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OF GOVERNANCE AND THE BPO PARADOX: THE IMPACT OF INFORMATION CAPABILITIES ON SERVICE SATISFACTION

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Abstract

The fundamental value premise of business process outsourcing (BPO) is greater process efficiency at reduced costs of ownership. However, recent studies suggest that BPO may add cost and friction, and require more management attention than originally envisioned to realize the benefits of outsourcing. Service dissatisfaction ensues, giving rise to a BPO paradox. This study focuses on the role of governance choice in resolving this emerging paradox. We build on the information processing view of the firm and theories of interfirm coordination to argue that the alignment between information requirements (IR) of the BPO relationship and information capabilities (IC) of the governance solution is central to service satisfaction. We use this conceptual model of fit to identify two aligned configurations of BPO governance, which reflect the end points of a continuum in decreasing order of IR and IC. These configurations are used to test hypotheses predicting alternative governance choices and the impact of these choices on service satisfaction. Our empirical analysis of survey data on 137 BPO relationships suggests that aligned BPO configurations are marked by higher levels of satisfaction than nonaligned relationships, and that underinvestment in IC has a marked negative impact on satisfaction relative to overinvestment. The findings enhance managerial understanding of governance choice in BPO, and underscore the normative implications of the alignment between IR of the BPO relationship and IC of the governance solution on service satisfaction and the BPO paradox.

Keywords: Business process outsourcing, governance, information requirements, information capabilities, outsourcing paradox

Introduction

Business process outsourcing (BPO) is fast gaining ground as an imperative for competitive success in modern organizations. However, recent studies[1] suggest that instead of simplifying operations, BPO often introduces complexity, cost, and the requirement for broader and deeper management skills than originally envisioned, calling into question the potential of BPO as a strategic driver for cost savings and organizational flexibility. Many firms have responded to this emerging paradox by transferring part of their outsourced operations back in-house. However, the economic ramifications of such failed BPO relationships are pronounced, and include a potential adverse impact on customer value and overall firm competitiveness.

[1]In a recent survey (April 2005) by Deloitte Consulting , 70 percent of the participants said that they had significant negative experiences with outsourcing projects and now exercise greater caution in approaching such deals. The survey found that although outsourcing is largely driven by cost-related objectives, firms experience hidden costs related to contract administration, profit margins, and in-house management. Therefore, the management of outsourcing relationships was more complex, expensive, and time-consuming than anticipated.

This study investigates the role of BPO governance in resolving the paradox. Prior research on governance choice in outsourcing relationships has been primarily influenced by transaction cost economics (TCE), which defines a governance solution as the contractual structure that participant firms use to formalize an outsourcing relationship. The TCE perspective focuses on appropriation concerns that arise from relational uncertainty (Pisano 1990; Balakrishnan and Koza 1993), and suggests that hierarchical controls are an effective response to such hazards of cooperation. The greater the appropriation concern, the more hierarchical is the contractual structure (e.g., joint venture) that governs the relationship.

In order to facilitate our understanding of BPO governance, the above premises of TCE must be enriched to recognize two aspects of BPO. First, the coordination of critical tasks among participant firms involves uncertainty in execution and management of the outsourced process that is different from appropriation concerns of relational uncertainty. Such process uncertainty relates to whether the outsourced process is well understood, how process tasks will be allocated between participant firms and executed, and the extent to which mutual adjustment in behavior is required during process execution. As BPO becomes more global and the user firm and the provider are increasingly characterized by different nationalities, the role of such process uncertainty in structuring the relationship turns more pronounced.

A second related concern is that as BPO emerges as a strategic, collaborative paradigm (Alborz et al. 2003) that increasingly spans regional boundaries, more insights are required into how contractual institutions that align incentives among participant firms are actually employed to coordinate activities in the BPO relationship. This viewpoint is supported by theories on interfirm coordination, which suggest that contractual coordination (or the mutual exchange of rights) and procedural coordination (or the mutual exchange of information) perform complementary roles in governance, and that their systemic fit impacts relationship performance (Sobrero and Schrader 1998). Therefore, a model of BPO governance must not limit attention to any one of these dimensions to the exclusion of the other.

This study builds on the information processing view (IPV) of the firm (Galbraith 1973) and theories of interfirm coordination to address the above issues. We conceive of the BPO relationship as a fit between information requirements (IR) of the BPO relationship and information capabilities (IC) of the governance solution. The IPV, which posits a strong relationship between task (process) uncertainty and IR, is extended to recognize relational uncertainty as an additional antecedent to IR. In addition to process and relational uncertainty, the model incorporates the influence of the strategic impact of BPO on IR. Theories of interfirm coordination are used to conceptualize IC of the governance solution as a multi-dimensional construct comprising the contractual, procedural, and technological capabilities used to coordinate activities in the BPO relationship. We posit that the alignment between IR and IC is central to service satisfaction and resolving the BPO paradox.

The empirical testing of the model uses survey data on a range of 137 BPO relationships. Cluster analysis is used to identify two aligned configurations, (high IR, high IC) comprising strategic BPO relationships and (low IR, low IC) representing transactional BPO relationships. These configurations reflect the end points of a continuum of governance models in decreasing order of IR and IC. The configurations are subsequently used to validate that firms, which choose a governance form that is aligned with their IR, are marked by relatively higher levels of service satisfaction. The confirmatory analysis accounts for endogeneity in governance choice by employing a series of two-stage, self-selection models that simultaneously capture decisions of governance choice as well as the observed and unobserved antecedents of these decisions and their impact on service satisfaction. Finally, the analysis suggests that underinvestment in IC has a marked negative impact on satisfaction relative to overinvestment.

The study provides a parsimonious model for governance choice, and emphasizes an early understanding of process requirements and the contingent design of governance capabilities in BPO initiatives. The results hold normative implications for managers on how performance would vary if the aligned governance structure is not chosen. The analysis also offers empirical support to the information processing theory, and responds to the call to identify patterns of IR and test their fit with organization structure and design (Daft and Lengel 1986).

The balance of the article is organized as follows: Related literature on the information processing view of the firm and interfirm coordination is investigated in the next section. The conceptual model is then specified. Research design, data collection, and analysis are discussed. The paper concludes with a presentation of key findings.

Literature Review

This study draws from and contributes to three broad streams of literature. We draw on the IPV to develop our conceptual model of fit and identify antecedents of IR of the outsourced process. We then analyze the literature on management of interfirm

relations to identify complementary, mutually reinforcing dimensions of the BPO governance structure. Finally, we draw on the strategy literature to underscore the implications of alternative governance choices and misalignment on service satisfaction.

IP Theory and Selective Alignment

The IPV was developed by Galbraith (1973), who identified organizational IR and antecedent uncertainty as conditioning variables of organization design. The principles of the IPV have since been extended to analyze the structure and coordination of interfirm activities. For example, Bensaou and Venkatraman (1995) focused on the fit between IR of a manufacturer and IC of a supplier to identify dominant configurations of interfirm relationships in the automotive industry. We draw on their work to conceptualize a BPO relationship as a fit between the BPO relationship's IR and the governance solution's IC. However, we focus on specific dimensions of uncertainty that are antecedents to the user firm's IR, and identify process and relational attributes that are indicative of such uncertainty. This formative approach helps the user firm better manage its dynamic IR. Moreover, our analysis systematically tests for the predominance of one interorganizational pattern over the other. It compares alternative governance modes in BPO and, analogous to the discriminating alignment hypothesis in transaction cost economics (TCE), confirms the positive impact of alignment between IR of the BPO relationship and IC of the governance solution on service satisfaction.

Dimensions of BPO Governance

Our study is also related to the literature on the design and management of interfirm relations. The two fundamental and complementary dimensions that characterize the structuring of interfirm relations are contractual coordination, which describes the distribution of rights in the relationship, and procedural coordination, which specifies the coordination of information flows in the relationship (Dibbern et al. 2004; Sobrero and Schrader 1998). Sobrero and Schrader state that "while contractual coordination refers to institutions that may be in place to govern the relationship…procedural coordination asks how these institutions are used, and describes the day-to-day interactions between the firms" (1998, p. 590). The separate investigation of these dimensions precludes useful insights on governance. We adopt a holistic approach that subsumes both dimensions. We consider not only contractual enforceability of the transaction emphasized by rational agent perspectives such as TCE, but also its procedural feasibility and transferability emphasized by process-oriented perspectives.

Governance and Service Satisfaction in BPO

Relatively few empirical studies have addressed the performance implications of alternative modes of organization (Masten 1993; Rumelt 1982). Further, the contrast between empirical support for process-oriented theories of organization and rational agent perspectives is stark. For example, as of the year 2000, there were over 600 documented empirical articles on TCE with exponential growth therein (Boerner and Macher 2002). Similar work is required to establish congruity between evidence and alternative theories of organization (Alborz et al. 2003), and to provide a broader understanding of new paradigms in outsourcing. For example, TCE does not adequately explain the rapid growth of strategic BPO relationships and partnership forms that are characterized by relatively high contractual hazards. This study responds to the call (Williamson 2000) to confront such issues and develop new conceptual apparatus that helps us gain a deeper understanding of complex governance issues. Further, prior research suggests that normative implications drawn from empirical analyses involving a self-selection bias may be confounding (Heckman 1979; Maddala 1983; Masten 1993). Our study addresses this issue and examines whether unobserved attributes underlying governance choice contribute to the BPO paradox.

Conceptual Model of Selective Alignment between IR and IC: A Summary

Our predictive model of organization in BPO relationships is outlined in Figure 1.

The conceptualization of the constructs, including identification of antecedents of IR and sub-constructs of IC, is described below.

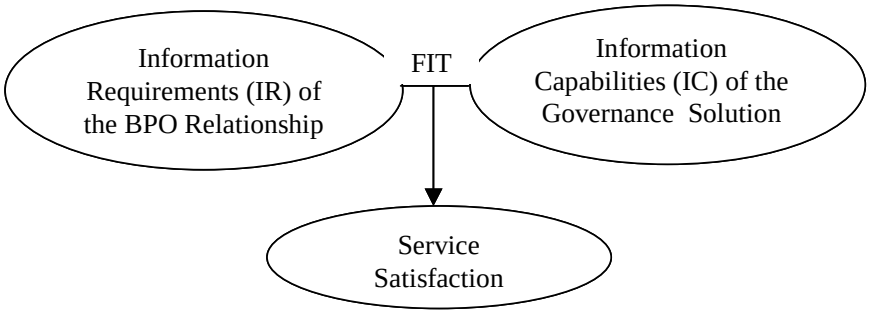

Figure 1. Conceptual Model of Fit between IR and IC

IR of the BPO Relationship

Information refers to relevant, accurate, and timely data that effects a change in knowledge (Tushman and Nadler 1978). One class of definitions (Eppler and Mengis 2004; Schick et al. 1990) characterizes IR in terms of the information amount that has to be processed and integrated within a certain time period. Another group of studies (Iselin 1993; Keller & Staelin 1987) refers to qualitative attributes of organizational information to define IR. We integrate these schools of thought to define IR of the user firm as qualitative and quantitative changes in its information domain during design and management of the relationship.

We use three attributes of organizational information as indicative sub-constructs of IR: *information amount, information dynamism, and technological sophistication of organizational systems*. The literature (Daft and Lengel 1986; Galbraith 1973) supports the use of these sub-constructs as indicators of IR. We define information dynamism in terms of variability in content and meaning of information within a specified time interval. The dynamic nature of information allows for feedback and adaptation to different information environments of BPO decision makers. Greater technological sophistication is required to collect information at the points of origin and direct it, at appropriate times, to the appropriate places in the organizational hierarchy, preventing information overload of the decision maker (Galbraith 1973). We posit that given a set of outsourcing objectives, an increase in the user firm's IR is reflected in an increase in the amount of information, generated in the firm, the dynamism of organizational information and technological sophistication of its organizational systems.

Antecedents of IR

TCE focuses on the manifest presence of relational uncertainty, which, when combined with certain contracting situations, aggravates appropriation concerns and engenders costly contracts. The role of task or process uncertainty in governance choice has been less developed and may be equally important. We extend the IPV to include both process and relational uncertainty as antecedents to IR in the context of BPO. We provide below summary comments on the conceptualization of these antecedents, including the nature of their impact on the user firm's IR.

Process Uncertainty: We conceptualize process uncertainty in terms of complexity and modularity of the outsourced process. *Complexity* encompasses the notions of analyzability and variety. An analyzable process comprises events that are hard, measurable, and determinant (Daft and Weick 1984). When a process is analyzable, outcomes are well-understood, and the process administrators follow an objective, computational procedure to resolve problems. Our notion of process variety is consistent with the early conceptualization of content variety, variability in the inputs or outputs of a process (Perrow 1967; Thompson 1967), as well as the more recent concept of sequential variety, diversity of work processes that an organization uses to transform inputs into outputs (Pentland 2003). *Modularity* refers to the ability of the process to function as a coherent subtask that can be analyzed, modified, and enhanced, independent of its influence on other organizational processes.

An increase in process uncertainty, as assessed by the above sub-constructs, results in an increase in the user firm's IR. Uncertainty in the outsourced process circumscribes the ability of the firm to comprehensively anticipate needs and contingencies in the exchange process, and specify these *ex ante*. Measurement of performance and output of the process is also difficult, and task allocation is transacted and renegotiated frequently. Also, contingent situations that arise on account of uncertainty must be solved using judgment and experience rather than rules or computational routines and necessitate a wider scope of information sharing

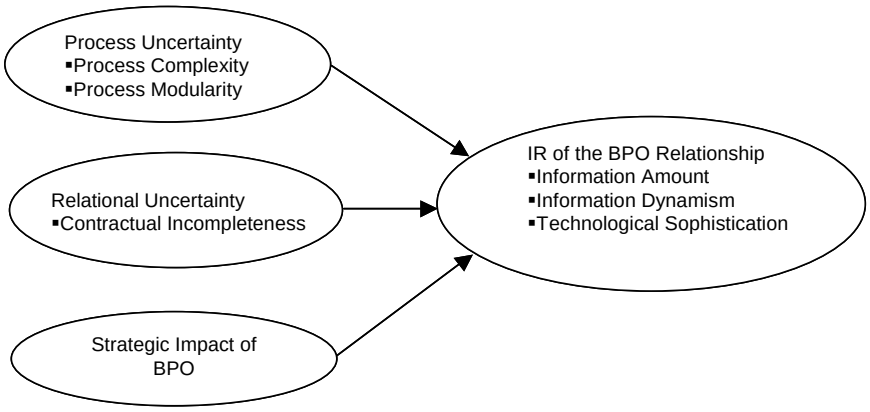

Figure 2. Organizational IR and its Antecedents

(Perrow 1967). Finally, the extended range of stakeholders involved in supporting and managing the relationship, including transferring value back to the user firm, also increases the firm's IR.

Relational Uncertainty: We conceptualize relational uncertainty in terms of contractual incompleteness of the relationship or the lack of *ex ante* contractual instructions regarding obligations of contracting parties. Institutional economics validates incompleteness as an economizing action in the context of uncertainty in that including more detail in a contract involves direct transaction costs. Relational uncertainty increases IR of the user firm through (1) limiting the ability of the firm to prescribe and enforce specific actions and (2) enhancing the need to create commitment levels from which desirable actions evolve (Williamson 1983).

Strategic Impact of BPO

Our model controls for the strategic impact of BPO. Strategic BPO relationships are characterized by high payoffs and the relationship between the user firm and the service provider is frequently long-term, close, and involves a sustained, m and complex pattern of interaction between and within each of these firms (Ford 1990). This, in turn, implies frequent communication and greater incentives and opportunities to share information (Krackhardt 1992). This nature of the information exchange process embodied in a strategic BPO relationship results in an increase in the user firm's IR. The conceptualization of IR and its antecedents is outlined in Figure 2.

IC of the Governance Solution

BPO governance is conceptualized as a second-order construct that includes the institutions, processes, and technology that empower decision making and action in the BPO relationship to deliver sustainable value. We use theories on structuring and management of interfirm relations to identify three complementary dimensions of BPO governance: contractual coordination (CC), procedural coordination (PC), and technological coordination (TC). These dimensions are described below.

Contractual Coordination: CC refers to the mutual exchange of rights in the BPO relationship, and represents a mutual attempt to control uncertainty in desired behavior and outputs. This study includes three dimensions of CC: contract type, contract length, and contractual emphasis on control versus coordination.

Procedural Coordination: Strategists (Doz et al. 1989; Sobrero and Schrader 1998) have argued that interfirm coordination is achieved not through contractual mechanisms, but by day-to-day communication between parties involved in the relationship. Sobrero and Schrader (1998) state that these day-to-day interactions, reflected in the extent to which parties coordinate processes to exchange information, describe PC in the relationship. They are structurally identified by the contract but actually reflect how the contract is implemented. The four dimensions of PC used in this study are sharing of risk, division of bargaining power (Gardner and Cooper 1988), extent of joint action (Robicheaux and El-Ansary 1976; Bensaou and Venkatraman 1995), and nature of performance metrics.

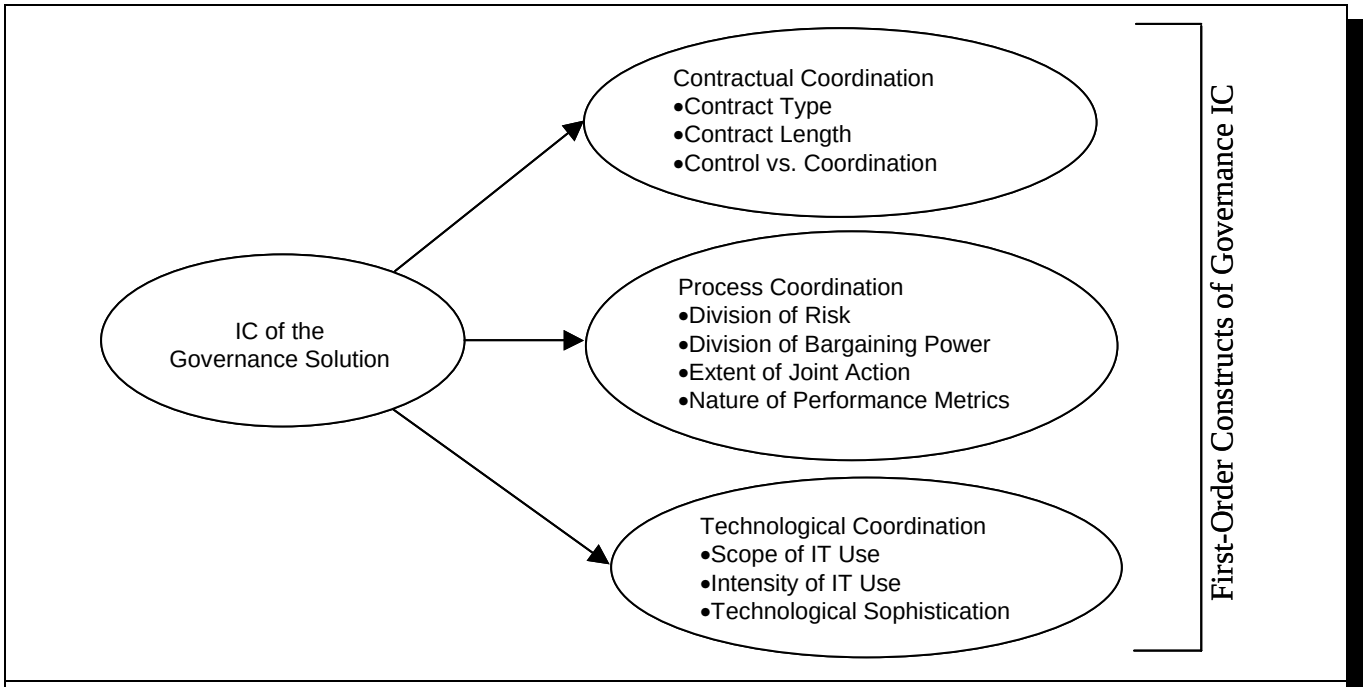

Figure 3. Second-Order Construct of IC of the Governance Solution

Technological Coordination: TC refers to the role of technological mechanisms used to facilitate contractual and procedural coordination in the BPO relationship. The three dimensions of TC include scope of IT use, intensity of IT use, and sophistication of coordination systems (Bensaou and Venkatraman 1995). The second-order construct of governance is depicted in Figure 3.

Fit between IR and IC

Our model of selective alignment between IR and IC points out that BPO relationships, which differ in their IR, when governed by allied contractual, procedural, and technological governance capabilities, have a positive impact on service satisfaction.

Service Satisfaction

Sureshchandar et al. (2002) argue that customer satisfaction should be developed along the same factors as service quality. We adapt their conceptualization of customer satisfaction to identify four sub-constructs: reliability, responsiveness, responsibility, and systematization. Reliability refers to the ability to perform the promised service dependably and accurately. Responsiveness reflects willingness to help customers and provide prompt service. Responsibility reflects accountability of the provider. Finally, systematization refers to the processes, procedures, systems, and technology that make a service a seamless one.

Empirical Analysis

Instrument Design and Refinement

A structured questionnaire was developed based on comprehensive reviews of academic and practitioner oriented literature and initial interviews with 20 BPO experts[2]. These exploratory interviews were conducted with the underlying objective of assessing

[2]The subject experts comprised directors of strategic outsourcing practices in Fortune 100 firms (in financial services, healthcare, retail, and high-tech), outsourcing advisory consultants, leading Indian offshore vendors, and academicians.

applicability of the information processing model to interfirm BPO relationships, assessing the validity of distinguishing characteristics of our conceptual model, validating logical linkages between the constructs, and obtaining more clarity of perspective on desirable sample characteristics. Consequent to these exploratory interviews, we developed a structured questionnaire that was pretested with a total of 30 medium to large organizations, market research firms, and academicians. The instrument was tested for clarity of content, scope, and purpose (or content validity). A seven-point Likert scale was used for most questions; however, some questions involved binary choices. The pretest was instrumental in enhancing our understanding of respondents' perceptions of questions, clarifying instructions and other pertinent communication, and improving definition and measurement of constructs.

Data Collection

Our sample, which comprised small, medium, and large U.S. organizations, was representative of a range of outsourcing objectives. We received a total of 145 responses (response rate of 10 percent). After accounting for missing data, the dataset comprised 137 valid responses. Respondents to the questionnaire belonged to executive management of participating firms, with functional responsibility of a bulk of the respondents belonging to the "Chairman/CEO/President" and "Director-Level Management" categories. The respondents were offered the option to complete any of a print survey, telephone survey, or an online questionnaire; however, almost all responses were received through the online questionnaire. All respondents were assured that their responses would remain confidential and that results would be reported only in aggregate, thereby addressing privacy concerns and minimizing potential bias in self-reported data.

Instrument Reliability

We averaged the internally consistent estimates of each indicator (Hoyle and Smith 1994; Kishton and Widaman 1994) to obtain manifest variables (parcels) that measured a unidimensional construct. The reliability estimates for the indicators, as measured by Cronbach's alpha, ranged from 0.73 to 0.93, indicating high levels of internal consistency.

Empirical Analysis

Our empirical approach comprised the three steps summarized in Table 1.

Step 1: Structural Modeling. We first validated a second-order construct of IC. After verifying reliability and validity of the model, we obtained factor scores for constructs IR, IC, and IC sub-constructs, which were used in subsequent stages of the analysis. All constructs were tested for convergent and discriminant validity. We tested convergent validity by checking the critical ratios of each factor (Thong et al. 1996). Discriminant validity was examined by comparing construct variance extracted with squared correlations among constructs (Segars and Grover 1998; Thong et al. 1996).

Table 1. Summary of the Three-Step Empirical Approach

Step No.	Description
1 (Structural Modeling)	The objectives of this analysis were to validate a second-order construct of IC, and obtain factor scores for constructs IR and IC (used in the regressions in Step 3) and its sub-constructs, CC, PC, and TC (used in the cluster analysis in Step 2). No dependent measures of satisfaction were tested.
2 (Cluster Analysis)	Cluster analysis (CA) on the process variables was used to derive clusters of IR. Within each identified cluster of IR, we performed CA on the factor scores for CC, PC and TC obtained in Step 1. Therefore, each of the final clusters represents a fit between IR and IC. Two aligned output configurations were identified at this step: "complex-own-transform" (high IR, high IC) and "modular-transfer-improve" (low IR, low IC). Measures of satisfaction were used to compare the aligned and nonaligned clusters.
3 (Switching Regression)	Heckman's two-stage regression was used to correct for endogeneity in governance choice. In the first stage, we estimated a probit model specifying the governance choice equation and calculated the inverse Mills ratio, a correction term for self-selection. Second-stage models, incorporating this estimate, evaluated the impact of governance choice and misalignment on satisfaction and provided *consistent, unbiased* estimates.

Table 2. Estimates for the IR Construct				
Construct	**Indicators**	**Standard Loading**	**Composite Reliability**	**Variance Extracted**
IR	Information Amount	0.795	0.84	0.63
	Information Dynamism	0.793		
	Technological Sophistication	0.796		

Table 3. Estimates for the Second-Order IC Construct				
Construct	**Indicators**	**Standard Loading**	**Composite Reliability**	**Variance Extracted**
IC	CC(CC)	0.639	0.75	0.50
	PC(PC)	0.600		
	TC(TC)	0.863		

Table 4. Estimates for the First-Order IC Sub-Constructs					
Construct	**Sub-Construct**	**Indicators**	**Standard Loading**	**Composite Reliability**	**Variance Extracted**
IC	Gov_Str	Contract Type	0.878	0.82	0.6
		Contract Length	0.798		
		Degree of Formalization	-0.625		
	Coord_Proc	Joint Action	0.790	0.85	0.59
		Risk Sharing	0.826		
		Sharing of Bargaining Power	0.724		
		Metrics	0.713		
	Tech_Cap	Intensity of IT Use	0.722	0.79	0.56
		Scope of IT Use	0.784		
		Coordination Infrastructure	0.728		

Tables 2, 3, and 4 provide reliability estimates for the IR and IC constructs. Table 2 summarizes factor loadings and reliability of the IR construct. All factor loadings are significant ($p < 0.001$), and the composite reliability for the construct is 0.63. IC is conceptualized as a second-order construct comprising three complementary dimensions: CC, PC, and TC. Correlations among these dimensions are significant but below the limit of 0.90 (Bagozzi et al. 1991). Hence, a second-order factor model comprising an integrative latent representation of IC is useful in explaining such correlations (Segars and Grover 1998). Table 3 details the factor loadings for the second-order IC construct while Table 4 details the factor loadings for the first-order dimensions of IC. All factor loadings were significant and of high magnitude.

Step 2: Cluster Analysis. The overall objective of the second step of the empirical analysis was to identify clusters of fit between IR and IC. This provides insights into patterns or forms of BPO governance and helps to affirm whether (1) the IR of the outsourced process and IC of the governance solution distinguish these governance forms and (2) the differentiation between aligned and nonaligned configurations is useful in predicting differences in service satisfaction. For the CA, we use the antecedents of IR (i.e., the process variables) and the sub-constructs of IC (i.e., CC, PC, and TC) instead of aggregate measures of IR and IC, since these variables provide more insight into the nature of governance forms in BPO.

The primary issues in CA involve determining the number of clusters and assigning membership to the observations. We used Punj and Stewart's (1983) recommendations for CA, that is, (1) use of standardized variables, (2) use of the squared Euclidian distance as a similarity measure, and (3) use of Ward's minimum variance method for cluster formation. Milligan and Cooper (1985) compared 30 methods for estimating the number of population clusters. The three criteria that performed best in these simulation studies were the pseudo F statistic (PSF), the pseudo t^2 (PST) transformation, and the cubic clustering criterion (CCC). We used these three heuristic methods to determine the number of clusters. All three indices support a two-cluster solution across the antecedents of IR, C_1, and C_2. The next step was to run the same cluster algorithm for each of these two clusters across the three IC variables: CC, PC, and TC. The indices support a two-cluster solution for cluster C_1 (C_{11} and C_{12}), and a two-cluster solution for cluster C_2 (C_{21} and C_{22}).

In summary, the data analytic procedure uncovers four configurations of fit/misfit between IR and IC. We describe two of these clusters as aligned (C_{11} and C_{22}) and two as nonaligned (C_{12} and C_{21}). The first aligned cluster, C_{11}, is marked by low process complexity and strategic importance, high process modularity, and low contractual incompleteness. The allied IC include low levels of contractual, procedural, and technological coordination and support autonomous ownership and functioning of the outsourced process. We call this cluster "Modular–Transfer–Improve," reflecting the independence of the outsourced process, its relative ease of transferability, and BPO objectives of process efficiency and improvement. The second aligned cluster, C_{22}, is marked by high process complexity and strategic importance, low process modularity, and high levels of contractual incompleteness. The allied IC support collaborative ownership and functioning of the outsourced process. We label this cluster "Complex–Own–Transform," reflecting the complex interdependencies of the outsourced process, difficulty in transferability and resultant joint ownership, and BPO objectives of business transformation.

We use Scheffe's F-test to examine differences in values of the dependent measures of performance across the clusters. The multiple comparison tests establish that the distinction between aligned and nonaligned configurations is useful in predicting differences in levels of service satisfaction. Table 5 illustrates that satisfaction levels in the nonaligned clusters are lower than the aligned clusters, a difference that is more pronounced when IR are high.

Step 3: Switching Regression. Empirical analyses that suggest a direct relationship between governance choice and satisfaction assume that firms' governance choices are not influenced by firm- or transaction-level characteristics. However, this proposition is untenable (Leiblein et al. 2002). Research studies and anecdotal evidence point to the impact of relative firm-level capabilities on governance decisions. This implies that firms self-select governance forms based on their own maximizing analyses rather than on a random basis (Leiblein et al. 2002). Further, it is likely that these unobserved firm- and transaction-level characteristics impact performance and, in turn, service satisfaction. A failure to correct for this selection bias while estimating the impact of governance choice on satisfaction threatens external and internal validity (Berk 1983), and results in biased and inconsistent normative implications (Heckman 1979; Maddala 1983; Masten 1993). Differences in satisfaction may be attributed to governance choice when, in actual fact, they are due to unobserved factors underlying governance choice.

In the present study, the estimates in the satisfaction model need to be corrected by controlling for the user firm's propensity to choose a particular governance form. Using Heckman's two-stage regression approach, a first-stage probit model is estimated to specify a selection equation (Equation 1) and calculate the inverse Mills ratio, which is used as a control variable in the second-stage satisfaction model. Second-stage models that incorporate this correction provide consistent and unbiased estimates. Controls we use in both stages of the regression include firm size, firm tenure, prior association, and environmental dynamism.

First Stage Probit Model

IC is defined to be equal to one for cases where a firm chooses the strategic BPO governance form—*Complex–Own–Transform*—marked by high IR and IC, and equal to zero for transactions where a firm chooses the transactional BPO governance form—Modular–Transfer–Improve—marked by low IR and IC. We defined the threshold value for high IC as the mean response value of 4. Therefore, the choice of IC for a given transaction is estimated using the following probit model:

$$\text{Prob}(Y_i = 1) = \text{Prob}(Y_i > 4) = \Phi(\beta' X_i) \quad (1)$$

IC Misfit is then defined as $1 - \Phi(\beta' X_i)$, when *IC* is equal to one and as $\Phi(\beta' X_i)$ when *IC* is equal to zero. This variable measures the probability that relatively higher IC are employed in transactional BPO relationships with low IC, and the probability that relatively lower IC are employed for strategic BPO relationships that have chosen high IC.

Table 5. Satisfaction of Aligned Versus Nonaligned Clusters							
Aligned Clusters	**Process Dimensions**	**Contractual Incompleteness**	**Governance Dimensions**	**Customer Satisfaction Higher than Nonaligned Cluster?**			
				Reliability	Responsiveness	Accountability	Systematization
Modular-Transfer-Improve	Low Complexity	Low	Arms Length Contract	Yes*	Yes*	Yes**	Yes**
	High Modularity		Autonomous ownership & functioning of outsourced process				
	Low Strategic Importance		Low strategic impact, low levels of PC and TC				
Complex-Own-Transform	High Complexity	High	Relational Contract-Partnership Model	Yes***	Yes***	Yes***	Yes***
	Low Modularity		Collaborative ownership & functioning of outsourced process				
	High Strategic Importance		High Strategic Impact, high levels of PC and TC				

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.0001$

Model I presents a baseline case comprising controls while Model II introduces IR as an explanatory variable. The analysis confirms the significant impact of IR on choice of IC. Given the results of the log likelihood ratio tests and the pseudo-R^2, estimates from Model II are used to formulate the inverse Mills ratio for the second-stage satisfaction model. Table 6 describes estimates from the two first stage governance choice models.

Table 6. Probit Estimates for First-Stage IC Choice Model[a,b]		
Independent Variables	**Model I**	**Model II**
Intercept	-2.1858***	-5.9486***
Firm Size	0.8642**	0.4028*
Firm Tenure	0.0309	-0.0086
Prior Association	0.5030*	0.2291
Environmental Uncertainty	0.3050***	0.2305*
IR		1.0931***
N	137	137
Log Likelihood	-68.980	-49.376
Pseudo-R Square	0.19	0.42

[a]Positive coefficients indicate a greater probability of *Complex–Own–Transform*
[b]*$p < 0.05$; **$p < 0.01$; ***$p < 0.001$

Table 7. Estimates for Second-Stage Satisfaction Models						
			Model III		Model IV	
Independent Variables	Model 1	Model II	Strategic Outsourcing	Efficiency Outsourcing	Strategic Outsourcing	Efficiency Outsourcing
Intercept	4.4190***	4.5578***	6.1796***	4.4593***	6.5556***	5.3601***
Firm Size	0.3174*	0.1230	0.0665	–0.1358	0.0195	–0.0716
Firm Tenure	0.0367	0.0253	–0.0291	0.1793**	–0.0288	0.1713**
Prior Association	0.6725***	0.5346**	0.4811*	0.3306	0.5598**	0.1033
Environmental Uncertainty	–0.2389***	–0.3116***	–0.3356***	–0.2837**	–0.3491***	–0.2731**
Governance Choice	0.2835	1.0153***				
IC Misfit					–2.2379***	–5.653
Correction for self-selection (Wλ)		–0.6897**	–1.1767***	–0.4408†	Excluded - not significant	–2.3650†
Model F	12.28***	12.87***	13.21***	6.11***	12.99***	5.75***
Adjusted R^2	0.29	0.34	0.40	0.38	0.39	0.40

†$p < 0.10$; *$p < 0.05$; **$p < 0.01$; ***$p < 0.001$

Second Stage Satisfaction Estimates

Table 7 provides the results of our satisfaction models. Model I provides a baseline specification that does not correct for self-selection. Model II adds the correction for self-selection, which is negative and strongly significant, indicating that the firms have self-selected the most favorable form of governance: unobserved characteristics underlying IC choice strongly influence service satisfaction of that transaction relative to an equivalent transaction of alternative IC choice. While Model I indicates that IC choice does not impact satisfaction, Model II suggests that strategic, collaborative BPO relationships characterized by high IC exhibit relatively superior satisfaction characteristics. Self-selection reduces the impact of IC choice on performance in Model I.

Model III separately estimates models for the two governance forms while correcting for self-selection. The inverse Mills ratio is negative and significant for both governance forms. We note that while prior association and environmental uncertainty impact service satisfaction in collaborative BPO relationships, firm tenure and environmental uncertainty impact service satisfaction in autonomous BPO relationships.

Model IV tests the selective alignment proposition by examining the impact of the *IC Misfit* variable on service satisfaction. We find that the inverse mills ratio turns insignificant in the case of strategic outsourcing, indicating the lack of a selection bias. This is likely given the correlation between the ability to self-select and misfit. Therefore, we run the regression after excluding the self-selection correction. We find that governance misfit does have a negative impact on performance for strategic, collaborative BPO relationships; however, the variable is not significant in the autonomous governance form, implying underinvestment in IC has a greater impact on service satisfaction than overinvestment.

Discussion and Conclusion

This study considers two perspectives on governance of outsourcing relationships, each of which specifies the role of different facets of uncertainty experienced by participant firms as important to their decision of governance choice. The economic approach highlights the role of appropriation concerns and manifest relational uncertainty, while the organizational approach points to the complexity of task coordination and execution or task uncertainty. Our study suggests that IR of the BPO relationship is a function of both these dimensions of uncertainty, and is an important basis for the choice of governance solution in BPO. This is consistent with our finding that a governance solution is more than a contractual mechanism to control opportunism; it includes processes and technology that enable participant firms to coordinate tasks and responsibilities so as to create value, mutually adjust

behavior, and allay fears and concerns about the relationship. We find that service satisfaction in BPO is contingent upon the alignment between IR of the outsourced process and IC of the governance solution.

The results hold normative implications for outsourcing managers, and point to interesting directions in future research. For example, a comparison between local versus cross-regional BPO partnerships as well as analyses of local relationship characteristics by region may provide useful insights into how the institutional context of a particular country influences mutual trust and governance structures. Further, as BPO becomes increasingly global in its reach and strategic in its impact, greater difficulty in enforcing property rights, greater coordination challenges and costs, and specific legal and cultural contexts may all encourage choice of a particular governance form.

The analysis suggests that the unobserved factors that increase the likelihood of IC choice also decrease the likelihood of satisfaction with the chosen IC. For example, the decision to pursue BPO may reflect the mimetic adoption of a popular industry practice, which is also likely to adversely impact satisfaction. The BPO paradox detailed in industry surveys and anecdotal evidence may be partly explained by such self-selection. As the industry matures and aligns organization with outsourced process requirements, we are likely to find increased evidence against the paradox.

The controls for service satisfaction in both aligned governance forms are consistent with our theoretical expectations. For example, prior cooperative association between participant firms positively impacts satisfaction in strategic, collaborative BPO. This confirms the important role that mutual trust and commitment play in strategic BPO. Similarly, firm tenure influences satisfaction in transactional BPO relationships. This is likely because older firms are more likely to house mature processes that lend themselves to transferability and autonomous functioning.

We find that strategic, collaborative BPO relationships exhibit characteristics associated with higher levels of satisfaction. Further, we also find that underinvestment in IC in these relationships adversely impacts service satisfaction more than overinvestment in IC in autonomous relationships. Both findings are consistent with the intrinsic linkages that a strategic business process shares with its organizational context and its direct impact on customer value. Therefore, while success in strategic BPO relationships can create competitive differentiation and advantage for the user firm, relatively higher recovery and transition costs of failed relationships can create a significant dent in its bottom line and satisfaction. The findings, while questioning the consistent theme in the strategy literature that partnership models are inherently problematic, are aligned with market trends that indicate a growth in strategic BPO.[3]

Finally, the study helps to answer an important question on the rapidly maturing phenomenon of strategic BPO: How do the factors affecting the likelihood of outsourcing a strategically important process influence its subsequent performance? We find that large firms that face uncertainty in their business environment are likely to engage in strategic outsourcing. However, while user firms are likely to use BPO as an organizational lever that provides access to skills required to cope with dynamic business environments, such uncertainty adversely impacts service satisfaction. A strategic lesson that may be inferred from this finding is that user firms probably outsource the responsibility of management of uncertainty in their business environment to the service provider. Given their intimate knowledge of consumer and product markets, the user firms must work collaboratively with the provider to manage such uncertainty.

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[3]In our survey, 35 percent of the respondents indicated that access to new markets was a significant dimension of their outsourcing strategy, while 18 percent of the respondents indicated that product/ process innovation was an important dimension of their outsourcing strategy. This is in alignment with a recent study by Accenture which stated that over 65 percent of organizations in their analysis were outsourcing processes of medium to high strategic value. Top reasons to outsource in their sample were converting capital to expense, access to technology, and centralization and standardization.

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