

# Theoretical perspectives on the outsourcing of information systems

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Critics have argued that the field of information systems (IS) lacks a coherent theoretical framework. This paper attempts to further the theoretical development of a critical and pervasive contemporary phenomenon, outsourcing of IS functions, by synthesizing four theoretical models (resource-based theory, resource-dependence theory, transaction cost theory and agency theory) that are useful for understanding determinants of a firm's outsourcing strategy. From these theoretical models, a contingency model of outsourcing is developed which can be used to direct empirical research.

## Introduction

In recent years there has been an increasing amount of attention paid to outsourcing of information systems (IS) functions in organizations. A recent survey of IS senior executives highlights outside services management as one of the six strategic management issues confronting organizations in their management of corporate systems (Clark, 1992). Another recent study by the Yankee Group indicates that by 1994 every Fortune 500 company would have considered IS outsourcing. The changing and more strategic role of outsourcing in business firms has been given much coverage in trade publications like *Computerworld*, *Datamation*, *Network World*, and *MIS Week*.

This area of study has produced a number of conceptual and practitioner-oriented articles proposing the particular outsourcing practices that would be associated with various business strategies. In addition, recent research has begun to examine the determinants of outsourcing practices from a strategic perspective. However, there has been little in the way of strong theoretical models to aid in understanding both the role of outsourcing in organizations and the determinants of various outsourcing practices. This deficiency in the literature needs to be addressed before significant progress can be made.

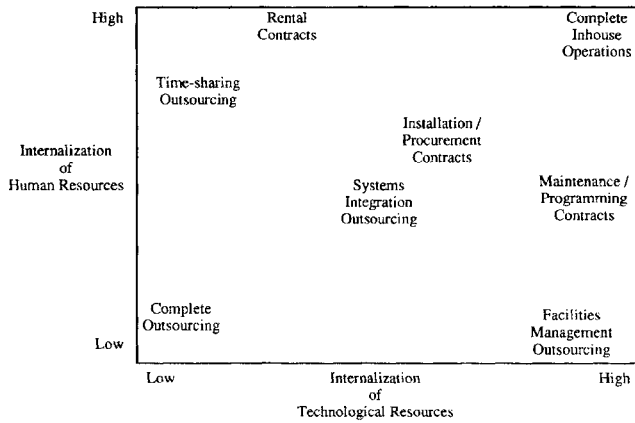
The purpose of this paper is to provide a foundation to guide future outsourcing research and practice by reviewing alternative theoretical models that have and can be applied to explain the role of outsourcing in an organization's IS management. In order to accomplish this task, we will first review the general background of outsourcing and offer a definition of outsourcing. In the

context of outsourcing, we review the components of theory construction and its importance to the outsourcing research process. We will then present four specific theoretical perspectives and evaluate them for their potential in enhancing our prescriptive understanding of the determinants of outsourcing practices. Finally, these perspectives are put together toward a contingency model of outsourcing that can be used to guide future empirical studies.

## General background on outsourcing

In this paper we define broadly outsourcing of IS functions as: the organizational decision to turn over part or all of an organization's IS functions to external service provider(s) in order for an organization to be able to achieve its goals. This definition includes the following external services: applications development and maintenance, systems operation, networks/telecommunications management, end-user computing support, systems planning and management, and purchase of application software, but excludes business consulting services, after-sale vendor services, and the lease of telephone lines. An organization can obtain these services through complete outsourcing, facilities management, systems integration, time-sharing, and other contracts (including rental, installation and procurement, and maintenance and programming).

The IS functions involve technological resources or the entire infrastructure including hardware, software and communications systems deployed, and human resources with managers, programmers, systems administrators, maintenance and related personnel involved in



**Figure 1** Alternative types of IS outsourcing (Adapted from Loh and Venkstraman, 1991)

the design, maintenance and operation of the overall IT infrastructure (Loh and Venkatraman, 1992). A rational perspective on outsourcing presumes that organizations attempt to make these decisions in their best interests.

It is important to note however, that IS outsourcing is neither a new phenomenon nor is it homogeneous. There are various kinds of outsourcing arrangements, some of which are depicted in Figure 1 (Loh and Venkatraman, 1991). Facilities management which involves high externalization (or low internalization) of human resources, and time sharing which involves externalization of technical resources, have been around for decades. However, the nature of outsourcing has evolved. Compared with the 1970s, current outsourcing practices differ in the following key ways (Aucoin, 1991; Schiffman and Loftin, 1991):

- (1) Larger companies are outsourcing although there is evidence that in the current environment size does not affect the outsourcing decision (Grover *et al.*, 1994b).
- (2) A greater range and depth of services are being outsourced.

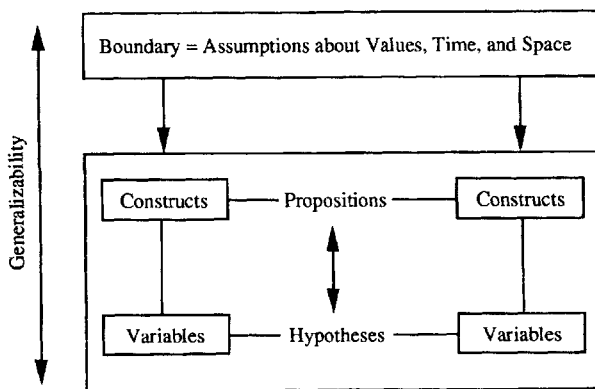
- (3) Service providers are accepting more responsibility and risk.
- (4) The nature of the relationship with the service provider is evolving and in many cases is a partnership.
- (5) Information technology intensity and complexity is higher, giving more companies the option of outsourcing in a competitive provider market.

The rapid changes in the technological base and the increasingly competitive environment have caused some companies to shift the focus of their outsourcing strategy from technology to information utilization and management. From this perspective, organizations can spend less time and resources building an internal computing infrastructure while concentrating their efforts on the effective use of information and the creation of new analytical data with which they can improve management’s responsiveness to organizational needs (Grover and Teng, 1993). Others can choose their outsourcing strategy based on their current deficiencies and the nature of the outsourcing marketplace. Such flexibility offered to corporations in today’s outsourcing environment provides the impetus for the need to develop a contingent model that facilitates evaluation and eventually prescriptions on IT outsourcing. Guidance for such a model can be obtained through theoretical perspectives in other fields.

**The role of theory in outsourcing research and practice**

Rudner (1966, p. 10) defines a theory as ‘a systematically related set of statements, including some law like generalizations, that is empirically testable’. The purpose of theory is to increase scientific understanding through a systematized structure capable of both explaining and predicting phenomena (Rudner, 1966). In more detailed terms, Bacharach (1989, p. 498) views a theory as ‘a system of constructs and variables in which the constructs are related to each other by propositions and variables are related to each other by hypotheses’. The whole system, presented in Figure 2, is bounded by the theorist’s assumptions. Dubin (1969) maintains that the notion of specific critical bounding assumptions is important because it sets the limitations in applying the theory.

The function of a theory, then, is to fulfil the objectives of prediction (knowledge of the outcome) and understanding (knowledge of the process) regarding the relationships among the variables of interest (Dubin, 1976). Thus, a good theory enables one both to predict what will happen given a set of values for certain



**Figure 2** Components of a theory (adapted from Bacharach, 1989)

variables, and to understand why this predicted value should result. Further, a good theory enables one to determine whether the theory is constructed such that empirical refutation is possible (Bacharach, 1989).

Although the primary goals between theorist researchers and practitioners may differ (Dubin, 1976), a strong theoretical model has great value to both. Practitioners are primarily concerned with the accuracy of prediction of a theoretical model in order to guide their decision-making when outsourcing: thus, an accurate theoretical model is 'practical precisely because it advances knowledge in a scientific discipline, guides research toward critical questions, and enlightens the profession of management' (Van de Ven, 1989, p. 486). On the other hand, theorist researchers have greater concern for understanding the 'why' behind the prediction. For them, a well developed theoretical model allows for testing of the model and, based on these tests, revision of the model to increase its accuracy.

Outsourcing research and practice can benefit from various theoretical notions developed in the fields of strategic management and economics. The next section will discuss the basic theoretical models in order to describe each approach and its implications for outsourcing research and practice.

### Theoretical models of outsourcing

Strategic management as a discipline is concerned with how firms formulate and implement strategies in order to accomplish a desired performance goal (Schendel and Hofer, 1979). Economic theories examine the coordination and governance of economic agents in their transactions with one another. In the context of this paper, resource-based theory (RBT), resource dependence theory (RDT) from strategic management, transaction cost theory (TCT), and agent cost theory (ACT) from economics are reviewed in order to understand the growing trend toward outsourcing of IS functions.

#### Resource-based theory (RBT)

Resource-based theory views a firm as a collection of productive resources. The growth of the firm depends upon a desire to utilize slack resources (Penrose, 1959). Rubin (1973, p. 937) further defines a resource as a 'fixed input which enables a firm to perform a particular task'. A variety of authors have generated a list of firm resources which may enable a firm to conceive of and implement strategies that improve its efficiency and effectiveness (Thompson and Strickland, 1983; Hitt and Ireland, 1986; Barney, 1991). These possible firm resources can be conveniently classified into three categories: physical capital resources, human capital

resources and organizational capital resources (Barney, 1991).

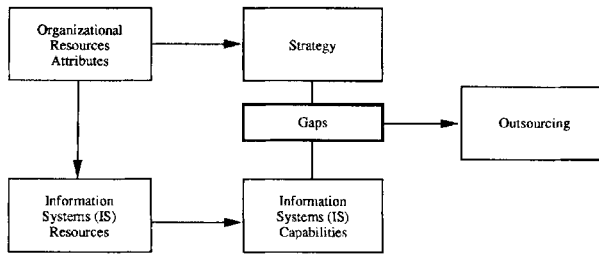
According to the resource-based theory, competitive advantage can only occur in situations of firm resource heterogeneity and firm resource immobility. Firm resource heterogeneity refers to the resources of a firm (physical, human and organizational capital) and how different these resources are across firms. Firm resource immobility refers to the inability of competing firms to obtain resources from other firms (Barney, 1991; Williams, 1992).

In order for a firm's resource to provide sustained competitive advantage, four criteria must be attributable to the resources: value (the resource must be valuable to the firm), rareness (the resource must be unique or rare among a firm's current and potential competition), imperfect immutability (the resource must be imperfectly imitable) and nonsubstitutability (the resource cannot be substituted with another resource by competing firms) (Barney, 1991).

Thus, the essence of the resource-based theory is that given resource heterogeneity and immobility and satisfaction of the requirements of value, rareness, imperfect immutability and non-substitutability, firm's resources can be a source of sustained competitive advantage. The role of resources in firm growth and (sustained) competitive advantage has been developed by Rumelt (1974), Barney (1991), Grant (1991) and Wernerfelt (1984). In other words, according to the resource-based approach to strategic management, a firm's competitive position (above normal returns) depends on its ability to gain and defend advantageous positions concerning resources important to production and distribution (Rumelt, 1974; Wernerfelt, 1984; Barney, 1986; Conner, 1991).

Thus, the critical problem faced by the firm is how to maintain the distinctiveness of its product – or for identical products, its low cost position – while not investing so much in obtaining this difference as to destroy above normal returns. Distinctiveness in the product or low costs are tied directly to distinctiveness in the inputs (resources) used to produce the product (Conner, 1991). Grant (1991) provides in his five-stage procedure a practical framework for a resource-based approach to strategy formulation: analysing the firm's resource base; appraising the firm's capabilities; analysing the profit-earning potential of the firm's resources and capabilities; selecting a strategy; and extending and upgrading the firm's pool of resources and capabilities.

Further, Grant (1991) argues that a resource-based approach to strategy is concerned not only with the deployment of existing resources and capabilities, but also with the development of the firm's resources and capabilities. In order both to fully exploit a firm's existing stock of resources and capabilities, and to develop competitive advantage, the external acquisition of comp-



**Figure 3** A resource-based perspective of outsourcing

lementary resources and capabilities may be necessary (Grant, 1991). This external acquisition (i.e., outsourcing) is known as filling gaps of resources and capabilities in the strategic management literature (Stevensen, 1976).

Filling gaps of resources and capabilities through an outsourcing strategy not only maintains the firm's stock of resources and capabilities, but also augments resources and capabilities in order to buttress and extend positions of competitive advantage as well as broaden the firm's strategic opportunity set (Grant, 1991). Figure 3 indicates the relationships among firm's strategy, organizational resources, IS resources, IS capabilities and outsourcing. This resource-based perspective for outsourcing provides a framework for examining the pool of IS resources and capabilities (i.e., financial condition, people, machinery, facilities) that may or may not be able to carry out a given strategy during the formulation phase. Thus, the resource-based theory may demonstrate the fact that strategies are not universally implementable, but are contingent on having the necessary IS resource and capability base.

According to the resource-based perspective, outsourcing is a strategic decision which can be used to fill gaps (i.e., the difference between desired capabilities and actual capabilities) in the firm's IS resources and capabilities (e.g., information quality, IS support quality, staff quality, cost effectiveness and financial condition). The firm's IS resources and capabilities may vary depending both upon the firm's resource attributes (value, rareness, imperfect imitability and non-substitutability) and upon the amount of the firm's resources allocated for IS. Thus, the outsourcing decision can be formulated as the following linear relationship:

$$\begin{aligned} \text{Outsourcing} &= f(\text{gaps in IS capabilities}) \\ \text{Gaps} &= f(\text{resource attributes, resource allocation}) \end{aligned}$$

### Resource-dependence theory (RDT)

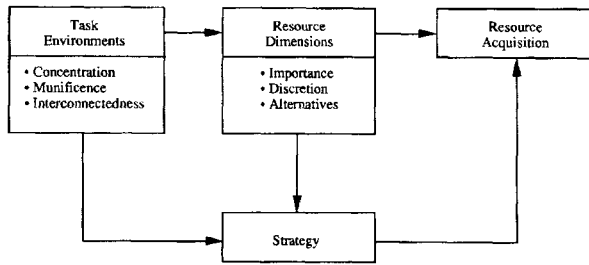
While a resource-based approach to strategic management focuses on an internal analysis of a firm in terms of resources and capabilities, a resource dependence theory focuses on the external environment of a firm and argues

that all organizations find themselves dependent, to varying degrees, on some elements in their external environments (Thompson, 1967; Aldrich and Pfeffer, 1976; Pfeffer and Salancik, 1978; Aldrich, 1976). This external dependence is usually based on the external elements' control of some resources which an organization needs, such as land, labour, capital, information, or a specific product or service (Kotter, 1979). Aldrich (1979, p. 61) states that 'environments affect organizations through the process of making available or withholding resources, and organizational forms can be ranked in terms of their efficacy in obtaining resources'. Thus, a resource-dependence theory stresses the organizational necessity of adapting to environmental uncertainty, coping with problematic interdependence, and actively managing or controlling resource flows (Pfeffer and Salancik, 1978).

According to the source and nature of the interdependence between the environment and the organization, Emery and Trist (1965) describe four types of environments: first, placid-randomized, in which the necessary resources are randomly distributed, with a constant probability of uncovering them; second, placid-clustered, in which the pattern of resources are sequentially predictable; third, disturbed-reactive, in which the distributions and probabilities of resources are created by the actions of the organizations themselves; and fourth, turbulent, in which many groups of organizations are closely interconnected and interdependent. Based upon this work, Pfeffer and Salancik (1978) provide three dimensions of organizational task environments: concentration, munificence and interconnectedness. Each dimension differs according to 'the nature and the distribution of resources in environments, with different values on each dimension implying differences in appropriate structures and activities' (Aldrich, 1976, p. 54). Concentration refers to the extent to which power and authority in the environment is widely dispersed. Munificence refers to the availability or scarcity of critical resources. Interconnectedness refers to the number and pattern of linkages among organizations.

In the context of these dimensions of organizational task environments, a resource-dependence approach to strategic management argues that organizations adopt strategies to secure access to critical resources, to stabilize relations with the environment, and to enable survival (Pfeffer and Salancik, 1978; Zeithaml and Zeithaml, 1984). These strategies depend on the task environment and might involve alignment with powerful units in the environment, outsourcing or control of weaker units. Yuchtman and Seashore (1967) have defined organizational effectiveness in terms of the organization's success in obtaining scarce and valued resources from the environment. That is, resource dependence theory maintains that organizational sur-





**Figure 4** A resource dependence perspective of outsourcing

vival is dependent on the acquisition of necessary resources from the environment.

To obtain externally resources that cannot be generated internally organizations might enter into exchange relationships with other organizations in the environment. That is, organizations alter their structures and behaviours to acquire and maintain needed resources (Ulrich and Barney, 1984). The organization is likely to attempt to form a mutually beneficial coalition. 'For example, a firm can minimize its uncertainty in supply relationships by engaging in coalition activities such as forming links with influential individuals in supplier firms, becoming partners with such firms in joint ventures, or acquiring key supplier firms' (Ulrich and Barney, 1984, p. 472). Thus, resource dependence theory (Pfeffer and Salancik, 1978), which emphasizes the dependence of organizations on their external environment, provides a useful perspective from which to examine the relationship between an organization's decision to outsource IS functions and that organization's effectiveness.

Further, Pfeffer and Salancik (1978) argue that three factors are critical in determining the external dependence of one organization on another.

First, there is the importance of the resource – the extent to which the organization requires it for continued operation and survival. The second is the extent to which the interest group has discretion over the resource allocation and use. And third, the extent to which there are few alternatives, or the extent of control over the resource by the interest group, is an important factor determining the dependence of the organization (pp. 45–46).

Pfeffer and Salancik (1978) then define the term environmental dependence as 'the product of the importance of a given input or output to the organization and the extent to which it is controlled by relatively few organizations (p. 51). Thus, the organization's dependence on any other organization (outsourcing) is determined by the importance of the resource to the organization, the number of potential suppliers, and the cost of switching suppliers.

Figure 4 shows the relationships among dimensions of organizational task environments, dimensions of

resources, firm's strategy, and resource acquisition (outsourcing). The resource-dependence perspective for outsourcing provides a framework for examining those dimensions of task environments that may determine the firm's dimensions of resources. These dimensions of resources then determine an organization's decision to outsource IS functions. Further, a firm's strategy may affect the decision to outsource IS functions, since an organization may need to obtain critical resources from external sources in order to implement its strategy. Thus, outsourcing strategy is composed of different degrees of dependence of one organization on another in order to obtain critical resources which are not available internally. Thus, outsourcing as a strategic option can be formulated as the following linear relationship:

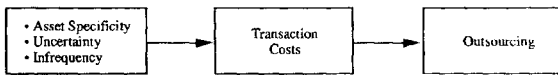
$$\begin{aligned} \text{Outsourcing} &= f(\text{dimensions of resources, strategy}) \\ \text{Dimensions of resources} &= f(\text{task environments}) \end{aligned}$$

### Transaction cost theory (TCT)

The transaction cost theory, introduced by Coase (1937) and developed principally by Williamson (1975, 1979, 1981, 1985), maintains that the organization of economic activity depends on balancing production economics, such as scale, against the cost of transacting. Transactions are here the exchanges of goods or services between economic actors, who are technologically separate units, inside and/or outside the organization (Williamson, 1981). The analysis of transactions focuses on achieving efficiency in their administration. In this perspective, organizational success depends on managing transactions efficiently. Organizations exist to mediate the economic transactions among members inside and/or outside the organization (Ulrich and Barney, 1984).

The transaction cost approach offers a method of evaluating the relative advantages of the different internal and external organization forms for handling transactions. This theory also provides an excellent framework for analysing the outsourcing option, since the essential choice here is between using an outsourcing service provider (a market mechanism) and providing in-house services (an organizational hierarchy) (Elam, 1988; Clemons and Row, 1989; Apte, 1990; Lacity and Hirschheim, 1993b). First, the theory seems to be very useful for investigating the outsourcing option as an economic reorganization of IS departments. Second, the theory appears to be useful for formulating an action plan that reduces transaction cost and thereby improves the benefit one can realize through outsourcing.

Transaction cost theory identifies two costs to be considered in determining whether the appropriate governance structure for a transaction is a market or a hierarchy: production costs and transactions costs. Out-



**Figure 5** A transaction costs perspective of outsourcing

sourcing leads to smaller production cost (i.e., the cost of delivering IS functions) primarily due to the economies of scale that a service provider enjoys in providing IS functions such as data centre and communication operations and systems development (Apte, 1990) and generally leads to higher transaction costs arising from negotiating, monitoring and enforcing contracts. Therefore, the outsourcing option can be evaluated with respect to the increase in transaction costs through a framework that examines factors which influence the magnitude of transaction costs.

Transaction costs increase as a result of three factors: asset specificity or the degree to which the transaction will produce an asset that is dedicated to a special purpose with poor alternative uses; the degree of uncertainty in the environment as it impacts the contract and its fulfilment; and infrequency of contracting, or the infrequency with which the two parties contract together (Williamson, 1985).

Asset specificity in the context of outsourcing refers to the uniqueness of the firm's hardware and/or software architectures and the skill set of IS employees. Such idiosyncratic investments would serve to increase the costs of any transactional relationship with a vendor. Uncertainty is another factor that influences transaction costs. Conditions of high uncertainty in this relationship may be a result of unpredictable market, technological, economic trends, contractual complexity and quality of outputs. These might be mitigated through a complex control structure instigated by the firm or the adoption of standards. Such mechanisms can be used to reduce opportunism but may increase costs of enforcing the transactional relationship. Also, the infrequency of contracting might increase associated transaction costs due to initial 'relationship building' during contract negotiation. Consistency of goals between the contracting parties is critical to promote this relationship. It should be recognized however, that certain IS functions tend to be inherently more 'commoditized' and can benefit from market relationships (i.e., lower asset specificity, uncertainty and higher frequency of contracting) such as transaction processing while others such as specialized application development might benefit from hierarchical relationships.

Figure 5 indicates the relationships among transaction costs, their determinants and outsourcing. Each of these factors raises the effort and cost of structuring an agreement between service receiver and provider that will assure the successful completion of the contract and its future enforcement. Based upon the factors determin-

ing the magnitude of transaction costs (or the relative tradeoff between transaction and production costs), the decision to outsource can be expressed as the following linear relationship:

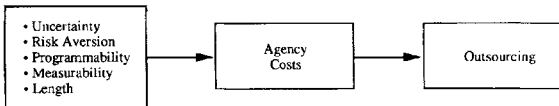
$$\begin{aligned} \text{Outsourcing} &= f(\text{transaction costs}) \\ \text{Transaction costs} &= f(\text{asset specificity, uncertainty,} \\ &\quad \text{infrequency}) \end{aligned}$$

### Agency cost theory (ACT)

The agency cost theory, developed by Ross (1973), Mitnick (1975, 1986) and Jensen and Meckling (1976), examines the reasons for principal-agent relationships and the problems inherent in them. Jensen and Meckling (1976, p. 308) define an agency relationship 'a contract under which one or more persons (principal(s)) engage another person (the agent) to perform some service on their behalf which involves delegating some decision making authority to the agent'.

The focus of the agency theory is on determining the most efficient contract (behaviour-oriented versus outcome-oriented) that governs the relationship between a principal and an agent (Eisenhardt, 1988). The choice between a behaviour-based contract (e.g., hierarchy governance, insourcing) and outcome-based contract (e.g., market governance, outsourcing) depends on the agency costs, which are the costs incurred as a result of discrepancies between the objectives of the principal and those of agents. That is, the agency costs are the sum of the monitoring costs by the principal, the bonding costs by the agent, and the residual loss of the principal. Monitoring costs are incurred by the principal in assessing the performance of the agent, bonding costs are incurred by the agent in assuring the principal of 'his' commitment and the residual loss is the loss resulting from having an agent (with a parochial utility function) perform the task.

The agency cost theory provides an excellent framework for evaluating the relative advantages of the different internal and external organization forms for handling contracts between an outsourcing service receiver and a provider. An agency cost perspective of outsourcing offers a method of examining factors which influence the magnitude of agency costs. The presumption is that organizations will base their outsourcing decisions on factors that influence agency costs. Agency costs are determined by five factors: outcome uncertainty due to government policies, economic climate, technological change, competitor actions and so on; risk aversion of the outsourcing receiver (or provider); programmability or the degree to which appropriate behaviour by the outsourcing provider can be specified in advance; outcome measurability or the extent to which



**Figure 6** An agency costs perspective of outsourcing

outcomes can be easily measured; and the length of the agency relationship (Eisenhardt, 1989). Agency costs (monitoring, bonding and residual loss) increase in outsourcing relationships with high uncertainty, high risk aversion, low programmability, low outcome measurability and greater length of relationship.

Based upon the factors determining the magnitude of agency cost, the decision to outsource may be expressed as the following linear relationship (see Figure 6):

$$\text{Outsourcing} = f(\text{agency costs})$$

$$\text{Agency costs} = f(\text{uncertainty, risk aversion, programmability, measurability, length})$$

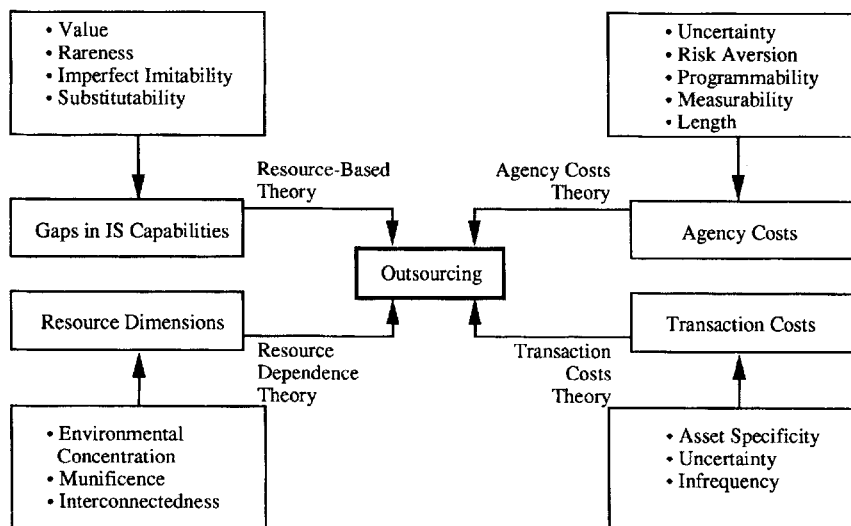
The following section integrates the theoretical perspectives discussed into a framework to guide empirical work in this area.

### Toward a contingency model for IS outsourcing

Structural contingency theory has dominated the study of organizational design and performance during the past twenty years (Hofer, 1975; Miles and Snow, 1978; Miller and Freisen, 1978; Drazin and Van de Ven, 1985; Ginsberg and Venkatraman, 1985). It is the perspective underlying the prescribed dual approach to strategic analysis (Grant and King, 1982): environmental threats and opportunities analysis, and organizational strengths and weaknesses.

Contingency perspectives on business strategy indicate that the appropriateness of different strategies depends on the competitive setting of business (Hambrick and Lei, 1985). Further, the perspectives rest on the belief that ‘no universal set of strategic choices exists that is optimal for all businesses, irrespective of their resource positions and environmental context’ (Ginsberg and Venkatraman, 1985, p. 421). Thus, effective strategies are those which achieve a fit or congruence between environmental conditions and organizational factors (Drazin Van de Ven, 1985; Venkatraman and Camillus, 1985). Fahey and Christensen (1986) present a strategy research paradigm which indicates that the central research question of strategy content is typically some variant of the following: what results arise from following strategies under different conditions? In the case of IS outsourcing, the question becomes: what results arise from following IS outsourcing strategies under different conditions? Therefore, the basic premise of contingency theory is that outsourcing strategy is only one of several types of economic restructuring by which an organization adapts to the environment (Child, 1987; Clemons and Row, 1989). Therefore, there are situations under which outsourcing may or may not be appropriate. These situations include discrepancies in IS factors, dimensions of IS resources and firm’s costs that are perceived by decision-makers as they seek to formulate the outsourcing strategy.

Figure 7 puts together the variety of contingency variables discussed earlier (in resource-based theory, resource-dependence theory, transaction costs theory and agency theory) into a conceptual model for studying outsourcing. We believe that such a framework can provide guidance in examining the various aspects of the outsourcing phenomenon in a consistent and cumulative manner.



**Figure 7** A conceptual model for studying outsourcing

### **Integrative aspects of the model**

It should be emphasized that the various theoretical concepts depicted in the model are interrelated. For instance, based on perspectives of resource-based theory and transaction costs theory, Clemons and Row (1989) examine economic reorganization and the role IT plays in it. Economic restructuring is viewed in terms of changes in the allocation and integration of strategic resources. They suggest that change in competitive position comes from leveraging an advantage or mitigating a disadvantage in critical resources. Changes in economic structure are classified by the basic ways firms can alter or redeploy their resources:

#### *Horizontal integration of resources within a market*

Firms can expand or contract within a particular market, relative to the total market size. IT contributes to increasing scale economies both as a resource by itself and as a mechanism for coordinating other resources. Due to these scale economies, there could be pressure for increased concentration of the IT resource, depending on the importance of IT to the business and its cost relative to other costs. The form concentration takes – ownership consolidation, outsourcing and cooperative supply – depends on the potential economies of integration, the initial resource positions, and the transaction costs in transferring the services of the resource.

Outsourcing strategy is adopted where the transaction costs of accessing the resources are low relative to the savings from scale economies, and where the risks of dependence are low. Smaller competitors may outsource the services of the resources from third parties who are larger players within the industry or from industries with significant overlap in the key resources.

#### *Horizontal integration of resources between markets*

Firms can expand into, or withdraw from, different markets and industries. Economic benefits may be creating scale advantages in resources that are similar in multiple markets, reducing average units costs. However, this type of economic restructuring can also create scope economies where the value of the integration is greater than the parts independently. This integration between markets can take on any form: ownership consolidation, outsourcing or cooperative agreement.

Outsourcing between markets is very common in financial services due to the high overlap in the resources required in the different markets.

#### *Vertical integration of resources*

Firms can expand into, or withdraw from, activities that are vertically related within a single value chain. Vertical resource integration refers to the transfer of goods and services along a single value chain. Unlike the horizontal integration case, vertical integration indicates that

decreased transaction costs or increased production economies leads more to resource disintegration. IT can lead to vertical disintegration (outsourcing) in access to strategic resources when a firm (compared to larger competitors or other service providers) is at a scale disadvantage in operating those resources, and it is prohibitive to acquire the resources necessary to be competitive.

While resource dependence theory, though emphasizing that much organizational action is determined by environmental conditions, recognizes the possibility of intentional adaptation to environmental conditions through management actions, resource-based theory emphasizes the necessity of critical IS resources and capabilities. Thus, an organizational decision to outsource IS functions depends both on a firm's pool of IS resources and capabilities and on environmental conditions. Pfeffer and Salancik (1978) derive three roles for management – symbolic, responsive and discretionary – to explain how organizations may act upon the environment. The degree to which the organizations outsource their IS functions can be classified by the different roles for management actions:

#### *Symbolic approach to outsourcing*

In the symbolic role, actions of an organization are unrelated to constraints. Organizational performance is determined primarily by the firm's existing IS resources and capabilities. Thus, the outsourcing strategy involves low levels of dependence on external environment.

#### *Responsive approach to outsourcing*

In the responsive role, organizational actions are developed in response to the demands of the environment. The organization acts according to the interdependencies it confronts. Here constraints and actions are directly related. It is expected here that the outsourcing option involves medium levels of dependence on external environment.

#### *Discretionary approach to outsourcing*

In the discretionary role, constraints and environments are managed to suit the interests of the organization. Management's function is to direct the organization toward more favourable environments and to manage and establish negotiated environments favourable to the organization. Unlike other approaches, this approach to outsourcing involves high levels of dependence on environment.

Thus, the decision to outsource IS functions is the result of the complex interplay of two factors: the organization's dynamic environmental conditions and the extent to which the organization needs to fill gaps in IS resources and capabilities.



### Empirical study based on the model

The model depicted provides insight, albeit preliminary, into the nature and structure of outsourcing concepts and variables. These can be used to direct inquiry into the phenomenon. For instance, propositions based on resource-based theory would suggest that organizations that have deficiencies in their information resources would seek outsourcing alternatives. These propositions could relate to a homogeneous monolithic outsourcing or to discretionary introspection of specific IS functions (i.e., applications development may be retained in-house but operations and end user computing outsourced). Similar introspection could facilitate assessment of the value, rareness, imitability and substitutability of IS resources. Based on resource-based theory, corporations that perceive these assessments in favour of their IS resources would tend to outsource. It could also be proposed that firms that follow aggressive strategies in fulfilling resource gaps tend to outsource more and have a higher risk profile of outsourcing arrangements.

Similarly, propositions based on resource dependence theory seek to examine the nature of environmental resources (i.e., vendor market) and their ability to enter into contractual or partnership arrangements with powerful vendors. Propositions examining the vendor market, vendor versus firm power (concentration of resources) and uniqueness of IT skill desired (munificence) as related to degree and nature of outsourcing would facilitate understanding from this perspective. Integrated studies that look at both firm, environment and their interaction through strategy (e.g., symbolic, responsive and discretionary approaches) can provide greater explanatory power.

Transaction cost theory examines outsourcing from an economic perspective, trading off transaction costs and production costs. Propositions based on this perspective would suggest that, since vendors possess inherent economies of scale due to production efficiency and labour specialization, outsourcing IS functions with low asset specificity (e.g., network management, operations, transaction processing) would be desirable while unique IS products such as application development and planning should be insourced. There is preliminary evidence that supports and questions these notions (e.g., Lacity and Hirschheim, 1993a; McFarlan and Nolan, 1995). Also, transaction costs increase with asset specificity, uncertainty and infrequency in the didactic relationship, thereby making outsourcing difficult.

Agency cost theory suggests that agency costs increase based on various factors. The costs of enforcing 'tight contracts' based on uncertainty, measurability, length, programmability, etc., would inhibit outsourcing. These effects would be compounded if there was a lack of goal congruence between the contracting parties.

There has been some early empirical work on some of the factors suggested. For instance, Fitzgerald and Willcocks (1994) have examined the degree of uncertainty in contractual definition. Loh and Venkatraman (1992) have studied financial determinants of outsourcing. Grover *et al.* (1994a) and Teng *et al.* (1995) have evaluated the role of strategy in pursuing a resource gap model of the outsourcing of IS functions. Based on a market approach for meeting information processing requirements, Elam (1988) proposed the use of cooperative arrangements (e.g., outsourcing) for future IS organizations in the following areas: in developing back office and support applications, the IS organization will seek cooperative arrangements (external to the organization) that result in the divestment of skills, knowledge, and technology; in developing strategic applications, the IS organization will seek cooperative arrangements (external to the organization) that result in the acquisition of new skills, knowledge, and technology.

### Conclusion

The increasing pervasiveness of IS outsourcing, the competitiveness and diversity of the vendor market and the growing interest among IS researchers systematically to examine this phenomenon, provide the impetus for this paper. The framework presented and the theoretical perspectives reviewed, both strategic and economic, provide insight into the complexity of variables that need to be studied. While making no pretensions of comprehensiveness, the framework, its concepts and interactions can guide future empirical research. While studies based on one theoretical perspective have been reported, opportunities exist to study the phenomenon in a more integrative manner, thereby facilitating a robust understanding. Future work should expand this model, identify specific and testable constructs, and propose and test hypotheses. Doing so will contribute to understanding current research and to improving future research and practice while establishing a cumulative tradition for this work.

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