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Abstract

This study investigates the effect of conflict resolution methods on the IS outsourcing performance. A survey of 207 IS outsourcing relationships of U.S. firms indicates that (1) constructive/proactive methods, such as joint problem solving, is positively related to the success of IS outsourcing relationships, and that (2) destructive/passive methods, such as persuasion, smoothing/avoiding, domination, and use of harsh words are negatively related to the success of IS outsourcing relationships. The findings suggest that the manner in which conflict is resolved can be productive or destructive for the IS outsourcing performance.

I. Introduction

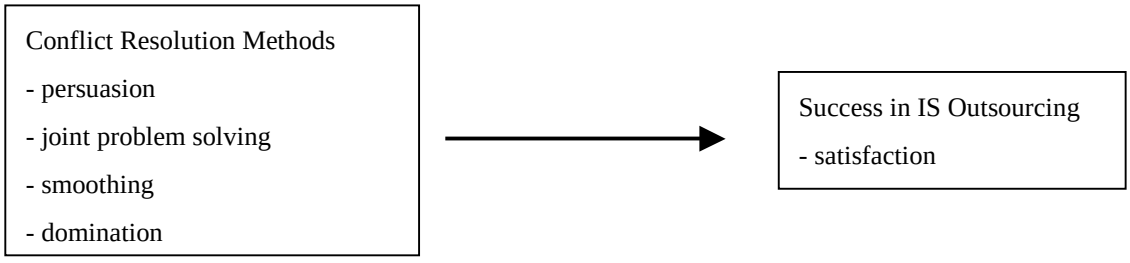
As information systems (IS) outsourcing expands its scope of outsourcing areas and its portion in the total IS expenditures increases, IS outsourcing has become a fundamental issue in management of information systems. Previously, empirical studies in IS outsourcing has mainly focused on the determinants of IS outsourcing decisions. Recently, however, considerable efforts are under way to investigate the success factors influencing the implementation of IS outsourcing, reflecting the fact that actual implementation rather than decision to outsource become of more practical concern and research in the IS outsourcing area is moving toward more mature stage.

The benefits of IS outsourcing are well documented in the IS literature. They include cost savings, improved quality of IS services, access to up-to-date technology, flexibility in IS operations, and focus on core competencies. There is, however, a reason to believe that many outsourcing arrangements may have failed in fulfilling organizations' expectations. Most of the published stories of IS outsourcing are about successes. Yet, other interorganizational arrangements such as strategic alliances have low success rates (Mohr and Spekman, 1994), casting doubts on this anecdotal evidence.

A relationship developed between a client firm and a vendor in IS outsourcing can be characterized as an interorganizational relationship (IOR) since two parties from different organizations work together. Research has shown that outcomes of IOR are affected by relationship process variables, such as conflict resolution strategies and communication behavior. These relationship process variables are particularly important because the desired outcomes of IS outsourcing relationships are not always guaranteed even under appropriate conditions (e.g., excellent vendors, right selection of outsourcing tasks, and etc.). That is, the success of IORs, such as IS outsourcing relationships, might be affected by the way in which relationship partners carry out and manage the on-going relationship (Frazier et al., 1988).

The primary objective of this study is to empirically investigate the factors contributing to the success or failure of IS outsourcing relationships between client firms and vendors. Specifically, this study will investigate the effect of conflict resolution methods on the IS outsourcing performance. Knowledge acquired in this study is expected to provide a framework for helping IS managers in the on-going management of the IS outsourcing relationships.

<Figure 1> Research Model



II. Research Model and Hypotheses

<Figure 1> presents the research framework employed in this study. The five independent variables of conflict resolution methods represent the specific mode of conflict resolution techniques employed in a focal outsourcing relationship. Success in IS outsourcing implementation, the dependent variable, is constructed by two dimensions, satisfaction and perceived benefits from a focal outsourcing relationship.

2.1 Conflict Resolution Methods

Conflict refers to "an expressed struggle between at least two interdependent parties who perceive incompatible goals, scarce rewards, and interference from the other party in achieving their goals" (Hocker and Wilmot 1985, p. 23). In interorganizational relationships, such as IS outsourcing, conflict often exists due to the inherent interdependencies between parties (Borys and Jemison, 1989; Mohr and Spekman, 1994). Lacity and Hirschheim (1993) argue that, in IS outsourcing, the profit motive is not shared between the client firms and vendors since account managers at the vendors are often rewarded by charging additional fees. Even though excess fees are not the sole criterion for evaluating the performance of account managers, there exists the possibility of frequent conflicts in fee setting, procedures, and performance measuring due to difficulties inherent in precisely evaluating information systems delivery. The potential for frequent conflicts also comes from employee resistance. Employee resistance to outsourcing is natural since in-house IS employees put their jobs at risk as well as give up control of the function to an outside entity (Khosrowpour et al., 1995). Given the fact that a certain amount of conflict is expected in IS outsourcing, how such conflict is resolved is very important for the successful implementation of outsourcing.

In the IS area, empirical studies in conflict resolution have been conducted mainly in the context of the information systems development (ISD) process (e.g., Barki and Hartwick, 1994; Robey et al., 1993). To the best of this researcher's knowledge, only one study (Robey et al., 1993) tested the effect of conflict resolution on performance. The study found a strong positive relationship between conflict resolution and the ISD project success.

Previously, conflict was considered to be destructive for organizational functioning. Now, conflict is considered to be neither bad nor good, but it is seen as an opportunity for change and growth. Hence, conflict needs to be properly managed. The manner in which conflict is resolved can be productive or destructive for the relationship (Barki and Hartwick, 1994; Deutsch, 1969; Mohr and Spekman, 1994).

In the long-term relationship, when parties use constructive conflict resolution techniques, such as joint problem solving and persuasion, the effect will be productive for the successful relationship since a mutually satisfactory solution may be reached. McFarlan and Nolan

(1995) suggest that joint problem solving is among critical determinants of long-term success in IS outsourcing. On the other hand, when parties use destructive conflict resolution techniques, such as domination and harsh words, the effect will be counter-productive for the successful relationship. While third-party arbitration may be helpful for a particular conflict situation, ongoing use of outside arbitration may be an indication of inherent problems in the relationship. Other passive conflict resolution techniques, such as smoothing over and ignoring/avoiding the issue, fail to address the fundamental cause of the conflict and tend to be detrimental for the long-term working relationship (Mohr and Spekman, 1994; Mylott, 1995). Hence, the following hypotheses are proposed regarding conflict resolution.

H1. Success of an IS outsourcing relationship is positively associated with the use of persuasion.
H2. Success of an IS outsourcing relationship is positively associated with the use of joint problem solving.
H3. Success of an IS outsourcing relationship is negatively associated with the use of smoothing/avoiding issues.
H4. Success of an IS outsourcing relationship is negatively associated with the use of domination.
H5. Success of an IS outsourcing relationship is negatively associated with the use of harsh words.
H6. Success of an IS outsourcing relationship is negatively associated with the use of outside arbitration.

2.2 Success Measures of Implementation of IS Outsourcing

In MIS research, having well-defined success measure(s) or dependent variable(s) is very important since MIS research is intended to make a contribution to the world of practice (Delone and McLean, 1992). In the IS arena, research in interorganizational relationship (IOR) is sparse and most success measures have been utilized to measure performances of specific IS activities in non-IOR contexts. There is no consensus on the appropriate measures of success of IS outsourcing (Palvia and Parzinger, 1995) due to lack of study in the investigation of success of IS outsourcing.

Areas of outsourcing surveyed in this study are not restricted to any specific area, but include all areas of IS outsourcing. Due to difficulties in constructing success measures in all areas of IS outsourcing and the space limitation of the questionnaire, quantitative measures, such as the system response time in mainframe operation outsourcing and network availability in telecommunications outsourcing, are not utilized in this study. Based on the literature of IORs in marketing channels, strategic alliances, and descriptive studies in IS outsourcing, this study employs two indicators of outsourcing success: satisfaction and perceived benefits.

Satisfaction is an affective measure that represents the degree of a client firm's satisfaction with the vendor. Satisfaction is defined as "a positive affective state resulting from the appraisal of all aspects of a firms working relationship with another firm" (Anderson and Narus 1984, p. 66). Since the measurement of satisfaction involves the evaluation of all aspects of the relationship, satisfaction is considered as a close proxy for perceived effectiveness of the relationship (Anderson and Narus, 1990). Satisfaction has been widely utilized as a measure of relationship success in IOR studies (e.g., Anderson and Narus, 1984; 1990; Mohr and Spekman, 1994).

Perceived benefits are a client firm's perception of benefits gained from a specific outsourcing relationship (Cheon, 1992). Since benefits of IS outsourcing are also underlying reasons for or expectations from outsourcing arrangements, perceived benefits measure the degree of accomplishment of expectations from the client firm's perspective. Hence, they are accepted as good measures of IS outsourcing success. Three major types of benefits identified in the literature are strategic, economic, and technological benefits

(Cheon, 1992; Collins and Millen, 1995; Gupta and Gupta, 1992). First, strategic benefits refer to the achievement of focusing on core competence, enhancing strategic use of IT, and enhancing flexibility. Second, economic benefits refer to the capability to produce IS services at lower costs. The degree of economic benefits depend not only upon achieving economies of scale and scope in the areas of human and technological resources such as hardware and software, but also upon controlling cost structure. Third, technological benefits refer to the achievement of gaining access to leading-edge IT and avoiding the risk of IT obsolescence that results from accelerating changes in the nature of IT infrastructure.

III. Research Methods

3.1 Research Approach and Data Collection

This study involved a cross-sectional field study via a questionnaire-based mail survey. This study focuses on the relationship in IS outsourcing. Hence, the unit of analysis in this study is the relationship between a client firm and one of its vendors. Researchers have recommended dyadic analysis to comprehensively investigate the interorganizational relationship (Heide and Miner, 1992). However, considering the immense difficulty of locating exact parties in IS outsourcing relationships, this study focuses on one perspective of the dyadic relationship, the client firm's view of the relationship with its referent vendor. The sampling frame for this research consisted of the large U.S. firms listed in the *Directory of Top Computer Executives* (West Edition; Spring 1996 Version) published by Applied Computer Research, Inc. Of the 2,200 questionnaires mailed, 368 were returned. Upon further evaluation, thirteen incomplete questionnaires were determined unusable. Thus, 355 responses was usable, resulting in a usable response rate of 16.1%. Of the 355 responses of the survey, a total of 207 outsourcing relationships were utilized for hypothesis testing after removing non-outsourcing firms.

3.2 Measures

3.2.1 Measure of Conflict Resolution Methods

Conflict resolution strategy has been utilized in many IOR studies, but its operationalization has been varied. Two widely used measures of conflict resolution strategies are Thomas and Kilman's (1974) MODE and Rahim's (1983) ROCI-II. Both measures classify conflict resolution strategies into the following five categories: avoiding, competing, accommodating, problem solving, and compromising. This study does not utilize any of these measures for two reasons. First, these measures are too long to adequately accommodate in the questionnaire. Second, single-item scales may be used to serve the exploratory nature of this study.

This study employs single-item scales utilized by Mohr and Spekman (1994). These scales were intended to cover a broad spectrum of modes by which conflict could be resolved. The measures include the following six modes of conflict resolution methods: smoothing over the problem, persuasion, joint problem solving, harsh words, domination, and outside arbitration. Howell (1987) describes this type of measurement as a check list, where each item represents a different dimension. He argues that traditional reliability analysis is not appropriate for this type of measurement. Hence, these six items were treated as unitary items. Each conflict resolution mode was assessed on a seven-point Likert-type scale with anchors at "very infrequently" and "very frequently".

3.2.2 Measure of success in IS Outsourcing

The present study utilizes two measures of success in the implementation of IS outsourcing: satisfaction and perceived benefits. Satisfaction was measured by three

items adapted from Park (1995), who in turn based his scale on the work of Anderson and Narus (1984; 1990). Perceived benefits were measured by nine items based on Cheon (1992) and Collins and Millen (1995). Each item of perceived benefits was measured by a seven-point Likert-type scale, anchored from "much worse" to "much better" in comparison to the client firm's expectation. This type of measurement approach represents the concept of "outcomes given comparison level (Outcomes\CL)" proposed by Thibaut and Kelley (1959) from the perspective of social exchange theory. The comparison level in the present context can be defined as a standard representing the quality of outcomes the client firm has come to expect from a given type of relationship, based upon present and past experience with similar relationships, and knowledge of other IS outsourcing relationships (Anderson and Narus, 1984). Thus, perceived benefits in this study are conceptualized as outcomes obtained from a relationship, against the comparison level defined above. The comparison level is introduced as an anchor for assessing perceived benefits to control different expectations by different IS activities outsourced.

3.3 Measure Assessment

Since dependent variables were measured with multiple items, unidimensionality and reliability were evaluated to ensure construct validity. In order to assess unidimensionality, principal components factor analysis was conducted. All items measuring satisfaction cleanly loaded to its intended construct. For perceived benefits, two factors emerged from eight items. The split of perceived benefits into two factor was not intended, but it is not unexpected since the items represent a diverse set of benefits including strategic, technological, and economic dimensions. Upon an inspection of the items, the two factors were termed as "perceived non-economic benefits" and "perceived economic benefits" respectively. Similar division in perceived benefits was also found in Cho and Jeon (1998). The items of non-economic benefits generally reflect strategic and technological benefits. As a result, three dependent variables will be utilized for hypothesis testing. <Table 1> lists summary scale statistics of dependent variables. All Cronbach's alphas exceeded the generally accepted minimum value of 0.70, demonstrating satisfactory evidence of internal consistency.

<Table 1> Reliabilities of Final Scales in Dependent Variables

Construct	Number of Items	Item-to-Total Correlation		Alpha
		Min.	Max.	
Satisfaction	3	.93	.93	.97
Perceived non-economic Benefits	5	.59	.74	.85
Perceived economic benefits	3	.72	.78	.87

<Table 2> Beta Coefficients from Regression Analyses

	Dependent Variables		
	Satisfaction	Non-economic Benefits	Economic Benefits
Independent Variables (β)			
persuasion	-.136**	--	-.162**
joint problem solving	.287****	.363****	.201***
smoothing	-.126*	-.129*	--
domination	-.108*	--	--
harsh words	-.320****	-.128*	-.125*
Adjusted R^2	.376	.179	.087
F-Value	25.795****	15.986****	7.518****

* p<0.10; ** p<0.05; *** p<0.01; **** p<0.001; -- nonsignificant

IV. Results

A total of 207 outsourcing relationships were utilized for hypothesis testing. Multiple regression analysis with stepwise method was employed to test the hypotheses. Since variables in regression runs should be normally distributed, overall normality check was conducted for each variable. One variable, "outside arbitration", was particularly problematic with a skewness value of 3.8 and a kurtosis value of 15.5. The mean value of the variable was 1.198, reflecting the fact that most firms in the sample very rarely utilize "outside arbitration" as a means to resolve conflicts. A formal test of normality by Kolmogorov-Smirnov method also failed to demonstrate evidence of normality. Thus, "outside arbitration" was discarded from the further analysis and H6 was not tested.

The regression was run separately for each of the dependent variables: satisfaction, non-economic benefits, and economic variables.

The results of hypothesis testing for conflict resolution methods are shown in <Table 2>. The table reports the standardized regression coefficient (β) of independent variables, and adjusted R^2 and F value of each regression run.

It is proposed that the success of IS outsourcing is positively related to persuasion (H1) and joint problem solving (H2), and negatively related to smoothing over the problem (H3), domination (H4) and harsh words (H5). <Table 2> indicates that problem solving is positively associated with all three success measures (p<.001 for satisfaction and non-economic benefits, and p<.01 for economic benefits), providing strong support for H2. Smoothing is found to be negatively associated with satisfaction (p<.10) and non-economic benefits (p<.10), providing support for H3. Domination are found to be negatively associated with satisfaction, providing support for H4 (p<.10). Harsh words are found to be negatively associated with all three success measures (p<.001 for satisfaction and p<.10 for both non-economic benefits and economic benefits), providing strong support for H5. Finally, persuasion is negatively associated with satisfaction (p<.05) and economic benefits(p<.05). Since persuasion is

proposed to be positively associated with success measures, H1 is rejected. Overall, proposed hypotheses are generally supported except H1.

V. Discussion and Concluding Remarks

The findings in this study indicate that the manner in which conflict is resolved influences outsourcing success. All of the tested five variables in conflict resolution methods were significantly related to success measures. Joint problem solving has been found to be the most strongly and positively associated with all three success measures. A strong showing of joint problem solving reflects the fact that joint problem solving is a proactive, constructive conflict resolution method, in which grievances are aired, underlying issues are uncovered, and practical solutions are sought (Mohr and Spekman, 1994). The negative association between smoothing and success measures is consistent with the expectation. Smoothing over the problem or ignoring/avoiding the issue fails to address the fundamental cause of the conflict and tend to be detrimental for the long-term working relationship. The negative association between harsh words/domination and success measures is also consistent with the expectation. The use of harsh words or domination imposed by one party hurt other party's feelings and negatively influence IS outsourcing performance, especially the affectionate performance measure of satisfaction.

The negative association found between persuasion and satisfaction is interesting. This study categorized persuasion as a constructive conflict resolution method. However, it seems to have some destructive attributes since persuasive attempts may mean that the party initiating persuasion is mainly concerned with satisfying its own concerns without considering the other party's concerns. Further investigation on persuasion is needed with more elaborate constructs. Overall, as seen in <Table 2>, the negative effects of destructive/passive conflict resolution methods are more prevalent in the affectionate measure (satisfaction) than in actual performance measures (economic and non-economic benefits).

This study has empirically shown that the manner in which conflict is resolved have significant impact on the implementation of IS outsourcing. However, this study has several limitations, which suggest that the results should be interpreted cautiously. First, five modes of conflict resolution methods were measured by single-item measures. These scales are subject to further refinement with multi-item measures. Second, the relationship involved in IS outsourcing is a dynamic process that cross-sectional data may not properly capture. Third, the finding of this study relied on information from the client firms perspective. A perceptual difference with the vendor could exist. The possible perceptual gap offers an avenue for future research in a dyadic setting, in which perspectives from both the client firm and the vendor are addressed.

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