job. He looks at it. He determines whether it's contractually correct etc. We still take contract people upstairs. There's a chap upstairs who is really right into this sort of stuff. He has a look at it then he may say right we are going to do that. They send us a thing with the change. We sign it. They sign it. Everybody has a look at it. And then that becomes part of the contract. So it's a constant review type of thing. In the early days, I know there were a lot of these went on. They reviewed the contract regularly. Every a couple of weeks they reviewed it and changed things. Yeah. There's certainly a review process that goes on.

C: For all 3 contracts?

A: All 3 of them. Yeah. It's sort of standard practice. At the beginning of each calendar year, there's a big calendar put out. All of the review dates were marked on it right from the day one. So on 1 January, you know, you have got a meeting down on 13 December to talk about the ASD contract, you know, how things were running,

and whether the things were right. As I've said, there's a part of each of this you go through. Not all of them but certainly the ASD one you go through the scorecard to make sure that the relationship is still holding and everything is right. If there's a problem, that's when you start reviewing. With other ones, they are more on ad-hoc. Somebody decides whether things have changed. There's going to be a change in the relationship or something like that. So that's reviewed at the time at one of those meetings. And at a meeting, it was introduced and brought up, whether they can be escalated to the further meetings. So you have more meetings to look after it.

C: So the committee members are responsible for reviewing these contracts?

A: Yeah. That's contract manager. Then it will be the contract coordinators. So which one of the two out there happened to be in this case. Say it's ASD. In that case, it would be more in both cases because I'm acting in this position (note: contract manager). I also look after the ASD contract. I would be the person in that case. Gavin, who is the manager, would be involved. Then you would have the representatives of the other companies. At the lower level to start with, say, P6 who is the relationship manager. Then further to that could be his manager or whoever.

C: Do you have a benefit realisation process for BDMW?

A: I know what you meant. I don't know the answer to that. I don't know anyone has gone through that process to actually look at it. I imagine the initial contract when it was drawn up probably would have that type of thing in there. You know, a review after so many months would have been made. And for benefit, how it was going. You probably have to ask one of the other people. The other 2, P2 and P4, have been contract coordinator for 2-3 years. I've only come into that area in the last 6-8 months. They have a bit of feeling....

C: Are you also a contract coordinator?

A: I'm actually a project coordinator. I'm doing half and half. I'm a project coordinator but I'm doing contract coordinating at the same time. P4 is going the opposite way. He was the contract coordinator and he's doing half and half. He's coming from the other side.

C: What's the difference between them?

A: Project coordinator..... We need to install a new financial system. Project coordinator, he is in charge of coordinating that. So you get together of all of the groups, all of the people and do it. Contract coordinator is more to do with the BDMW contract to make sure that runs smoothly and things like that. There's just 2 different little groups. P2 is a full time contract coordinator. So that's she's ever done. So that's the way it works. They might be able to tell you more about it as far as that goes.

C: Have you learned any lessons from BDMW or the other 2 contracts?

A: I personally would say certainly the ASD contract, that the idea of relationship management and the closeness, it is not one of these ones when you signed the contract and sort of ....

A: You don't sort of sign the contract and sort of walk away from it and expect everything to keep happening as it does. You know it's a managed thing. P6 is always there. He's always concerned about what we are doing. He's got a good idea of the politics of the place. It's a very close sort of relationship. From that point of view, that works much better probably in the BDMW which is a bit more aloof. Not that there is a problem with that one either. But when there's a problem with BDMW it is more a matter of getting people organised. We have got these people in. We have to do something about it. Whereas with ASD we have that very close relationship. They are already doing something about it before we even realise we've got serious problem. They are already on to it, if you know what I meant, as part of what goes on. I think the partnering type of arrangement we have with ASD is better than the others which tend to be ..... The guys from Contractor 1, because they sit on the floor, you don't have that feeling. But like the WAN one we have now because we broke that one we have with Contractor 2. They come in once a month. If you need them you can ring them. But you don't get that. You don't get that feeling with closeness. That's certainly the thing I've noticed the most. The difference between them all is that partnering type of thing we have. We see P6 once a week. We have a meeting every Wednesday with P6. That's basically lunch. I meant it's not him by us lunch or anything like that. We'll quite often all go to the cafe downstairs. We all buy our lunch and just go and sit in the tea room and eat our lunch and talk about things. Just little things come up and information gets passed. Then we have a formal



meeting once a month. Then we have a much higher level meeting about once every 3 months or 6 months or something like that. It's just sort of the closeness that you feel. From that point of view, things seem to work better.

C: Do you think overall BDMW project is successful?

A: Yeah. I think so. I think what happened is that what you get is you get expertise and a number of people with certain amount of expertise which always kept up. And if you need anything that sits outside that quite often people come in and fill in for these things. Now if you try to do that in-house, of course, you need a very wide scope and a very wide group of people to start with to be able to deal with all those of things. If there's a problem here with your internal things, if you haven't got people to do a particular job you've got to go and get them in. And of course that means you're paying short-term contractors. And I would say the rough rate it would cost twice if not 2.5 times for the short-term contractors. So you're paying 250% more for a short-term contractor than what you do for a person who is in-house. What happens is if the expertise of the people there isn't good enough other people can come in. But at the same time, even if we have to pay extra for these people to come in it's at a much reduced rate. It's not the 250%. We might just have to pay for that extra person. So we still pay all of that amount. We might have to pay for that extra person. But you get that thing. And as I've said you don't need training. You don't need leave. You don't need sick leave. You don't need all of things to look after a staff member because somebody is doing all that for him. The quality of the work..... In a lot of cases, these guys take direct order from P1. They take direct order from me as to what gets done and what doesn't get done. If there's a problem, they come back to us. And we deal with them. If one of our users isn't happy, he would quite often help by first approaching the contractor. But if that's not successful, then he will come back for me as a project or contract coordinator. We will deal with it. Generally, I think the relationship in all 3 of these contractors are very very good. I'm not taking credit for that. It's always been like that. Perhaps, the first 6 months when we were a bit feeling that way. But certainly in recent time, it's been very good.

C: So you are satisfied with all 3 contracts?

A: Yeah. All 3 of them, I think. Yeah. I could not fault any of them really.

C: Is there any difference in methods or techniques used for evaluating insourcing and outsourcing? Do you still have any insourcing projects?

A: In relation to what you are talking about there, theoretically, we don't do any inside work. What should happen in all cases if users got a problem or if a user got a project he wants done, he should go through the helpdesk, rings the helpdesk, and register the job with helpdesk. The job comes to us. We set up the things of what we need. We need 3 people etc. The project is sort of managed from here at a fairly high level. At a lower level, for ASD for instance, they would provide a project manager. So I'm a project coordinator. I coordinate the project. But they will provide the project manager. In some cases, you'll have a project manager from Contractor 1 and a project manager from ASD. Both are working from Contractor 3. Both are working on the project, taking directions from the project coordinator who sits here. But all he would do is to say we want this to happen. We want to happen a bit like this, a bit like this, and a bit like this. And they would go away and do that. You know, in consultation, if they have any doubt about what you've said, they will do it. While they're doing that, it may mean that this other group needs to be involved. That's what a coordinator does. He makes sure they are all talking to each other and they are all happy together. If there is any little dispute between 2 groups, he looks after it. Under that set up, we shouldn't be doing IS/IT work. And that includes computing equipment. None of it should be happening unless it has come through here. So it's managed inside but is actually outsourced to these groups. So they actually do this work as the outsourced group. So we do not theoretically do any inside work now. I'm not gonna hold my hand up or anything like that. But theoretically we don't. If there is any, it's not very much anyway. It's not you can significantly find and pick it out.

C: If the Department have walked out from any of those 3 contracts, what is the cost for the Department for breaking the contract?

A: Breaking the contracts? I couldn't tell you that. I've got no idea. There are penalties. There are penalties in all of the contracts. I don't know. I couldn't tell you that. Perhaps P4 or P2 might be able to tell you that. I don't know the answer to that one.

C: How about the vendors? What's the cost for them?

A: It would be the same sort of thing. Yeah. There are penalties thing in them. I actually have a read of the ASD and I go all the way through one day. They do have penalties in there. Out of top of my head, I couldn't tell you what they are. But they are all very well spelled out again. There are a lot of negotiations before the thing actually happens. There is a fixed set of rule of what has to happen before that taken down or anything like that for any reason. If there's a major problem or major conflict, it's actually almost spell out in there of what the process is to go through the breaking of the contract. But P2 and P4 might be able to tell you better than I can about that sort of things.

C: What are the other issues or key points that you would like to mention to me?

A: I think I've told you all I know or just about. Like I've said, having been here for only a short time, I'm still feeling away to a certain extent with some of the things in there. No, generally, the contracts in the organisation work well. Occasionally, I have to perhaps manage a little more. If you've got, say, 3 staff working for and one of them is the technician who looks after the computers and another one is the programmer who does this and this one is the WAN person. You have a meeting. And because all 3 of those people all work for you and they all work for the Department so they're all in a same organisation. They know each other and a bit more friendly. If this guy says I cannot do it, then it's not going to hurt this guy to do anything because he is just helping out one of his mates. When you have situation where you have the contractor coordinator and you have somebody from Contractor 1 and somebody from ASD and somebody from the WAN area. Of course, he works for company, he works for a company, and he works for a company. So he's not going back and say I'm just going to give this guy a bit of hand because he'd doing work he shouldn't be doing. And therefore, it's costing his company money for him to be involved in there. So it needs to be a little bit better managed. You need to manage this sort of thing a little bit better. So you need to keep an eye on the people. You've got to make sure they do and produce what they're suggesting. That's about the only thing I would say that's the only slight downfall in the system. But we are very lucky we've got P8. He's the Contractor 1 bloke in charge. P6 is in charge of ASD from Contractor 3. I cannot remember about the other chap. He's from Contractor 2. He looks after the Contractor 2. All 3 of them are very very good at

people's skills. So you can go to P8 and sort of say something and he knows what we are trying to do is trying to do your job. He will get back at you. But he realises what's going on. If required, he has the ability to talk to the Contractor 3 people. So the Department is lucky we've got these people doing their job at the moment. If there was somebody else sitting in one of these spots, it might not work quite as well. But generally it's successful because they do all get together and do try to push the course.

C: Thank you for your time.

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# **Appendix J**

## **Data Storage and Ethical Issues**

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According to Leedy (1993), the principles of ethical propriety lying at the base of most of the guidelines resolve into simple considerations of fairness, honesty, openness of intent, disclosure of methods, the ends for which the research is executed, a respect for the integrity of the individual, the obligation of the researcher to guarantee unequivocally individual privacy, and an informed willingness on the part of the respondent to participate voluntarily in the research activity.

This research is no exception. For reasons of confidentiality, unless expressly permitted in writing, the respondents and responding organisations were given coded names instead of their real personal and organisational names for the purpose of this research. In addition, no individual and organisation was, under any circumstances, be asked to cooperate in any research that may result in a sense of self-denigration, a violation of moral or moral standards, or embarrassment.

Moreover, where relevant, the researcher had obtained written, informed consent from the respondents for the research. The researcher had respected the respondents' right not to answer any questions that were confidential to the organisations. The recorded interviews and any other confidential information gathered during this research was only used with the express consent from the respondents. The research had also fulfilled the commitments made to those who took part in this research (such as guarantees of organisational anonymity in reporting, confidentiality of data and providing reports of results to participants where requested). Furthermore, this research was conducted with full disclosure of aims and purposes of the research made available to the respondents.

Furthermore, this research also adhered to the requirements set out in the University's Guiding Ethical Principles and, where appropriate, to the specific requirements of University's Ethical and Research Practice Committees.

Finally, all data (i.e. audio tapes, documents, field notes, interview transcripts, photographs and questionnaires) collected by this PhD research was recorded in a durable and appropriately referenced form and will be held for at least five years.