

## The IT Sourcing Process: A Framework for Research

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## **ACKNOWLEDGEMENTS**

The authors wish to express their gratitude to Reuben McDaniel, Brad Crisp, Sharon Dunn, Carol Brown, and Sanjay Gosain for their valuable feedback on earlier drafts of this paper. An earlier version of this paper was presented at the Annual Meetings of the Academy of Management, 2001. We are also grateful for the comments and suggestions we received from participants in that session.

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# The IT Sourcing Process: A Framework for Research

## **ABSTRACT**

The market for externally provided IT services is projected to continue its rapid expansion, to \$123B by 2002 (GartnerGroup, 1998). Partially in reaction to this growth, a significant body of research on IT outsourcing has been produced in the last decade. This paper describes a theory-based framework that is used to both locate current literature and also to identify opportunities for new theory-based research in IT sourcing. There are several key elements to the framework. First, it separates decision, negotiation and contract-execution processes from the contracts themselves and the outcomes they produce. Second, it includes a set of contextual factors -- capabilities, markets, institutional forces and prior commitments -- that both shape and are shaped by the key processes in the model and sourcing outcomes. Third, it considers buyers and suppliers of IT services simultaneously and in parallel. Using the framework, we identify many avenues for new theory-based research in IT sourcing.

Keywords: IT outsourcing, IT management, IT capabilities, IT organization, Research frameworks

ISRL categories: EG03, EL07, IB02, IB03, IB04

# The IT Sourcing Process: A Framework for Research

## INTRODUCTION

The market for externally provided IT services has grown significantly in the last decade and it is projected to continue to grow at a rapid pace (16.3% CAGR), to \$123B in 2002 (GartnerGroup, 1998). The outsourcing of IT products and services has evolved from a solution to the problem of incompetent IT management to a key competence of IT management (Sambamurthy and Zmud, 2000). "Informed buying" of services, from desktop management to application integration and IT infrastructure services, and more recently for application services, is now a "core capability" for IT management (Feeny and Willcocks, 1998). Partially in response to senior management and investor attention to IT outsourcing (Loh and Venkatraman, 1992b), a significant body of research on IT sourcing has been produced in the last decade, with the earlier work being more case-based and focusing more on descriptions (e.g., Applegate and Montealegre, 1991; Grover, et al., 1994; Huber, 1993; Lacity and Hirschheim, 1993b; McFarlan and Nolan, 1995), and more recent literature focusing more on explaining buyers decisions to outsource. The early theory-based literature on outsourcing drew heavily from the transaction cost economics perspective or theories of industrial organization (e.g., Ang and Beath, 1993; Ang and Straub, 1998; Apte, 1990; Grover, et al., 1996) and, to a lesser extent, looked at institutional effects (e.g., Ang and Cummings, 1997; Hu, et al., 1997; Loh and Venkatraman, 1992b). More recently there has been interest in applying concepts on the resource based view or social exchange theory to understand outsourcing decisions and outcomes (e.g., Kern, 1997; Kern and

Willcocks, 1996; Steensma and Corley, 2000; Teng, et al., 1995) (see Table 1 for a summary of theoretical foundations for research in IT sourcing).

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In this paper we seek to lay the groundwork for further research development in IT sourcing. Adopting Lacity and Hirschheim's (1993b) definition, we define IT sourcing as the provision of or purchase of an IT product or service that could be provided within the buyer firm. Although the use of individual contractors and temporary workers is also considered IT sourcing, in this paper we focus only on the contracting between buyer and seller firms for provision of identifiable products or services, as distinct from access to labor resources that would be directly supervised.

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In order to aid the identification of future research opportunities, we present a research framework, summarized in Figure 1, that fills three gaps left by the literature. First, prior research has focused mainly on the decision making portion and, occasionally, the contract management portion of the IT sourcing process. Our new framework includes all the stages of the IT sourcing process, and separates decision, negotiation and contract-execution processes from the contracts themselves and the outcomes they produce. Second, our framework incorporates a multitude of theoretical perspectives that have not been considered together in the past. IT outsourcing is a complex phenomenon, the investigation of which can be enhanced by an appreciation of theoretical perspectives that, in sum, paint an equally complex picture. Third,

because prior research has, by and large, ignored the supplier side of the IT service market, this framework attempts to fill this gap by considering both buyers and sellers simultaneously and in parallel. Like Cheon, Grover and Teng (1995), we believe that a strong theoretical framework is of value to both researchers and practitioners in that it allows researchers to locate a set of factors that practitioners can consider or manipulate.

Using the framework, we locate IT sourcing research accomplishments to date and identify several opportunities for new theory-based research. We believe that there are many interesting questions about the IT sourcing process that have not yet been raised. We also believe that there are many promising theoretical bases that researchers can use to study the IT sourcing process. The scope of this paper does not allow us to provide a detailed treatment of all the theoretical perspectives we touch on. Here we attempt only to point out their relevance to IT sourcing research. Table 2 summarizes the points at which our list of theoretical perspectives might be relevant.

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Our framework is meant to broaden research on IT sourcing. It is, by no means, an exhaustive model – indeed, Lacity and Willcocks (2000) propose a model with 6 phases or processes. Although the model may be applicable for other types of sourcing, we are reluctant to generalize it beyond the realm of IT sourcing without further investigation. This is because the model is framed with IT sourcing in mind. IT sourcing involves work that is highly knowledge and labor intensive. And because of the fast pace of information technology advancement, IT sourcing involves highly

uncertain project activities that are susceptible to cost or schedule overruns. IT sourcing is one quite specific contracting setting.

It is also important to point out that we are not suggesting that researchers include in their studies all the constructs and relationships we identify. But we hope that this paper will make researchers more aware of the possibility of additional influences on or contingencies relevant to the constructs on which they focus, or competing theoretical explanations for the phenomena that interest them, and justify more completely the choices they make in bounding their research.

Before discussing our theoretical framework, we will describe briefly the method by which we reviewed the IT sourcing literature. We started with a set of prominent work in the area. From the references of this set, we identified more studies. We restricted our attention to work about IT sourcing that had been published in major academic journals, journals targeting both academic and practitioner audiences, as well as several widely cited books and selected conference proceedings (see Table 3 for the list of sources included). We repeated this process of paper identification until there were no more new entries. This method yielded 143 papers and books on IT sourcing. This review method enables us to pinpoint with reasonable confidence what has been accomplished to date and, together with our framework, where future research can contribute most.

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## **A FRAMEWORK OF THE IT SOURCING PROCESS**

As can be seen in Figure 1, our framework includes several processes (decision making and negotiation processes, as well as contract management and execution processes), some constructs (contracts and outcomes), and two environmental contexts – the buyer's context and the seller's context. The framework includes many recursive or bi-directional relationships among these elements. In a nutshell, almost everything can influence almost everything else. In particular, the processes and constructs are shaped by and re-shape the contexts within which they are embedded. To enhance the readability of our framework and reduce the complications due to this embeddedness, we will start the story of the IT sourcing process with a discussion of this context and its influences on just the buyer's and seller's decision making processes, on the left of the diagram. As our discussion moves on to other processes or constructs in the diagram, we will return to the issue of context, so that we can show how each processes is related to this context. Our discussion will focus on *both* the buyer's and the seller's sides of the story, as we both summarize past research on IT sourcing and suggest some new research questions that could be pursued. As will become evident, our discussion loads heavily on the front end of the framework. This is mainly an artifact of the current research – much of it concerns the front end of the framework (viz. Table 4) – and not because it is the more important portion to study.

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## **Influences of Context on the Decision to Contract for IT Products and Services**

There are four major elements in the contexts of both the buyer and the seller: the organization's capabilities, the IT sourcing markets in which each firm transacts, the institutional forces on each firm, and each firm's prior or existing commitments.

Although we touch on the same set of constructs for both buyers and sellers, it is worth noting that the same construct may mean very different things to buyers compared with sellers, and therefore, should be theorized separately for buyers and sellers. As we argue below, all of these influence both the buyer's and seller's expectations about the risks, costs and benefits of IT sourcing. As shown in Table 5, the current research literature has devoted most of its attention to market and institutional forces on buyers.

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### **Capabilities**

There are three distinct capabilities that are of particular interest in IT sourcing decisions – the capability to deliver IT products and services, the capability to manage an IT sourcing contract, and the capability to select a partner and negotiate a contract. According to the resource-based view, firms are collections of capabilities (Penrose, 1980). If firms possess standard and valuable capabilities, they achieve competitive parity; if the capabilities are also rare and inimitable, the firms can sustain their competitive advantage by performing distinctive activities (Barney, 1991; Mata, et al., 1995). The development of such capabilities is expected to be limited by a firm's existing base of capabilities and to be shaped by its environment and its history (Grant, 1996; Teece, et al., 1997).

Technological capability is one of the most frequently cited factors to weigh in a buyer's outsourcing decision, especially in articles that are descriptive or not based in theory. Basically, an implicit or explicit argument is that sellers are sometimes more technically capable than internal IT groups. As IT has become more core and critical to businesses over the years, many buyer firms have considered outsourcing their IT functions to achieve, at the minimum, competitive parity (Mata, et al., 1995). Pushing this idea a step forward, Hopper (1990) argues that what buyers need to cultivate is the capability of applying IT, and not that of building IT, and that outsourcing the building of IT allows firms to focus on its application. These arguments are consistent with the idea that an IT function can be outsourced if its provision is not a core competence of a firm (McFarlan and Nolan, 1995; McMullen, 1990; Prahalad and Hamel, 1990; Quinn, 1999; Seger and McFarlan, 1993) and with Grant's (1996) argument that a critical capability of a firm is to integrate capabilities. In summary, the IT literature seems in agreement on the point that the IT capability of the buyer may influence the expected benefits to be gained in engaging in IT outsourcing. However, this "truism" has not been frequently studied using theories about capabilities such as those cited here.

Many authors have also noted the importance of contract management capability in the formation of buyer's expectations about the value of IT outsourcing (e.g., Alpar and Saharia, 1995; Clark, et al., 1995; Jones, 1994; Loh, 1994; Pearlson, et al., 1990; Schiffman and Loftin, 1991). Any outsourcing deal involves firms with different vested interests. According to agency theory, when there is joint production, and when the contribution of any individual party is hard to measure or monitor, contracts may not be economical (Fama, 1980; Jensen and Meckling, 1986). Besides, the ability to

coordinate work and manage service delivery across organizational boundaries requires knowledge about managing relationships. In fact, Earl (1996) warns that buyers with poor coordination skill within themselves are not likely to gain from outsourcing as expected because the same coordination skill is crucial to the success of contract management. In summary, it appears that a buyer's contract management capability might significantly influence its costs of IT outsourcing.

Perhaps the least researched capability is the capability to select partners and negotiate contracts with them. The capability to select partners and negotiate contracts may depend in part on the available stock of business and legal knowledge. It also depends on the available stock of knowledge that is specifically related to IT sourcing. According to various scholars (Lacity and Hirschheim, 1993a; Saunders, et al., 1997; Willcocks and Kern, 1998), getting the contract right is key to the success of an outsourcing deal; perhaps this capability affects the risks of sourcing decisions.

And what if the buyer or seller has strong capabilities in one of these areas? DiRomualdo and Gurbaxani (1998) suggest that firms might consider becoming a provider of IT products and services if they have the IT capabilities that are suitable for commercial exploitation. In support of this argument, Silverman (1999) showed that supplying others could be a good alternative to diversification for firms that possess rent-generating capabilities.

These observations about capabilities lead us to pose the following research questions:

**RQ1a: How do buyers and sellers assess their own and each other's capabilities when making IT sourcing decisions? Do buyers and sellers differ in how they make these assessments?**

**RQ1b: Do buyers and sellers, or how do they, monetize the effects of the three capabilities to calculate the value of a sourcing decisions? How do they assess the risks of missing capabilities? Do buyers and sellers differ in how they make these assessments?**

**RQ1c: How do the three capabilities interact with each other to affect IT sourcing decisions? Do service delivery capabilities outweigh contract management capabilities in the decision process? Are the effects the same for buyers and sellers?**

Some have also suggested that outsourcing allows buyers to access new capabilities that they do not own at present time (Judenberg, 1994; Palvia, 1995). McLellan and colleagues (1995) point out that outsourcing IT enables firms to achieve synergies between their own competencies and those of their vendors. But, according to theories of absorptive capacity, a low level of capability at one point in time may inhibit a firm's ability to learn more (Cohen and Levinthal, 1990). Buyers and sellers may have different capability development objectives. Specifically, sellers may seek to accumulate common knowledge or widely desired capabilities, but would shun deals (or expect to be highly compensated for them) that required investments in specific knowledge or other specific assets (Beath and Walker, 1998). So it is not that clear why capabilities should be available at lower than market rates, or why firm-specific capabilities should be available at all. As the research on alliances has shown, it is not that easy to manage knowledge transfer across firm boundaries at exactly the desired rate.

**RQ2a: Do buyers and sellers, or how do they, factor opportunities to learn into their sourcing decisions?**

**RQ2b: Do buyers and sellers, or how do firms, consider the role of firm specific vs. standard capabilities in their sourcing decisions?**

**RQ2c: What IT capabilities do buyers of IT services need to own and which can they routinely acquire in the market? Which IT capabilities should sellers decline to accumulate?**

**Market**

The second element of the context in our framework is the market in which the aforementioned capabilities are transacted. The market comprises a certain quantity and quality of vendors, as well as a certain quantity of buyers. As suggested by the laws of supply and demand, the price of the IT service offered in the market is a function of the quantity of the service transacted in the market, and this quantity depends in part on the number of buyers and sellers, and in part on the uniqueness of the buyers' needs and the sellers' capabilities. In general, the expectation is that larger firms will achieve some economies of scale in the delivery of IT products and services, and firms that specialize in IT products and services will achieve economies of scope. Thus, some firms may be able to deliver IT services at lower cost. Beyond production costs, buyers and sellers also consider the costs of transacting for services. Transaction cost economics argues that the uncertainty of transactions and the presence of or need for specific asset investments affects the probability of opportunistic behaviors from either side of the transaction (Pisano, 1990; Williamson, 1975; Williamson, 1981). While some relationship-specific investments might lower communication costs (Dyer, 2000) for a particular buyer/seller pair, these specific asset investments as such also make organizations vulnerable to opportunistic behaviors.

The market is one of the most studied elements in the IT sourcing context (see Table 1). The concepts of the economies of scale and scope have been well studied by

economists, and have been widely documented by IT sourcing scholars (Behara, et al., 1995; Gupta and Gupta, 1992; Poppo and Zenger, 1998; Schiffman and Loftin, 1991). In addition, the transaction cost perspective has played a major role in research in IT sourcing, albeit almost exclusively from the buyer's point of view. The most commonly cited factors in the IT sourcing context are transaction frequency (e.g., Alpar and Saharia, 1995; Aubert, et al., 1996; Klepper, 1995b), asset specificity (e.g., Alpar and Saharia, 1995; Klepper, 1995b; Loh, 1994; Nam, et al., 1994; Nam, et al., 1996; Poppo and Zenger, 1998; Venkatesan, 1992), volume and technological uncertainty (e.g., Alpar and Saharia, 1995; Loh, 1994; Marcolin and McLellan, 1998; Nam, et al., 1994; Nam, et al., 1996; Poppo and Zenger, 1998; Saarinen and Vepsäläinen, 1994; Willcocks and Fitzgerald, 1993a; Willcocks and Fitzgerald, 1993b; Willcocks, et al., 1995a). There is little doubt that expected transaction costs and production costs are key IT sourcing decision components for buyers, at least, and probably for sellers as well.

But price and opportunism are probably not the only market characteristics that buyers and sellers consider; the quality of the services being transacted is another. Often, the past performance and reputation of a seller also influence what a potential buyer expects from the seller should the two sides enter an IT sourcing engagement (Granovetter, 1985; Podolny, 1993). Gupta and Gupta (1992) point out that it is important for buyers to check the reputation and past performance of potential vendors before signing a contract. Their point is that the market influences what a potential buyer expects to pay and obtain in return from an IT sourcing arrangement; it also influences what a potential seller can be expected to do and obtain in return should it

choose to offer IT services for a client. In the IT sourcing arena, there is evidence that buyer reputation may also influence sellers who can build reputations on the strength of gaining contracts from firms with respected IT units (McFarlan and Nolan, 1995).

**RQ3a: Do buyers or sellers, or how do they, take reputation into account when making IT sourcing decisions?**

As noted above and shown in Table 5, most research on IT sourcing has focused on the costs and benefits of sourcing arrangements from the perspective of the buyer. There would appear to be significant opportunities to study the influence of the market on sellers' decisions to offer services (e.g., Michell and Fitzgerald, 1997). Economic theory suggests that sellers should prefer markets or deals where buyer power was weak, or where downstream switching costs were likely to be large because of network externalities (Shapiro and Varian, 1999). Little has been researched about the benefits for sellers to supply products or services that are complementary to those that are dominant in the market. Researchers might also consider the long-term implications of the specific investments in relationships or alliances that buyers are encouraged to make (Klepper, 1995b; McFarlan and Nolan, 1995); marketers advocate these relationships as a means of locking in buyers, maximizing the total value obtained from the buyers, influencing follow on buyer purchasing decisions, reducing information asymmetries that could be problematic for sellers in negotiations, and so forth (e.g., Boyle, et al., 1992). But from the buyer's standpoint, these seller-specific relationships may incur significant hidden costs as has been noted by Lacity and her colleagues (Lacity and Hirschheim, 1993b; Lacity and Willcocks, 1998; Lacity and Willcocks, 2000).

**RQ4a: What determines the quantity of sellers in a particular market niche?**

**RQ4b: Do buyers demand, or sellers offer, standard services at lower cost than tailored services, or not?**

**RQ4b: What are the effects of the compatibility of a seller's products with the buyer's IT architecture or the standardization of the seller's services on the probability of a deal being struck between buyer and seller?**

## **Institutional Forces**

The third component of the context is a set of institutional forces associated with groups holding a stake in the success or failure of the buyer or the seller. According to Freeman (1984), there are five main groups of stakeholders – the government, shareholders, customers, employees and society at large – that comprise the institutional environment of a firm. Each stakeholder has his or her own interests. Among all of a firm's stakeholders there will be some with interests that converge and others with interests that are in conflict. For example, in the IT sourcing context, an IT staff member in the buying organization may believe that IT outsourcing threatens his or her job security, and thus might oppose the decision; on the other hand, shareholders may believe that IT outsourcing will decrease the firm's asset base and increase the firm's return on assets, causing them to favor the decision to outsource. Because stakeholders are the sources of legitimacy and other resources, an organization needs to respond to the institutional forces exerted by these stakeholders when making IT sourcing decisions, in order to survive or to mobilize resources (Oliver, 1991; Suchman, 1995). However, because different stakeholders do not have equal importance, or some stakeholders exert more pressure than others, their concerns may enter into the decision-makers' expectations with different weights (Agle, et al., 1999). These

arguments are also consistent with resource dependence theory (Pfeffer and Salancik, 1978) and institutional theory (DiMaggio and Powell, 1983).

Institutional forces have been considered by some researchers as factors in the IT outsourcing decision (Ang and Cummings, 1997; Hu, et al., 1997; Loh and Venkatraman, 1992b) from the buyer's perspective. There is evidence that some buyer firms outsource their IT functions improving shareholders' perceptions of the firms (Hayes, et al., 2000; Palvia, 1995; Schiffman and Loftin, 1991); the internal IT department is usually treated as a cost center (Carlyle, 1989; Venkatraman, 1997), and so outsourcing it may seem to improve a firm's financial health. There is also some indirect evidence that buyers outsource because their peers do so (Hu, et al., 1997; Loh and Venkatraman, 1992b). To our knowledge researchers have not examined institutional forces on sellers and how these might influence their decisions of which deals to seek. Thus, some interesting questions to ask might be:

**RQ5a: What institutional forces bear on seller's decisions to seek particular IT sourcing deals? What regulatory threats, employee preferences or societal pressures are exerted on IT suppliers, if any?**

**RQ5b: How are institutional forces accounted for in seller decision making?**

### **Prior Commitments**

The fourth component of the context in our framework is prior commitments that constrain decision options for the buyer or seller. An organization is a nexus of contracts (Fama, 1980; Jensen and Meckling, 1986). Each and every contract to be written is embedded in the web of other existing contracts, including psychological contracts. This embeddedness is referred to as governance inseparability (Argyres and

Liebesskind, 1999). According to Argyres and Liebesskind (1999), an organization's governance options may be constrained by prior commitments and thus not every transaction will be governed in an ideal way. Examples of formal prior commitments that may impinge on IT sourcing decisions for buyers include union contracts, customer warranties, and existing leases or contracts for IT services. Less formal but still influential commitments would include technology infrastructures, architectures or standards, and business partner or employee expectations. For example, if an organization has promised its IT staff long-term employment, the decision-makers might expect that an IT sourcing decision will lead to a feeling of job insecurity among the IT staff members whose tasks are to be outsourced, leading to possible lower commitment from them in the future (Robinson, 1996; Robinson, et al., 1994; Shore and Barksdale, 1998). For sellers, prior commitments may include these same factors as well as agreements to protect data or knowledge that might preclude relationships with certain buyers or make them very costly to manage. Overall, embeddedness restricts the number of governance options that decision-makers will expect to be feasible and effective.

In the IT literature on buyer decisions, we do find acknowledgements that existing formal and informal agreements have played a role in outsourcing decisions (e.g., Apte, 1990; Clark, et al., 1995), but we are not aware of any theory-based research on this topic. For example, the outsourcing of IT functions involves the transfer of the buyer firm's IT staff to the vendor(s) or layoffs. However, while concerns such as the demoralization of the buyer firms' employees have been documented in several places (Cross, 1995; Davis and Applegate, 1995; Gupta and Gupta, 1992;

Larabee and Michaels-Barr, 1994; Martinsons, 1993; Pearlson, et al., 1990), this has not yet been the focus of a systematic empirical study.

The theory of psychological contracts argues that when an outsourcing deal involves transferring or laying off employees, employees may perceive a breach of the psychological contract (i.e., job security) they have maintained with the buyer firm (Robinson, 1996; Robinson, et al., 1994; Shore and Barksdale, 1998). In such case, the demoralization of these employees is probable, and their commitment and productivity may drop (Huber, 1993). Pearce (1998) argues that the perception of job insecurity brought forth by outsourcing may impede the development of new capabilities, because demoralized employees are less likely to embark on learning experiences. This could increase the costs or risks of a sourcing deal for both buyer and seller.

Furthermore, the developing research in IT infrastructure would seem to be applicable here (e.g., Broadbent and Weill, 1999). For example, an organization committed to a certain IT infrastructure would have to take continuity of service and compatibility of vendor technology into account when it makes a sourcing decision.

We are unaware of any research on sellers that addresses issues of prior commitments, in spite of the fact that seller, more than buyers, must need to take care not to let new contracts conflict with existing contracts. Overall, we raise the following questions:

**RQ6a: Do buyers and seller, or how do buyers and sellers, factor prior commitments, such as psychological contracts with employees, into their IT sourcing decisions? How are prior commitments monetized in decision making?**

**RQ6b: How do sellers value deals that preclude future deals?**

In sum, there are a number of theories that can explain the link between context and decision-makers' expectations, or their beliefs about the feasibility and effectiveness of any IT sourcing arrangement. Thus far, much of the research has focused on only a few perspectives, most noticeably, the transaction cost perspective. Moreover, most studies concern the buyers' side of the story, ignoring the sellers. Although the context is probably the most studied processes among all processes of IT sourcing, there is still much room for future research, as illustrated by the multitude of potential future research questions raised.

### **Sensemaking and Decision-Making Processes**

Having described the contextual factors in our framework, and illustrated how they might influence both the buyer's and seller's decision making, we turn now to a more detailed examination of the sensemaking and decision-making processes themselves. We conceive of the process of turning expectations into sourcing decisions as consisting of a set of sensemaking episodes. Expectations are, by definition, probabilities, and are thus inherently uncertain. Under situations of uncertainty, decision-makers rely on enactments of the information they have to guide their decisions. Sensemaking is a complex process that involves not only reasoning, but also the interpretation of information (Weick, 1995). Because the IT sourcing literature is predominantly grounded in transaction cost economics (Williamson, 1975; Williamson, 1981), the path from expectations to the drafting of the contracts is often characterized as a traditional vigilant decision process (Janis, 1989) – rational and

orderly, as depicted in Figure 2. According to this stream of argument, decision-makers develop a set of beliefs about their situation (based on their understanding of their context); based on these beliefs, they reason about the value of their sourcing options; this reasoning leads them to a decision to outsource the IT function (or not).

However, according to research in sensemaking, this is only one of several paths decision-makers can take. Not only do decision-makers consider information differentially based on their conceptualization of it (Barr, 1998), their cognitive biases and their values (Dutton and Ashford, 1993; Hambrick and Mason, 1984; Ocasio, 1997), they often do not follow the calculative thinking process described above. Decision-makers may go through rounds of recursive scanning, interpretation and reasoning during a decision-making process (Daft and Weick, 1984). As depicted in Figure 3, they can make decisions based on their interpretations of the context (e.g., to jump on the outsourcing bandwagon), and then attach causal logic (i.e., espoused reasons) to justify their decisions, inferring beliefs and likely expectations from this reasoning (Starbuck and Milliken, 1988). Or, as shown in Figure 4, managers' beliefs might be shaped by subordinates seeking to frame problems in such a fashion that their own expertise or other resources would be necessary for their resolution (Dutton and Ashford, 1993). Based on these beliefs, managers would make decisions and then seek to explain their decisions with after-the-fact reasons, much like the decision-making process described in the garbage can model (Cohen, et al., 1972). People favor order and rationality; past decisions and decision-making situations are often described, in retrospect, as very orderly and rational, when they are, in fact, very messy (Starbuck and Milliken, 1988; Weick, 1995). Decision-makers, in many cases, make decisions, interpret their context

and reason simultaneously. Weick (1995, p. 61) succinctly sums this up in novelist E. M. Forster's famous dictum, "how do I know what I think until I see what I say."

Considering the challenges of explicitly taking into account the effects of all the contextual factors identified above, one might argue that vigilant processes would be the exception rather than the rule, especially for buyers; sellers might be argued to at least have more opportunities to develop methods for rationally valuing IT sourcing deals.

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Insert Figures 2, 3 and 4 about here  
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The IT literature on sourcing decisions, summarized in Lacity (2000), tends to be either cross sectional or based on retrospective recollections. This constrains it from informing us much about the decision-making processes by which sourcing decisions have been made. Many studies of IT outsourcing implicitly assume that decision-making has been rational (e.g., Clark, et al., 1995; Sobol and Apte, 1995). As shown in Table 6, a few researchers have suggested that decision processes are not always purely rational. Some have argued that outsourcing decisions are more political (e.g., as in Figures 3 and 4) than rational (e.g., as in Figure 2) (Lacity and Hirschheim, 1993a; Lacity and Willcocks, 1998), and, as noted earlier, others have noted that a vigilant process is bypassed when institutional pressures make the decision a foregone conclusion (Hu, et al., 1997; Loh and Venkatraman, 1992b). But by far the emphasis in this literature has been on identifying factors considered rather than understanding the process by which the decision-making unfolded. And because research in IT sourcing

tends to focus on buyer decisions, we have even less information about the seller's decision or sense-making processes.

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Insert Table 6 about here  
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Thus, there are many opportunities for researchers in this area. Researchers might consider using the sensemaking perspective (Weick, 1995), including the more political version of sensemaking (Cohen, et al., 1972; Dutton and Ashford, 1993). Future research could also consider various contingencies under which each of the decision-making models is most likely to be followed, and how contingencies differ for buyers and sellers. Therefore, we suggest the following research questions:

**RQ7a: Does who initiates or dominates the IT sourcing decision-making affect the direction of decision-making processes? If so, how?**

**RQ7b: Do any of the contextual factors in the framework influence the effectiveness of different IT sourcing decision-making processes (e.g., do low levels of technological capability make it hard to be rational)?**

### **The Negotiation Processes**

Strictly speaking, sensemaking does not end just because an initial sourcing decision is made. But, for discussion's sake, let us assume that a decision is reached in the buyer organization to obtain some IT service from an external provider and a decision is reached in the seller organization to provide some IT service. Buyers and sellers will then come together and discuss to reach terms on which they both can agree. This negotiation period involves a bilateral learning process (Brett, et al., 1999). Both sides try to make their counterparts agree to their initial offer while adjusting what they are willing to offer. As the process unfolds, each party to the negotiation develops a

deeper understanding of both their own target and reservation points on the various issues being negotiated, as well as the target and reservation points of the other party. Some of this new information may be about one's own or the other's capabilities, the market in which they compete, institutional forces that bear on them, or either party's prior commitments. In much the same ways that the context influenced buyer and seller decisions, it influences the negotiation process. That is, the context shapes and reshapes the negotiators' expectations about the value or risk of the deal, their decisions or the offers they put on the table (see Figures 2-4), shaping the negotiation process.

In addition, negotiation processes can reshape the buyer's and seller's context. In particular, as the negotiation progresses, buyers and sellers may develop better capabilities for negotiating, or their IT capability may increase. If these new capabilities are specific to the transaction at hand, they may change the value of the transaction. Or the mere fact of being in a negotiation may influence either the buyer or seller's reputation among its stakeholders.

The literature on IT sourcing has, to date, paid only slight attention to the contract negotiation process, with the notable exception of Klepper (1995b) and some descriptive pieces (Cross, 1995; Davis and Applegate, 1995; Pearlson, et al., 1990). (See Table 7.) Some authors have considered the implications of a long negotiation process on employee morale when rumors spread (Due, 1992; Larabee and Michaels-Barr, 1994). Lacity and Willcocks (2000) identify the negotiations process as distinct from the processes of selecting partners or contract fulfillment, but their main emphasis to date has been on negotiating points that buyers should attend to, rather than on the

negotiations process itself, what contextual contingencies frame negotiations or what outcomes ensue from variations in the process, for both buyers and sellers.

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Insert Table 7 about here  
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There is a significant literature on negotiations (e.g., Bazerman and Neale, 1992; Lewicki, et al., 1999; Mnookin, et al., 2000) that could be brought to bear on the study of negotiations in IT sourcing. With this in mind, we can pose these research questions:

**RQ8a: How does the presence or absence of alternative suppliers in the market influence the buyer/seller negotiating process?**

**RQ8b: How do value or risk expectations or decisions evolve during negotiation processes? What factors affect the evolution of expectations?**

**RQ8c: What are the relative effects of the availability of accurate information about buyers and sellers contexts vs. the ability of buyers and sellers to rationally process information (rational vs. political decision making), on negotiating processes?**

**RQ8d: How do buyers obtain negotiating capability? What consequences, if any, arise if negotiating capability is not firm specific?**

### **The Contract**

The end product of the buyers/seller negotiation process is an artifact, the contract. In our framework, the contract is an artifact that arises from the negotiation process and has a strong influence (but not the only influence) on subsequent processes. Effects of the buyer's and seller's context on the contract are indirect, mediated by decision-making and negotiation processes. Contracts are a key construct in the literature on industrial economics, including transaction cost theory, agency theory, and theory of property rights (e.g., Fama, 1980; Grossman and Hart, 1986; Jensen and Meckling, 1986; Williamson, 1975; Williamson, 1981), and in law (e.g.,

Macneil, 1985). Contracts (and in particular, incomplete contracts, which are common in IT sourcing) are important in this literature because they capture governance disciplines and incentive schemes, and also because they define firm boundaries or property rights. In contrast, in the negotiations literature agreements are evaluated in terms of the total value they create for both parties.

A considerable body of IT outsourcing research has indeed focused on contracts, specifically, the characteristics of IT sourcing contracts. (See Table 8). Lacity (e.g., 1993a), Willcocks (e.g., 1998; 1995b) and their colleagues have collected and analyzed scores of outsourcing contracts. The contract is, by far, one of the most studied constructs in the IT sourcing literature because of its importance in the transaction cost economics framework. For example, Ang and Beath (1993) look at the number of contractual elements in contracts for software services that resemble hierarchical control mechanisms, as theories of relational contracting would suggest. Even researchers who do not follow transaction cost economics seem to agree that contract is a key construct in the IT sourcing process (Saunders, et al., 1997; Willcocks and Kern, 1998; Willcocks, et al., 1995b).

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Insert Table 8 about here  
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Contracts, by their presence, have some effect on the context of both the buyer and seller. In particular, as noted earlier, today's contracts may constrain future sourcing options, particularly for sellers. Thus, even though IT sourcing contracts has been well studied, there is room still for future research that incorporates the notion of governance inseparability (Argyres and Liebeskind, 1999). Moreover, contracts are an

important element of organizational structure, in the sense that they embody interpretive schemes, norms for behavior, and incentive schemes. At the same time, they are flexible in their interpretation, in that both buyers and sellers are constantly deciding what the contract mean and what value they place on their incentives, so that their effect on behavior is mediated by this interpretation. Thus, a structuration perspective (DeSanctis and Poole, 1994; Giddens, 1984) might also be used to study the downstream effects of contracts, a point to which we return below. We raise the following research questions on contracts:

**RQ9a: Do, or how do, contracts or other prior commitments shift buyer's/seller's view of their environmental context?**

**RQ9b: Are there differences in how buyers and sellers interpret contracts? What are the consequences of these differences, if any?**

**RQ9c: Do, or how do, contracts influence contract management or service delivery processes?**

**RQ9d: Are IT sourcing contracts typically integrative or distributive bargaining agreements?**

### **From Contract and Context to Contract Activities**

The completion of the contract marks the end the negotiation process and the starting point of the actual work of delivering the outsourced IT service. Willcocks and Kern (1998) specifically point out that a good contract is necessary but not sufficient for a successful outsourcing project. The success of an outsourcing deal hinges largely on how the activities unfold. In this section, we focus on two main categories of activities that are inherent in the delivery of services – contract management and the service delivery itself. Both of these activities are shaped by the contract as well as (and

possibly even more so) by the buyer and seller contexts. Both also have consequences for both buyers and sellers.

### **Contract Management Processes**

Contract management processes are those activities by which the buyer and the seller control and coordinate service delivery. There is a fair amount of IT research regarding project management behaviors in system development projects that applies to the management of IT sourcing, from both the buyer's and seller's perspectives but we will not review that literature here. For example, Kirsch (1997) has found that a certain set of coordination and control mechanisms prevail during project activities, with or without contracts. In general, control and coordination at the inter-organizational level have been studied mainly using transaction cost theory (Ouchi, 1980), agency theory (Eisenhardt, 1989), and more recently, the literature on strategic alliance (Doz, 1996; Kale, et al., 2000; Powell, 1990; Ring and Van de Ven, 1992). We argue, however, that much of the IT sourcing literature, like much of the organizational economics literature, confuses contract with governance (Beath and Walker, 1998). While governance involves actual behaviors of control and coordination, a contract is just an artifact with numbers and terms that are designed to guide or constrain governance behaviors. However related they are, the two are, conceptually, distinct constructs.

One reason why contracts are confused with governance is because the research on which many IT scholars draw has thus far focused more on elements of structure than on processes of structuration (DeSanctis and Poole, 1994; Orlikowski, 1996; Weick, 1979; Weick, 1998). Thus, instead of focusing on the control and

coordination (governance) behaviors that emerge after contracts are signed, we assume that the elements of structure captured in contracts will determine human action, ignoring the effects of human agency. Consistent with structuration theory, we argue that social structures in the buyer and seller contexts interact with the structure imposed by the contract, providing myriad opportunities for interpretation, modification and/or resistance to these structures. Thus, both contracts and contexts will undergo interpretation and alteration (Lacity and Willcocks, 1995).

According to the organizational learning perspective (Huber, 1991), as the buyers and the sellers gain more experience regarding contracting during the contract management processes, their set of potential contract management or service delivery behaviors will change. In our framework, as both parties continue to learn about their respective markets, their own IT capabilities as well as those of their exchange partners, their own capability to manage contracts, as well as how their stakeholders come to perceive the contracts similar to the IT sourcing contract at hand, the contract management processes adapt.

In the literature on organization control, it is argued that relationships can substitute for contractual coordination mechanisms (Das and Teng, 1998; Ring and Van de Ven, 1992; Willcocks and Kern, 1998), but that contract driven monitoring may undermine trust and commitment (Ghoshal and Moran, 1996), making control both more costly and less sure. With respect to IT sourcing (see Table 9), scholars have mainly argued (Doz, 1996; Kale, et al., 2000; Klepper, 1995b; Sabherwal, 1999), and research has shown (Heckman and King, 1994; Mohr and Spekman, 1994) that the relationships

between contracting parties improve when both sides are willing to work on building trust, better coordination and communication, and joint conflict resolution mechanisms.

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Insert Table 9 about here  
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It is been noted that perhaps because few firms have lawyers with expertise in the construction of relational contracts (Macneil, 1985), firms agree to contingent claims contracts but manage their day to day relationships using influence, persuasion, negotiation or other means of social control (Lacity and Willcocks, 1998). As a result, the significant body of literature on conflict management (Thomas, 1992; Wall and Callister, 1995) may be of value in characterizing contract management processes.

While authors have noted that the management of external contracts is an important capability of IT executives (Feeny and Willcocks, 1998; Sambamurthy and Zmud, 2000), we are not aware of any research has focused directly on the management of IT service contracts or on contingencies that might bear on the effectiveness of such management. In particular we note that no attention seems to be paid to how sellers are managing IT sourcing contracts. Therefore, future research can investigate:

**RQ10a: What organization structures influence buyer and seller contract management processes? How influential are contracts, and does this differ between buyers and sellers?**

**RQ10b: How does contract management capability influence the coupling between contracts and governance?**

**RQ10b: How do trust and mistrust change the contract management process? What conflict management approaches are most commonly used by buyers and sellers?**

## **Service delivery**

Service delivery comprises those activities and processes executed by both buyer and seller in order to fulfill their contractual obligations. At the least, the contract has a direct effect on service delivery in the sense that the contract outlines the scope of the work to be performed by both the seller and the buyer. Contracts also have an indirect effect on service delivery by influencing the contract management processes. An ill-managed contract affects the timeliness and quality of the product or service to be delivered. It is also likely that contextual factors, in particular accumulated capabilities, have a strong influence on service delivery.

Following the logic of structuration theory noted above, we argue that the process of service delivery itself influences both the buyer's and seller's contexts. For example, the experiences that both buyer and seller gain during service execution change their IT capabilities. It is also during service delivery that various stakeholders come face-to-face with certain repercussions of the sourcing decision. It has been found that the resistance from deskilled stakeholders is the fiercest when an IT product or service is first adopted and implemented (Barley, 1986; Barrett and Walsham, 1999; Orlikowski, 1996), i.e., at the start of the service delivery processes. Perhaps at that point stakeholders re-evaluate the threat to their power due to the sourcing decision, and exert new or last-ditch effort pressure on the decision-makers to change course. While this may have limited impact on the contracts already in place, it might certainly affect the decisions regarding potential future IT sourcing engagements, or be influential when contract change opportunities arise.

While there is a significant literature in the information systems domain on the delivery of software products, there is surprising little research on the management of externally provided information services such as help desk services, mainframe operations, and so forth. (See Table 9.) We simply note here that to our knowledge there is no research that compares the work processes or activities of buyers and sellers, or the work processes of IT professionals before and after they were outsourced, even though the assumption that these processes must differ underlies expectations of seller's production economies.

**RQ11a: What differences in service delivery activities, if any, typically ensue following IT outsourcing? What factors account for the timing or nature of these changes?**

**RQ11b: What are the effects of service delivery on stakeholder evaluations of buyers and sellers?**

**RQ11c: What effects, if any, do conflict management approaches adopted by buyers and sellers for contract management, have on service delivery?**

### **From Contract Activities to Project and Organizational Outcomes**

We believe there are, generally, three classes of outcomes associated with IT sourcing. All three are a consequence of contract management or service delivery activities, and all three influence or shape the contexts for both buyers and sellers. The first class of outcomes is the most immediate and the most obvious one – whether the specified product or service is delivered on time, at the expected cost to the seller, and at the contracted price to the buyer. In the ideal case, these outcomes should satisfy the expectations of the decision-makers by leaving the buyer with a high quality and cost effective product or service, and the seller, a good profit rate.

The second class of outcomes with which we are concerned are the slightly longer-term outcomes such as the accumulation of contract management capability by doing, as well as learning about the buyers' and sellers' contexts. These two classes of outcomes are mainly the direct and indirect results of the contract management activities that occur during the contract.

The third class of outcomes is of the longest-term, has the strongest repercussions regarding an organization's future IT sourcing decisions, and is mainly the result of the service delivery process. IT capabilities have long been argued, by the resource-based perspective, to be a source of competitive advantage for many firms (Barney, 1991; Mata, et al., 1995; Ross, et al., 1996). For this to be true, IT capabilities must be rare, valuable, and hard to imitate directly or by virtue of substitutes (Barney, 1991; Mata, et al., 1995). Others have argued that IT products or services may be necessary infrastructure for or critical complementary elements of other strategic resources. In order for sellers to produce at lower costs due to the economies of scale, their products or services must be relatively standardized, rather than rare or unique. Thus, it is difficult to see how any IT product or service that can be economically obtained from the market can also be rare, inimitable or without substitutes, and hence the source of competitive advantage directly. On the other hand, others have argued that competitive advantage arises mainly through the combination of IT capabilities with other firm-specific capabilities (Bharadwaj, 2000). If this is so, one might ask whether it is necessary to own both capabilities in order to effectively combine them? Two questions that arise are:

**RQ12a: Can buyers build strategic IT capabilities, or strategic capabilities that involve IT capabilities, if other firms provide them with relatively standardized or generic IT resources and assets?**

**RQ12b: Can sellers profit from the provision of standardized or generic IT resource and assets if these cannot be strategic for firms?**

We note that the building of IT capabilities should require the active learning by the buyers about the nuances of the IT products or services. This buyer learning is done by its taking an active part of the service delivery, much like other forms of learning by doing (Argote, et al., 1990; Huber, 1991). Thus, following an absorptive capacity argument (Cohen and Levinthal, 1990), even if buyers are not concerned about accumulating strategic IT capabilities, they might still consider whether or not outsourcing IT will affect whether they will be able to absorb knowledge that is related to IT products or services delivered by others so that they can use or apply IT products or services effectively. It has been found that organizations have not been able to retain all the knowledge that they have learned even if the knowledge is internally generated (Argote, et al., 1990). There seems to be little reason to believe that a buyer learning from an IT sourcing engagement will be any more effective, unless there are specific structures or routines in place to promote learning and knowledge retention (as there sometimes is when firms use contracting to absorb new IT skills). The presence or absence of learning structures or routines could have a strong bearing on whether the buyer will develop an increasing dependency on the seller market in the future.

The seller, on the other hand, is almost certain to be actively engaged in the delivery process, and thus benefiting from the learning that comes with the experience of doing. This accumulation of capabilities can certainly factor into the seller's ability to

attract businesses in the future. However, this is not the only factor that matters when it comes to future businesses. The sustainability of the seller's competitive advantage depends largely on its ability to continuously innovate in the high velocity IT sector (Brown and Eisenhardt, 1997). Thus, while the seller is busily exploiting its current capabilities, it must also keep an eye on the exploration of new capabilities (March, 1991). And, indeed, exploration and exploitation need not to be mutually exclusive (Katila, 2000; Weick, 1998). With good management, both can be done simultaneously (Brown and Eisenhardt, 1997). Thus, whether or not the seller falls into a competency trap (Levinthal and March, 1993) depends on how much exploration it is able to accomplish while exploiting its existing capabilities.

In sum, while the immediate outcomes of the contract execution and the contract management affect both the buyers' and sellers' contexts (and, by extension, the expectations of decision-makers from both buyer and seller organizations regarding future IT sourcing decisions), it is the actual learning that takes place during the service delivery process that may have the largest, and perhaps, the most subtle impact. This effect is not immediately observable. And because of the high velocity of technological advancement, once a seller falls into a competency trap, it is likely to discover too late that it has lost its competitive edge. As for the buyer, because of the supposedly high interdependence between the business strategy and the IT products or services being outsourced, it is also easy for it to discover too late that it has already become too dependent (and increasingly so) on the seller market. These two traps, ultimately, threaten the survival of an organization. Thus, it may be the third class of outcomes,

learning about information technology that occurs during the service delivery process, that matters the most.

There has only been a little research on actual outcomes obtained from IT sourcing. (See Table 10.) On the short-term front, there is some evidence that some, but by no means all, buyers achieve expected cost reductions (Lacity and Willcocks, 1998; Saunders, et al., 1997), and that some buyers are sufficiently satisfied to continue their relationships with their vendors (Nam, et al., 1996). Overall one might conclude that IT sourcing contracts are challenging to manage and/or fulfill. Nevertheless, a recent study shows that financial markets respond positively to announcements of outsourcing (Hayes, et al., 2000).

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Insert Table 10 about here  
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There is very little evidence relative to longer-term outcomes. While there is no direct evidence that we are aware of that sellers find IT product and service provision profitable, one might infer from the growth in this sector that entrants are persuaded that profits can be obtained. Interestingly, while knowledge transfer is one of the reasons for buyers to outsource (e.g., McFarlan and Nolan, 1995), we are unaware of any research showing that buyer (or seller) learning has occurred. Significant opportunities for research exist to use theories of organizational learning to study the long term effects of sourcing decisions on both buyer and seller IT capabilities, both in the management and delivery of services.

**RQ13a: What is the relationship between the technological capability retained in-house and the long-term benefits reaped (e.g., technological knowledge gained, competitive advantage) by the buyer firms?**

**RQ13b: How do the sellers' exploitation of current technological capabilities and exploration of new technological capabilities relate to their long-term performance (e.g., competitive advantage?)**

## **DISCUSSION**

We have used our framework to identify a number of potential research questions. This set includes, by no means, the only questions future research can address. As the IT sourcing research evolves, more interesting avenues of inquiry will arise. In particular we have identified research questions that exploit our framework, and to illustrate with these questions our point that a vast array of theories bear on the very complex phenomenon of outsourcing. In particular we have tried to make the point in our research questions that the supplier side of the framework is just as important as the buyer side. Ultimately, effective IT outsourcing requires that the agreement work for both the buyer and the seller, who are joined by the contract in the center of our framework.

Before concluding, we shift our attention briefly to the methods current research has used (see Table 11). Four points are worth mentioning here. First, the vast majority of the current research in the area is either case-based or survey-based. While there is much virtue to pursue these methods, the development of the IT sourcing research depends on the use of a wider variety of research methodologies. Second, most research considers IT sourcing as strictly the make or buy of certain IT functions (e.g., Jurison, 1995). While a small number of recent studies (e.g., Ang and Straub, 1998; Loh and Venkatraman, 1992a) have considered other measures of IT sourcing to capture the fact that sourcing is more a continuous variable, they fail to convey that the sourcing of *each specific IT function* is a continuous variable. Future research must

consider finer measures of sourcing. Third, researchers can go beyond individual and firm levels of analysis and study IT sourcing at a higher level of analysis. For example, it would be fruitful to study the evolution of the market, a segment of the market, or examine a set of stakeholders or industries. Finally, at present, the IT sourcing literature is mainly normative/prescriptive and descriptive. There is much need for more predictive studies to complement the earlier work. We also encourage future research to investigate the seller's perspective, as well as processes beyond the decision-making processes from theoretical bases including, but not restricted to, the ones mentioned above (e.g., services marketing).

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Insert Table 11 about here  
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## **CONCLUSION**

IT sourcing research has come a long way since its infancy during the late 1980s. Over the past decade, we have seen an array of descriptive and more theoretically grounded research. Unfortunately, IT sourcing has been viewed from a rather narrow set of perspectives, which can only explain part of the story that the more descriptive studies are telling. We set forth to introduce a framework that incorporates past research in the area and some of the more relevant perspectives. Using this framework, we identify an agenda for IT sourcing research. The ultimate objective is to stimulate future research that is theoretically grounded, more complete in terms of perspectives, relevant and rigorous.

That being said, we are not proposing that future research should take every perspective into account. While we encourage future research to be aware of competing arguments, we do not encourage future research to use our framework as is. A model that considers everything, while more true, is unreasonably complicated and inapplicable. Nonetheless, often times, as researchers, we become blinkered by our own perspectives because of our worldviews and training. Rather than letting the phenomenon, in this case, IT sourcing, tell us what perspectives we should be using, we come into a research project with a set of perspectives. Thus, instead of fitting models that describe the phenomenon, we often try to fit the world into the models we have in mind. We hope that by presenting a big picture framework, we will help future research move from ignoring to justifying— from simply ignoring competing arguments to justifying why one argument is more likely than the others. Until we start fairly acknowledging alternative perspectives, our research will not be complete and conclusive.

## END NOTE

This following list includes articles that are cited in the tables but not referenced otherwise:

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**Table 1. Theoretical Bases of IT Sourcing Research<sup>1</sup>**

<b>Theoretical Basis</b>	<b>Representative Work</b>
<b>Transaction Cost Economics</b>	Alpar & Saharia (1995); Ang & Beath (1993); Ang & Cummings (1997); Aubert, Rivard & Patry (1996); Beath & Walker (1998); DeLooff (1995); Grover, Cheon & Teng (1996); Heiskanen, Newman & Simila (1996); Jurison (1995); Loh (1994); Loh & Venkatraman (1995); Nam, Rajagopalan, Rao & Chaudhury (1994; 1996); Ngwenyama & Bryson (1999); Poppo & Zenger (1998); Saaksjarvi (1993); Saarinen & Vepsalsinen (1994)
<b>Other Economic Theories (e.g., Agency Theory, Production Cost)</b>	Ang & Straub (1998); Bakos & Bynjolfsson (1993a, b); Chaudhury, Nam & Rao (1992; 1995); Clemons & Reddi (1993); Hayes, Hunton & Reek (2000); Loh & Venkatraman (1992b); Nelson, Richmond & Seidmann (1996); Richmond & Seidmann (1993); Richmond, Seidmann & Whinston (1992); Whang (1992)
<b>Resource Based View / Core Competence</b>	Cronk & Sharp (1995); King (2001); Slaughter & Ang (1996); Steensma & Corley (2000); Teng, Cheon & Grover (1995); Willcocks, Fitzgerald & Feeny (1995)
<b>Social Exchange / Trust / Other Relationship-Related Theories</b>	Kern (1997); Kern & Willcocks (1996; 2000); Klepper (1992; 1995a, b); Lasher, Ives & Jarvenpaa (1991); Lee (2001); Lee & Kim (1999); Marcolin & McLellan (1998); McLellan, Marcolin & Beamish (1995); Sabherwal (1999); Willcocks & Choi (1995); Willcocks, Fitzgerald & Lacity (1996)
<b>Others</b>	Buchowicz (1991); Heckman & King (1994); Hu, Saunders & Gebelt (1997); Lacity & Hirschheim (1993); Lacity & Willcocks (1995); Lin & Shao (2000); Loh & Venkatraman (1992a)

<sup>1</sup> About half of the papers reviewed for this paper do not have any specific theoretical basis, and are not included in this table.

**Table 2. Theoretical Perspectives Relevant to the IT Sourcing Process**

Constructs	Theoretical Perspectives	
Context (Theoretical Perspective – Organizational Learning)	Context <ul style="list-style-type: none"> <li>• Capabilities</li> <li>• Market</li> <li>• Institutional Forces</li> <li>• Prior Commitments</li> </ul>	Traditional Economics (Production Costs) Transaction Cost Economics Institutional Theory Theories on Social Influences Resource Dependence Theory
	Decision-Makers' Expectations	Psychological Contract Theories on Property Rights Agency Theory Governance Inseparability
	Espoused Reasons	Transaction Cost Economics
	Decisions	Sensemaking Garbage Can Model Social Networks
	Contract	Negotiation Transaction Cost Economics Governance Inseparability Legal Theories
	Contract	Transaction Cost Economics Structuration Theory Agency Theory
	Project Activities <ul style="list-style-type: none"> <li>• Contract Management Processes</li> <li>• Service Delivery</li> </ul>	Organizational Learning Resource-Based View Path Dependence
	Outcomes <ul style="list-style-type: none"> <li>• Immediate Project Outcomes</li> <li>• Contract Management Capabilities</li> <li>• Long-term IT Capabilities</li> </ul>	

**Table 3. Sources of Research Articles on IT Sourcing<sup>2</sup>**

	<b>Journal Titles</b>
<b>IS Research Oriented Journals</b>	Accounting, Management & Information Technology Communications of the ACM European Journal of Information Systems Information & Management International Journal of Information Management Information Resources Management Journal Information Systems Research Journal of Information Systems Journal of Information Technology Journal of Management Information Systems Journal of Organizational Computing Journal of Strategic Information Systems MIS Quarterly
<b>Other Research Oriented Journals</b>	Academy of Management Journal California Management Review Decision Sciences Decision Support Systems European Journal of Operational Research European Management Journal IEEE Transactions on Engineering Management Industrial Marketing Management Long Range Planning Management Science Organization Science Strategic Management Journal
<b>Conference Proceedings</b>	European Conference on Information Systems Hawaii International Conference on System Sciences International Conference on Information Systems Conference on Outsourcing of Information Systems Services Decision Sciences Institute Annual Meeting

<sup>2</sup> The original list also includes Harvard Business Review, Information Systems Management, Journal of Systems Management, and Sloan Management Journal, but articles appearing in these journals are generally more practitioner-oriented than research oriented, as are most articles from California Management Review. Book chapters and books are included but not listed above in the interest of conserving space.

**Table 4. Main Areas of Interest of IT Sourcing Research**

Area of Interest	Representative Work
<b>Context / Decision Making</b>	Alpar & Saharia (1995); Ang & Cummings (1997); Ang & Straub (1998); Apte & Mason (1995); Apte et al. (1997); Arnett & Jones (1994); Aubert, Rivard & Patry (1996); Buchowicz (1991); Buck-Lew (1992); Chaudhury, Nam & Rao (1992; 1995); Cheon, Grover & Teng (1995); Clark & Zmud (1993); Clark, Zmud & McCray (1995); Cronk & Sharp (1995); DeLooff (1995); Grover, Cheon & Teng (1994; 1996); Goo, Kishore & Rao (2000); Gurbaxani (1996); Hirschheim & Lacity (2000); Hu, Saunders & Gebelt (1997); Jurison (1995); Kelter & Walstrom (1993); Kern & Willcocks (1996); King (2001); King & Malhotra (2000); Lacity & Hirschheim (1993; 1995); Lacity & Willcocks (1995); Lee & Kim (1997); Loh (1994); Loh & Venkatraman (1992a, b; 1995); Marcolin & McLellan (1998); McLellan, Marcolin & Beamish (1995); Michell & Fitzgerald (1997); Nam, Chaudhury & Rao (1995); Nam, Rajagopalan, Rao & Chaudhury (1994; 1996); Nelson, Richmond & Seidmann (1996); Ngwenyama & Bryson (1999); Palvia (1995); Pennington & Woolcock (1995); Peppard & Ward (1999); Poppo & Zenger (1998); Reponen (1993); Richmond, Seidmann & Whinston (1992); Saaksjarvi (1993); Saarinen & Vepsalsinen (1994); Saunders, Gebelt & Hu (1997); Schiffman & Loftin (1991); Slaughter & Ang (1996); Smith, Mitra & Narasimhan (1998); Sobol & Apte (1995); Teng, Cheon & Grover (1995); Willcocks & Fitzgerald (1993a, b); Willcocks, Fitzgerald & Feeny (1995); Willcocks, Fitzgerald & Lacity (1996); Willcocks, Lacity & Fitzgerald (1995)
<b>Negotiation</b>	Heiskanen, Newman & Simila (1996)
<b>Contract</b>	Ang & Beath (1993); Bakos & Brynjolfsson (1993a, b); Harris, Giunipero & Hult (1998); Martinsons (1993); Richmond & Seidmann (1993); Steensma & Corley (2000); Whang (1992); Willcocks, Lacity & Fitzgerald (1995); Willcocks, Lacity & Kern (1999)
<b>Project Activities</b>	Beath & Walker (1998); Collins & Mullen (1995); Heckman & King (1994); Kern (1997); Kern & Willcocks (2000); Klepper (1992; 1995a, b); Lasher, Ives & Jarvenpaa (1991); Lee (2001); Lee & Kim (1999); Lin & Shao (2000); Sabherwal (1996); Willcocks & Choi (1995); Willcocks, Lacity & Fitzgerald (1995)

**Table 5. Research Literature on IT Sourcing Context**

<b>Main Factors</b>	<b>Representative Work</b>
<b>Capabilities</b>	
<b>Buyer's Side</b>	
Contract management and Technical capabilities	Willcocks & Kern (1998); Clark, Zmud & McCray (1995)
Capability to make accurate assessments	Pennington & Woolcock (1995); Willcocks, Fitzgerald & Lacity (1996)
<b>Seller's Side</b>	???
<b>Market</b>	
<b>Buyer's Side</b>	
Production costs and transaction costs	Ang & Cummings (1997); Ang & Straub (1998); Cheon, Grover & Teng (1995); Goo, Kishore & Rao (2000); Grover, Cheon & Teng (1994; 1996); Loh & Venkatraman (1992b); McLellan, Marcolin & Beamish (1995); Nelson, Richmond & Seidmann (1996); Poppo & Zenger (1998)
Relationships and trust	Nam, Rajagopalan, Rao & Chaudhury (1994); Nam, Rajagopalan, Rao & Chaudhury (1996)
Desire for flexibility	Buck-Lew (1992); Slaughter & Ang (1996)
Coordination costs, uncertainties and other external factors are key factors	Alpar & Saharia (1995); Apte & Mason (1995); Aubert, Rivard & Patry (1996); Jurison (1995); Kern & Willcocks (1996); Loh (1994); Loh & Venkatraman (1995); Marcolin & McLellan (1998); Nam, Rajagopalan, Rao & Chaudhury (1994); Ngwenyama & Bryson (1999); Richmond, Seidmann & Whinston (1992); Saarinen & Vepsäläinen (1994)
Design of the bidding processes	Chaudhury, Nam & Rao (1992; 1995); Nam, Chaudhury & Rao (1995)
Access to scarce resources	Apte et al. (1997); Clark, Zmud & McCray (1995); Michell & Fitzgerald (1997)
<b>Seller's Side</b>	
Entry barriers	Michell & Fitzgerald (1997)
<b>Institutional Forces</b>	
<b>Buyer's Side</b>	
Internal Forces	
Match with strategic intent and core competence	Cronk & Sharp (1995); Gurbaxani (1996); King (2001); Saaksjarvi (1993); Willcocks, Fitzgerald & Feeny (1995)
Different stakeholders' perceptions of IT performance and unmet expectations	Buchowicz (1991); Hirschheim & Lacity (2000); Hu, Saunders & Gebelt (1997); Peppard & Ward (1999); McLellan, Marcolin & Beamish (1995); Teng, Cheon & Grover (1995)
Others	Arnett & Jones (1994); Reponen (1993); Smith, Mitra & Narasimhan (1998)
External Forces	
Government and peer influences	Ang & Cummings (1997); Hu, Saunders & Gebelt (1997); Loh & Venkatraman (1992a)
<b>Seller's Side</b>	
Match with strategic intent	Gurbaxani (1996)
<b>Prior Commitments</b>	
<b>Buyer's Side</b>	???
<b>Seller's Side</b>	???

**Table 6. Research Literature on Alternative IT Sourcing Decision Making Processes**

<b>Alternative Decision Making Process</b>	<b>Representative Work</b>
<b>Buyer's Side</b>	
Outsourcing decisions involve more than just transaction cost considerations; they also involve politics	DeLooff (1995); Lacity & Hirschheim (1993; 1995); Lacity & Willcocks (1995); Palvia (1995); Willcocks & Fitzgerald (1993a); Willcocks, Lacity & Fitzgerald (1995)
Mimicry	Hu, Saunders & Gebelt (1997); Loh & Venkatraman (1992)
Knowing what factors are important does not mean that those factors are considered in an outsourcing decision	Kern & Willcocks (1996)
<b>Seller's Side</b>	???

**Table 7. Research Literature on IT Sourcing Negotiation**

<b>Negotiation</b>	<b>Representative Work</b>
Buyers and sellers use different strategies to maintain control in the negotiation process	Heiskanen, Newman & Simila (1996), Klepper (1995)

**Table 8. Research Literature on IT Sourcing Contracts**

<b>Contract Characteristics</b>	<b>Representative Work</b>
When technology is hard to imitate, tight coupling leads to better performance; when environment is dynamic, loose coupling is better	Steensma & Corley (2000)
Tight contract is key to good project outcomes	Saunders, Gebelt & Hu (1997); Willcocks, Lacity & Fitzgerald (1995)
Organization and contract flexibility are beneficial	Harris, Giunipero & Hult (1998); Martinsons (1993)
Reliance on small number of suppliers and give enough incentives for knowledge sharing give more favorable contracts	Bakos & Brynjolfsson (1993a, b)
Two stage contracts invite commitment from vendors	Richmond & Seidmann (1993)
Hierarchical elements in contract allow more flexibility to accommodate uncertainty, complexity and asset specificity	Ang & Beath (1993)
Comprehensive, complete and trenching	Whang (1992); Willcocks, Lacity & Kern (1999)

**Table 9. Research Literature on IT Sourcing Project Behaviors**

<b>Main Themes</b>	<b>Representative Work</b>
<b>Contract Management Processes</b>	
Relationship management (communication, coordination, trust, knowledge sharing) is a key factor	Collins & Mullen (1995); Fitzgerald & Willcocks (1994); Heckman & King (1994); Kern (1997); Kern & Willcocks (2000); Klepper (1992; 1995a, b); Lasher, Ives & Jarvenpaa (1991); Lee (2001); Lee & Kim (1999); Lin & Shao (2000); Sabherwal (1996); Saunders, Gebelt & Hu (1997); Willcocks & Choi (1995); Willcocks & Kern (1998)
Contract management activities must matching the type of knowledge sharing required	Beath & Walker (1998)
Monitoring and measurement are critical to good contract management	Willcocks, Lacity & Fitzgerald (1995)
<b>Service Delivery</b>	???

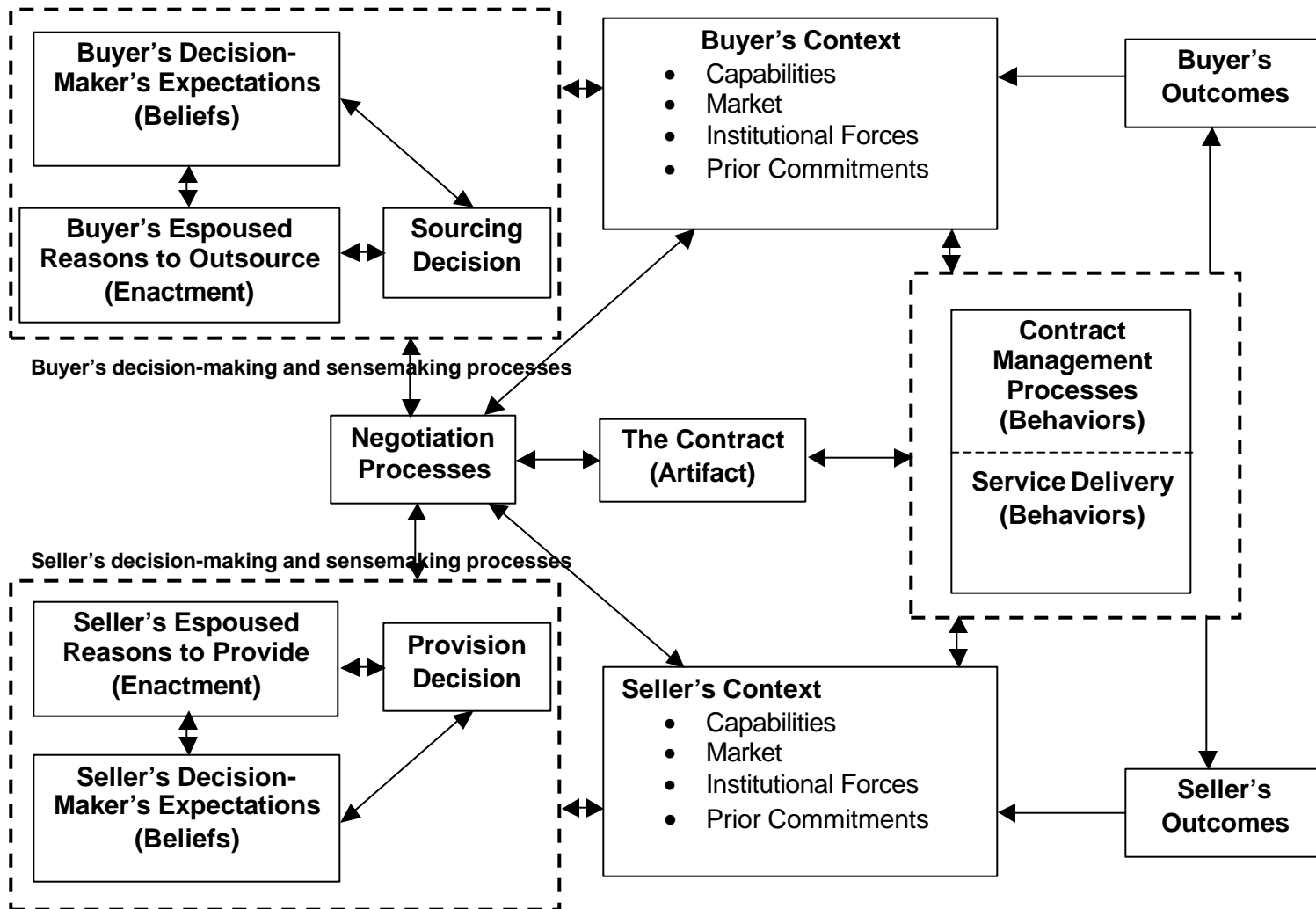
**Table 10. Project Outcome Constructs Considered in IT Sourcing Research Literature**

<b>Main Outcome Constructs</b>	<b>Representative Work</b>
<b>Short Term Outcomes</b>	
<b>Buyer's Side</b>	
Intention to continue relationship with vendor	Nam, Rajagopalan, Rao & Chaudhury (1996)
Economic, technological and immediate satisfaction	Saunders, Gebelt & Hu (1997); King & Malhotra (2000)
Financial market valuation	Hayes, Hunton & Reck (2000)
<b>Seller's Side</b>	???
<b>Medium Term Outcomes</b>	
<b>Buyer's Side</b>	
Control, firm performance, risk sharing	King & Malhotra (2000)
<b>Seller's Side</b>	???
<b>Long Term Outcomes</b>	
<b>Buyer's Side</b>	
Flexibility of IS Delivery	Lacity & Hirschheim (1995)
Strategic implications	Saunders, Gebelt & Hu (1997); King & Malhotra (2000)
Dependence	Willcocks & Kern (1998)
<b>Seller's Side</b>	???

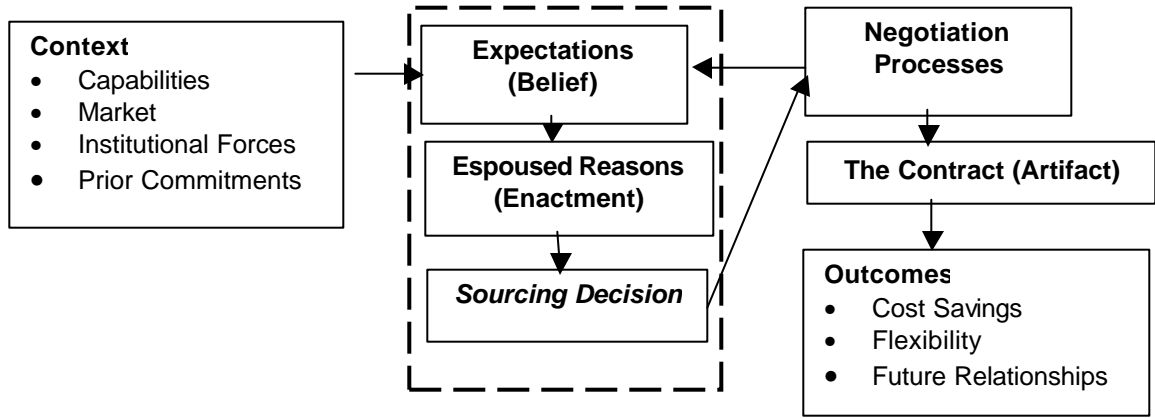
**Table 11. IT Sourcing Research Methodology**

<b>Methodology</b>	<b>Representative Work</b>
<b>Conceptual</b>	Alpar & Saharia (1995); Apte & Mason (1995); Buck-Lew (1992); Cheon, Grover & Teng (1995); Cronk & Sharp (1995); Gurbaxani (1996); Jurison (1995); King (2001); King & Malhotra (2000); Klepper (1992, 1995b); Martinsons (1993); Peppard & Ward (1999); Saaksjarvi (1993); Schiffman & Loftin (1991)
<b>Case Study / Other Qualitative Methods</b>	Ang & Beath (1993); Aubert, Rivard & Patry (1996); Beath & Walker (1998); Buchowicz (1991); Clark & Zmud (1993); Clark, Zmud & McCray (1995); DeLooff (1995); Fitzgerald & Willcocks (1994); Goo, Kishore & Rao (2000); Heiskanen, Newman & Simila (1996); Hirschheim & Lacity (2000); Kelter & Walstrom (1993); Kern (1997); Kern & Willcocks (1996; 2000); Klepper (1995a); Lacity & Hirschheim (1993; 1995); Lacity & Willcocks (1995; 1998); Lasher, Ives & Jarvenpaa (1991); Lee & Kim (1997); Marcolin & McLellan (1998); McLellan, Marcolin & Beamish (1995); Michell & Fitzgerald (1997); Nam, Rajagopalan, Rao & Chaudhury (1994); Palvia (1995); Pennington & Woolcock (1995); Reponen (1993); Sabherwal (1996); Saunders, Gebelt & Hu (1997); Slaughter & Ang (1996); Willcocks & Choi (1995); Willcocks & Fitzgerald (1993a, b); Willcocks, Fitzgerald & Feeny (1995); Willcocks, Fitzgerald & Lacity (1996); Willcocks & Kern (1998); Willcocks, Lacity & Fitzgerald (1995); Willcocks, Lacity & Kern (1999)
<b>Survey Methods</b>	Ang & Cummings (1997); Ang & Straub (1998); Apte et al. (1997); Arnett & Jones (1994); Collins & Mullen (1995); Fitzgerald & Willcocks (1994); Grover, Cheon & Teng (1994; 1996); Harris, Giunipero & Hult (1998); Heckman & King (1994); Kern & Willcocks (1996); Lee (2001); Lee & Kim (1999); Lin & Shao (2000); Loh (1994); Loh & Venkatraman (1995); Michell & Fitzgerald (1997); Nam, Rajagopalan, Rao & Chaudhury (1996); Poppo & Zenger (1998); Saarinen & Vepsäläinen (1994); Sobol & Apte (1995); Steensma & Corley (2000); Teng, Cheon & Grover (1995)
<b>Archival Data Analyses</b>	Ang & Cummings (1997); Hu, Saunders & Gebelt (1997); Loh & Venkatraman (1992a, b); Nelson, Richmond & Seidmann (1996)
<b>Analytical Models</b>	Bakos & Brynjolfsson (1993a, b); Chaudhury, Nam & Rao (1992; 1995); Hayes, Hunton & Reck (2000); Nam, Chaudhury & Rao (1995); Ngwenyama & Bryson (1999); Richmond & Seidmann (1993); Richmond, Seidmann & Whinston (1992); Smith, Mitra & Narasimhan (1998); Whang (1992)
<b>Others</b>	Lacity & Willcocks (2000); Smith, Mitra & Narasimhan (1996)

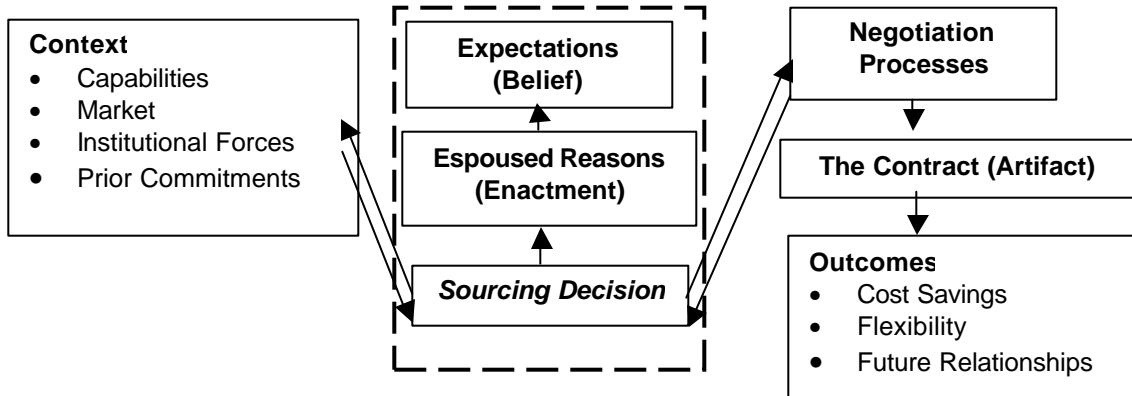
Figure 1. The IT Sourcing Process



**Figure 2. A Vigilant Decision Process**



**Figure 3. A Sensemaking Decision Process**



**Figure 4. A Political Decision Process**

