

# A Comparative Study of IT Outsourcing Management in Australia and Taiwan

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## ABSTRACT

*Growth in IT outsourcing is expected to remain high in the coming years as there have been widespread market claims that IT outsourcing can reduce firms' costs by over 30 percent. The scope and range of IT outsourcing services are also increasing, as evidenced by the promotion of ASP (applications service providers), global outsourcing, software development outsourcing, and web and e-business outsourcing. However, management of IT outsourcing evaluation is particularly under-studied, especially in how these firms measure their IT outsourcing contracts and ensure that benefits expected from these contracts are delivered. The main objective of this paper is to examine and compare the current management practices in IT outsourcing evaluation and benefits realization by Australian and Taiwanese firms. The paper first reviews relevant literature with respect to IT outsourcing, the evaluation of IT outsourcing, and IT benefits realization. Key survey findings from the Australian and Taiwanese firms will be presented.*

**Keywords:** *IT Outsourcing, Management, Outsourcing Benefits Realization, IT Evaluation.*

## INTRODUCTION

Outsourcing of information technology (IT) investment has become so widespread in recent years that it can no longer be ignored (Barthelemy and Geyer, 2004; Lin et al., 2007; Young, 2005). Globally, outsourcing has been spreading quickly in many countries. Spending by firms in IT outsourcing is huge and increasing. According to Gartner (Blackmore et al., 2005), total spending on IT outsourcing worldwide is likely to rise from US\$184 billion in 2003 to US\$256 billion in 2008. The scope and range of outsourcing services are increasing as well, as is shown by the promotion of BPO (business process outsourcing), ASP (applications service providers), global outsourcing, R&D (research and development) outsourcing, web and e-business outsourcing (Gonzales et al., 2005; Hirschheim and Lacity, 2000; Huang et al., 2005). Despite the recent debates in the US and other western countries about outsourcing of skilled IT jobs to other low-cost countries such as India and about firms' obligations to the broader stakeholder community (Jones, 2005; Palvia, 2003; Rottman and Lacity, 2004), offshore IT outsourcing has often been employed by most large firms to reduce the cost of future IT investments and to improve the cash flow of the firms (Kakabadse and Kakabadse, 2001).

While there is already much research on the economics of IT outsourcing, critical success factors for IT outsourcing decision-making and for outsourcing vendor management (Barthelemy and Geyer, 2004; Hirschheim and Lacity, 2000), there is very little literature on the actual linkage between IT outsourcing and the use of evaluation methodologies in firms, especially in how these firms evaluate their IT

outsourcing contracts and ensure that the benefits expected from these contracts are delivered eventually. The aim of this paper is to examine issues surrounding the management of evaluation and benefits realization processes in Australian and Taiwanese firms undertaking IT outsourcing. The paper first reviews relevant literature with respect to IT outsourcing, the evaluation of IT outsourcing, and IT benefits realization. Key findings from a survey of the top 2000 Australian firms as well as a survey to top 3000 Taiwanese firms will then be presented. The paper examines these findings and issues in light of these large firms' evaluation practices.

## LITERATURE REVIEW

### IT Outsourcing

Globally, outsourcing has been spreading quickly in many countries (e.g. Australia and Taiwan). IT outsourcing has often been employed by most large firms to reduce the cost of future IT investments and to improve the cash flow of the firms (Kakabadse and Kakabadse, 2001; Young, 2005). However, despite the fact that many IT outsourcing project failures (e.g. Barton, 2002; Douglas, 1999; Mitchell, 2000) had been reported in the media, very little attention had been paid to the management of IT investment evaluation and benefits realization methodologies in order to ensure outsourcing success. Moreover, difficulty in monitoring the performance of the outsourcing contracts is one of the most important disadvantages for outsourcing firms (Apte et al., 1997; Lin et al., 2007).

IT outsourcing also tends to generate strong emotions among the senior executives and external contractors. There are many reasons and issues contributing to the growth of the outsourcing. A review of relevant outsourcing literature has revealed the following organizational goals or objectives that firms aim to achieve for their IT outsourcing projects. Some of the goals or objectives for IT outsourcing include:

- Greater focus - Some functions have become non-strategic due to the maturing of IT technology. The firms wish to stay focused on the core of the business. (Cronk and Sharp, 1998; Gonzalez et al., 2005).
- Increase flexibility - It provides a way to increase flexibility in order to easily absorb fluctuations in environmental demands (Graham and Scarborough, 1997; Slaughter and Ang, 1996).
- Increase customer satisfaction – It is extremely important for firms to attract new customers and retain their existing customers (Misra, 2004).
- Lower costs - There is tremendous downsizing and cost-reduction pressures on many firms. This is often the number one reason for IT outsourcing (Ang and Straub, 1998; Beaumont and Costa, 2002; Gonzalez et al., 2005).
- Risk sharing – The external contractors can share the risks. Contractors have responsibility to ensure the systems are meeting the reliability and performance criteria (Graham and Scarborough, 1997; Williams, 1998).
- Increase efficiency/service level - Many IT functions have become stable commodities that can be turned over to external contractors for more efficient processing and management (Cilek et al., 2004; Diamond, 1993; Graham and Scarborough, 1997).
- Access world class expertise – Outsourcing allows firms to obtain required skills and expertise from outsourcing contractors (Aubert et al., 2003; Smith et al., 1998).
- Economies of scale - Outsourcing can provide economies of scale for smaller firms (Ibrahim, 1998; Smith et al., 1998).
- Higher quality of goods and services – Competition among external outsourcing contractors ensure availability of higher quality goods and services in the future (Graham and Scarborough, 1997; Smith et al., 1998).

Careful and rigorous management of IT outsourcing contracts are critical for firms to be successful in undertaking IT outsourcing (Cilek et al., 2004). There are several important factors that govern successful and less successful outsourcing decision. These include: differentiation of the business from the competitors, strategic direction of the business, degree of uncertainty of the business environment, scope of outsourcing services, quality of outsourcing contract, technology maturity, level of IT integration, in-house capabilities, and trust (Barthelemy, 2003; Hormozi et al., 2003). In addition, there are other factors that are more critical for offshore outsourcing than for domestic outsourcing. According to Adalakun (2004), the following critical success factors are very important for offshore outsourcing: people factors (e.g. language skill and project management skill), technical factors (e.g. workers technical skill), business infrastructure factors (e.g. service level agreement details), regulatory factors (e.g. travel and visa restrictions), and client interface factors (e.g. security and trusting relationship). In particular, the traditional approaches to security are failing as we move to open networks and business models due to IT outsourcing (Grimshaw et al., 2002; Wright, 2001). In addition, IT outsourcing also forces firms to extend the boundaries of trust outside of their former closed spheres (Wright, 2001). According to Khalfan (2004), these two issues are the most prominent risk factors that would affect the attitudes of firms to IT outsourcing.

Moreover, IT outsourcing can vary according to organizational 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) has pointed out 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, firms that invite both internal and external bids tend to have higher success rates than firms that merely compare external bids with current IT costs (Lacity and Willcocks, 1998). Furthermore, senior executives and IT managers who make decision together have higher success rates than either stakeholder group acting alone (Lacity and Willcocks, 1998). Furthermore, outsourcing requires a considerable cultural change on the management of evaluation (Willcocks and Lester, 1997). Before outsourcing any IT, the more successful firms 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 galvanized the in-house staff into identifying new ways of improving on IT performance, and into maintaining the improvement through putting in place, and acting on the output from enhanced evaluation criteria and measures.

However, despite the promised savings from the IT outsourcing contracts, there have been problems for firms to manage IT outsourcing contracts. Some of the major IT outsourcing risks include:

- Loss of critical skills and competences – When a service is outsourced, the outsourcing firms lose their understanding of the service in both technical and managerial areas over time (Willcocks et al., 1999).
- Inexperienced employees – There is no guarantee that the external contractors will necessarily have either the best expertise or solid experience (Earl, 1996). Very often, firms which outsource are supported by the same employees that have been transferred to the external contractors before (Gonzalez et al., 2004; Sullivan and Ngwenyama, 2005).

- 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). Business uncertainty is the major barrier to IT outsourcing (Aubert et al., 2003).
- Irreversibility of the outsourcing decision – If the outsourcing firms have got rid of the technical and human infrastructure the costs to reconstruct their IS in-house is very high (Aubert et al., 2003; Barthelemy, 2003).
- The possible opposition of the IS staff – They can see outsourcing as a threat to their job security (Gonzalez et al., 2004).
- Dependence – It is difficult for outsourcing firms to quantify and define the information services they need, and these services tend to evolve over time. If these services had not been agreed in the original contract, they would have to be charged with an additional rate (Gonzalez et al., 2005).
- Possibility of weak management – It is difficult to know whether the IT managers will be any better at managing an external contractor (Earl, 1996; Sullivan and Ngwenyama, 2005).
- Inability to adapt to new technologies – If external outsourcing contractors do not find benefit in the adoption of new technologies they could become reluctant to adopt them in order to make the services they offer as profitable as possible (Gonzalez et al., 2004).
- Justification problem – An overwhelming majority of senior managers view their IT functions as cost burdens. As such, IT managers could not appeal to effectiveness or strategic significance to justify their existence. 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; Lin et al., 2007).
- Hidden costs – These costs are mainly due to ambiguities in the contract (Gonzalez et al., 2004). 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). Other hidden costs include contractor search and contracting as well as transitioning to the external contractor (Barthelemy, 2003).
- Security issues – They can happen when an external contractor has to serve several direct competitors and to keep confidentiality about the information corresponding to all of them (Lacity and Hirschheim, 1994).

Reasons for this include failing to properly monitor and evaluate IT outsourcing contracts and projects, especially the performance of contractors (Lin et al., 2005; Lin et al., 2007a; Perrin and Pervan, 2004).

### **Management of IT Evaluation in IT Outsourcing**

A lot of IT projects fail to deliver the promised benefits because firms focus on implementing the technology rather than tracking and measuring the performance of IT projects (Lin and Lin, 2007; Standing et al., 2006; Tsao et al., 2004). One reason for this is that most firms fail to properly monitor and evaluate their IT outsourcing projects (Perrin and Pervan, 2004; Willcocks and Lester, 1997). Complexity and scope are often the major constraints and difficulties in IT investment evaluation and benefits realization processes (Tallon et al., 2000; Ward and Daniel, 2006). According to Kakabadse and Kakabadse (2001), the development of suitable methodologies for IT outsourcing has been very slow. For example, McIvor (2000) found that most firms had no formal process to evaluate their IT outsourcing decision and, instead, relied on limited cost analysis associated with the outsourcing decision. Beaumont

and Costa (2002) found that evaluating all costs relevant to outsourcing was a very difficult task. According to Hsu et al. (2005), most large firms (52.4%) in Taiwan do not perform evaluation on a regular basis and those firms which do evaluate tend to do so irregularly. In fact, 15.1% of firms surveyed did not evaluate at all (Hsu et al., 2005).

Firms that make extensive use of IT evaluation methodologies or measures have higher perceived payoffs from IT (Tallon et al., 2000). Misra (2004) found that outsourcing firms need to choose the evaluation methodologies which: (a) lead to the desired behavior by both outsourcers and outsourcing contractors; (b) are within the outsourcing contractors' control; (c) can be easily measured by both the outsourcers and outsourcing contractors; (d) can be evaluated by objective criteria rather than subjective criteria; and (e) can be aligned with business objectives. There are many methodologies that can be used to evaluate IT investments in outsourcing. According to Andresen et al. (2000), there are more than 30 currently available IT investment evaluation methodologies such as Information Economics Approach (Parker et al., 1988), Return on Management (ROM) (Willcocks, 1992), and Options Theory (Dos Santos, 1994).

### **Management of IT Benefits Realization in IT Outsourcing**

IT benefits realization methodologies extend investment evaluation further into the project life cycle by ensuring expected benefits are realized after a decision to invest has been taken (Changchit et al., 1998; Lin et al., 2005a; Love et al., 2005). The use of IT benefits realization methodologies enables firms to ensure that desired business changes have been clearly defined, and they are measurable (Standing and Lin, 2007; Ward and Daniel, 2006). The identification of planned benefits of a proposed IT outsourcing project is a difficult and complicated task. According to Lin and Pervan (2003) and Lin et al. (2007), very few firms have a benefits realization approach. Ironically much attention is paid to ways of justifying investments with little effort being expended in ensuring that the benefits expected are realized. As benefits are frequently long term, uncertain and intangible future benefits are too wide-ranging to be estimated with any accuracy. After all, the critical role of benefits realization depends on external IT outsourcing contractors' ability to not just deliver excellent service but also to turn this service into organizational consequences such as control of costs, meeting organizational goals, flexibility, and focusing on core functions (Rouse et al., 2001).

While firms have spent a lot of organizational resources on IT outsourcing, the importance of IT outsourcing evaluation and benefits management has received limited attention, as has the linkage between IT outsourcing and the use of IT investment evaluation and benefits realization methodologies. There are only a handful of IT benefits realization methodologies published in the literature (Lin et al., 2007b). These include Cranfield Process Model of Benefits Management (Ward and Daniel, 2006), Model of Benefits Identification (Changchit et al., 1998), and the IT Benefits Measurement Process (Andresen et al., 2000).

## **RESEARCH DESIGN AND METHODOLOGY**

As noted earlier, growth in IT outsourcing is expected to remain high in the coming years. In Australia, there is an increasing push by businesses for offshore IT outsourcing (to India, in particular), although many industry executives believe that Australia can also become an offshore destination as it is at least 25% cheaper to run a commercial undertaking in Australia than in the US or Western Europe (Hollands, 2004). In Taiwan, foreign companies spent a total of US\$66 billion on IT outsourcing to

Taiwan in 2005 and over 70% of Taiwan's IT output was actually outsourced to China (Burns, 2006). However, so far no research has been carried out to obtain an overview of IT investments and benefits management practices in these two economies. The research aims to provide new empirical evidence comparing Australia (a developed economy) and Taiwan (a newly industrialized economy) on their IT outsourcing investment evaluation and benefits realization practices.

The survey approach was chosen as it has the advantage of being able to focus on problem solving and pursue a step-by-step logical, organized, and rigorous method to identify problems, gather data, analyze the data, and draw valid conclusions (Sekaran, 1984). Specifically, the survey sought to: (1) examine current practices and norms in managing IT outsourcing benefits and evaluation by firms in Australia and Taiwan; and (2) study the usage of the IT outsourcing investment evaluation and benefits realization methodologies or approaches by firms in Australia and Taiwan.

Prior to determining the sample size for the surveys in Australia and Taiwan, a pilot survey of IT managers/CIOs of several large firms in Australia and Taiwan was conducted. Comments about the pilot questionnaire were all positive and so no significant changes were made to the questionnaire. The sample for the Australian study was obtained by mailing questionnaires to the IT managers and CIOs of large Australian firms. The survey elicited a total of 176 responses and a response rate of approximately 20%. Questionnaires were also sent to top Taiwanese firms and 889 questionnaires were returned (a response rate of about 30%). In the absence of objective data on the firms' evaluation practices, the IT executives' perceptions were used. Although there has been some debate regarding the legitimacy of perceptual measures as a proxy for objective measures, research has succeeded in alleviating some of the concerns by showing that perceptual measures of organizational performance has a strong positive relationship with more traditional objective measures (Tallon et al., 2000). For example, a study by Venkatraman and Ramanujam (1987) showed that there was a high degree of correlation between perceptual and objective performance measures in the process of measuring performance of several competing firms.

Chi-squared Goodness of Fit tests, on 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. Late returns were compared with other response received earlier in order to check for non-response bias. No significant differences were detected between two samples (Armstrong and Overton, 1977). Therefore, the respondents can be considered representative of the population as a whole. Most of the information presented below is based on descriptive statistics (i.e. frequencies) but some comparisons between groups were made using crosstabs, ANOVA, and correlation statistics. SPSS was deployed to analyze the quantitative data collected through the survey.

## **SURVEY FINDINGS AND DISCUSSION**

The responding Australian firms were large in revenue and number of employees, typical of the large corporate sector with large numbers from wholesale and retail (19%), public services (15%), health and related services (12%), construction and mining (12%), and manufacturing (11%). More than half of the responding Australian firms had an IT budget of more than US\$5 million. About 63% of the responding firms had more than US\$100 million in total revenue and almost 80% of them have more than 500 employees. On the other hand, most Taiwanese firms were from manufacturing (32%), wholesale and retail (25%), and IT and communication industries (20%). Approximately 58% of the responding firms had more than US\$100 million in total revenue and almost half of the firms had more than 500 employees. Approximately 45% of Taiwanese firms had an IT budget of more than US\$5 million.

### **IT Investment Evaluation and Benefits Management for IT Outsourcing**

The Australian survey results revealed a reasonably high adoption of methodology for IT investment evaluation (68%), but less for IT benefits realization (42%). However, the results also showed that 15% had failed to adopt an IT investment evaluation methodology while 32% of responding firms failed to adopt an IT benefits realization methodology. 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 IT investment appraisal. On the other hand, the survey results in Taiwan also revealed lower adoption rates for IT investment evaluation (44%) and IT benefits realization (42%). The ANOVA revealed that both Australian and Taiwanese firms tend to adopt either both methodologies or none at all.

Furthermore, Australian respondents indicated that IT investment evaluation methodology was widely used in 51% of cases. However, only 29% of the respondents had pointed out that an IT benefits realization methodology was widely used in their firms. On the other hand, the Taiwanese respondents reported that both methodologies were widely used in only 39% and 40% of cases, respectively.

Finally, in terms of effectiveness of those methodologies in ensuring successful IT outsourcing, 46% and 32%, respectively, of the Australian firms pointed out that they were effective. Overall, the IT investment evaluation methodology was not effective in ensuring successful IT outsourcing. Furthermore, IT benefits realization methodology was neither widely used nor effective in ensuring successful IT outsourcing. The figures for the effective utilization of these methodologies by the Taiwanese firms were 41%, and 39%, respectively.

### **Motivation for undertaking IT outsourcing**

IT outsourcing was extremely popular among Australian and Taiwanese firms. Almost all firms surveyed had outsourced at least part of their IT functions. Cost reduction (70%) due to lower salaries was considered an important factor for IT outsourcing by Australian firms. However, this was given a very low priority by the Taiwanese firms. Instead, time saving (69%) and ability to focus on core activities (68%) were the most often mentioned benefits for IT outsourcing in Taiwan. Furthermore, most Australian and Taiwanese firms preferred those external IT outsourcing contractors which had a good track record and extensively skills and experience in outsourcing. The size of external IT outsourcing firms was not an important selection factor for both Australian and Taiwanese firms.

## **CONCLUSION**

The main focus of this paper is to examine issues surrounding the management of evaluation and benefits realization processes and practices in Australian and Taiwanese firms undertaking IT outsourcing. The survey results indicate that while the usage of IT investment evaluation methodologies by Taiwanese firms is lower than firms in Australia, the usage of IT benefits realization methodologies is about the same for both groups of firms. In addition, large Australian firms are more able to conduct IT investment evaluation methodologies more widely and effectively whereas large Taiwanese firms are more likely to deploy IT benefits realization methodologies widely and effectively.

The surveys also show that the extent of outsourcing is quite high in large Australian and Taiwanese firms. Furthermore, Australian and Taiwanese firms differ on their motivation for IT outsourcing. Cost reduction is the number one reason for IT outsourcing for large Australian firms while time saving and ability to concentrate on core activities are the most often mentioned IT outsourcing reasons for Taiwanese firms.

A key contribution of this exploratory comparative study is to provide new empirical evidence on IT outsourcing practices as well as IT investment evaluation and benefits realization processes in large Australian and Taiwanese firms. The findings here can assist senior executives in making their IT outsourcing decisions.

IT outsourcing spending will continue to rise in the future. The rising price of oil will put increasing pressure on firms to both utilize technology and outsource to remain competitive. Despite the recent debates in the US and other western countries about outsourcing of skilled IT jobs to other low-cost countries such as India and China, and about firms' obligations to the broader stakeholder community, offshore IT outsourcing has often been employed by most large firms to reduce the cost of future IT investments and to improve the cash flow of the firms (Burns, 2006; Hollands, 2004; Rottman and Lacity, 2004).

Finally, our study took place at a particular point in time. This research has relied on the information provided at a particular point in time. Further research could take a longitudinal approach as the perception and evaluation of benefits are likely to change over time. Alternatively, our study could be replicated in a few years time in other countries.

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