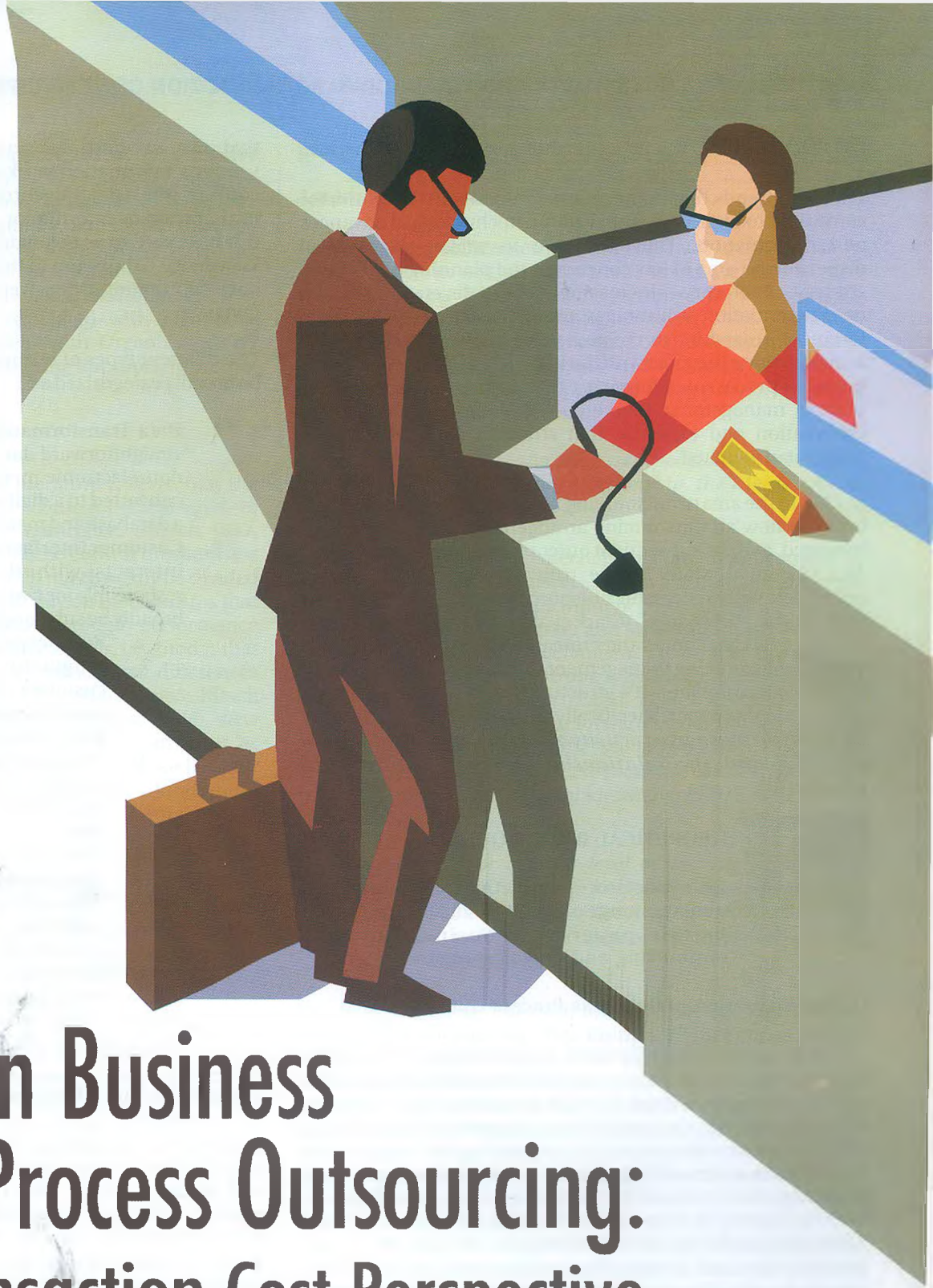

Control In Business Process Outsourcing: A Transaction Cost Perspective

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ABSTRACT

The better service levels and cost-savings promise of business process outsourcing is making it one of the fastest-growing practices in the market today. The greatest challenge in this management tool, however, is one of 'control'. Managers are accustomed to having direct control over the resources to deliver the results for which they're accountable. With BPO, these controls are in the hands of the provider. How the control issue is handled can mean the difference between adequate results and high performing outsourcing that delivers beyond expectations. This paper adopts a transaction cost framework to advance the understanding of the impact of the nature of the outsourced activity on the structure of the control portfolio and the relationship between control and outsourcing success.

KEYWORDS: *Business Process Outsourcing, Control, Management, Transaction Cost Approach, Outsourcing.*

INTRODUCTION

The three trends that seem certain to dominate the world, for some time to come, are globalization, technological advances and deregulation. They combine to make geographical dispersion an area of low concern in the planning of business strategy; as enterprises increasingly look for leveraging the cost or differentiation advantages available across the globe - forging partnerships to create a value chain with the aim of accomplishing the most with the least. It is in this scenario that business process outsourcing ('BPO') emerges as the latest buzz in management thinking as a global supply-chain of information and expertise that stretches from Mumbai to Manhattan is etched.

Studies in the area of outsourcing have suggested a natural link between how an outsourcing arrangement is structured and managed, and the subsequent outcomes (Dibbern et al., 2004). As Clark et al. state "....the truly critical success factors associated with successful outsourcing are those associated with vendor governance" (Clark et al., 1998). The practitioner literature has also noted the critical role that control plays in effective outsourcing management (Linder and Sawyer, 2003). It is this control issue – it's structuring and it's impact that is explored in this paper. Specifically we look at ***the impact of the nature of the outsourced activity on the structure of the control portfolio and the relationship between control and outsourcing success.***

HEORETICAL BACKGROUND

This section presents the theoretical underpinnings of the key concepts dealt with in this paper viz. 'business process outsourcing' and 'organizational control'.

Conceptualization of 'Business Process Outsourcing'

The transaction cost approach to the theory of the firm hypothesizes that firms are organizational innovations born out of the costs involved in market transacting in order to reduce those costs. Coase (1937) has argued that, were the firm and the market alternatives for organizing the same set of transactions; a firm will substitute market transactions as long as management costs are less than transaction costs. Thanks to the convergence in corporate computing platforms and rapid advances made in communications technology it has become easy and inexpensive to seamlessly link together geographically dispersed information systems thus making market transactions for executing several activities previously done within the firm boundaries possible and preferable. This concept of remotely executing tasks was the genesis of business process outsourcing defined as "the delegation of one or more IT-intensive business processes to an external provider that, in turn, owns, administrates and manages the selected process/processes, based upon defined and measurable performance metrics" (Gartner 2004).

In 2002, Aron and Singh proposed the idea of a 'Knowledge Continuum' in business process outsourcing work. As raw data provided by client / end-user is transformed into knowledge that can support decision making, intervention by the vendor's information workers is needed at various levels to convert, translate, transform and validate the data that is fed into corporate information systems. Outsourced processes can be classified as belonging to different segments along the knowledge continuum in the direction of increasing expertise and information-intensiveness in the nature of the work involved.

The different types of business process outsourcing work can be broadly categorized as:

1. **Data Transformation:** Information workers may do straightforward data entry where data contained in a non-electronic medium (documents, audio tapes) is converted to a digitized format which can be stored in a database and manipulated via a structured query.
2. **Customer Interface Services:** The information worker interacts with the client's customers, and is responsible for two way information transfer. This can broadly be subcategorized (Roy, 2001) into:
    a. Rule-set processing, in which a worker makes judgments based on rules set by the customer. He might decide, for example, whether, under an airline's rules, a passenger is allowed an upgrade;
    b. Problem Resolution, in which the bpo provider has more discretion—for example, to decide if an insurance claim should be paid;
    c. Direct customer interaction, in which the bpo provider handles more elaborate transactions with the client's customers. Collecting delinquent payments from credit-card customers is an example.
3. **Expert Intervention:** Information workers sometimes use a combination of knowledge, information, analytical skills and some sets of rules (supplied by the client) to drive outcomes for the client's customers.

Transaction Cost Theory and Control

In terms of academic research 'control' refers to the organization's attempt to increase the probability that people will behave in ways that contribute to the attainment of organizational goals (Flamholtz et al., 1985). TCA suggests that control structures can be understood as solutions to the coordination, adaptation, incentive and enforcement problems that arise in contracting for and controlling these contributions. These problems originate from two main sources: (1) the characteristics of human behavior; and (2) the attributes of the activities in which the organization engages.

On the behavioral side, TCA considers for bounded rationality and opportunism. Bounded rationality refers to man's limited cognitive and computational ability (Simon, 1945). Opportunism is "self-interest seeking with guile" (Williamson, 1985: 47), which may include calculated efforts to mislead and deceive. The nature of the activities can be defined discriminatingly through their scores on three dimensions: (1) the degree of asset specificity, or the extent to which alternative

uses of investments made to support the activity involve opportunity losses; (2) uncertainty, or the extent to which the activities and desired contributions are amenable to ex ante programming i.e. task programmability; and (3) the intensity of ex post information asymmetry, or the ability to assess the true quality of actually delivered performance i.e. output measurability. Given bounded rationality and opportunism, these features are predictably associated with distinctive control problems that need to be dealt with. Organizations try to cope with these problems by adopting appropriate control structures (Speklé 2001).

Understanding 'Control'

Our survey and review of control literature reveals, that the controller uses certain devices, or control mechanisms, to promote desired behavior by the controllee. (Kirsch 1997, Choudhury and Sabherwal, 2003). These control mechanisms help implement control modes, which may broadly be divided into formal controls, i.e., modes that rely on mechanisms that influence the controllee's behavior through performance evaluation and rewards, and informal controls, i.e., modes that utilize social or people strategies to reduce goal differences between controller and controllee (Eisenhardt 1985; Kirsch 1996, 1997). Some researchers (e.g., Merchant 1988) view formal and informal controls not as a dichotomy, but as opposite ends of a continuum. Controllers often use the four modes (behavior, outcome, clan, self) in combination, creating a portfolio of controls (Kim 1984, Jaworski 1988, Jaworski et al. 1993, Kirsch 1997).

RESEARCH METHODOLOGY

This section presents the methodological elements and the research design of this study.

Hypothesis Development

The research questions addressed in this study are: (1) *the relationship between the characteristics of the outsourced activity viz. asset specificity, task programmability and output measurability on the structure of the control portfolio and (2) the relationship between degree of control and outsourcing success.*

Degree of Control

Tannenbaum (1968) proposed that two different types of control "can operate concurrently and that their effect is additive". Thus Tannenbaum (1968) presented the approach that control types are not mutually exclusive, that their control 'levels' are quantifiable and that they can be summed up to one aggregate level. In his research design, he 'added' the values for team leaders' control and values for team members' control to arrive at a total value of control.

This study adopts a similar approach and develops the construct of 'degree of control' defined as the aggregate of amounts of all formal and informal controls that are exercised by the client and self control exercised by the vendor over the performance of the outsourced function in the business process outsourcing relationship.

Antecedents of Control: Asset Specificity

Relationship specific assets create an obstacle to the formation of an alliance, as neither party wants to expose itself to their inherent risks. Firms must therefore structure their relationship in order to mitigate these risks. Common approaches to doing so in the context of alliances are the use of formal governance mechanisms and relational or informal governance mechanisms (Poppo and Zenger 2002). Following Poppo and Zenger, we posit that:

> ***H1 (a): The greater the asset specificity in a business process outsourcing relationship, the higher will be the degree of control used***

Contractual governance mechanisms are handicapped in coordinating knowledge assets, which are difficult to specify concretely in advance and influenced by the unobservable efforts of both parties (Hoetker and Mellewigt, 2004). Informal (relational) governance mechanisms create the "expectation that alleviates the fear that one's exchange partner will act opportunistically" (Bradach and Eccles 1989:104), thus allowing the parties to move forward under the assumption that contingencies will be addressed in good faith (Cusumano 1985). Thus, we expect to observe more use of informal control mechanisms when substantial knowledge assets are involved in an alliance.

> ***H1 (b): For a given level of asset specificity in a relationship, the more knowledge assets involved in the business process outsourcing relationship, the higher will be the degree of informal control mechanisms***

For physical assets, however, informal control mechanisms require time-consuming, often costly, activities and may even lead to poorer performance via diminished incentives as "relationships based on frequent interaction take on some aspects of internal supply that diminish incentives, such as second chances being given more frequently, an expectation of due process before termination, and greater willingness to negotiate unexpected cost increases" (Hoetker and Mellewigt, 2004: pg 1).

> ***H1 (c): For a given level of asset specificity in a relationship, the more physical assets involved in the alliance, the higher will be the degree of formal control mechanisms***

Antecedents of Control: Task Programmability

Programmable activities are those for which the organization possesses sufficient knowledge and information to decide in advance on the way in which they are to be executed in order to achieve success (Spekle 2001). Formal control mechanisms can thus be designed for such activities. Thus we posit that:

H2: The greater the task programmability of the outsourced business process, the higher will be the degree of formal control used

Antecedents of Control: Output Measurability

Output measurability is the extent to which the organization is able to observe and to assess perceptively the true quality of actually delivered contributions (Spekle 2001) indicating the relevance of outcome controls. Also, when one is able to specify what one expects from the activity, one will usually have at least some notion as to the behaviors that may result in those outcomes indicating the use of behavior control mechanisms. Thus:

H3: The greater the output measurability of the outsourced business process, the higher will be the degree of formal control used

Ouchi (1979) also found evidence of the relationships between the mode of control, and the characteristics of the task. His results state that where both output measurability and task programmability are high, either behavior or outcome controls may be used while informal controls emerge when both output measurability and task programmability are low.

Degree of Control and Outsourcing Success

Extant literature suggests that inter-organizational relationships achieve greater satisfaction through more control and certainty in their relationships, and are better in avoiding conflict, achieving cost reductions, and developing trust (Dibbern et al., 2004). Thus our final hypothesis is presented as:

H4: The degree of control would have a positive association with outsourcing success

DATA COLLECTION

As a master list of the "List of 50 best-managed global outsourcing vendors, 2006" from The Black Book of Outsourcing survey, conducted by Brown-Wilson Group, a Clearwater, Fla., based consultancy, was taken. This survey ranked outsourcing vendors according to responses by executives and others involved in outsourcing decision-making about their experience and satisfaction with current suppliers and appeared in 'Sourcing Magazine' July 2006. The survey has wide acceptance and credibility in the global business process outsourcing sector. Of this list permission to interview managerial employees from the tactical and strategic levels from twenty was obtained. The vendor organization management were then requested to solicit the support of their counterpart client teams for this study. The resultant sample had 13 vendor organizations with access to senior managers from both client and vendor sides. Since this process had excluded the captive business process outsourcing centers access was sought and gained to study 2 captive centers as well. This was based on personal and professional acquaintance, hence a convenience sample.

Thus a final sample of thirteen business process outsourcing vendor organizations was taken. At our request, these organizations identified one or more vendor-client relationships among their ongoing lines of business. The client executives and vendor executives who agreed to participate in the study were sent an email detailing information about the purpose of the study, the level of participation required and potential benefits. It also stressed the anonymity and confidentiality of the respondents. This was followed by interviews over the period August 06- July 07. In sum, we surveyed 124 relationships between 103 service receivers and 15 service providers through 228 interviews.

Measure Development

Two survey instruments were developed for this study. The first one was used to collect information from the client executive and the other was used with vendor executives for control practices and partnership quality. The measures were administered through interviews which were semi structured and detailed. Interviews were held individually for one to three hours per session.

Prior to measure development, we conducted a series of personal interviews with seven BPO professionals to confirm the external validity of the developed research framework. The interviews confirmed that our proposed research model was suitable for studying real world outsourcing phenomena. We then developed a five-point Likert-style questionnaire based on the literature and the comments gathered from the interviews for control practices.

Operationalization of Asset Specificity

1. **Asset specificity**
   To generate our measures of the knowledge and physical assets involved we analyzed the relevant literature in order to identify strategic resources in outsourcing. The list of resources thus identified was then discussed with bpo practitioners with regard to relevance, completeness, and comprehensibility. This elicited a final list of 9 resources (6 physical and 3 knowledge assets). Asset specificity was measured by adapting a scale from Reuer and Ariño (2002).

2. **Task programmability**
   This construct measures the extent of unpredictability at the localized level of the specific function that is being outsourced. The items for measuring this construct have been adapted from Chang et al. (2003) and Withey et al. (1983).

3. **Output measurability**
   The extent to which outcomes of the outsourced function can be clearly articulated and accurately measured is the focus of this construct. The items for measuring this construct have been adapted from Kirsch et al (2002) and modified based on our study of outsourcing literature.

4. **Degree of control**

Items for the construct of degree of control have been developed by creating a list of control mechanisms, which are then individually operationalized. Kirsch (1997) and the findings of an earlier work by the authors of this research work (Daityari et al., 2007) are the sources for this list.

5. **Outsourcing success**
This construct measures the extent to which the client organization achieved their outsourcing objectives as assessed through economic benefits, technological benefits and strategic benefits. Items for this construct have been adapted from Grover et al. (1996); Lee and Kim (1999) and Rustagi (2004).

ATA ANALYSIS

Sample Characteristics

The target population of this study was the client vendor teams belonging to business process outsourcing relationships. The initial list adopted for this study was the fifty top BPO vendors in India from which access to representatives from both client and vendor sides from 13 were obtained (2 were added later from captive firms). Hence the response rate of this study may be taken as 26%.

Among the fifteen vendors who participated in our study, six were 'IT Outsourcers', one was a 'business process specialist', another two were 'pure play BPO providers'. 'Captives' were represented by two respondents while there were three 'former captives' and one 'BPO consultant'. In terms of vendor size, with respect to employee headcount, the smallest was 3300 and the biggest 22000. Revenues earned from BPO alone for the vendors studied ranged from $54mn to $613mn excluding the captive units.

Majority of the clients (38%) were from the financial services sector, followed by telecom (12%) and IT hardware and software (11%). Contact and front office services (16) comprised the largest chunk of the outsourced processes, followed by financial and accounting (14) and knowledge services (12).

Reliability and Validity of the Measurement Instrument

The content validity of the instruments was established through the adoption of the constructs that have been validated by other researchers and a pretest with outsourcing professionals. We calculated the internal consistency (Cronbach's alpha) in order to assess the reliability of the measurement instrument. For convergent validity, we evaluated the item-to-total correlation that is the correlation of each item to the sum of the remaining items. Discriminant validity was checked by means of a factor analysis.

Analysis of Empirical Data

This section presents the statistical tools used to test the hypothesis proposed in the study and presents the results thereof.

Hypothesis Testing

The overall regression model is significant ($F = 58.921$, $p < 0.001$). The multiple R showed a substantial correlation between the dependant variable (control) and the four variables viz. asset specificity (physical), asset specificity (knowledge), task programmability and output measurability ($R = .815$). The value of R^2 (0.664) indicates that about 66.4 % of the variance in control is explained by the four predictor variables. The β values indicate the relative influence of the entered variables, that is, output measurability has the greatest influence ($\beta = 0.45$, $p = .000$) followed by asset specificity (knowledge) ($\beta = 0.354$, $p = .000$) on control. The direction of influence for all four was positive.

Hypothesis 1(a) stated that the level of asset specificity in a relationship would be positively associated with the degree of control. However a p value of .456 indicated that this relationship was not significant.

Since, the remaining hypothesis were directed at the influence of task characteristics on the components of control viz. degree of formal control and degree of informal control, the next step was to analyze these relationships.

The overall regression model of task characteristics vis-à-vis informal control showed a substantial correlation between the dependant variable (informal control) and the four variables viz. asset specificity (physical), asset specificity (knowledge), task programmability and output measurability ($R = .963$). The value of R^2 (0.928) indicates that about 92.8 % of the variance in informal control is explained by the four predictor variables. The β values indicate the relative influence of the entered variables, that is, output measurability has the greatest influence ($\beta = -0.40$, $p = .000$) followed by asset specificity (physical) ($\beta = -0.230$, $p = .000$) on informal control.

Hypothesis 1(b) stated that the level of asset specificity (knowledge) in a relationship would be positively associated with the degree of informal control. This relationship is determined to be significant ($B = .718$, $p = .000$) and the hypothesis is supported.

The next three hypotheses concerned the relationship between task characteristics and degree of formal control. The overall regression model of task characteristics vis-à-vis formal control showed a substantial correlation between the dependant variable (formal control) and the four variables viz. asset specificity (physical), asset specificity (knowledge), task programmability and output measurability ($R = .983$). The value of R^2 (0.967) indicates that about 96.7 % of the variance in formal control is explained by the four predictor variables. The β values indicate the relative influence of the entered variables, that is, output measurability has the greatest influence ($\beta = .850$, $p = .000$).

Hypothesis 1(c) stated that the level of asset specificity (physical) in a relationship would be positively associated with

the degree of formal control. This relationship is determined to be significant (B= .584, p = .000) and the hypothesis is supported.

Hypothesis 2 stated that the level of task programmability in a relationship would be positively associated with the degree of formal control. This relationship is determined to be significant (B=.737, p=.000) and the hypothesis is supported.

Hypothesis 3 stated that the level of output measurability in a relationship would be positively associated with the degree of formal control. This relationship is determined to be significant (B=.971, p=.000) and the hypothesis is supported.

Our final hypothesis stated that the degree of control would have a positive interactive association with outsourcing success. Control was found to have a significant positive relationship with outsourcing success (β=.683, p=.000).

Comparative Analysis

Besides testing the hypothesis in our research model, the data collected was used to study the differences in the task characteristics and structure of control portfolio of business process outsourcing relationships categorized by the nature of the work involved. This analysis was conducted using the means procedure and one-way ANOVA.

The comparative analysis revealed that a movement along the knowledge continuum in the direction of increasing expertise and information-intensiveness in the nature of the business process outsourced is characterized by decreasing task programmability (means = 21.8; 15.8; 9.9) and output measurability (means = 22.5; 19.0; 13.8) and increasing asset specificity (means = 10.5; 13.5; 14.3).

Predictably, usage of formal control mechanisms decreased (means = 25.5; 23.9; 18.5) and informal control mechanisms increased (means = 8.6; 10.3; 13.4) alongside a movement from 'data transformation' to 'customer interface services' to 'expert intervention'. A comparison of outsourcing success across business process outsourcing types however reveals that the means are largely similar (15.6; 15.0; 13.1).

INDINGS

A substantial correlation was found between the degree of control and the four variables of task characteristics viz. asset specificity (physical), asset specificity (knowledge), task programmability and output measurability. Of these output measurability had the greatest influence followed by asset specificity (knowledge) on overall control. The direction of influence for all four was positive indicating that increases in levels of these characteristics are associated with higher levels of control.

Further, fine grained analysis regarding the relationship of task characteristics with specific control modes revealed that increases in output measurability or the ability to assess the true quality of actually delivered performance; task programmability or the ability to define ex ante the outcom that may realistically be expected to result from the activitie and investment in physical assets specific to the relationship are positively related to increases in degree of formal contro and negatively to degree of informal control. Conversel increases in relation specific knowledge assets are related negatively to formal control and positively to informal control

These results are consistent with earlier control literature. Prior theory and evidence suggest that the use of behaviour control (formal mode) is a function of the extent to which the process that transforms inputs to outputs is understood (task programmability) (Ouchi 1979, Snell 1992). Further, Spekle (2002) states that programmable activities permit a fairly comprehensive ex ante articulation of the characteristics of the contribution that is required from the members of the organization, and therefore, control can be prescriptive or authoritative in nature, featuring rules of behaviour, specific instructions, and relatively rigid performance targets, and focusing on assuring compliance to these pre-imposed norms. Outcome measurability has also been found to have a positive relationship with outcome (formal) control (Eisenhardt 1985, Snell 1992, Kirsch 1996).

Similarly, control theory argues that clan (informal) control will be implemented when it is not possible to implement formal modes of control (Ouchi 1980). There is evidence of a negative relationship between reliance on vendor self-control and outcome measurability: as it becomes more difficult for controllers to measure whether specific targets are achieved by the controllees, they might encourage the use of vendor self-control by the controllees (Kirsch 1996). Social controls are also indicated by van der Meer-Kooistra and Vosselman (2000) for transactions characterised by low levels of task programmability and low levels of output measurability.

Our research results thus, suggest that the structure of the control portfolio in terms of comparative reliance on formal or contractual governance mechanisms as against informal or relational governance mechanisms is influenced by the level of these task characteristics. An examination of the nature of outsourced business processes reveals that the nature of the work can be broadly classified into three categories (Aron and Singh, 2002) viz.:

1) **Data Transformation:** Straightforward data digitization work which are typically routine and repetitive and thus lend themselves easily to ex ante programming and definition of quantifiable measures of outcome assessment. These processes are also low on strategic importance and hence investment in knowledge assets is also low. Our analysis would suggest an appropriate control portfolio for such processes to be largely dependent on formal control mechanisms.

2) **Customer Interface Services:** In this category, the vendor employee handles tasks with varying levels of information structuring thus requiring differing degrees of human intervention as opposed to routines that can be run off computerized menus. In some instances the information worker is no more than

conduit for the transfer of highly structured and pre-determined information types (telemarketing) and at other times s/he may use the information contained in the user firm's systems to decide whether or not a course of action was in consonance with the client's policies (Aron and Singh, 2002). Thus dependant on the formalization of the process structure the activity would amenable task programmability and output measurability. Further the strategic importance of these activities also vary influencing the clients investments in relation specific assets. Consequently portfolios of control would be structured with increasing reliance on informal control and decreasing reliance on formal control as the nature of the process involves higher levels of vendor judgement and strategic importance.

3) **Expert intervention**: Here vendor employees use a combination of knowledge, information, analytical skills and some sets of rules (supplied by the client) to drive outcomes for the client's customers (Aron and Singh, 2002). Thus, these processes are characterized by higher levels of uncertainty and lower intensity of ex post information symmetry leading to higher reliance on informal or relational governance mechanisms.

The above results are diagrammatically represented here using an adapted version of Aron and Singh's diagram on 'BPO types':

Research results of the comparative analysis conducted using

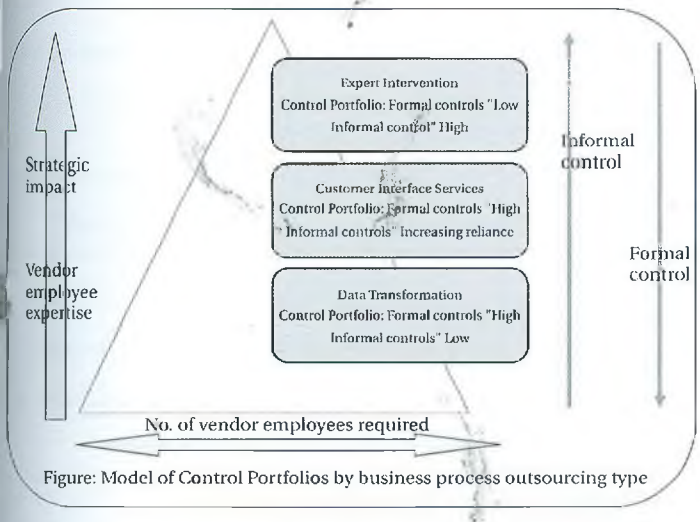

Figure: Model of Control Portfolios by business process outsourcing type

the means procedure and one-way ANOVA support the model of controls across business process outsourcing types presented above.

As stated in our final hypothesis, degree of control was established as a significant predictor of outsourcing success. This contention finds empirical support from research work done on other inter-organizational settings. Henderson and Lee's (1992) study on control behaviors that can affect the performance of an I/S design teams supported the proposition that increases in the total level of control behavior is positively correlated with performance.

ONCLUSION

The purpose of this study was an examination of business process outsourcing controls from a transaction cost approach perspective and hence to examine the influence of the dimensions of outsourced process on the predominance of certain control modes over others. We also tested the association of degree of control with outsourcing success. A survey methodology was utilized involving matched pair samples of client and vendor executives in business process outsourcing relationships. Overall, a substantive number of model hypotheses (five out of six) were supported by the analysis. In addition, further analysis on the task characteristics and control portfolio of business process outsourcing relationships categorized by nature of work involved presented some important findings.

This paper makes some significant contributions of interest to managers who enter outsourcing relationships, and to researchers who endeavor to understand the nature of control systems associated with new organizational forms.

Application of the transaction cost perspective unifies the diverse control portfolios found in business process outsourcing under a single explanatory scheme by showing that they are in fact expressions of the same set of explaining factors (viz. task characteristics). Previous research has specified composition of various archetypal control structures and the links to their antecedent conditions (Spekle 2002, Langfield-smith 2003) albeit without adequate empirical grounding. The empirical component of this study fills this lacuna and adds to the growing knowledge of the design of control systems in new organizational forms. This research develops valid measures that operationalizes the concepts of formal and informal control which would aid future research.

For the practicing manager, the influence on task characteristics on efficacy of control modes has direct implications for the scope and content of control portfolios. Dependant on the characteristics of the outsourced process the portfolio should be largely contractual or primarily relational. Also processes which show a mix of these characteristics lend themselves to a suboptimal structuring of the control portfolio. Thus the implication is for clients to break down these processes into sub-processes to create a homogeneous set of characteristics which lend themselves to a more optimal control structuring.

There is also the indication that the process of structuring outsourcing controls should in fact be initiated while the outsource decision itself is being considered. The client needs to assess the level of task programmability and measurability of outputs of the process as well as the investment requirements in physical and knowledge assets in the outsourced condition to be able to judge the feasibility of adequately governing the process after outsourcing. Differing control structures also point to the need for differing vendor

governance skills required by the client's outsourcing management team dependant on the outsourced process.

A limitation of the study relates to the examination of the client-vendor relationship in a static timeframe. The study does not consider the evolution of control mechanisms as the outsourcing relationship progresses between the client and vendor. Second, this study is limited geographically to outsourcing relationships being executed in India. This may have influenced the behavior of the companies and thus our results. Also, the broader institutions of nations and their cultural and legal systems are likely to alter the effectiveness of various control mechanisms as governance devices.

REFERENCES

1. *Aron, R.; Singh, J.; 'IT Enabled Strategic Outsourcing: Knowledge Intensive Firms, Information Work and the Extended Organizational Form' Published October 08, 2002 in Knowledge@Wharton*
2. *Bradach, J.L., and R.G. Eccles. 1989. Markets versus hierarchies: from ideal types to plural forms. In Annual review of sociology Vol. 15. edited by W.R. Scott. Palo Alto, CA: Annual Reviews, Inc. 97-118*
3. *Chang, R., Chang, Y, and Paper, D. 'The effect of task uncertainty, decentralization and AIS characteristics on the performance of AIS: An empirical case in Taiwan' Information and Management, 40, 2003, 691-703*
4. *Choudhury and Sabherwal, Portfolios of Control in Outsourced Software Development Projects, Information Systems Research Vol. 14, No. 3, September 2003, pp. 291–314*
5. *Clark, T. D., Jr., Zmud, R. W. and McCray, G. E. (1995) "The Outsourcing of Information Services: Transforming the Nature of Business in the Information Industry," Journal of Information Technology, Vol. 10, pp. 221-237.*
6. *Coase, R. H. (1937). "The Nature of the Firm," Economica, Vol. 4, No. November, pp. 386-405.*
7. *Cusumano, M. 1985. The Japanese automobile industry: Technology and management at Nissan and Toyota. Cambridge, MA: Harvard University Press.*
8. *Daityari, A., Saini, A.K. and Gupta, R; 'Portfolios of control in business process outsourcing' 2007, Proceedings of the National Conference on Management GGSIP University Delhi*
9. *Dataquest Gartner 2004 available at www.gartner.com*
10. *Dibbern, J., Goles, T., Hirschheim, R., Jayatilaka, B., Information Systems Outsourcing: A Survey and Analysis of the Literature; The DATA BASE for Advances in Information Systems - Fall 2004 (Vol. 35, No. 4)*
11. *Eisenhardt, K.M.., "Control: Organizational and Economic Approaches", Management Science, 31,2 (1985), 134 – 149.*
12. *Flamholtz, E., Das, T. and Tsui, A 'Toward an Integrative Framework of Organizational Control', Accounting Organizations and Society, 10-1, 1985, 35-50*
13. *Gewald, H., K. Wüllenweber and T. Weitzel (2006). "The Influence of Perceived Risks on BankingManagers' Intention to Outsource Business Processes - A Study of the German Banking and finance Industry." Journal of Electronic Commerce Research 7(2): 78-96.*
14. *Grover, V., Cheon, M.J. and Teng, J. T. 'The effect of service quality and partnership on the outsourcing of information system functions'; Journal of Management Information Systems, 12(4), 1996.*
15. *Hoetker, Glenn P. and Mellewigt, Thomas, "Choice and Performance of Governance Mechanisms: Matching Contractual and Relational Governance to Sources of Asset Specificity" (November 17, 2004). Available at SSRN: http://ssrn.com/abstract=621742*
16. *Hyder, Kumar, Mahendra, Seigel, Heston, Gupta, Mahaboob and Subramanium. 2002. 'eSourcing Capability Model for IT enabled service providers' School of Computer Science; Carnegie Mellon University*
17. *Jaworski, B. J. 1988. Toward a theory of marketing control: Environmental context, control types, and consequences. J. Marketing 52 23–39.*
18. *Jaworski, B. J., V. Stathakopoulos, H. S. Krishnan. 1993. Control combinations in marketing: Conceptual framework and empirical evidence. J. Marketing 57(1) 57–69.*
19. *Kim, J. S. 1984. Effect of behavior plus outcome goal setting and feedback on employee satisfaction and performance. Acad. Management J. 27 139–149.*
20. *Kirsch, L. J. 1996. The management of complex tasks in organizations: Controlling the systems development process. Organ. Sci. 7(1) 1–21..*
21. *Kirsch, L. J. 1997. Portfolios of control modes and IS project management. Inform. Systems Res. 8(3) 215–239.*
22. *Kirsch, L., Sambamurthy, V., Ko, D. and Purvis, R.L. 'Controlling Information Systems Development Projects: The view from the client,' Management Science. 48:4, April 2002*
23. *Langfield-Smith, K. and Smith, D. 'Management Control Systems and Trust in Outsourcing Relationships' Management Accounting Research, 14, 2003*
24. *Lee, J. and Kim, Y. 'Effect of Partnership Quality on IS outsourcing success: Conceptual framework and empirical validation' Journal of Management Information Systems 15(4), Spring 1999*
25. *Linder, J., Sawyer, J. (2003), "Control: getting it and keeping it in business process outsourcing", Journal of Applied Corporate Finance, Vol. 15 No. 4, pp. 72-80..*
26. *Merchant, K. A. 1988. Progressing toward a theory of marketing control: A comment. J. Marketing 50(July) 40–44.*
27. *Michell, V. and Fitzgerald, G. (1997). "The IT Outsourcing Market-Place: Vendors and their Selection," Journal of Information Technology, Vol. 12, pp. 223-237.*
28. *Ouchi, W., 1979. A conceptual framework for the design of organizational control mechanisms. Manage. Sci. 25, 833–848.*
29. *Poppo, L., and T. Zenger. 2002. Do formal contracts and relational governance function as substitutes or complements? Strategic Management Journal 23(8): 707-25.*
30. *Reuer, J.J., and A. Arino. 2002. Contractual renegotiations in strategic alliances. Journal of Management 28(1): 47-68.*
31. *Rouse, Anne C. & Corbitt, Brian J. (2004). Business Process Outsourcing: Promises Promises. ABIE Source (Annual). pp 86-87*
32. *Roy, R. as quoted in The Economist. 'Back office to the world'. May03*
33. *Rustagi, S. (2004). Antecedents of success in IS outsourcing: A control theory perspective. Unpublished PhD Thesis. University of Pittsburgh*
34. *Simon, H.A. 1945. Administrative behavior, 3rd edition 1976. New York: Free Press.*
35. *Snell, S.A., Control theory in strategic human resource management: the mediating effect of administrative information; Acad. Management Journal., 35,2 (1992), 292-327*
36. *Sovie, D., and Hanson, J. (2001): The xSP Revolution, Round 2: Separating Winners From Losers, Mercer Management Consulting, http://www.mercermc.com/Perspectives/WhitePapers/Commentaries/Comm01ASP.pdf*
37. *Spekle, R., 2001. Explaining management control structure variety: a transaction cost economics perspective. Acc. Organ. Soc. 26 (4/5), 419–442.*
38. *Tannenbaum, A,, (ED,), Control in Organizations, McGraw-Hill, New York, 1968.*
39. *Whitaker, J., Bardhan, I.R., Mithas, S., Antecedents of Business Process Outsourcing in Manufacturing Plants; Proceedings of the 39th Annual Hawaii International Conference on System Sciences - Volume 08, 2006, 168.1*
40. *Williamson, O. 1985. The Economic Institutions of Capitalism. The Free Press, NY.*
41. *Withey, M., Daft, R. and Cooper, W; 'Measures of Perrow's work unit technology: an empirical assessment and a new scale,' Academy of Management Journal, 26-1, 1983*

APPENDICES

Appendix A: Reliability and Validity Statistics of the Survey Instruments

Construct	Coding	Item-to-total correlation	Factor loading
Asset specificity (physical)	ASP		
α= .911	ASP1	.781	0.877
	ASP2	.757	0.866
	ASP3	.737	0.824
	ASP4	.781	0.873
	ASP5	.730	0.807
	ASP6	.784	0.881
Asset specificity (knowledge)	ASK		
α= .919	ASK1	.784	.896
	ASK2	.956	.975
	ASK3	.928	.963
Task programmability	TP		
α= .966	TP1	.958	0.971
	TP2	.966	0.978
	TP3	.730	0.81
	TP4	.957	0.971
	TP5	.957	0.971
Output measurability	OM		
α= .951	OM1	.943	0.965
	OM2	.698	0.789
	OM3	.933	0.959
	OM4	.894	0.931
	OM5	.928	0.954

Construct	Coding	Item - to - total correlation	Factor loading
Formal control	FC		
α = .870	FC1	.844	0.98
	FC2	.665	0.75
	FC3	.942	0.94
	FC4	.858	0.982
	FC5	.040	0.948
	FC6	.921	0.952
Informal control	IC		
α = .879	IC1	.780	0.894
	IC2	.908	0.933
	IC3	.781	0.871
	IC4	.616	0.79
Outsourcing success	OS		
α = .918	OS1	.749	0.834
	OS2	.841	0.907
	OS3	.892	0.938
	OS4	.824	0.892
	OS5	.658	0.773

Appendix B: Regression Analysis Summarized

	Degree of formal control		Degree of informal control		Degree of overall control	
	B	sig. (p)	B	sig. (p)	B	sig. (p)
Asset specificity (physical) ASP	.584	.000	-.388	.000	.196	.000
Asset specificity (knowledge) ASK	- .975	.000	.718	.000	-.257	.000
Task programmability (TP)	.737	.000	-.507	.000	.230	.000
Output measurability (OM)	.971	.000	-.654	.000	.317	.0 00

Appendix C: Means Analysis Summarized

	Data Transformation	Customer Interface Services	Expert intervention
Task Characteristics			
Asset Specificity (physical)	10.575	13.5	14.3571
Asset Specificity (knowledge)	5.175	10.75	12.1429
Task Programmability	21.875	15.8929	9.9286
Output Measurability	22.5	19.0536	13.8214
Formal Control	25.55	23.9821	18.5357
Informal Control	8.65	10.3036	13.4286
Outsourcing Success	15.6	15.0179	13.1786