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The Role of Benchmarking and Service Level Agreement (SLA) Practices in IT Outsourcing Success

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Abstract

Despite claims in the trade literature that a number of recommended practices have been proved to lead to IT outsourcing success, few of these practices have been subject to disconfirmatory research. Even fewer have been tested statistically to determine whether they generalize to wider populations, or to determine the magnitude of their effect. In this paper, several recommended outsourcing practices associated with service level agreements (SLAs) and benchmarking are investigated. These practices are recommended extensively on the basis of case study research, yet they do have downsides, and they add substantially to the transaction costs of outsourcing. Based on a large survey of organizations engaged in IT outsourcing, this paper established that developing detailed SLAs did improve cost and service outcome, and that clients who met with vendors more frequently to renegotiate service levels reported greater outsourcing success. The research also established that benchmarking both before outsourcing commences, and once the outsourcing contract is in place, led to improvements in cost and service outcomes. Benchmarking during the outsourcing contract had the greatest effect, accounting for 10% of the variance in a success vector that included strategic, technical, cost-related and service outcomes plus an overall evaluation of satisfaction and value.

Keywords: Outsourcing; Service Level Agreements (SLAs); Benchmarking; Outsourcing Success; Multiple Analysis of Variance (MANOVA)

1. Introduction

The issue of IT outsourcing has been a recurring topic within the information systems literature since the early 90s, yet there is a noticeable shortage of published theory-testing studies. A large number of sometimes-contradictory practices are recommended to ensure success, yet the evidence that these practices do lead to success, and the likely effect they will have, is drawn almost exclusively from case studies. Few of these have taken a disconfirmatory, theory-testing approach, and while case studies provide rich insights into the complexity of outsourcing arrangements, they are not statistically representative. They cannot tell the reader how likely it is that the experiences of case study informants will generalize to the wider population. The shortage of theory-testing studies in the literature means that decision makers have limited evidence to assist them to choose which outsourcing practices to emphasize. While some practices involve minimal costs, others, like developing highly detailed service level agreements, or formal benchmarking, use substantial organizational resources, both human (in terms of staff involvement and managerial attention) and financial. Therefore, some indication of their likely impact on success will be of value for decision-makers.

To address this issue, this paper reports several tests of hypotheses related to SLA and benchmarking practices using a survey sent to 1000 IT managers and IT Directors. Their

organizations were selected from the largest 1600 Australian government and non-government organization. The large data set (n = 240) provided a chance to see whether certain almost unquestioned SLA and benchmarking practice recommendations would be confirmed empirically.

The paper initially describes the hypotheses and the literature from which they were sourced, and then discusses the methodology and results. It later goes on to consider the implications these have for decision-makers.

2. Related Literature and Hypotheses

Despite the recent IT downturn, outsourcing of IT services is still growing rapidly, with the industry analyst Datamonitor (2005) reporting that the worldwide IT outsourcing market grew by 37% in 2004. Nonetheless, it is acknowledged to be a relatively risky strategy (Aubert et al., 2001; Rouse & Corbitt 2003). Consequently, there is an ongoing need to establish how best to manage IT outsourcing arrangements, and to determine which outsourcing practices are likely to lead to good outcomes. The findings from case study research have been mixed. Some organizations (particularly those studied by Lacity & Hirschheim 1993) experienced substantial problems, while others have succeeded in meeting expectations, at least for cost savings outcomes (Lacity & Willcocks 1998).

A question on which there is no real agreement is “Which choices, and practices are *most likely* to lead to improvements in outsourcing success?”. While several authors, particularly Lacity & Willcocks (1998; 2001) have proposed a large number of practices that they argue should improve the success of IT outsourcing arrangements, their recommended practices have not been subject to statistical verification, so prioritizing them is difficult. Furthermore, some recommended practices have even been described as “proven” in the trade literature (Willcocks & Lacity 2001), despite the fact that they have not been subject to empirical test.

One problem with “recommended practices” is that while they can produce benefits in many circumstances, most have downsides too. As an example, a widely-held heuristic is to “selectively” outsource IT to “best of breed” vendors (Gartner’s term – Gartner, 2004). This has an appealing simplicity as “selective” implies judicious, thoughtful, and careful, and “best of breed” inherently implies effective. Yet the research from which this heuristic was derived (33 outsourcing cases reported in Lacity, Willcocks & Feeny 1996) used “selective” to describe the extent of IT budget outsourced, and as an oppositional term to a practice they did not recommend — “total” outsourcing. More recent research has suggested that few organizations now outsource totally, and that most modern IT outsourcing is “selective” (Rouse & Corbitt 2003). A series of smaller, selective contracts typically involves higher transaction and coordination costs than a larger “total” outsourcing contract, particularly if multiple vendors are used, and contracts kept short. These costs are both financial, and organizational. Many go unrecognized when evaluations of the success of the selective outsourcing is determined. Given these downsides, it is not surprising that when the proposition that “selective outsourcing is more successful” was tested statistically, it was established that selective outsourcing is no more successful than total outsourcing (Rouse & Corbitt 2003; Lee et al. 2004). Rouse and Corbitt (2003) have suggested that paradoxically the widespread exposure to this formerly-untested heuristic may have lulled decision makers into viewing IT outsourcing as less risky than it really is.

Given the wide range of recommended practices, this paper concentrates on propositions related to *service level agreements* and *benchmarking*. The benefits of these practices were

widely promoted in the 90s (see discussion below). However, while the literature includes a number of qualitative studies suggesting the practices contribute to success, there has as yet been no attempt to test the implied propositions in a generalizable way, or to establish how much impact these have on outsourcing success.

The recommended outsourcing practices considered in this paper are:

- inclusion in the outsourcing contract of detailed service descriptions and the service levels or standards that are expected — usually as an addendum or attachment labeled the “service level agreement” (SLA); and
- benchmarking of IT service performance and costs before or during the outsourcing contract.

2.1 Service Level Agreements

A theme through much of the earlier literature on outsourcing (particularly Lacity & Hirschheim 1993, 1995) has been the need to understand and articulate exactly what services are required from the vendor, and the standards on which these will be judged. This advice has now become so widespread that the benefits are almost implicitly assumed. Almost all “how to” manuals suggest that purchasers carefully articulate their detailed service requirements, and the measures of success they expect. This is usually incorporated in some form of “service level agreement” or SLA that is an aspect of the outsourcing contract. Case study evidence abounds on the negative consequences of *not* articulating service levels and managing negotiations associated with them (Lacity & Hirschheim 1993, Lacity & Willcocks 2001). However, the generalizability of these findings to the wider population has not yet been tested.

On the basis of the literature it was expected that those organizations that included specific service level agreements (SLAs) in their contracts would create a much clearer understanding on the part of vendors about the services required, and the priorities that exist amongst aspects of these services. This, in turn, should lead to better service, positive strategic benefits, and cost savings, and hence should result in increased outsourcing satisfaction.

However, there are some potentially downsides to the recommended practice. SLAs are a form of contract definition, and the more the contract is defined, the more costly it gets (Williamson, 1985). The process of capturing in detail all elements of an IT service is complex, expensive and time consuming. Articulating, and agreeing the metrics by which services should be measured is not easy and may require (costly) external assistance. Highly detailed SLAs might lead to information overload, and the detail might obscure critical aspects of the services required. Without an accompanying process of review and updating, detailed SLAs might detract from outsourcing success by freezing into the contract outdated or inappropriate standards. Hence, the existence of complex contracts and detailed SLAs might conceivably detract from, rather than enhance the capacity to manage the outsourcing arrangement, and might lead, paradoxically to loss of flexibility. Some writers (e.g. McFarlan & Nolan 1995) have even argued that a detailed, tightly articulated contract outlining expectations is less desirable than a looser relationship based on mutual understanding and trust. These contradictions led the author to consider whether a formal process of SLA renegotiation would also influence IT outsourcing success, and whether the frequency with which the vendor and purchaser met to renegotiate SLAs would have an affect.

The specific SLA-related hypotheses tested in this paper include:

- H1 The practice of including service level agreements (SLAs) in the outsourcing contract will lead to better outcomes*
- H2 A formal process of SLA renegotiation will lead to better outcomes*
- H3 More frequent SLA renegotiations will lead to better outcomes*

2.2 Benchmarking IT

In the management literature, benchmarking is seen as a strategy for improving process performance by using “best practice” as a goal to aspire to (Camp, 1989). However, in relation to IT outsourcing, benchmarking is a process of measuring services, costs or practices in detail, usually against those of others in the marketplace, or those companies recognized as industry leaders (Meta Group 2005). Given the high costs of repeated market testing, benchmarking is often recommended as an alternative strategy for ensuring that the arrangement provides value for money (Brown & Wilson 2005, Lacity & Hirschheim 1995b).

Many earlier IT outsourcing agreements were based on an initial benchmarking period after which the vendor offered to provide the agreed services at a lower cost, although Lacity and Hirschheim (1993) have shown that this process can be manipulated. Benchmarking is also encouraged because it allows a purchaser to determine which in-house IT services are currently being performed below, at, or above market standards, so as to more effectively target services to outsource (Willcocks & Lacity 1998). There is a trend for longer IT outsourcing contracts to include benchmarking clauses that require a third party to conduct a formal benchmarking study of the vendors’ costs viz a viz market prices, after which contractual terms and pricing may be adjusted (Rouse 2002). As might be expected, this adds substantial transaction costs to the arrangement.

While understanding the vendor’s performance/costs in comparison with marketplace costs might appear an almost essential requirement for successful outsourcing, benchmarking is not a universal practice (Rouse 2002) and there are downsides. These include the substantial costs and organizational effort involved, and high measurement errors due to the lack of sufficiently-comparable sites. Commercial benchmarking practices, and the error margins for benchmarks, are not always well understood by benchmarking customers, yet poorly understood benchmarks can lead to incorrect evaluations of the cost efficiency of the outsourcing vendor. For example, benchmarking done against international sites can mislead because exchange rates do not adequately capture relative labor costs. Local vendors can exploit this by appearing cheaper than “comparable” sites overseas even though they are substantially more expensive than local competitors — the cost-advantage is an artifact of differing labor costs that are not adequately captured in exchange rates (Rouse 2002).

Surprisingly, there has been limited confirmatory research into the consequences of benchmarking in IT outsourcing arrangements, despite the persuasive arguments for the practice presented in Willcocks and Fitzgerald (1994), Lacity and Hirschheim (1995b) Willcocks & Lacity (1998), Reilly et al. (2001) and Aubert et al. (2001). There is still a need to gather empirical evidence on the outcomes of benchmarking practices associated with outsourcing to determine whether the theoretical benefits are widely experienced in the IT community, and do outweigh the costs and limitations.

The benchmarking-related hypotheses examined in this paper include:

- H4* Benchmarking as part of the decision to outsource will lead to better outcomes, and
- H5* Benchmarking once outsourcing is underway will lead to better outcomes

3. Methodology

The analysis reported in this paper uses data gathered by a team at the University of Melbourne (Seddon et al. 2001) that included the author. The data was obtained through a mailed survey to the IT Managers/IT Directors of 1000 of the largest 1600 sites in Australia, incorporating both public sector and private sector organizations. These sites would be typical of medium to very large organizations in other western economies.

Creation of the sampling frame involved consolidating data from commercial lists, business databases and government directories to establish the country's largest organizations, in terms of revenue and number of employees. The sample consisted of the top 500 sites common to all lists, plus a random sample of 500 of the other 1100 sites. The first University of Melbourne survey involved an "omnibus" questionnaire designed to meet a number of varying goals for the participants, and consequently incorporated 109 items. Sampling details are shown in Table 1. Analysis of the response rates revealed the responses were representative of the sample frame in terms of both size and sector (public vs. private), and there was no relationship between organizational size and sector for the responses. Of the 240 responding organizations, only six were not involved in IT outsourcing.

Table 1: Sampling details

Theoretical population	Medium, large and very large organizations in the public and private sector
Sampling frame	The largest 1600 IT sites in Australia (as determined by revenue, number of employees, and number of IT "seats")
Sample surveyed	1000
No of respondents	240 (24%)

Mean annual revenue for respondents was \$AU290million for *medium* organizations (with less than 500 employees); \$AU212million¹ for *large* organizations (500 to 999 employees); and \$AU1.154billion for *very large* organizations. The mean proportion of IT budget outsourced was 28%, but there was wide variation, with a standard deviation of 25.3%.

3.1 Dependent Variables

The University of Melbourne survey included two banks of items (for a total of 27) related to perceived consequences and evaluations of IT outsourcing. Survey items were developed from a range of earlier studies, and included nine items adapted from the measures of outsourcing success reported in Grover, Cheon & Teng (1996). These latter items were measured on a 7 point scale. The anchors were (1) strongly disagree through (7) strongly agree.

¹ As a group, the "medium" sized organizations had fewer staff, but higher revenues than the "large" organizations.

The other 18 items were measured on a 4 point scale with the following anchors: "worse", "no change" (generally seen as negative outcomes) "moderate improvement" and "substantial improvement" (positive outcomes). There was a high level of non response for many of these 4-anchor items, limiting their usefulness for statistical analysis.

There is still no general consensus about how IT outsourcing "success" should be measured. The DVs used in this study were initially taken from the outsourcing success scale developed and trialed by Grover et al. (1996). The development of this pilot scale was based on arguments presented by the authors that IT outsourcing has four key dimensions: technical, economic, and strategic benefits, and overall satisfaction. However, confirmatory factor analysis (using AMOS 4) established that the original scale developed by Grover et al. (1996) was not uni-dimensional – instead, it was more appropriate to subdivide this scale into the various facets the authors originally argued for. More recently, Lee et al. (2004) came to the same conclusion when examining a sample of 311 Korean outsourcers. Furthermore, the Grover et al scale did not measure two important aspects of outsourcing success: cost and vendor service, even though these are critical aspects of the outsourcing arrangement, and underlie many of the success measures that had been used by authors like Willcocks and Fitzgerald (1999).

Additional confirmatory factor analysis of the 27 items (described in detail in Rouse 2002) revealed there were seven measures of IT outsourcing success – the five detailed in Table 2, plus *access to skilled personnel*, and *economies of scale*. These loosely mapped to the constructs predicted by theory: outsourcing satisfaction, economic benefits (replaced with "economies of scale"); strategic benefits, technical benefits; cost reduction and vendor service.

Only five of the DVs resulting from this analysis are used to test this paper's hypotheses, as not all the facets of outsourcing success were likely to be affected by the predictor variables. For example, while *access to skilled personnel*, and *economies of scale* were used to test other hypotheses, there was no reason to expect these aspects of outsourcing success would be affected by the purchaser's service level management or benchmarking practices. Furthermore, structural path analysis (Rouse, 2002) had revealed that both these variables affected outsourcing success only through the intermediate variables "vendor service" and "cost reduction" respectively.

The DVs used in this analysis, together with the items making up the measures are shown in Table 2. Construct reliability (for the multi-item measures) was determined by one-factor confirmatory factor analysis (CFA) and is reported in Table 2. The reliability measures meet the criterion of .7 described as acceptable for exploratory research (Nunnally, 1978). The CFA also established that measures exhibited both convergent and discriminant validity

With the exception of vendor service, the mean scores (and proportions of positive outcomes) were either neutral or negative for these success measures. Thus, "better" outcomes in this paper's hypothesis testing tended to mean reducing the proportion of negative outcomes, rather than increasing positive outcomes. In interpreting the measure of cost reduction listed in Table 2, an important piece of contextual information is that the majority of respondents (58%) expected to get some cost reductions from outsourcing their IT.

3.2 Analysis Methods

The primary analytical method used was multiple analysis of variance (MANOVA) using SPSS's General Linear Model (GLM) procedure. This method involves two statistical tests.

Firstly MANOVA tests whether there is a global or overall relationship between the predictor variables and a linear composite (or vector) of outsourcing success measures. Secondly it tests the relationships with individual measures of success (such as cost reduction or strategic benefits) within this vector. A number of statistical tests were conducted for each analysis to confirm that the assumptions of MANOVA could be met; however, they are not listed here for brevity.

An important assumption for MANOVA is that cell sizes are equal, but in some cases this assumption was not met by the data. MANOVA is relatively robust for this assumption and the main effect would be to attenuate (and hence fail to reveal) any underlying relationship. SPSS reports² that their GLM procedure is designed to handle unequal cell sizes provided all cells have at least one response. The results of the statistical test for equality of covariance matrices for some of the hypotheses suggested that items with different forms of construction had different covariance matrices. In those cases, separate MANOVA analyses were conducted for the 7 and 4-anchor measures.

Table 2: Measures of IT outsourcing success used in the analysis

Measure	<i>Items making up the measure</i>	<i>Reliability</i>
Overall 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 [Outsourcing IT led to] [worse, no change, moderate improvement, substantial improvement] - access to better/more skills/expertise 	.86
Technology benefits of IT outsourcing	<ul style="list-style-type: none"> 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
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

Details of the predictor variables and the detailed procedure for each hypothesis are included below. The alpha level used in all analyses was .05.

H1 The practice of including service level agreements (SLAs) in the outsourcing contract will lead to better outcomes

² in the on-line Help file.

H2 A formal process of SLA renegotiation will lead to better outcomes, and

H3 More frequent SLA renegotiations will lead to better outcomes

Respondents were asked whether any SLAs existed with (1) internal IT providers prior to outsourcing, (2) internal IT providers at the time of the survey, and (3) external IT suppliers. They were also asked to indicate the proportion of services captured by these SLAs (using the categories “none”, “some”, “many” and “all” services). Responses to the first two items indicated that SLAs with external suppliers are used much more frequently than internal SLAs. The items described above were collapsed into two categories: “SLAs used by the respondent organization for at least some IT services” (scored as 1) and “no SLAs used” (scored as 0). There were 186 respondents with SLAs, but only 23 (11%) with no SLAs at all.

Respondents were also asked whether a formal process for renegotiation outsourcing SLAs was in place. There were 116 responses (61%) with a formal process in place, and 75 (39%) with no formal process.

For those organizations that had a formal renegotiation process in place, respondents were asked how frequently they conducted this renegotiation, with a choice of “monthly or more frequently”, “quarterly”, “annually”, or “at the end of the contract”. The numbers of respondents for each category were 12, 29, 43 and 21 respectively.

H4 Benchmarking as part of the decision to outsource will lead to better outcomes

H5 Benchmarking once outsourcing is underway will lead to better outcomes

Respondents were asked to indicate whether or not they had benchmarked their IT services at different stages of the outsourcing decision, and how this was done. The first question asked whether they had benchmarked as part of their decision to outsource. The second question applied to only those that had outsourced — these respondents were asked whether they had benchmarked their suppliers *since* outsourcing. Almost half responding to this question (87, or 48.6%) had done the latter. In those cases, benchmarking of costs was more common than benchmarking of service levels.

Responses were collapsed into a bivariate category: scored as 1 = “benchmarking” (costs, service levels or both) and 0 = “no benchmarking”. There were 154 respondent organizations (83%) that benchmarked as part of the decision, and 78 (17%) that did not.

The same categories were used for benchmarking *after* the outsourcing decision. This item applied only to those who had outsourced. There were 87 respondent organizations (48%) that benchmarked after the decision, and 93 (52%) that did not.

4. Results

H1 The practice of including service level agreements (SLAs) in the outsourcing contract will lead to better outcomes

This hypothesis was confirmed at the .10 level of significance. The respondents that had no SLAs at all had statistically lower scores for the DV vector than those that had developed SLAs. This was largely accounted for by a more negative score for *cost reduction*. However, because SLAs are now common, there was substantial difference between the numbers in the two groups: no SLAs (n=10); and some SLAs (n=141) so the assumption of equal numbers

was violated. The small numbers in the first group (less than 30) would have the effect of reducing the likelihood of rejecting the null hypothesis. The multivariate F test (Lambda = .94, $F = 2.02$, $df (5,145)$, $p = .08$) was significant at the .10 alpha level, and $\eta^2 (.065)$ indicates that SLAs accounted for 6.5% of the variability of this vector. Because unequal numbers would have contributed to the inability to get a statistical effect at the .05 level, the analysis was continued using a less stringent alpha level. However, this does mean there is a higher possibility that the effect is a chance one.

The test for between-subject effects indicated that, using an alpha of .10 as the criterion, *cost reduction* differed significantly between the two groups. The average score on the 4-anchor cost item was 1.8 for those with no SLAs ($sd = .79$), but 2.3 ($sd = .86$) for those with SLAs of some sort. Recalling the anchors described in Table 2, this means that on average, those reporting no SLAs reported costs were *higher* as a result of IT outsourcing, while those with SLAs on average reported no reduction in IT costs.

H2 A formal process of SLA renegotiation will lead to better outcomes

This hypothesis was not confirmed. The multivariate F test ($p = .14$) was not significant at either the .05 or .10 significance levels, indicating that there was no linear relationship between having a formal renegotiation mechanism in place and the vector of success measures. In view of this, no between-subject test was undertaken for individual DV measures.

H3 More frequent SLA renegotiations will lead to better outcomes

This hypothesis was confirmed for some outcomes. There was no relationship between the predictor (frequency of renegotiation) and the 7-anchor vector made up of *strategic* and *technical benefits* and *satisfaction/value* ($p = .493$). However, there was a statistically significant relationship for the four-anchor *vendor service/cost reduction* vector. Both *vendor service* and *cost reduction* appeared responsible for this relationship.

The multivariate F test (Lambda = .88, $F = 2.291$, $df (6,200)$, $p = .04$) was significant at the .05 level and $\eta^2 (.065)$ indicated that frequency of SLA renegotiations accounted for 6.5% of the variability of this vector. The test for between subject effects indicated that, using an alpha of .05 as the criterion, *vendor service* differed significantly between the categories, however if an alpha of .10 is used, there is an effect for *cost reduction* as well. This is the statistic for a two-tailed test, whereas the hypothesis is directional (one tailed), so it is appropriate to use the .10 level of significance.

The mean scores revealed that, if the anchor “at end of contract” was left out (as how frequently such negotiations occur will depend on how long the contract is), there was a linear relationship between frequency of negotiations and *vendor service* and *cost reduction* outcomes.

H4 Benchmarking as part of the decision to outsource will lead to better outcomes

This hypothesis was confirmed for some outcomes. There was no relationship between this predictor and the vector incorporating *satisfaction/value*, *strategic benefits*, or *technical benefits*. There was, however, a statistically significant relationship between this predictor and the *cost reduction/vendor service* vector, with both DVs contributing to this relationship. Wilks' Lambda was significant at the .05 level (lambda = .094, $F=4.29$ $df (2, 125)$ $p = .016$) and η^2 was .064. Hence benchmarking as part of the outsourcing decision accounted for 6.4% of the variability in the *cost reduction/vendor service* vector.

Those *benchmarking as part of the decision*, on average, reported *no cost reductions*. However, those not benchmarking reported, on average, *cost increases*. In relation to *vendor service*, those benchmarking as part of the decision reported, on average, “no change”, while those benchmarking reported “moderate improvements”.

H5 Benchmarking once outsourcing is underway will lead to better outcomes

This hypothesis was confirmed. The multivariate F test showed that benchmarking after the outsourcing decision had a statistically significant impact on the vector of all five outsourcing success measures in Table 2. Wilks’ Lambda was significant at the .05 level (lambda = .897, F=3.01 df (5, 131) p = .013) and η^2 (.10), indicating that *benchmarking after the arrangement has begun* accounted for 10% of the variance in this vector.

The test for between-subject effects indicated that, using an alpha of .05 as the criterion, benchmarking after the decision had a significant effect on *strategic benefits, technical benefits* and *cost reduction*. The effect was greatest for *strategic benefits* and *cost reduction*.

Table 3 below summarizes the results of the hypothesis testing:

Table 3: Summary of Hypothesis Tests

	<i>Hypothesis</i>	<i>Outcome</i>
H1	Including service level agreements (SLAs) in the outsourcing contract will lead to better outcomes	Some evidence that it leads to reduced costs
H2	A formal process of SLA renegotiation will lead to better outcomes	Not confirmed
H3	More frequent SLA renegotiations will lead to better outcomes	Leads to better service and reduced costs
H4	Benchmarking as part of the decision to outsource will lead to better outcomes	Leads to better service and reduced costs
H5	Benchmarking once outsourcing is underway will lead to better outcomes	Leads to strategic and technical benefits, and reduced costs

5. Discussion

5.1 Service Level Agreements

The survey revealed that most respondent organizations already have some kinds of SLAs in place for their outsourcing arrangement, possibly because of exposure to recommendations coming out of earlier outsourcing research (e.g. Lacity & Hirschheim, 1993). The absence of large-scale surveys means this information had not been available before the survey was conducted. However, the analysis here has highlighted that where they do not include SLAs, there is evidence that this leads to poorer cost outcomes. Thus, the value of service level agreements is validated using a quite different analytical approach to the original case study research that arrived at the same conclusion. The small numbers of respondents that did not have SLAs meant that any statistical effect would be difficult to discern, so the existence of any effect at all in these circumstances is important. Decision makers should be reassured that the substantial organizational effort involved in developing detailed SLAs will be worth doing.

There were no statistical differences between those with and without a formal process to renegotiate service levels. This was a surprising finding, as it is contrary to recommended

practice, and in some ways to “common sense”. While several explanations are possible, it is likely that formal negotiation mechanisms were used by purchasers in different ways. This is consistent with an explanation that formal renegotiations are sometimes instigated because the outsourcing arrangement is unsatisfactory for the client, as a strategy for improvement. It may be that those with a formal mechanism in place consists both of organizations with increased outsourcing success as a result of the positive benefits, and also of those less satisfied to start with, who used formal renegotiation mechanisms as means to regain control. Further research should be undertaken to establish whether this explanation is supported.

There was a statistical difference between those who met frequently to renegotiate service levels and those who met infrequently, with the latter reporting less positive outcomes. This suggests that, particularly in a volatile environment, it may be necessary to renegotiate the services and service measures often so as to continually align IT services to business needs. Focus group research by Rouse (2002) produced the same suggestion. The findings above indicate that doing so improves perceived vendor service, and leads to increased cost savings. The practical implications of these findings are that, despite the difficulties involved, organizations should strive to develop service level descriptions, and measures, and should implement structures to manage and monitor the adequacy and continuing appropriateness of SLAs. This monitoring should occur regularly and frequently, rather than annually, or at the end of a contract. Thus, the findings corroborate, and add weight to the case-derived recommendations.

5.2 Benchmarking

This research reveals that benchmarking before outsourcing leads to improved outsourcing success, as does benchmarking during the outsourcing contract. While the former is a practice adopted by the majority (83%) of respondents, the latter is less common (49%). Benchmarking before the outsourcing arrangement increases, in particular, perceived *vendor service* and the likelihood of *cost reductions*. Benchmarking during the contract led to the largest number of benefits, particularly *cost reductions* and *strategic and technology benefits*.

This is important information for practitioners, because benchmarking is both complex to undertake, and costly. To date there has been limited empirical research into the consequences of benchmarking in outsourcing arrangements, despite the persuasive arguments for the practice presented in Willcocks and Fitzgerald (1994) and Lacity and Hirschheim (1995b). With this new information, practitioners can feel more confident that the effort and expense involved will be justified. However, it still needs to be recognized that it is difficult, and expensive to obtain benchmarking data that is strictly comparable across businesses or in sufficient detail to enable valid and meaningful comparisons. The costs, and organizational effort involved need to be factored into the outsourcing business case.

6. Conclusions

This analysis has confirmed the benefits of developing detailed SLAs and of benchmarking IT services and costs. It also revealed that the largest impact, and most widespread effects come from benchmarking during the outsourcing contract, which contributed to 10% of the variance in outcomes. In interpreting the findings, it is important to recognize the very large number of factors that are claimed to influence the success of outsourcing arrangements. The likelihood that any single practice will lead to statistically discernible effects is quite low, and statistical “effect sizes” in social and organizational research are usually small or medium (Weinfort, 1996, p 249). An important moderating factor will be “how well” the practices are carried out, something that is not easily discerned from survey data.

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