

Revisiting IT outsourcing risks: Analysis of a survey of Australia's Top 1000 organizations

Dr Anne Rouse ¹
Prof Brian Corbitt ²

¹ School of Information Management and Systems
Monash University
² Deakin University
Melbourne Australia
e-mail: anne.rouse@sims.monash.edu.au
e-mail: brian.corbitt@deakin.edu.au

Abstract

IT outsourcing strategy has the potential for substantial benefits, but also the likelihood of significant risks. The literature has not fully explored the probability of encountering IT outsourcing risks, and, conversely, the probability of success, leaving open the possibility that many decision-makers enter into IT outsourcing with unwarranted optimism. This paper reports on the experiences of 240 Australian organizations engaged in IT outsourcing taken from a survey of the largest 1000 sites in the country. The survey revealed some surprising findings. Certain widely promoted benefits of outsourcing were observed (access to skilled staff, positive vendor service and improved business flexibility), but a range of benefits that were similarly promoted were reported by only a minority of respondents. These included strategic benefits, cost savings, economies of scale, and technology benefits. Only around a third (36%) of respondents reported satisfaction with their outsourcing arrangement(s) and a range of risks were more prevalent, and less manageable than has previously been reported.

Keywords

Outsourcing of IS EI07, IS strategic planning EF04, Issues in organizing IS, EG03 IS risk management EL08

INTRODUCTION

Determining whether the trade-off between risk and reward justifies a selected choice is fundamental to the IT outsourcing decision, but this implies an understanding of risk sources, risk probabilities, and the impact of remedies on these. Whether risk or reward has been emphasized in IT outsourcing research has largely been determined by individual preference, but an examination of more recent literature (such as Lacity and Willcocks' 2001 text) suggests that a community of scholars exist who believe the benefits of outsourcing generally outweigh the risks. This is certainly consistent with the continued growth in IT outsourcing, but this optimistic view is possibly unwarranted (Hirschheim, interviewed in Healey, 2002).

Where does data about the likelihood of IT outsourcing risks and rewards (or benefits) come from? Generally not from the IT outsourcing literature, which is marked by a shortage of reliable probabilistic studies on the outcomes and consequences of IT outsourcing. The predominant research approach to studying IT outsourcing has been case studies, and while these provide rich insights into the complexity of IT outsourcing arrangements they are not statistically representative. Hence it is not possible to determine how likely it is that the experiences of case study informants will generalize to the wider population. Even when cross-case comparisons are done (such as those by Lacity & Willcocks, 1998; 2001); the ratios of success amongst the different sub-categories of cases can tell decision-makers nothing about their own likelihood of success (or risk). In fact, because it is difficult for researchers to gain access to case study sites that are failing or have experienced severe problems, the published case studies are likely, as a group, to be more positive than those in the general population.

The issue is compounded for IT outsourcing, because even though there has been almost a decade of research into the strategy, there have been few published quantitative surveys that have used dependent variables with good psychometric properties, or have had large enough samples to provide reasonably bounded confidence limits. Consequently, there is limited reliable information available to decision-makers on either success rates, or failure and risk rates, for the choice to outsource (Rouse, 2002).

To help redress this problem, this paper reports on analysis of a survey sent in 2000 to 1000 IT managers and IT Directors. Their organizations were selected from the top 1600 Australian government and non-government

organizations. As the response sample for the survey was high (n = 240, or 24%) the data set provided a chance to examine, probabilistically, success and failure rates, and so to gauge risk probabilities.

The paper considers the notion of organizational risk and of risks specific to IT outsourcing, then briefly reports details of the survey and the risk-related measures and findings. It then examines the implications these findings have for decision-makers confronted with choices about how to source the delivery of IT services.

The notion of organizational risk

Managers are concerned with assessing, and reducing, risks. From the managerial decision-making perspective (Kahneman & Tversky, 1982; March & Shapira, 1987) the potential positive outcomes of a choice constitute the attractiveness of an alternative (the reward) while the negative outcomes, or potential losses, represent the risk. Managers implicitly consider the likelihood (or probabilities) of these in considering alternative actions, however the issue is clouded because there are a range of human cognitive biases that mean that decision-makers will often mis-diagnose the probabilities (Kahneman & Tversky, 1982). Normative strategies for comparing risky alternatives attempt to overcome these limitations by encouraging decision-makers to multiply the likely magnitude of both positive and negative outcomes by their estimated probability, and to seek out objective information about the likely probabilities of negative consequences.

Drawing on March & Shapira (1987), Aubert et al (1998; 2001) considered risk in relation to IT outsourcing, and presented a framework that decision-makers could use to structure their risk assessment and management. The authors noted that while risk is considered in the literature in a number of different ways, it generally involves the two elements discussed above: the likelihood of a negative event, and the magnitude of the negative consequences or impacts.

In relation to the downsides, or risks, of a choice, the multiplication of these two aspects results in the calculated “risk exposure” of the organization using the formula below. This approach is used regularly in software engineering for estimating the risks of software projects (e.g. Boehm, 1991) and underpinned Aubert et al’s (1998; 2001) framework for considering IT outsourcing risk. This formula also underlies the Australian and New Zealand “AS/NZS 4360:1999” standard on risk management (Standards Australia, 1999), reported by the authors to be the first international standard on risk management. This standard has been used as a framework for a methodology for managing outsourcing risk (Standards Australia, 2000).

$$\text{Risk exposure} = \text{Probability (negative outcome)} * \text{Impact (negative outcome)}$$

Using this formula, a risk factor that has a high potential impact, but a low probability would probably not receive much managerial attention because of its unlikelihood. But high-impact risks with moderate to high probability, or low-impact risks with high probability, should be scrutinized carefully by decision-makers. As Aubert et al (2001) have suggested, once the risk exposure is estimated, the organization can then go on to manage the risk. Aubert and his colleagues suggest decision-makers can employ one of four approaches: (1) reducing the negative impact in some way (e.g. by contracting with several different vendors); (2) reducing the probability of the negative impact (e.g. by choosing to outsource only commodity-like services); (3) reducing both elements, or (4) monitoring. Standards Australia (2000) suggests two additional alternatives: (5) choosing to transfer the risk to another party better able to handle it, or (6) choosing not to outsource at all.

An example of the application of this normative model is to consider one risk with outsourcing IT services — that sensitive information might be leaked to those who should not have access to it. Assessing the risk exposure would involve consideration of how likely it was that information might be leaked (the probability) and then examining the impact, or costs, of the negative outcome. The latter aspect will depend on the sensitivity of the information, and the consequences of its unlawful release, which might be financial in the case of a corporation that lost critical trade secrets, or political in the case of a government agency that had private information released.

A potentially catastrophic risk (such as the vendor going out of business) might be rare, but because of its impact, it is an important risk that would need to be considered when planning an organizational strategy. Conversely, every-day risks, that have a high probability, need to be managed even though the consequences might be less substantial. Because of the importance of probabilities, the risk-exposure approach necessarily focuses on more common day-to-day risks (like the outsourcing arrangement failing to meet cost savings expectations) at the expense of unlikely, but highly damaging risks.

Assessing the magnitude of the consequences necessarily depends on the individual circumstances of both the decision-maker, and his or her organization. It is usually largely subjective, because assigning objective and reliable measures to such assessments is difficult for managers. Consequently there is a limited role for academic researchers in calculating the overall risk exposure of a strategy, as this will differ for each organization, and possibly for different managers within one organization. However, providing independent data about the

probabilities of negative consequences across particular populations is an important role for researchers. Knowing the likelihood of certain outcomes will allow individual decision-makers to apply this likelihood to their own individual assessments of the magnitude of loss, and so derive an estimate of the organization's risk exposure. Objective information about probabilities should also counteract human cognitive biases that might cause decision-makers to over, or under-estimate risk probabilities (Kahneman & Tversky, 1982).

The specific risks of IT outsourcing

A number of writers have discussed potential risks of IT outsourcing. Most have produced subjective-argumentative papers, like the influential paper by Earl (1996) or the tutorial on applying the AS4360 standard to outsourcing produced by Standards Australia (2000). Lacity and Hirschheim (1993; 1995) and Lacity and Willcocks (2001) have discussed risk in relation to the case studies they have undertaken. Aubert et al (2001) provided a classification of risks based on a review of much of the earlier research. Drawing on this literature (particularly Aubert et al's review) the authors have classified risks in terms of threats to the purchaser's key resources:

- *financial* (where the risks are that the arrangement will result in additional costs, and/or reduced savings);
- *managerial attention* (which would be diverted from the organization's core competencies to the management of the arrangement, or resolution of disputes and problems);
- *organizational knowledge*; and
- *security of information*.
- Three other important risks are:
- *service debasement* (Aubert et al, 2001; Lacity & Hirschheim, 1993), and
- *reduced business flexibility* (Lacity & Hirschheim, 1993) both of which would have consequent impacts on operational performance
- *vendor failure*, or the vendor walking away from the contract (as happened recently in Victoria for transport outsourcing contracts).

Each of these categories embraces a number of risks. For example, financial resources are threatened by several risks: unexpected transition and management costs; switching costs, costs associated with contractual amendments and with disputes and litigation; and costs resulting from poor assessment of the costs of internal delivery, or lack of expertise on the vendor's part (Lacity & Hirschheim, 1993; Aubert et al, 2001).

Economists tend to convert many of these elements (and risks that threaten them) into financial terms, but Davenport and Beck (2001) argue that managerial attention, which is bounded by human cognitive limitations (March & Simon, 1958; Dörner & Schaub, 1994) is an equally important limiting factor in organizational life. Redirected managerial attention cannot easily or quickly be remedied through financial means even if funds are available. Indeed, one of the key arguments for outsourcing IT services is that it will allow the organization to husband this resource, and divert it to the core competencies critical to the organization.

Loss of organizational knowledge (described by Aubert et al as "organizational competencies") is also important, over and above the costs of replacing staff, because of its tacit nature and the difficulties and time frames needed to rebuild it. The risk of losing critical organizational knowledge through outsourcing IT services has caught the attention of a number of researchers, because of the consequences on organizational performance, and market competitiveness, such losses might have (Strassman, 1997, pp 263-269).

METHODOLOGY

In order to better understand the probabilities of success and risk factors, data gathered in 2000 by a team at the University of Melbourne (Seddon, Cullen, Willcocks, Rouse & Reilly, 2000) was analyzed. The data was obtained through a mailed survey to the IT Managers/Directors of 1000 of the largest 1600 sites in Australia, incorporating both public sector and private sector organizations. Creation of the sampling frame involved extensive investigations of commercial lists, business databases and government directories. The sample consisted of the top 500 sites common to all lists, plus a random sample of 550 of the other 1100 sites. Of the 240 responses, only 6 were not involved in IT outsourcing. This was an "omnibus" survey designed to meet a number of varying goals for the participants, and consequently incorporated 285 items. To accommodate these, the survey was split into two. The first was sent to the sample of 1000, while the second was sent several months

later to those who had indicated they were involved in IT outsourcing ($n = 231^1$). However, not all respondents answered all items. Details of the two surveys are shown in Table 1.

Because IT outsourcing risk has largely been considered qualitatively in the literature, there is no clear agreement on how outsourcing risk should be measured. The survey had not asked respondents directly about the issue of risk, but did include information that could shed light on risks.

Dependent variables

The approach used by the University of Melbourne team was to develop two banks of items (totaling 32) related to perceived consequences and evaluations of IT outsourcing. Survey items were developed from a range of earlier studies, and included 9 items adapted from the measures of outsourcing success reported in Grover, Cheon & Teng (1996).

Table 1: Summary Details for First and Second Surveys

	<i>First survey</i>	<i>Second survey</i>
No of items	109	176
Population	The top 1600 IT sites in Australia	Those who replied to Wave 1 (by cutoff date) indicating they outsourced (n = 231)
Sample surveyed	1000	231
<i>No of respondents</i>	240 (24%)	78 (34%)

The proportion of respondents citing difficulties was used as a direct indicator of risk, as was the proportion of contracts that were either brought back in-house or terminated prematurely. An indirect indicator of risk was calculated from the success measures. This was the obverse of the proportion of respondents who reported their outsourcing arrangements were successful. The extent to which arrangements were *not* successful (using the dimensions of success in Table 2) was treated as an indication of the relative level of risk faced by decision-makers. The advantage of using this approach was that it was unobtrusive, and more likely to give a realistic indicator of risk than simply asking respondents their opinions of the likely risks.

An important assumption was made by the authors in considering the issue of risk. This assumption was that decision-makers enter into an outsourcing arrangement with strong expectations of success. That is, they believe that the strategy will, on balance, lead to positive (rather than neutral) outcomes. Decision-makers cannot expect that the probability of success will be 100%, given the uncertainties involved in predicting the future. However, they do not expect that the odds of success are random (i.e. a 50% success rate), or worse than random. A recent McKinsey report on outsourcing (Doig, Ritter, Speckhalls & Woollson, 2001) makes the point that if evaluation scores on a Likert-like scale are neutral (neither positive nor negative) then the benefits of outsourcing are not clear, and the arrangement cannot be seen as successful. In situations where respondents expressed neutrality the authors treated a neutral score as “not success”, indicating some level of ambivalence or uncertainty about the outcomes of outsourcing.

Given the structure of the items related to *difficulties* (shown in Table 3), and the smaller numbers involved, it was not possible to factor analyze that data or to create multi-item measures. However, confirmatory factor analysis of the other 41 items (using AMOS) revealed 7 measures of IT outsourcing success (reported in Rouse et al, 2001). These are listed in the following table, together with the items making up the measures, and some single item measures that are discussed below.

Construct reliability (for the multi-item measures) was determined from individual one-factor confirmatory factor analysis (CFA) and is reported in Table 2. For the CFA, n ranged from 146 to 198. Although ideally reliability should be .8 or higher for established scales, there are no well-established scales for measuring IT outsourcing success, but these measures all met the criterion of .7 generally described as acceptable for exploratory research (Nunnally, 1978). The CFA also established that measures exhibited both convergent and discriminant validity (discussed in more detail in Rouse et al, 2001).

Analysis methods

Analysis in this paper relies largely on calculation and analysis of 95% confidence intervals around the proportion positive. These were calculated using the on-line facility provided by Glass (2001) based on tables supplied in Glass (1996). The definitions of “selective” outsourcing used in this analysis was that given in

¹ The second survey did not include 3 late responses to the first survey even though these outsourced IT.

Lacity and Willcocks (1998), that is between 20 and 80% of IT budget outsourced. Full details of statistical analyses can be found in Rouse (2002). The alpha level used in all analyses was .05.

Table 2: Measures of IT outsourcing success derived from confirmatory factory analysis; and other risk-related measures from the survey

Measure	Items making up the measure	Reliability
Access to skilled personnel	<ul style="list-style-type: none"> Outsourcing IT has given our organization access to skilled personnel (1 strongly disagree, 7 strongly agree) 	n/a
Satisfaction/value	<ul style="list-style-type: none"> Overall, our organization is satisfied with the benefits from outsourcing Our organization is satisfied with the performance of our service provider(s) Our organization is satisfied with the value for money of our outsourcing arrangements (all 1 strongly disagree, 7 strongly agree) 	.94
Cost reduction	<ul style="list-style-type: none"> [Outsourcing IT led to] [worse, no change, moderate improvement, substantial improvement] - cost reduction 	n/a
Vendor service	<ul style="list-style-type: none"> [Outsourcing IT led to] [worse, no change, moderate improvement, substantial improvement] - better service [Outsourcing IT led to] [worse, no change, moderate improvement, substantial improvement] - better match of resource to supply [Outsourcing IT led to] [worse, no change, moderate improvement, substantial improvement] - access to better/more technology [Outsourcing IT led to] [worse, no change, moderate improvement, substantial improvement] - better use of in-house personnel [Outsourcing IT led to] [worse, no change, moderate improvement, substantial improvement] - access to services unavailable in-house 	.86
Technology benefits of IT outsourcing	<ul style="list-style-type: none"> [Outsourcing IT led to] [worse, no change, moderate improvement, substantial improvement] - access to better/more skills/expertise Outsourcing IT has increased our organization's access to key information technologies Outsourcing IT has reduced the risk of technological obsolescence (both 1 strongly disagree, 7 strongly agree) 	.78
Economies of scale	<ul style="list-style-type: none"> Outsourcing IT has provided enhanced economies of scale in technological resources Outsourcing IT has provided enhanced economies of scale in human resources (both 1 strongly disagree, 7 strongly agree) 	.72
Strategic benefits of IT outsourcing	<ul style="list-style-type: none"> Outsourcing IT has enhanced our organization's IT competence Outsourcing IT has enabled our organization to refocus on its core business Outsourcing IT has increased our organization's control of IS expenses (all 1 strongly disagree, 7 strongly agree) 	.71
Business flexibility	<ul style="list-style-type: none"> [Outsourcing IT led to] [worse, no change, moderate improvement, substantial improvement] – improved flexibility for the business 	n/a

RESULTS

Table 3 highlights those areas where (using 95% confidence limits) at least 20% reported a major difficulty.

Table 3: Areas where at least 20% of respondents reported major difficulties in the second survey

	<i>Major difficulty</i>	<i>95% confidence intervals</i>	<i>N</i>
Anticipating needs/changes to the service requirements	45%	34% - 56%	73
Determining service levels	44%	33% - 55%	73
Loss of organizational knowledge	39%	33% - 55%	72
Getting the right values/culture	39%	33% - 55%	72
Determining internal costs	37%	27% - 48%	73
Not enough resources devoted	37%	27% - 48%	73
Getting the right expertise in	37%	26% - 49%	67
Misunderstanding and misinterpretations	34%	24% - 45%	73
Restructuring internal accountabilities and work processes	32%	22% - 43%	72
Developing outsourcing strategy and objectives	30%	21% - 41%	73
Procedures between organization and supplier(s)	30%	21% - 41%	73
Loss of technical expertise	30%	21% - 41%	73

Source: adapted from Seddon et al (2001)

Table 4 reports the success rates, and the consequent risk rates, for the dimensions of outsourcing success.

Table 4: Success rates, and consequent risks for outsourcing success indicators

<i>Measure of success</i>	<i>n</i>	<i>n that were positive</i>	<i>% positive</i>	<i>95% confidence interval</i>	<i>Mean Score</i>	<i>Risk of not obtaining positive outcome</i>
Strategic benefits	196	49	25.0%	19-32%	3.94	75%
Technology benefits	196	52	26.5%	21-34%	3.90	73%
Economies of scale	196	63	32.1%	26-39%	4.03	68%
Satisfaction/value	198	71	35.9%	30-43%	4.15	64%
Cost reduction	177	75	42.4%	35-49%	2.28*	58%
Vendor service	167	104	62.3%	54-69%	3.01*	38%
Improved business flexibility	176	120	68.2%	61-74%	2.77*	32%
Access skilled pers'l	197	138	70.1%	63-76%	4.92	30%

**on a 4-anchor scale, not a 7-anchor scale, where 2 means no change, 3 moderate improvement.*

The risks related to cost reductions and business flexibility are shown in more detail in Table 5.

Table 5: Success rates, and consequent risks for cost outcomes and business flexibility

	<i>N</i>	<i>% of those responding (n = 177)</i>	<i>95% confidence intervals</i>	<i>Risk probabilities</i>
<i>Cost outcome</i>				
Substantial cost reduction	13	7%	4 – 12%	93% risks of not getting <i>substantial</i> reduction
Moderate cost reduction	62	36%	29% - 43%	57% risk of getting <i>no cost</i> reduction at all ²
Cost increase	38	22%	17% - 29%	22% risk of <i>cost increase</i>

² Calculated by subtracting from 100% the proportions reporting either substantial or moderate cost reductions.

Business flexibility				
<i>Substantially improved business flexibility</i>	26	15%	10% - 21%	85% risk of not getting <i>substantially</i> improved flexibility
Moderately improved business flexibility	94	53%	46% - 60%	32% risk of getting <i>no improvement</i> in flexibility at all ³
Worse business flexibility	11	6%	3% - 11%	6% risk of <i>worse flexibility</i>

Because it is proposed (e.g. Lacity & Willcocks, 2001) that selective outsourcing leads to much lower risks, the authors examined whether there were differences between those engaged in selective, total, and minimal outsourcing. However, the 95% confidence intervals revealed that the probabilities for those engaged in selective IT outsourcing were statistically no different - for cost savings, or for business flexibility - than those in Table 5 above ($p = .05$).

The authors also tested whether there were any relationship between extent of outsourcing (minimal, selective or total) and risks. This was done by using parametric and non parametric analysis of variance, and Pearson correlation. There was no correlation between extent of IT budget outsourced and any of the outcomes ($p > .05$). The authors did establish that minimal outsourcers failed to get the same level for certain benefits - access to skilled personnel, strategic benefits, and economies of scale - than selective outsourcers, which is to be expected ($p \leq .05$). However, our findings did not confirm Lacity & Willcocks' proposition at all - there were no statistical differences between selective and total outsourcing (greater than 20% of the IT budget) for any of the measures in Table 4 ($p > .05$). In other words, the levels of risk reported for the survey as a whole (in Table 4) apply even if the purchaser adopts the supposedly-less risky "selective outsourcing" strategy.

The authors also established that there were no statistical differences between government and non-government respondents on the measures in Table 4, nor differences between medium (less than 500 employees), large (500-1000 employees) and very large organizations (1000+). This suggests the proportions reported are likely to represent those of a large range of purchaser organizations.

Other measures

Also explored in detail for this paper was the item measuring the organization's capacity to refocus on its core business as a result of IT outsourcing. While this item formed part of the strategic benefits measure, it also provides an important indicator of one of the key risks (that of diverted managerial attention). For the individual item, the proportion reporting a positive outcome was 39.5% (with $n = 195$, and 95% confidence limits of 34%-46%). Hence the risks of a purchaser organization not being able to refocus on its core business, as a result of IT outsourcing, is 60%. This finding is consistent with qualitative interviews reported in Rouse (2002) where managers involved in outsourcing frequently reported that it absorbed substantially more attention than they had expected.

DISCUSSION

This large-scale survey of IT outsourcing's consequences reveals that failure rates, and hence risks, are substantially higher than has been recognized in the IT outsourcing literature to date. This finding applies even for supposedly less-risky "selective outsourcing". Even those areas with generally positive responses (access to skilled personnel, vendor service, and increased business flexibility) had relatively high failure rates, with around a third of respondents failing to obtain positive benefits. This information is unlikely to have emerged from earlier studies, which, as discussed, largely involved either qualitative studies, or small-scale surveys with little capacity to provide probabilistic data.

Financial risks

The probability of obtaining substantial cost savings revealed by the analysis, at 7%, indicates that such an outcome is highly unlikely to occur. Yet a search for cost savings has been observed in many case studies (e.g. those in Lacity & Willcocks, 1998) to be the prime motivating force for outsourcing. In the survey described in this paper, while the most common motivations to outsource were related to accessing skills and technology not held in house, cost savings were still sought by 58% of the respondents (Seddon et al, 2000). However, failure to achieve substantial savings would be related to the fact that many of the specific risks associated with IT

³ Calculated by subtracting from 100% the proportions reporting either substantial or moderate increase in business flexibility.

outsourcing (described above) will result in additional costs, and hence will either diminish cost savings, or result in overall cost increases.

The research strategy adopted by Seddon et al (2000) was not to ask respondents to provide an estimate of the savings, because of the inaccuracies involved, so there is no precise quantification of what was meant by “substantial”. However, focus group interviews by Rouse (2002) of 56 informants involved in IT outsourcing suggests that cost savings of more than 12% are uncommon, and would certainly be considered substantial. This is consistent with the meta analysis by Hodge (1996) of studies into cost savings resulting from outsourcing of a range of general services. He found that in contrast to trade claims of savings of 20% to 30%, the empirical evidence was more modest, with savings ranging from 8% to 14%.

The fact that the probability of not obtaining any cost savings at all was 58% also implies that financial risks of outsourcing are significant. Of this 58% who did not get cost savings, over a third reported that costs *increased*, and the overall probability that cost increases will occur, was (at 22%) three times the probability of obtaining substantial savings. Estimated savings reported on a questionnaire are likely to be overstated in the absence of detailed (and costly) post implementation analysis (Rouse, 2002).

Despite the general absence of probabilistic studies of IT cost savings, there are several studies in the literature that corroborate the low probability of obtaining cost savings, and the reasonable possibility that costs will, in fact, rise. Aubert et al (1999), in a longitudinal study of 70 organizations found that 49% of respondents reported IT costs had increased. Domberger, in a study of 7500 outsourcing contracts (CTC, 1999) found that while savings for certain simple services like cleaning, garbage collection and hospital services were in the realm of 30%, those for IT services *increased*, on average, by 8%+. Hodge (1999) found that while savings were obtained for simple services (like cleaning, garbage collection) corporate services (which would include IT), on average, involved an increase of 5%.

Organizational impacts

Failure to achieve cost reductions was not the most problematic area revealed in the survey. As Table 4 shows, all three of the organizational benefits of IT outsourcing articulated by Grover et al (1996) — strategic, technical and economies of scale benefits — had even higher probabilities of failure, as did overall evaluations of outsourcing satisfaction/value. In some respects the risks these findings reflect are even more disquieting than the risks related to cost savings. This is because a recent theme in the trade literature is that while only naive decision-makers seek cost savings from outsourcing IT, sophisticated decision-makers seek a partnership with the vendor, access to new technologies, business flexibility, and being able to divert attention back to core competencies (examples of these messages can be seen on vendor web-sites and the Outsourcing Institute site).

The fact that economies of scale benefits were not commonly reported is consistent with earlier literature, even though this is a benefit frequently cited by outsourcing proponents. Several of Lacity & Hirschheim’s case studies (1993, 1995) revealed that the argument that vendors can get major economies of scale unavailable to the purchaser is not necessarily valid, except for purchaser organizations with quite small IT functions.

The fact that strategic benefits were not commonly reported can be better understood by examining the items making up the measure: refocus on core business, control of IS expenses, and IT competence. Covariance structure analysis using AMOS using the same data (reported in Rouse et al, 2001) revealed that evaluations of the strategic benefits of IT outsourcing are predicted by economies of scale, cost savings and technology benefits, all of which (as shown in Table 4) had high probabilities of failure, and hence high risks.

Managerial attention

To maximize reliability, the construction of the strategic benefits scale weighted the measure “concentrate on core business” most heavily (Rouse, 2002), and so the high failure rate associated with strategic benefits is strongly influenced by the low proportion of respondents (39.5%) who agreed with the statement “Outsourcing IT has enabled our organization to refocus on its core business”.

This item provides an indicator of the extent to which managerial attention is at risk when IT is outsourced. The high failure rate (60%) casts into doubt trade literature suggestions that while IT outsourcing may not lead to cost savings, it does allow redirection of organizational attention (particularly managerial attention) to more important core competencies. Lacity and Hirschheim (1993) demonstrated that senior management’s wish to divest themselves of a problematic function often lay behind rational explanations that outsourcing was adopted so as to obtain cost savings. If this is the case, these findings suggest that such managers are likely to be quite disappointed, as outsourcing IT often does not reduce the demand for managerial attention.

The result for this core competency item is also consistent with case studies — such as those described in Willcocks & Fitzgerald (1994); Lacity & Hirschheim (1993); and Rouse & Corbitt (2002) — that demonstrated that outsourcing IT required considerably more managerial effort than expected.

Business flexibility

The responses for improved business flexibility were more positive than those for other organizational benefits, with a failure rate of 32%. However, as this, like increased capacity to focus on core business, is a benefit widely promoted in the trade literature, the fact that one third of respondents reported not obtaining it should be taken into consideration by decision-makers seeking organizational benefits from outsourcing IT. As with core competency, choosing an outsourcing strategy primarily on the basis that it will lead to business flexibility needs to be considered carefully in light of this information.

IMPLICATIONS FOR DECISION-MAKERS

The data from which these risk estimates were derived was a substantial sample, strongly representative of the largest, and presumably the more successful public and private sector organizations in Australia. It is unlikely that such a large pool of successful organizations all employed ineffective management strategies. A more likely interpretation of these findings is that IT outsourcing, involving as it does a complex inter-organizational social system where participant goals only partially overlap, has inherent risks that are only partly mitigated by careful management strategies. In this respect, IT outsourcing shares many of the problems of complex systems development, magnified by the additional number of, and potential conflicts between, the stakeholders involved.

While these findings raise concerns, they do not necessarily suggest that IT outsourcing should be avoided. A sizeable minority of purchasers obtained substantial benefits from the strategy, and over a third of respondents indicated that, overall, their IT outsourcing arrangements were satisfactory and produced value for money. Furthermore, risky undertakings are regularly embarked on in organizations, because many high-return strategies necessarily involve substantial risk.

However, it is important when embarking on risky undertakings that organizational decision-makers are aware of the risks, and ensure that the organization can manage the downsides, if they occur. A range of strategies have been suggested for managing risks in general, and for risks associated with outsourcing in particular (Standards Australia, 1999, 2000). Careful and detailed planning is clearly important, and this should include the risk-management approaches suggested by Aubert et al (1998; 2000): careful assessment of risks, analysis of how the organization can reduce either the likelihood of their occurrence, or the negative impact they can have (or both), and development of plans for implementing the remedies identified. However, the option of not continuing with the outsourcing venture should always be considered as one strategy for managing risks. Implementation should also ideally involve an incremental approach, incorporating a range of checkpoints at which key assumptions are re-examined and the business case for outsourcing re-calculated.

Associated with this risk management strategy is a need for sensitivity analysis, so as to determine the likely consequences of certain risks. Sensitivity analysis recognizes that projections about the future involve levels of uncertainty. These analyses should be supplemented by the development of practical contingency plans so that if substantial risks do eventuate, they can be managed.

REFERENCES

- Applegate, Lynda M.; McFarlan, F. Warren, and McKenney, James L. (1999). *Corporate information systems management : the challenges of managing in an information age*. Boston: Irwin/McGraw Hill.
- Aubert, B. A., Patry, M., & Rivard, S. (1998). Assessing the risk of IT outsourcing. in *Thirty First Annual Hawaii International Conference on Systems Sciences Hawaii*.
- Aubert, Benoit; Patry, Michel, and Rivard, Suzanne. (1999) *L'impartation des services informatique au Canada: Une comparaison 1993-1997* in Poitevin, Michel, Ed. *Impartition: Fondements et analyses*. Montreal: Canada: University of Laval Press; pp. 202-220.
- Aubert, B. A., Rivard, S., & Patry, M. (2001) *Managing IT outsourcing risk: Lessons learned*. CIRANO Working Paper 2001S-39 [Web Page]. URL www.cirano.qc.ca/pdf/publication/2001s-39.pdf [accessed December2001].
- Boehm, B. W. (1991). Software risk management: principles and practices. *IEEE Software* , (Jan), 32-41.
- CTC Consultants. (1999). *Government outsourcing: What has been learnt?* Sydney, Australia: CTC Consultants.

- Davenport, T. H., & Beck, J. C. (2001). *The attention economy: Understanding the new currency of business*. Boston: Harvard Business School Press.
- Doig, S. J., Ritter, R. C., Speckhalls, K., & Woollson, D. (2001). Has outsourcing gone too far? *The McKinsey Quarterly*, (4), 1-3.
- Dorner, D., & Schaub, H. (1994). Errors in planning and decision-making and the nature of human information processing. *Applied Psychology*, 33, 433-453.
- Earl, M. J. (1996). The risks of outsourcing. *Sloan Management Review*, 37(3), 26-32.
- Glass, G. V. (2002) Confidence interval on a sample mean. URL <http://glass.ed.asu.edu/stats/analysis/mci.html>, Accessed July 2002
- Grover, V., Cheon, M. J., & Teng, J. T. C. (1996). The effect of service quality and partnership on the outsourcing of information systems functions. *Journal of Management Information Systems*, 12(4), 89-116.
- Hammond, J. S., Keeny, R. L., & Raiffa, H. (1998). The hidden traps in decision-making. *Harvard Business Review*, (Sept-Oct), 47-58.
- Healey, C. (2002). Sourcing Strategies, *MIS* 11(2). 34-41.
- Hodge, G. A. (1996). *Contracting out government services: a review of international evidence*. Melbourne, Australia: Montech Pty Ltd/ Monash University.
- Hodge, G. A. (1999). Competitive tendering and contracting out: Rhetoric or reality? *Public Productivity and Management Review*, 22(4), 455-469.
- Kahneman, D., Slovic, P., & Tversky, A. (1982). *Judgment under uncertainty : Heuristics and biases*. Chichester: NY: Cambridge University Press.
- Lacity, M. C., & Hirschheim, R. (1993). *Information systems outsourcing: Myths, metaphors and realities*. Chichester, England: Wiley.
- Lacity, M. C., & Hirschheim, R. (1995). *Beyond the information systems outsourcing bandwagon: The insourcing response*. New York: Wiley.
- Lacity, M. C., & Willcocks, L. (1998). An empirical investigation of information technology sourcing practices: Lessons from experience. *MIS Quarterly*, 22 (3), 363-408.
- March, J., & Simon, H. (1958). *Organizations*. New York: John Wiley and Sons.
- March, J. G., & Shapira, Z. (1987). Managerial perspectives on risk and risk taking. *Management Science*, 33(11), 1404-1418.
- Nunnally, J. (1978). *Psychometric theory*. NY: McGraw-Hill.
- Oliver Richard L. (1997). *Satisfaction: A Behavioral perspective on the consumer*. NY: Irwin/McGraw-Hill.
- Rouse, A C. (2002). *Information technology outsourcing revisited: Success factors and risks*. Unpublished Doctoral Thesis. Department of Information Systems, University of Melbourne.
- Rouse, A. C. & Corbitt, B. J. (2002), 'The Australian Government's abandoned infrastructure outsourcing program: "Fiasco", or relatively typical?', *Proceedings of the Thirteenth Australasian Conference on Information Systems*, Melbourne, Australia.
- Rust, R. T., & Oliver Richard L. (1993). *Service quality: New directions in theory and practice*. Newbury Park CA: Sage.
- Seddon, P., Cullen, S., Willcocks, L. P., Rouse, A. C., & Reilly, C. (2000). *Report on information technology outsourcing practices in Australia, 2000 (Version 1, October ed.)*. Melbourne, Australia: Department of Information Systems, University of Melbourne. Available from the Department.
- Standards Australia (1999) AS/NZS4360:1999 – Risk management, Melbourne: Standards Aust./Standards NZ
- Standards Australia (2000) HB 240:2000 Guidelines for managing risk in outsourcing utilizing the AS/NZS 4360 process. Melbourne: Standards Australia/Standards NZ
- Strassman, P. A. (1997). *The squandered computer : Evaluating the business alignment of Information technologies*. New Canaan, CT: Information Economics Press.

Willcocks, L., & Fitzgerald, G. (1994). A business guide to information technology outsourcing . London: Business Intelligence.

ACKNOWLEDGEMENTS

This research was funded in part by the management consultants Simson Bowles & Associates and by the University of Melbourne's Department of Information Systems.

COPYRIGHT

Rouse & Corbitt © 2003. The authors assign to ACIS and educational and non-profit institutions a non-exclusive licence to use this document for personal use and in courses of instruction provided that the article is used in full and this copyright statement is reproduced. The authors also grant a non-exclusive licence to ACIS to publish this document in full in the Conference Papers and Proceedings. Those documents may be published on the World Wide Web, CD-ROM, in printed form, and on mirror sites on the World Wide Web. Any other usage is prohibited without the express permission of the authors.