Analyzing IT Outscoring Relationships as Alliances among Multiple Clients and Vendors

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Abstract

As the business environment become more uncertain and competitive, many organizations are seeking ways to gain economic efficiency and share in business and technology risk. Despite wide differences in the reference disciplines applied to outsourcing research, the vast majority of it assumes a one-to-one relationship between the client and the outsourcing vendor. This paper examines the economic, strategic, and organizational issues involved in IT outsourcing when more complex arrangements are considered — such as multi-vendor alliances, co-sourcing, and complex multi-vendor, multi-client relationships. In this paper, we identify a taxonomy of four classes of outsourcing relationships (based on how many clients and vendors are involved in the outsourcing relationship), and illustrate each with recent business examples. Grounded in this taxonomy, we develop a theoretical framework that identifies both enabling and constraining forces that may influence client firms in choosing among the four types of outsourcing relationships. This paper provides insights regarding how the variations in the nature of these outsourcing relationships may shape the benefits and risks be achieved from outsourcing, as well as the ongoing complexity of managing outsourcing relationships.

1. Introduction

While still a relatively recent phenomenon, IT outsourcing has evolved through several phases and the literature has adopted a variety of theoretical lenses to explain the phenomenon. The majority of studies on IT outsourcing presume that client firms seeking IT services act independently of each other, while IT vendors do the same. Thus the assumed relationship between client firm and IT vendor has been a simple "dyadic" one. Despite the emergence of new terminology to describe different characteristics of these relationships such as a long-term strategic alliances, partnership, rather than simple market-based contracts (Fitzgerald & Willcocks, 1994), the fact is that concepts such as alliance or partnership have been little used to describe the relationships that may exist *among* client firms seeking IT services or *among* IT vendors themselves. As we discuss below, we believe that terms such as "partnership" or "strategic alliance" have only been used to characterize simple, dyadic outsourcing relationships between a single client and IS vendor. Furthermore, these terms are heavily used today and have recently been shown to be abused (Marcolin & McLennan, 1998) by using them to describe IS relationships which have no true partnership characteristics, such as risk sharing (Aubert, Patry & Rivard, 1998).

Two recent shifts in the business world prompt the need to develop a more comprehensive vocabulary and framework for understanding IS outsourcing relationships. The first is the observed shift toward more complex outsourcing arrangements, defined here as relationships involving more than two parties. According to *an InformationWeek* survey of IT managers (Caldwell, 1998), 92% of firms were using multiple IT vendors to assist them with their work; only 8% were using just a single IT vendor. One example is the recent announcement by Bell South Telecommunications that it had entered into a ten-year outsourcing arrangement with Andersen Consulting and EDS to provide application development, operations support, network planning, and administration (Garner, 1998).

The second shift is the greater frequency of cooperative arrangements among client *or* vendor firms. This includes such arrangements as joint ventures, strategic marketing alliances, and mergers and acquisitions. While the strategic management and R&D literature has paid increasing attention to the role of such networks in enabling firms to achieve their objectives, the IT literature has minimized the importance of such collaborative arrangements (with few exceptions, such as Cross, 1995). Increasingly, however, more complex or collaborative relationships are necessary – involving multiple IS vendors working in concert with each other, and possibly working to serve multiple clients under the terms of the same contract or same relationship. We believe that such

collaborative relationships – which we will characterize below as *multi-vendor*, *co-sourcing*, and *complex* IS outsourcing relationships – are increasingly necessary as client firms prefer to develop solutions characterized by "best of breed" expertise, rather than reliance on a single, comprehensive vendor solution. In addition, the need to develop common infrastructures across multi-divisional firms or even across entire industries generates the need for incorporating many players (or actors) into the game.

This paper develops a framework for integrating recent insights in strategic management with current thinking regarding IT outsourcing. We develop and present a theoretical framework describing different classes of outsourcing relationships, and analyze why client firms seeking IT services may wish to consider more collaborative or complex outsourcing arrangements than the dyadic relationships that have often been described in the IT literature. This framework draws from prior theoretical traditions that have been used to analyze IT outsourcing behavior -- specifically transaction cost economics, agency theory, conventional economic theory, and combines them with recent insights from cooperation theory (Ring & Van de Ven, 1992). This paper does not test propositions derived from any one of these theoretical traditions; rather, it combines them in a novel way, in order to generate new insights into the benefits and risks to be obtained from an array of outsourcing relationships that transcend the simple, dyadic relationships.

2. Literature Review

This section reviews the IT outsourcing literature as well as relevant literature from fields such as economics, strategic management, and R&D that are relevant to outsourcing alliances among client firms and IT vendors. The early IT outsourcing literature has employed transaction cost economics (Williamson, 1975; Alchian & Demsetz, 1972) as the primary theoretical lens to examine IS outsourcing arrangements (Loh & Venkatraman, 1992a). For example, Gurbaxani & Whang (1991) have suggested that firms should perform specific business functions in-house only if the transaction costs associated with arranging for such services in the marketplace exceed the production cost savings to be achieved from outsourcing it. The transaction cost economics approach thus implicitly relies on issues of economies of scale to determine whether firms should contract in the marketplace for provision of IT services. This received wisdom from transaction cost economics changed in the early 1990s when — at the celebrated lead of Kodak (Loh & Venkatraman, 1992b; Applegate & Montealegre, 1991), firms recognized that the overall production costs of managing their own internal IT operations may well be reduced by outsourcing — due to considerable economies of scale available to large IT vendors such as IBM. Within a few years, many large firms were jumping on the IT "outsourcing bandwagon" (Lacity & Hirschheim, 1993), and the conventional wisdom for general managers now reversed to the notion that "we don't maintain our own power supply,

so why should we do the same for IT?" (Venkatraman & Loh, 1994). Since many general managers already perceived their IT spending to be a mere overhead cost (rather than an investment) this prompted them to believe that if IT services could be provided cheaper in the external marketplace, then "why *not* outsource?" Within a few years of Kodak's lead (Loh & Venkatraman, 1992b), the burden-of-proof shifted to internal IS management to justify why it should continue providing IT services, when economies of scale favored huge providers such as CSC and EDS (at least for data center management). As a result, a new industry was born in conducting IT benchmarking studies.

While the focus still remained on IT costs, there was a different presumption. While IT outsourcing was assumed to be what smart firms do, outsourcing research now focused on how the ideal contract could be negotiated, written, and enforced (Chaudhury, Nam & Rao, 1995). Thus agency theory became a valuable theoretical framework to analyze the relationships between a firm and the parties responsible for IT services, for example, software development (Banker & Kemerer, 1992). This perspective recognized many risks inherent in creating and managing outsourcing contracts.

Recently, the focus has shifted from characteristics of the ideal outsourcing contract to the practicalities of making outsourcing relationships work. Following several well-publicized problems of IT outsourcing failures reported in the IT press (Farrell, 1998; Fabris, 1997; Earl, 1996; CIO, 1996) managers realized the savvy that was required to manage these relationships. This research stream has identified several problems that may occur during an outsourcing relationship -- such as hidden costs, failure to implement new technology innovations, failure to pass on cost savings to the client, arguments regarding contract details and interpretation of performance metrics (Earl, 1996). This literature has focused on developing appropriate contract language and incentives to minimize or prevent such risks.

Related to this, certain researchers have begun to develop a vocabulary to describe different philosophies of managing outsourcing relationships. Fitzgerald & Willcocks (1994) have identified two extremes as "simple transactional contracts" and the "full partnership-based relations" with a range of interim relationships.[1] Not only is each pure type of outsourcing relationship appropriate for a particular set of environmental and firm conditions, but recent research has built upon this framework to suggest that trust is an

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[1] Fitzgerald & Willcocks (1994: 93) identified five types of relationships: 1) tightly-defined service contracts; 2) short flexible service contracts; 3) partnerships based on formal contracts; 4) flexible partnerships based on trust; and 5) strategic alliances.

essential pre-condition to developing such strategic alliances (Eisenhardt & Schoonhoven, 1997; Fitzgerald & Willcocks, 1994). Marcolin & McLellan (1998) also suggest that such variety in relationships are also rooted in other industry and organizational factors such as the client's business and IT objectives, the level of uncertainty in their industry, and "interpretation strictness" -- how tightly or loosely the actual contract is observed in day-to-day practice.

The language of "partnership" and "strategic alliance" has recently entered the vocabulary of casual conversation regarding IS outsourcing -- and such terms have become broadly used whether the specifics of the situation match the actual conditions specified by Fitzgerald & Willcocks (1994) for partnership or not. The IT trade press unwittingly illustrates the over-use of "partnership" and "strategic alliance" jargon when applied to IT outsourcing (Caldwell, 1988; Hellebust, 1988).[2] Academic research has drawn the same conclusion. For example, one recent study on outsourcing relationships among banks and their IT vendors described that (Marcolin & McLellan, 1998: 656):

... five of the six banks *stated* that they had a strategic partnership .... [but] regardless of the stated relationships, only three actually exhibited behaviors to support the strategic partnership label.... [Two others] often resorted to the contractual details to resolve problems without concern for reciprocal outcomes.

The language of partnerships and strategic alliance should not be taken lightly, since such labels create expectations for how client firms and IT vendors should behave, which may be difficult to meet. Nevertheless, these concepts bear further examination, because it is not only clients and IT vendor firms that may enter into long-term partnerships; vendors and firms may themselves select such arrangements. We believe there is a need to develop a comprehensive framework for describing and understanding more complex outsourcing relationships, such as multi-vendor and/or multi-client alliances. Both multi-vendor and co-sourcing arrangements are now increasingly common, as we demonstrate below.

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[2] Fitzgerald & Willcocks (1994) identified seven attributes which can lead to effective partner relationships: non-reliance on the contract as the basis of the relationship; a mutual desire to work things out and a give-and-take philosophy; the ability to work together in personal relationships terms; existence of a cultural fit between the client and vendor organizations; good treatment of the client's transferred staff; a perception that the vendor understands the client's business and problems; a fair profit for the vendor ... [to prevent against] an inadequate contract.

Table 1 identifies several recent multi-vendor outsourcing arrangements. While such multi-vendor arrangements have occurred for many years,[3] the nature of the multi-vendor relationship has been overlooked or downplayed. Perhaps this was because many initial outsourcing "mega-deals" called for total outsourcing to a single vendor (Venkatraman & Loh, 1992a; Huber, 1993). Greater recognition has recently been accorded to such multi-vendor deals. Perhaps this is due to the greater propensity of firms to engage in selective outsourcing (Lacity, Willcocks & Feeny, 1996), "smart sourcing" (Earl, 1996) or "functional outsourcing" (Grover, Cheon, & Teng, 1996). Client firms thus recognize the need to engage multiple vendors to manage all of their outsourcing needs.

The greater frequency of such multi-vendor outsourcing arrangements may be due to a variety of forces. For example, IT vendors may be changing their business strategies to focus on their own core competencies. By teaming with other IT vendors whose core competencies complement their own, IT vendors may be best able to provide comprehensive IT services to their clients. Conversely, client firms (those contracting for outsourcing services) may deliberately set a strategy of having their IT needs serviced by multiple vendors (Cross, 1995), and they may choose to make explicit in their contracts that multiple vendors actively cooperative in serving them. There are other potential reasons why the frequency and visibility of such multi-vendor arrangements are increasing, although given the paucity of research in this area, such speculation will be deferred until the paper's discussion. Whatever the underlying reasons for the greater frequency of multi-vendor outsourcing arrangements, they are now a common part of the outsourcing landscape, and firms who consider outsourcing should evaluate the additional benefits, risks, and daily challenges posed by such opportunities.

It is important to recognize that complex outsourcing arrangements may involve multiple client firms, as well as vendor firms. Client firms are themselves forming into alliances for the purpose of having greater buying power when developing new custom applications (Sharma & Yetton, 1996), or in establishing IT standards and creating infrastructure which will support future transactions (Choudhury, 1997). While the IT literature has generally neglected the use of alliances and business networks,[4] this topic has been of considerable interest to scholars from the strategic management and R&D communities. Research has shown that such alliances have been widely adopted in the biotechnology, pharmaceutical, and electronic and computer components industries (Kogut, Shan, & Walker, 1992; Tucci, 1998; Nohria & Eccles, 1992). Consistent with economic research showing that alliances are most

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[3] Kodak's 1989 outsourcing contract called for contracts with three outsourcing vendors — IBM, DEC and Businessland (Applegate & Montealegre, 1991).
[4] With the exception of research analyzing the notion of alliance *between* IT vendors and firms, (Fitzgerald & Willcocks, 1994; Marcolin & McLennan, 1998), as described above.

common in fast-growing, high-technology industries (Mariti & Smiley, 1983) such arrangements are an important way for firms to ascend a learning curve where product generations change quickly and time-to-market is critical. Jarillo (1988) has noted two types of alliances in the strategy literature: *recurrent* contracting and *relational* contracting. While similar in terms of the ongoing nature of the business relationship, *recurrent* contracting is essentially a repeated set of market transactions whereas *relational* contracting is a true alliance. The latter has a longer time frame and is grounded in trust between the parties. Other researchers have labeled such relational contracts as "value-adding partnerships" (Johnston, & Lawrence, 1988), "information partnerships" (Konsynski & McFarlan, 1990), and "hybrid market arrangements" (Malone, Yates, & Benjamin, 1988).

We propose the framework in Figure 1 as an analytic device for developing appropriate terminology and identifying distinctions between different types of IT outsourcing arrangements. While the majority of the IT outsourcing arrangements that have typically been analyzed in the literature have focused on simple, dyadic outsourcing arrangements (one client, one vendor), the framework distinguishes among three classes of multi-party arrangements: *multi-vendor* (one client, multiple vendors), *co-sourcing* (many clients, one vendor), and *complex* outsourcing (many clients, many vendors). This paper defines each class of outsourcing relationship and analyzes reasons why client firms may pursue outsourcing arrangements other than simple, dyadic relationships.

This paper will address several questions. These questions all presume the existence of a business firm ("the client") that desires to outsource some IT activities. [5]

- Why may a client firm choose to work with one or more IT vendors?
- Why may client firms band together to purchase services jointly from an IT vendor?
- Under what circumstances do multiple IT vendors collaborate for providing IT services to a client firm?
- What triggers such multi-vendor collaborations?

Through elaboration of the theoretical framework in Figure 1, we identify enabling and constraining forces that may influence a client firm to choose certain outsourcing arrangements. The remainder of this paper is organized as follows. We first briefly define

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[5] It is *not* our objective to identify whether a firm should outsource IT activities or, if it chooses to do so, which IT activities should be outsourced. Although interesting questions, these have been discussed and debated at considerable length in the IT literature.

each cell of the matrix, and offer descriptions of current outsourcing examples. With this taxonomy in mind, we analyze the forces that may enable or constrain firms from adopting outsourcing arrangements other than simple dyadic ones. We first consider the case of *multi-vendor* relationships, analyzing enabling and constraining forces that may encourage or prevent firms from seeking such relationships. Second, we consider the case of *co-sourcing* arrangements, similarly identifying both enabling and constraining forces. Since the last class of relationships -- *complex* multi-vendor, multi-client relationships are a special case of both co-sourcing and multi-vendor alliances combined, we reserve some brief comments for the additional complexities created by these arrangements.

3. Theoretical Framework

Cell 1: Simple outsourcing Relationships

(One Client, One Vendor)

A one-to-one relationship is straightforward, and has been assumed in most outsourcing research. The client relies on a single outsourcing vendor in satisfying all of its outsourcing needs, which might range from a simple (i.e. accounts payable system) to a more sophisticate task (i.e. ERP Implementation skills). Most previous academic studies in IT outsourcing, particularly those that examined the contractual risks from the transaction costs economics perspective, have treated this one-to-one relationship as the default. One reason for this bias has been that for the last several decades there have been only a few IT outsourcing vendors (EDS, IBM and Andersen Consulting) dominating the market.[6] These huge vendors have been equipped with both the advantages of market power and knowledge expertise, thus enabling them to provide their clients with a full menu of IT services.[7] Such dominance by a few huge firms has made it difficult for smaller vendors to compete; the latter often focus on specific industries (e.g., health care) or in specialized technology niches (e.g., web page design). More important, these smaller vendors had little opportunity to cooperate with the large outsourcing providers. Examples of simple dyadic outsourcing relationships abound. Continental Bank's celebrated case of outsourcing to EDS and General Dynamics' outsourcing to CSC are prototypical examples (Huber, 1994; Venkatraman & Loh, 1992a).

Cell 2: Multi-Vendor Relationships

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[6] These three vendors -- EDS, IBM and Andersen Consulting had a combined 75% market share in 1990.

(One Client, Many Vendors)

A one-to-many relationship indicates that one client uses multiple outsourcing vendors to achieve its objectives, and that division-of-labor is jointly negotiated and understood by all parties to the agreement. For instance, in 1989 Kodak fully leveraged the expertise of three outsourcing companies (IBM, Digital Equipment Corporation and Business Land) by allowing them to concentrate on their core IT services. In 1994, British Petroleum's Exploration division entered into a similar arrangement with three IT vendors to provide services in data center management, application development, and network installation and support (Cross, 1995). Recently, Chevron's IT division signed a deal, valued at about $450 million, with three outsourcing companies (EDS, GTE, and Sprint) to make a best use of each firm's specialty (EDS Press Release, 1998. Table 1 provides several very recent examples of firms entering into multi-vendor outsourcing relationships. In most cases, such a multi-vendor alliance places a heavy coordination burden on each member, as discussed below.

Cell 3: Co-Sourcing Relationships

(Many-Clients, One-Vendor)

We use the term "co-sourcing" relationship to describe a many-to-one alliance where several clients contract with a single IT vendor for services. Such buyer alliances are common for other purchase decisions and have been the focus of research in other business disciplines such as marketing (i.e. co-marketing) and management (i.e. R&D consortia). Although some drawbacks exist, three major advantages have been identified: risk-sharing and reduction, increased bargaining power, and buyer economies of scale. Both the benefits and risks of co-sourcing relationships are described in the analysis section, below.

Firms may elect to pool their needs and resources for purposes of hiring an IT vendor. This has most often been observed for new system development, when firms seek a common software solution or common infrastructure to support business transactions. Such co-sourcing alliance enables two or more firms to contract for joint delivery of IT services from a single IT vendor. Sharma & Yetton (1996) describe an example of several independent hospitals joining together to contract with a systems integrator to develop custom software. The stated objectives for collaborating on such an effort were savings in time and money for the seven hospitals

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[7] This does not necessarily mean that client firms were using "total outsourcing," (Earl, 1996; Lacity & Hirschheim, 1993), but that client firms were having their outsourcing needs met by a single vendor firm. For example, a client may be outsourcing data center management to EDS, while retaining other IS functions in-house.

participating in the alliance.[8] Choudhury (1997) identified similar arrangements when firms seek a common infrastructure for interorganizational systems. Based on his investigation of several interorganizational systems in the aircraft industry, Choudhury argued that industry competitors will seek to collaboratively develop such systems, but only when the strategic importance of the systems are low or where the size and bargaining power of the participants are low. His arguments are supported by many examples in the financial services industry -- such as Cirrus and SWIFT[9] (Steiner & Teixeira, 1990) -- as well as by evidence from the economics of technology standards (Dewan, Seidmann & Sundaresan, 1995). In principle, similar buyer alliances may also occur when firms contract for ongoing IT support services such as data center, LAN support and help desk, yet the evidence for such buyer alliances has been scant in the literature.

Cell 4: Complex Relationships

(Many Clients, Many Vendors)

We use the term "complex" relationships to characterize a many-to-many relationship that features both multiple clients *and* vendors in the same outsourcing contract. This cell can be viewed as a combination of both multi-vendor and co-sourcing relationships. The recent contract negotiated among seven insurance companies, Andersen Consulting, and GE Capital Technology Management Services provides an excellent example for this type of relationship. According to Technology Partners, Inc. (1998), Andersen Consulting teamed with GE Capital Technology Management Services to deliver a comprehensive IT solution to the seven insurers[10], yet where both vendor firms are equal partners in the contract. According to the press release provided by Technology Partners, Inc.:

Andersen Consulting will manage the overall delivery of information technology and application services and GE Capital will provide infrastructure services, including 24-hour-a-day data center operations; systems administration and maintenance of midframe environments; voice and data network management; and desktop computing and help desk support.

Comparison of Dyadic Outsourcing Relationships to Multi-Vendor Relationships

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[8] During the 1980s, purchasing alliances among small-to-medium sized hospitals became an effective strategy for hospitals to reduce their raw materials costs through economies of scale. It is not surprising, then, that the same approach would be sought for software.

[9] SWIFT refers to Society for Word-wide Financial Telecommunication , a long-term consortium of 1600 major banks for handling international funds transfer. Cirrus is a consortium of banks to allow standard ATM transactions regardless of time and the customer's location.

Moving horizontally across Figure 1 implies that firms seek outsourcing relationships that feature coordinated agreements with multiple IT vendors. As the *InformationWeek* survey revealed, more than 90% of the outsourcing clients use multiple vendors. While these data do not prove that firms have established *coordinated* or *interdependent* relationships with IT vendors, based on the many examples described in Table 1, we argue that such arrangements are becoming widespread, and that there is value in structuring such coordinated relationships with multiple IT vendors, rather than a series of *independent* contractual agreements with distinct suppliers. We attribute the cause for the increased frequency of coordinated, multi-vendor relationships to several industry trends ranging from the emergence of new IT service vendors, sub-contracting among IT vendors (Marjanovic, 1998; Elliott, 1987), and client firms' greater use of selective outsourcing (Lacity et. al, 1996). Figure 2 identifies the important enabling and constraining forces that must be considered when moving from dyadic to multi-vendor relationships. Three enabling forces -- vendor specialization, contractual flexibility, and technological flexibility -- are the drivers that may trigger a client firm to choose multi-vendor outsourcing.

Enabling Forces

Vendor specialization. One reason that the multi-vendor approach has become more popular is that IT vendors form temporary or long-term strategic alliances with their competitors (Elliott, 1987). Such an alliance may permit vendors to focus on their core IT services while allowing their non-core competencies to be managed by other vendors. Such vendor specialization in this regard is consistent with the classical economists' notion of "division of labor" which utilizes the production economies of scale (Smith, 1965). As IT vendors specialize in their core activities such as data center management or networks, they are able to reduce their variable costs by increasing their own economics of scale. A self-reinforcing cycle occurs as vendors are able to increase their number of clients, enhance their skills and reputation, and drive costs further down. Such unit cost reductions also derive from vendors accumulated experience with the technology, as captured in the notion of "learning by doing" (Arrow, 1996). The conventional wisdom in classical microeconomics assumes that benefits accrued from this experience will be eventually transferred to the clients in the form of reduced prices. Although the production economies of scale are created by the vendors, the benefits are eventually shared with the clients in the long run.

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[10] Crum & Forster, Industrial Indemnity, Coregis Group, Westchester Specialty, The Resolution Group, Constitution Reinsurance, American Re Asset Management

Reduced Transactional Risks. A significant body of transaction cost economics literature has addressed the risks of opportunism, asset specificity or lock-in problems (Williamson, 1979). Intuitively, the extent to which these risks occur can be mitigated when the client deals with multiple vendors. More precisely, the vendors will have less incentive to behave opportunistically when other vendors in the alliances are ready and willing to substitute their role to replace a non-performing vendor. Conversely, single-vendor outsourcing relationships are constrained by huge switching costs, resulting in a greater risk that the IT vendor will behave opportunistically. Also, With multiple vendors, clients may benefit from the monitoring activities performed by the vendors regarding their peers in the contract. Although multi-vendor alliances may appear to be based on cooperation, competition always exists behind the scenes (Chapais, 1995).

Technical Expertise. Clients may be attracted by the fact that a multi-vendor approach enables them to leverage "best-of-breed" expertise and technologies by being able to choose the best provider for each required IT function. Most vendors typically have their own technical specialties in some areas of IT service while lagging in other areas. This is supported by 1998 dataquest survey of 191 IT executives (Caldwell and McGee, 1998) which has revealed that technical expertise is the most important criterion to consider when selecting IT vendors while vendor's understanding of business goals was the second highest factor in vendor selection.

Constraining Forces

While some economic benefits are realized from adopting the multi-vendor approach, there are potential drawbacks. These include additional coordination costs among the client and vendors and greater contractual complexity both of which may inhibit clients from leveraging the advantages of multi-vendor alliances.

Coordination Costs. Coordination costs include the costs associated with information search, communication, and monitoring costs (Gurbaxani & Whang, 1991; Malone, Yates & Benjamin, 1988). While the first two are straightforward, monitoring costs relate to problems in principal-agent relationships (Banker & Kemerer, 1992). When the performance of outsourcing IT fails to meet the client's expectation, it is often difficult for the client to determine "whether a problem is due to negligence on the part of its supplier or to an unforeeable event" (Aubert, Patry & Rivard, 1998:688). This responsibility problem will be exacerbated when one vendor has the opportunity to point fingers at other vendors for under-performance on their past.

In dyadic outsourcing relationships such coordination costs are minimized, because there are only two parties involved. Such costs will grow -- in some cases exponentially -- as additional parties become involved in the relationship. When multi-vendor alliances do occur, such coordination becomes critical to the outcomes of the relationship, yet the costs to ensure coordination may be high. When coordination degenerates -- whether between vendor and client or among vendors -- the client's IT and business performance will likely suffer. Due to these complexities of multi-vendor arrangements, coordination costs favor the fewer vendors. This view is consistent with the "move-to-the-middle" hypothesis posed by Clemons, Reddi & Row (1993) that client firms will make greater use of purchasing goods and services externally (rather than through vertical integration). In addition, however, they will generally rely on just one or two suppliers for each good in order to minimize coordination costs (Clemons, Reddi, and Row, 1993).

Contractual Complexity. Contracts usually become more complicated, *ceteris parabis*, as the number of parties increases. As the number of parties increases, rules and responsibilities become more complex and "incomplete" contracts occur (Williamson, 1975). Incomplete contracts refer to the fact that the agent usually takes into account less information than would be optimal for him to include in the contract. The contract literature suggests that incompleteness of contracts occurs due to the presence of "complexity costs" associated with writing and implementing contracts. Economic theories have shown that as the number of parties involved in the contract increases, legal fees incurred in writing, enforcing, and litigating such contracts will increase exponentially (Grossman and Hart, 1986; Hart and Moore, 1990)

In summary, there are a total of five enabling and constraining forces that client firms and IT vendors must consider when considering outsourcing through a multi-vendor alliance, compared to the traditional dyadic relationship. Rather than depending on a simple arithmetic calculation of these forces, there may be situations where one of these multiple contingencies must over-ride or dominate other concerns (Gresov, 1989).

Comparison of Co-Sourcing Relationships to Dyadic Outsourcing Relationships

Moving vertically down Figure 1 from one client to multiple clients implies that clients seek outsourcing arrangements with firms with needs similar to their own. As the business environment becomes more uncertain and competitive, many firms seek to gain economic efficiency and share business and technology risks. In IT outsourcing practice, there is a new tendency that clients have begun to collaborate with each other to share risk and maximize their economic efficiency. Such co-sourcing arrangements may occur

for a variety of different reasons, and such arrangements may differ widely in terms of the specific functions outsourced, the length of the relationship (short-term, medium-term or permanent), and the balance of power among members. Figure 3 provides an analysis of the enabling and constraining forces for such co-sourcing arrangements.

Enabling Forces

Three primary advantages are well understood in the strategy literature regarding the formation of joint ventures: 1) risk-sharing and reduction, 2) relationship power, and 3) buyer economies of scale (Berg et al., 1982; Kent, 1991). We conjecture that these benefits can be realized by clients in teaming with other buyers whose needs are similar.

Risk-Sharing and Reduction. One stream of IT outsourcing research has been concerned with the risk factors that arise with any type of outsourcing activity. According to Aubert et al. (1998), risk factors associated with IT outsourcing can be categorized into three domains: 1) agent risk, 2) principal risk, and 3) transaction risk. We argue while most risk associated with agents and transactions are difficult for the client to control due to their exogenous nature, some of the client's potential for error due to their own inexperience (labeled as *principal risk* by Aubert et al.) can be greatly reduced by engaging in co-sourcing alliances. We believe that as more client firms participate in an outsourcing contract, the greater the pool of experience and the lower the chance of encountering this principal risk.

Relationship Power. Several critics of IT outsourcing argue that outsourcing would lead to a loss of control of the activity or assets on the part of the clients (Aubert et al, 1998; Duncan,1998). Such power decreases occur when vendors assume leadership for the IT relationship, thus limiting client's autonomy. Pfeffer (1981) has argued that power derives from control over resource dependencies. Such resource dependencies can naturally occur in IT outsourcing, as vendors take control of certain decisions and resources in the outsourcing relationship. Pfeffer also argues that one strategy to re-assert a client's power is to form coalitions of similar buyers. Such coalitions and alliances can be a effective mechanisms to obtain power due to "strength in numbers". Although client firms who choose to outsource are necessarily ceding some control to vendors, multi-client alliances should enable the clients to re-assert their own power and control -- at least vis-à-vis the vendors.

Buyer Economies of Scale. Due to lower input costs, large-scale operations usually generate cost efficiencies. Cost savings of large-volume purchasing accrue to those buyers with greater market power, due to their ability to demand volume discounts from suppliers (Porter, 1985). It is likely that co-sourcing alliances will be able to generate client economies of scale by leveraging their market power.[11] One illustration of this is that for firms presented with the option of resolving its Year 2000 problems by hiring a contractor independently versus doing so as part of an industry consortium, such firms may save considerable time and money by doing so as part of a multi-client vendor alliance, due to buyer economies of scale.

Constraining Forces

Even though co-sourcing alliances allow client firms to reduce the risks stemming from market transactions, these are not without costs. The strategic alliance literature has denoted many possible dangers associated with selecting partners, coordinating and implementing contracts, and managing post-alliance relationships. We suspect that all these factors may potentially inhibit clients' intentions to participate in co-sourcing arrangements. Among the many reasons that discourage clients to move away from any outsourcing alliance, we analyze three variables that are particularly relevant to the multi-clients IT outsourcing strategy: knowledge diffusion risk, strategic inflexibility, and client coordination costs.

Knowledge Diffusion Risk. Many outsourcing researchers have warned that while interacting with vendors, the clients could lose their competitive advantages as a result of the transfer of their key business or strategic knowledge to their vendor service (Earl, 1996; Aubert et al, 1998). This knowledge transfer risk also exists when buyers maintain an alliance relationship with others. The interdependent nature of the alliance relationship forces firms to share both their physical and human resources, which consequently creates the environment where maintaining a secrecy is almost impossible to achieve (Harrigan and Newman, 1990). Obviously, as the size of the alliance increases the potential for 'leaks' and the risk of knowledge diffusion will proportionally increase.

Strategic Inflexibility. Despite the fact that many co-sourcing alliances are project-based or short-term (Choudhury, 1997), participating clients' strategic flexibility may be constrained in more long-term or strategic alliances. Consider, for example, a long-term industry alliance to develop and maintain industry infrastructure and standards. If a single firm is already committed to participate in such an ongoing alliance, this might inhibit it from taking advantage of other, newer alliance opportunities. This is

particularly problematic when the nature of the alliance or consortium is to share common IT infrastructure. Constraints arise for two reasons: first, the remaining partners will likely object to the one firm's attempts to secede from the alliance, and second, after committing its financial resources to ongoing initiatives, the firm will find its flexibility to pursue new opportunities constrained.

Client Coordination Costs. Coordination is a necessary ingredient for any alliance success, though not a sufficient condition. Any conflict or friction that occurs in the alliance, due to a lack of coordination will not generate any synergies, but rather may result in chaos. In principle, these coordination costs increase as the number of parties to be coordinated grows. We identified above that coordination costs are comprised of search, communication, and monitoring costs (Gurbaxani & Whang, 1991). Within the context of co-sourcing relationships, such costs will be exacerbated due to the greater overhead of dealing with additional client partners (as contrasted with the prior discussion of increased *vendor* coordination costs). Client firms must beware of the additional coordination burden for identifying suitable client partners, negotiating contracts that are suitable to all parties, as well as monitoring and communicating among partners on an ongoing basis.

Combining Multi-Vendor and Co-sourcing Approaches to IT Outsourcing

Figures 2 and 3 summarized the enabling and constraining forces that occur when moving from simple dyadic relationships to multi-vendor or co-sourcing arrangements, respectively. The same benefits and risks occur in concert when the option of "complex" outsourcing relationships are considered -- here defined as combining multiple clients and multiple vendor firms into a single contract or alliance. Due to the complexity of the many benefits and risks that may occur, the outcomes of such complex relationships are difficult to predict, and are likely to be path dependent and influenced by the specific context in which they are created. The few examples of complex outsourcing relationships that exist are very recent ones -- such as the alliance among seven insurance firms, Andersen Consulting and GE Capital Technology Management Services (Technology Partners, Inc., 1998). As described earlier in our description of Cell 4, each outsourcing vendor serves a separate role and provides unique expertise to the client (insurance) firms. In terms of the actual benefits of this complex alliance, there is not yet a suitable track record to identify its outcome. We believe that such complex multi-vendor, multi-client outsourcing relationships will become more common in the future. The business climate today increasingly favors business mergers, resulting in the newly-merged firm continuing to work not only with their prior IT vendors, but additionally, in the need to hire new outsourcers specifically to manage the IT integration and consolidation issues (Linder, 1989).

Given the combination of enabling forces that may offer superior returns from such relationships, we believe that more such contracts will be announced in the future. There may be many such deals in the negotiation process already, although given the number of parties involved and the potential risks to each, clearly the process for negotiating a contract suitable to all will be long. Furthermore, there are likely to be many more such outsourcing arrangements in place than readers can easily recognize as meeting our definition of complex outsourcing. This is due to the fact that, in many cases, the press release announcing an outsourcing agreement may mention only the largest vendor. In doing so, such press releases may slight the role of smaller or secondary IT vendors who are instead treated as "sub-contractors" to the primary vendor. This tendency to overlook the smaller vendors in a multiple vendor relationship may occur, even when the terms of the outsourcing contract specify a direct relationship between the smaller vendors and the clients (rather than just a contractual relationship between the small vendors and the large vendor). One by-product of this tendency to ignore the role of these smaller vendors is that we, as researchers, have fewer tangible, well-publicized examples of these complex multi-vendor multi-client relationships.

4. Implications

This paper has surfaced some key issues for understanding IT outsourcing. First, the examples have shown that many contextual forces and implementation details of the IT outsourcing arrangement are critical -- because these are the forces that have often been overlooked when analyzing IT outsourcing arrangements. Managers should understand that IT outsourcing arrangements differ from each other in critical ways. Rather than aggregating diverse types of IT outsourcing arrangements as the initial outsourcing literature had done (Loh & Venkatraman, 1992a), it is critical to note that outsourcing arrangements differ in terms of the type of functions outsourced (Grover, Cheon & Teng, 1996), their industry contexts, their business objectives, the nature of the contract (Jarillo, 1988), the degree of interpretation strictness of the contract (Marcolin & McLennan, 1998), and whether ownership of physical or human assets change hands.

While the recent IS outsourcing research has begun to identify various ways in which outsourcing arrangements differ from each other, the fact is that in seeking to identify generalized predictors of outsourcing arrangements or their consequence, much of the literature -- particularly of the hypothesis-testing genre -- often aggregates heterogeneous situations, thus stripping these scenarios from their organizational history and context.

Implications for Managers

It is important for both IT and line managers to realize that their options are far greater than the simple types of outsourcing relationships that have been prominently displayed in the literature. Recently, the simplistic type of "total outsourcing" has fallen under a cloud of suspicion; Strassman (1995) has even derided IT outsourcing by labeling it "a game for losers." It is critical that line managers recognize the variety of choices available beyond total IS outsourcing or simple dyadic relationships. By noting that other firms have documented their experiences with more complex outsourcing relationships, mangers may be better able to understand and review the specific circumstances that enable clients and vendors to engage in multi-vendor, co-sourcing, and complex relationships, both client and vendor managers may learn vicariously from the experiences of others. In recognizing these options, this should enable managers to identify the additional opportunities, risks, and management challenges before committing themselves to a course of action. Specifically, line managers need to consider how the various enabling and constraining forces identified in Figure 2 and Figure 3 may apply to their situation. They also need to learn vicariously from other in understanding the risks of these relationships, for example in recognizing that even in co-sourcing relationships, the other "cooperating" members may be their strongest competitors.

Implications for Researchers

We believe that understanding the incentives of multiple players involved in outsourcing relationships is a critical factor for optimal relationships. As the general IS literature has begun to employ more complex theories -- such as "multiple contingency" frameworks (Gresov, 1989; Brown, 1997) for understanding how to best organize and manage IT, so must more flexible, insightful frameworks be applied to understand when, what, and how to develop workable outsourcing arrangements. Similar to research that has been undertaken on the conditions for and experiences with strategic alliances in the R&D field, considerable insight can be gained from tracking firms' experiences with a range of different IT outsourcing arrangements over time (Doz, 1996; Tucci, 1998), rather than merely seeking generalized cause-and-effect relationships through cross-sectional survey data. One example that shows the need for such longitudinal methods is the recent trend where firms that had previously outsourced have canceled these outsourcing arrangements, re-negotiated radically different contracts (sometimes with new vendors), or have decided to "re-insource" IT responsibility (Hirschheim & Lacity, 1998). This is but one example of outsourcing phenomena that could easily be overlooked by one-time (or static) cross-sectional research. In terms of conducting ongoing research on IT outsourcing we recommend that

researchers incorporate strategies such as in-depth, longitudinal comparative case studies that can capture historical and contextual information about the firm and its industry, and also the process details of how the actual outsourcing relationships is initiated, how problems are surfaced and resolved, how the relationship evolves over time, and whether the contract is renewed or terminated.

Strengths and Limitations

This paper has not examined the question of whether firms should outsource or insource their IT management; similarly, it has not examined which IT activities firms should outsource. These are issues that the IT outsourcing literature has long sought to answer, although curiously, the questions posed and the insights achieved have changed dramatically over time. Such discontinuities may perhaps be due to changes in the IT vendor marketplace, as well as changes in management philosophy and fad regarding IT outsourcing (Hirschheim & Lacity, 1998; Lacity& Hirschheim, 1993).

This paper has examined the nature of multi-party outsourcing relationships from the perspective of the outsourcing firm. Equally important are the same set of issues when viewed from the perspective of outsourcing vendors, yet surprisingly, this area remains little investigated (Gurbaxani, 1996). One possibility is that vendor firms are reluctant to discuss openly (in the academic literature or in trade publications) their unique strategies in collaboration with other vendors and clients or their downstream consequences. Little published research has attempted to provide the perspective of IT vendors regarding *their* insights as to how to structure outsourcing relationships to yield satisfied clients and vendor profits (Gurbaxani, 1996).

Future Research

One question for future research is how to construct a socially optimal client and vendor relationship. As the variety and complexity inherent in IT outsourcing relationships have increased, developing models to optimize the number of players, their responsibilities, and the nature of the contract becomes difficult, if not overwhelming. Nonetheless, the normative approach, based on game-theoretic models may generate valuable insights into reconciling conflicts and creating environments where mutual benefits are generated. We recommend that researchers build on existing work on game theory (Chaudhury, Nam & Rao, 1995) to better understand how to develop appropriate contracts.

Another avenue for developing new theories of multi-party outsourcing relationships is the social network perspective (Nohria & Eccles, 1992; Gulati, 1998). This theoretic tradition could be employed to better understand the tangible and intangible benefits for

clients and vendors in joining such relationships. As demonstrated above, multi-vendor outsourcing relationships have recently become more common. It is unclear what specific explanations account for the majority of these multi-vendor relationships-- whether these relationships are initiated by vendors themselves (as in the Andersen Consulting/GE Capital scenario) or at the request of the client (as with British Petroleum Exploration, Cross, 1995).

Some questions that require examination are whether the outsourcing marketplace has become so competitive that it is now a critical strategy for vendors to initiate such alliances *themselves*, or whether IT vendors can still pursue solo strategies, and only combine forces with other vendors' (even a competitors) at the behest of its clients. Although we have provided examples of both scenarios, further research should be undertaken to understand the genesis and frequency of such multi-vendor relationships. Given the paucity of research in this area, we withhold speculation about these causes, while recommending this as an avenue for future research.

While this paper presents a theoretical framework and draws anecdotally from published studies and corporate press releases regarding outsourcing agreements, a structured investigation of the four classes of outsourcing arrangements has not been undertaken. We strongly recommend this as a critical next step for fleshing out the enabling and constraining forces identified above. Such field research could provide validation for the enabling and constraining forces described above and may also suggest additional forces that we have not yet considered.

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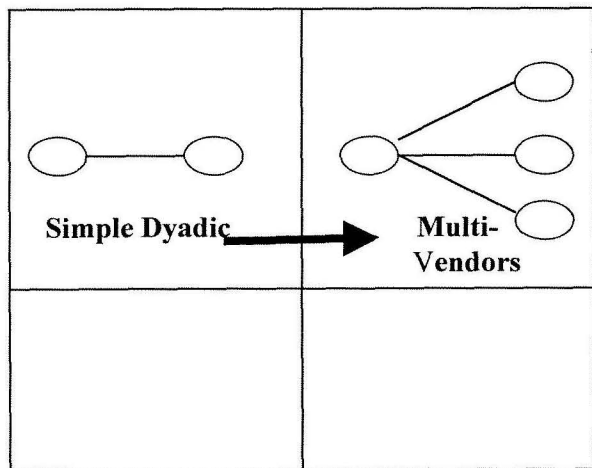
Figure 1
Taxonomy of Four Classes of Outsourcing Relationships
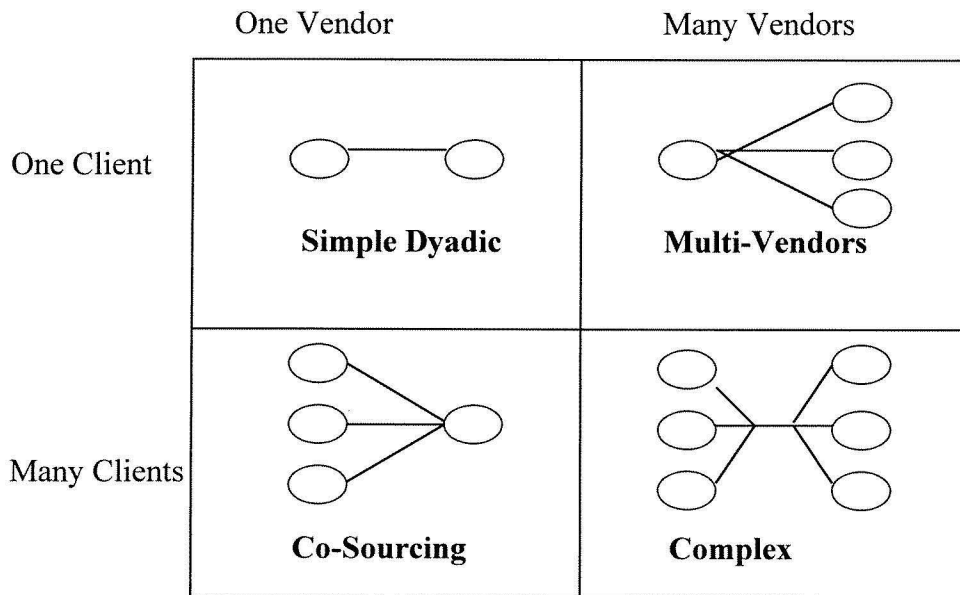
Table 1
List of Recent Multi-Vendor Alliances

Client Name	Vendor Names	Term (years)	Dollar Value
Bell South Telecommuni-cations	EDS, Andersen Consulting	10 years	$5 B (est.)
IRS	CSC, IBM, , SAIC, Unisys, and Northrop Grumman	N.A. (pending)	$ 8 B (est.)
DuPont (Chemicals)	CSC, Andersen Consulting	NA	$4 B
Ryder Systems	Andersen Consulting IBM	NA	$ 1.4 B
Chevron	EDS GTE SPRINT	5 years	$450 M
NASA	KPMG CSC	15 years	$ 186M
Department of Justice	Wang, SAIC Indus, ComTeq	5 years	$ 100M

Figure 2
Comparison of Multi-Vendor Relationships to Dyadic Outsourcing Relationships
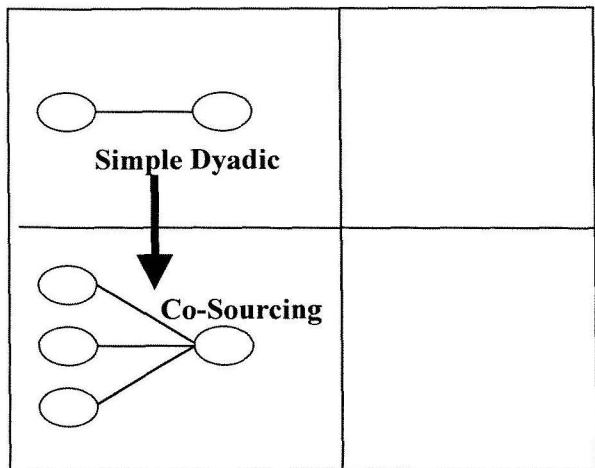

Simple Dyadic → **Multi-Vendors**

Enabling Forces

- ◆ Vendor Specialization
- ◆ Contractual Flexibility
- ◆ Technical Expertise

Constraining Forces

- ◆ Vendor Coordination Costs
- ◆ Contractual Complexity

Figure 3
Comparison of Co-Sourcing Relationships to Dyadic Relationships

Simple Dyadic

Co-Sourcing

Enabling Forces

- ◆ Risk -Sharing and Reduction
- ◆ Relationship Power
- ◆ Buyer Economies of Scale

Constraining Forces

- ◆ Knowledge Diffusion Risk
- ◆ Strategic Inflexibility
- ◆ Client-Client Coordination Costs