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## INFORMATION SYSTEMS OUTSOURCING: LINKING TRANSACTION COST AND INSTITUTIONAL THEORIES

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### ABSTRACT

In this article, we apply transaction cost theory (TCT) and institutional theory to the realm of IS outsourcing. TCT posits that firm's outsourcing governance is influenced by transaction cost factors, namely, bounded rationality, opportunism, and risk. Institutional theory, on the other hand, has been advocated to explain non-choice behavior of organizations in the context of competitors, norms, and professional associations. Although TCT has been used extensively in the extant literature to study outsourcing arrangements, we argue that as IS outsourcing practices propagate in organizational fields, TCT explanations will take a back seat to institutional explanations. We appropriate the transaction cost framework to the IS outsourcing setting and consider when and how firm's decision to adopt outsourcing and corresponding ex-ante screening and ex-post monitoring of the vendor will be influenced by mimetic, normative, and coercive institutional pressures. More specifically, we argue that greater the density and rate of adoption in outsourcing during innovation diffusion and stability stages, the greater the possibility that transaction cost factors will be replaced by institutional factors in explaining firms' governance structures (decision to adopt outsourcing, and corresponding screening and monitoring). Conversely, we posit that when the institutional pressures are relatively weak, TCT better explains the intricacies of IS outsourcing arrangements. In conclusion, future research directions and managerial implications of the institutional environment on IS outsourcing governance are discussed.

**Keywords:** information systems outsourcing, transaction cost theory, institutional theory

### I. INTRODUCTION

The importance of information systems (IS) outsourcing is well documented. According to the Gartner group, the global software outsourcing is estimated to reach \$260 billion by 2009. Outsourcing is argued to reduce software development costs and time, provide access to new technology, and improve business performance by enabling firms to concentrate on their core competencies [Bryson and Ngwenyama 2006; Dhar and Balakrishnan 2006; DiRomualdo and Gurbaxani 1998; Lacity and Willcocks 1998; Lee 2006; Levina and Ross 2003; Murthy 2004; Smith et al. 1998; Willcocks and Lacity 1998].

In this article, we focus on IS outsourcing<sup>1</sup> and use transaction cost and institutional theories to understand firm's outsourcing governance structures.<sup>2</sup> We chose transaction cost theory (TCT) because it has been applied extensively in discussing outsourcing relationships [e.g., Ang and Straub 1998; Carmel and Nicholson 2005; Choudhury and Sampler 1997; Clemons et al. 1993; Grover et al. 1996, 1998; Miranda and Kim 2006; Poppo and Zenger 1998; Steensma and Corley 2001; Willcocks and Cacity 1998]. Further support for the extent of TCT application in IT outsourcing research is provided by Klein [2002] who observed that the majority of scholars have adopted TCT as the primary theoretical basis for studying IS outsourcing. For example, in a book edited by Willcocks and Lacity [1998], Grover and colleagues highlight how transaction cost factors such as opportunism influence outsourcing governance (e.g., monitoring). However, in certain instances, TCT alone has failed to explain some outsourcing behavior. For example, Miranda and Kim [2006] did not find support for the position that bounded rationality impacts level of outsourcing. While institutional theory could possibly explain certain disparities in the application of TCT, most of the extant literature has ignored the institutional explanations of IS issues in general and outsourcing in particular [with the exceptions of Ang and Cummings 1997; Jayatilaka 2002; King et al. 1994; Miranda and Kim 2006; Teo et al. 2003]. Recently, several scholars have highlighted the importance of accounting for the institutional context in interorganizational relationships [Granovetter 1985; Grewal and Dharwadkar 2002; Miranda and Kim 2006; Teo et al. 2003; Uzzi 1996]. While many other theories such as agency and resource-based could be employed to complement TCT, we chose institutional theory because we wanted to focus on non-choice behavior in IT outsourcing that is lacking in many rational theoretical explanations to organizational behavior.

Firm's outsourcing governance structures are predominantly influenced by bounded rationality, opportunism, and risk characteristics [Chiles and McMackin 1996; Jones and Hill 1988; Miranda and Kim 2006; Williamson 1985]. TCT identifies two key governance costs that arise as a result of these transaction cost factors (e.g., opportunism) [Chaudhury et al. 1995; Chiles and McMackin 1996; Dyer 1997; Grover et al. 1998; Jones and Hill 1988]. First, due to the information asymmetry, the firm has to expend resources in *screening*<sup>3</sup> vendors. Second, due to possible goal conflicts, outsourcing firms have to expend considerable amount of resources to *monitor*<sup>4</sup> the vendor. In firms securing outsourcing contracts with vendors, screening represents *ex-ante* contracting costs while monitoring represents *ex-post* contracting costs.<sup>5</sup> Accordingly, in a dominantly rational, efficiency-based perspective such as TCT, transaction cost factors

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<sup>1</sup> Outsourcing is the practice in which a firm delegates a vendor to carry out some task because the firm is unable or unwilling to do the task by itself. By IS outsourcing, we mean any type of information technology outsourcing including outsourcing of software development, data centers or the entire IS function.

<sup>2</sup> In governance structures, we include firm's decision to adopt outsourcing and corresponding screening and monitoring of the vendor.

<sup>3</sup> Screening refers to all the activities of communication, search and evaluation the firm undertakes with the ultimate goal of finding a suitable vendor. Example screening activities include interviewing vendors, survey of vendors' existing customers, and call for Requests for Proposals (RFP).

<sup>4</sup> Monitoring refers to any collection of information by the firm, for either supporting direct incentives or setting limits on the vendor's behavior. Monitoring can be classified into two types of auditing activities: financial audits (e.g., consulting fees) and operational audits (e.g., site visits by the firm, examination of design documents and reports).

<sup>5</sup> By contract, we mean any legally binding contractual agreement between the firm and a vendor.

bounded rationality, opportunism, and risk will influence the firm's decision to adopt outsourcing and related screening and monitoring of the vendor.<sup>6</sup>

Nonetheless, although Klein [2002] and others have observed that a majority of extant literature adopts TCT as the key theoretical lens to studying outsourcing, anecdotal and research evidence suggests that TCT may not be the predominant factor in explaining governance structures in all outsourcing situations. For an example, the American Banking Association (ABA), the premier professional organization for more than 6000 banks in the U.S. not only endorses IS service providers but also provides vendors' client listings to member banks [aba.com]. Consequently, potential clients may overlook structuring optimal contracts with service providers by using standard practices and ABA endorsed service providers in IS outsourcing. Jayatilaka [2002] and Miranda and Kim [2006] provide research support as to how institutional settings could impact outsourcing governance.

In order to understand such deviations from the TCT perspective, we appropriate concepts from institutional theory and apply them to the IS outsourcing domain. According to institutional theory, organizations and their relationships with others are subject to pressures from the institutional environment that force them to conform to institutionalized norms, beliefs and taken-for-granted practices [DiMaggio and Powell 1983; Oliver 1991, 1997a; Teo et al. 2003]. We argue that, in many instances, mimetic, normative, and coercive pressures emanating from firms' institutional environments influence outsourcing<sup>7</sup>. In uncertain environments, organizations often use non-economic bases for making organizational decisions by mimicking other organization, by making decisions based on professional codes of conducts, or more instinctively, through reflexes based on some deeper cognitive mechanisms which they take for granted. Mimicking other organizations often results from *mimetic* pressures that arise from direct interpersonal ties among executives who serve on interlocked boards, and hence mimic the interlocked organization and/or from indirect pressure arising from structural equivalence within organizational fields wherein organizations mimic other successful organizations that they consider to be similar to them [DiMaggio and Powell 1983; Galakiewicz and Burt 1991]. *Normative* pressures originate from sources such as professional associations and educational systems [Davis 1991; DiMaggio and Powell 1983]. Unlike mimetic pressures, the underlying bases of normative pressures are perhaps deeper and not so obvious. As professions (like accounting) and industries (like banking) evolve, they standardize the code of conduct based on requirements of the educational systems that provide them with continued supply of professionals and through professionalization and standardization. Consequently, highly normed industries have collectivization of organization action due to the standardization of decision making that result in such actions. The last set of institutional pressures is termed *coercive* pressures, and they emanate from absolute regulatory directives or result from technological changes that compel the focal organization to make changes rapidly [Tushman and Anderson 1986].<sup>8</sup> When such immediate legal pressures arise

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<sup>6</sup> Adoption in this context refers to a firm's decision to outsource a particular IS technology.

<sup>7</sup> We refer readers to DiMaggio and Powell [1983, p. 150-154] for a more extensive discussion on mimetic, normative and coercive pressures. Mimetic pressures refer to those that force firms to adopt practices of similar and more successful firms in order to cope with uncertainty of an emerging technology or a new process. Normative pressures refer to those that force firms to adopt practices of professionalization mainly to achieve legitimacy from its customers and suppliers. Finally, coercive pressures refer to those that originate externally forcing firms to alter established practices. Although as DiMaggio and Powell envisioned coercive pressures to primarily emanate from regulatory mandates, with respect to the IS outsourcing context, we consider coercive pressure to stem from technological changes.

<sup>8</sup> In the classical institutional theory literature, coercive pressures generally manifest from government regulations or mandates. However, in a market economy, coercive pressures that impact existing outsourcing "cycles" emerge from technology changes. Such technology changes

(e.g., Sarbanes Oxley Act and the audit profession), organizations are often left with little recourse than to comply with the directives. However, in some instances, such pressures may be more subtle and the organizational reactions to them may not be instantaneous as in the case of some technology-induced changes.

In addition to these pressures, institutional theorists also concur that the process of institutionalization follows a path in which there is (1) an early phase of acceptance of an innovation followed by diffusion; (2) a middle phase of stability; and (3) in some instances, a final stage involving de-legitimizing [Lawrence et al. 2001; Tolbert and Zucker 1999; Zucker 1977]. Hence, the nature and extent of institutional pressures are likely to vary across the three stages. For instance, if other firms are rapidly adopting outsourcing, then the focal firm might face greater pressures to outsource. Accordingly, the differences across the three stages have implications for outsourcing governance. However, previous IS literature has largely neglected the role of institutional stages and varying pressures across these stages in influencing outsourcing decisions. Accordingly, against this backdrop, we aim to answer the following research question: **At various stages of institutionalization, what is the relative impact of institutional pressures and transaction cost factors on outsourcing governance structures?**

This research offers two key contributions. First, the outsourcing literature has examined both the determinants (e.g., strategic intent for IT outsourcing) and the consequences of outsourcing (e.g., benefits of IT outsourcing) [Dhar and Balakrishnan 2006; DiRomualdo and Gurbaxani 1998; Lacity and Willcocks 1998, 2001; Lee and Kim 1999; Levina and Ross 2003; Willcocks et al. 1996, 1999; Willcocks and Kern 1998]. However, limited research has addressed the institutional pressures faced by the firm and their implications for outsourcing. In linking institutional pressures to TCT explanations, we hope to add to the current understanding on the antecedents of IS outsourcing governance. As noted earlier, empirical and anecdotal evidence points to instances where TCT alone has failed to account for IT outsourcing behavior. By incorporating institutional theory in IT outsourcing research, gaps in TCT rationalization to outsourcing governance could be explained. For example, a community bank's decision to outsource its new Internet banking function to *Digital Insight* might be more based on normative pressures emanating from ABA endorsement rather than rational, efficiency-based explanations (e.g., risk) advanced by TCT. Hence, when institutional pressures prevail, managers need to assess their strength and manage them prudently in making decisions based on either TCT or institutional theory prescriptions to IT outsourcing.

Second, limited research has addressed the three stages of institutionalization and their implications for outsourcing. By linking institutional stages to transaction cost explanations, we hope to understand the circumstances in which one theoretical interpretation dominates the other. In other words, based on the stage of institutionalization of a particular IT outsourcing practice and the degree of institutional pressures, one theoretical perspective could better explain IT outsourcing governance than the other. For example, as an industry's initial pace of adoption in customer relationship management (CRM) applications increases, firms in this industry are likely to adopt outsourcing of such systems due to increasing mimetic pressures and hence exert less effort in screening. Lacity and Willcocks [2001] observe that the South Australia (SA) government's \$AU 600 million contract with EDS in 1995 gained attention of both the federal

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vary from emergence of the application service providers (ASP) model to component-based development. Although Tuchman and Anderson are not considered institutional theorists, the concept of technology change typifies coercive pressures relevant to the outsourcing context discussed in our research. Nonetheless, other scholars have acknowledged the impact of technology change on institutions. For instance, Tolbert and Zucker [1999] point out that innovation resulting from technological change causes breakdown of habitualized institutional behaviors.

government and the media. As outsourcing practices in majority of governmental entities become institutionalized (stability stage), other governments across the globe will turn to vendors such as EDS (less screening) and adopt standard industry sanctioned outsourcing practices (e.g., monitoring). Finally, during the deinstitutionalization phase as old technologies become obsolete and new technologies emerge, it is likely that firms will engage in more screening and monitoring (due to uncertainty). Therefore, managers need to focus not only on the strength of institutional pressures, but also on stage of institutionalization in determining whether to apply TCT or institutional theory recommendations to IT outsourcing.

In a recent study, Miranda and Kim [2006] focused on professional and political contexts in city governments in the U.S. and examined how institutional factors mitigate otherwise transaction cost heuristics applied to outsourcing decisions. Several key differences between their work and our research can be identified. First, we consider three phases of institutionalization and how institutional factors in each phase affect outsourcing decisions while aforementioned authors do not make such a distinction. Second, they consider “a less widespread variant of institutional theory; the institutionalizing effects of norms and beliefs subscribed to within organizations” [Miranda and Kim 2006, p. 276], rather than the traditional view where institutional forces emanate from the firm’s external environment. For instance, they classify mayor-council city government style to be professional context and council-manager city government style to be political context. In contrast, we consider institutional forces originating from both within as well as outside the firm such as from professional organizations or because of external regulatory changes, technology discontinuities, etc. Third, we take a more micro-view of outsourcing decisions by taking into consideration firm’s *ex-ante* screening and *ex-post* monitoring of the vendor. As we will highlight later in the paper, although a firm might first consider outsourcing for cost reasons, after screening, it may decide against outsourcing fearing vendor opportunism; hence, a closer examination of governance in terms of screen and monitoring is warranted. Nonetheless, it should be noted that Miranda and Kim’s work have considerably enhanced our understanding of how institutional forces affect outsourcing decisions.

Our paper is organized as follows. First, we provide an overview of our conceptual framework, wherein we present evidence as to how transaction cost factors and institutional pressures separately influence outsourcing governance. Then, we link transaction cost and institutional explanations to outsourcing governance at various stages of institutionalization. Finally, we end with a discussion about future research directions and managerial implications.

## II. CONCEPTUAL FRAMEWORK

In order to answer our research question, we focus on the theoretical model in Figure 1. First, we highlight how transaction cost factors influence firm’s decision to outsource and corresponding screening and monitoring of the vendor. Second, we highlight how institutional pressures impact governance structures. Later, in considering the stages of institutionalization, we overlay the influence of the institutional environment on the firm-vendor relationship and reexamine the conditions under which TCT explanations continue to be dominant or give way to institutional explanations of the outsourcing phenomenon. We consider asset specificity<sup>9</sup> as a moderating variable that effects outsourcing governance.

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<sup>9</sup> Asset specificity refers to the degree to which an asset can be redeployed to alternative uses and by alternative users [Williamson and Winter 1993]. While other factors such as uncertainty and frequency could function as moderators, we chose to include only asset specificity because it is found to be the most relevant predictor of governance in TCT [Geyskens et al. 2006].

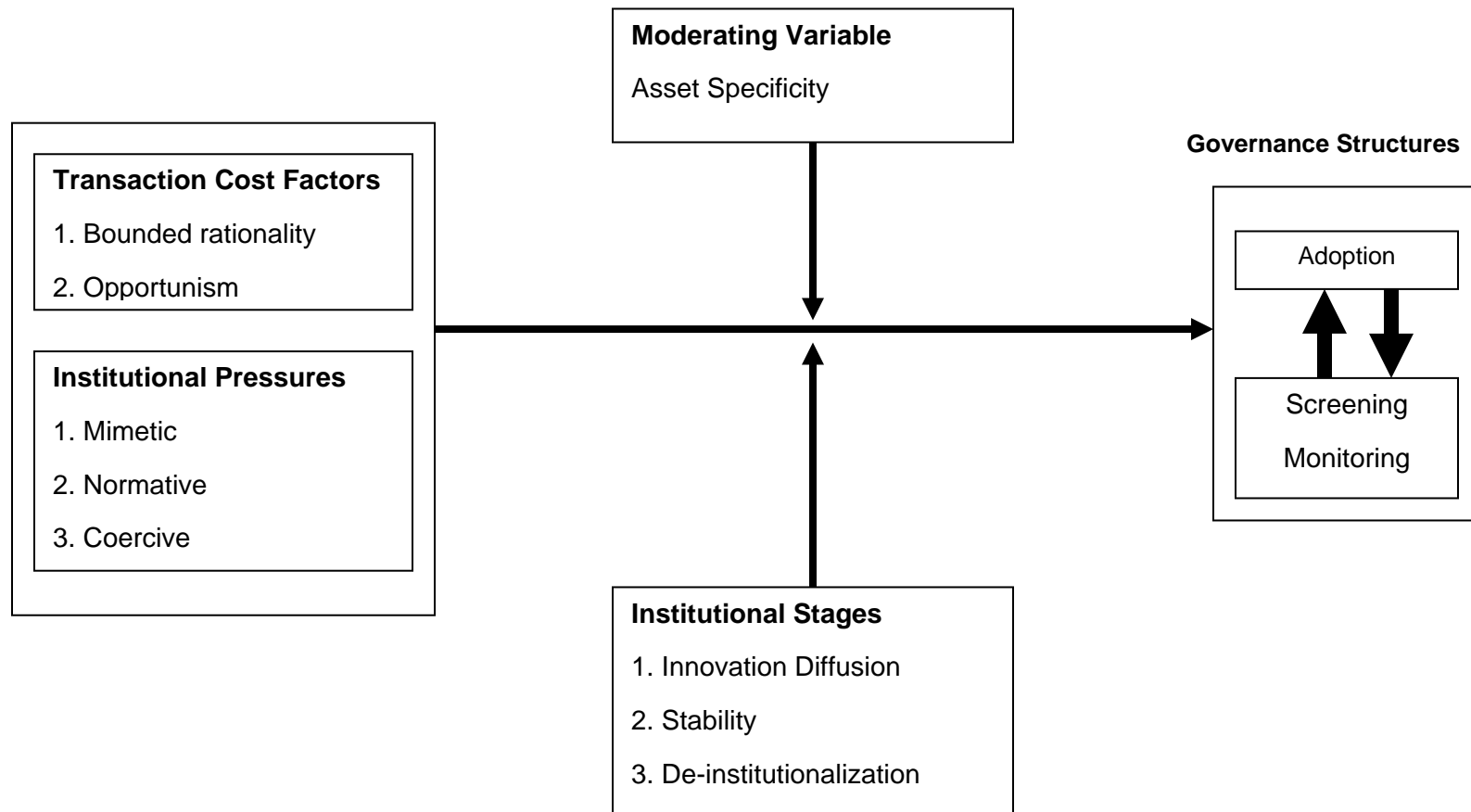


Figure 1. A Model for IS Outsourcing Governance

## TRANSACTION COST PERSPECTIVE

TCT focuses on relationships between organizations that are assumed to be rational in their decision making and engage in efficiency-based transactions [Roberts and Greenwood 1997; Williamson 1981]. Accordingly, in an inter-organizational outsourcing relationship, transaction cost factors such as bounded rationality, opportunism and risk are argued to influence governance structures (i.e., adoption decision, screening, and monitoring) [Chiles and McMackin 1996; Williamson 1985]. Bounded rationality emerges because of inherent cognitive limitations of humans. As Simon [1961, p. xxiv] contends, “human behavior is intendedly rational, but only limitedly so.” These constraints limit a firm’s ability to make an optimal decision on whether to outsource or insource, and in case of outsourcing, find the most suitable vendor and then write comprehensive, all-encompassing contracts that account for every possible contingency [Kishore et al. 2003; Lee et al. 2003].

Based on both relationship-specific and environmental characteristics, the vendor could take advantage of the firm by acting opportunistically. Opportunism is defined as “self-interest seeking with guile” [Williamson 1985, p. 47]. For instance, a vendor can behave opportunistically in cases where it has monopolistic power or when there is information asymmetry in its favor [Willcocks et al. 1999; Williamson 1975].

Finally, the firm faces certain risks inherent in outsourcing relationships. Contractual risks such as vendor bankruptcy, vendor’s inability to deliver, contract breach by the vendor and uncontrollable contract growth, among others are often identified as perils of outsourcing [Aubert et al. 2002; Jurison 2002; Klepper and Jones 1998; Lacity and Hirschheim 1993; Whang 1992].

To mitigate the effects of these transaction cost factors, the firm engages in elaborate mechanisms in screening the vendor *ex-ante* and monitoring the vendor *ex-post* [Bergen et al. 1992; Grover et al. 1998; Jacobides and Croson 2001]. In screening, the firm’s goal is to identify a potential vendor who is best suited for providing a certain IS service [Bergen et al. 1992]. Because of the number and variety of vendors and the nature of the signals they emit, screening plays a crucial role in identifying the “right” vendor. Accordingly, the challenge for the firm is to ascertain the relationship between signals and future performance [Spence 1974]. Given the information asymmetry in favor of vendors prior to entering into outsourcing arrangements with firms [Bergen et al. 1992; Spence 1974], screening helps firms to identify private information about the vendors. More importantly, through screening, firms can reduce the risk of opportunism and adverse selection [Mishra et al. 1998; Wathne and Heide 2000]. Screening methods vary from simple interviews, surveys of a vendor’s existing customers to complex requests for proposals (RFP).<sup>10</sup>

In monitoring the vendor, firms may use their own employees to obtain qualitative assessments of the vendor’s performance or require key vendor personnel to interact with firm personnel on a regular basis. Furthermore, firm personnel may examine intermediate documents such as design specifications or test reports that result during the outsourcing process. Alternatively, firms could employ control systems by examining financial records, requiring regular updates on certain financial criteria, or requesting responses to irregularities in audits [Hitt et al., 1990]. By monitoring, the firm aims to ensure that the vendor fulfills its obligations and guard against potential vendor opportunism.

The firm’s decision to outsource, and corresponding screening and monitoring efforts are intertwined (hence the arrows between them in Figure 1). A firm might consider outsourcing because of skyrocketing costs of insourcing. Based on this decision, the firm might engage in an

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<sup>10</sup> Request for Proposal (RFP) document typically details minimum requirements of the outsourcing project to prospective service providers and request that they submit bids [Klepper and Jones 1998].



elaborate scheme to screen suitable vendors. However, as a result of this screening exercise, the firm may decide against outsourcing because of significant potential for vendor opportunism. Therefore, in this particular case, the firm would decide after all to keep insourcing its IS operations, at least until prevailing conditions change.

Rational, efficiency-based TCT approach to assessing governance costs (e.g., screening and monitoring) and the corresponding outsourcing decision can be explained using Figure 2. For a given asset specificity  $K$ ,  $I(K)$  and  $O(K)$  illustrate the cost curves for insourcing and outsourcing, respectively. At a particular asset specificity point  $K_i$ , the firm is indifferent to either insourcing or outsourcing. However, at point  $K_{i+x}$ , the rational firm realizes that given its risk preferences with respect to outsourcing of specific assets, insourcing would lower governance costs. In contrast, at point  $K_{i-x}$  (i.e., lower asset specificity), the firm would lower governance cost by outsourcing.

**INSTITUTIONAL PERSPECTIVE**

When considered in isolation, TCT's limitations in explaining contractual relationships have been acknowledged. For instance, in their meta-analysis of extant empirical studies, David and Han [2004] found only mixed support for TCT explanations for contract governance. One possible reason for these ambiguous findings might be that as Granovetter [1985] contends, TCT represents an under-socialized account of organizational behavior. By observing that TCT takes a purely economic approach to studying organizations that focuses primarily on rational decision making and efficient transactions, Williamson [1981] further supports this assertion. However, more recently, scholars [e.g., Granovetter 1985; Grewal and Dharwadkar 2002; Teo et al. 2003; Uzzi 1996] have emphasized the importance of the institutional setting in explaining inter-organizational relationships. Hence, we now place the IS outsourcing in the larger institutional context, and highlight how differing institutional pressures foster or constrain governance mechanisms in making choices regarding outsourcing arrangements.

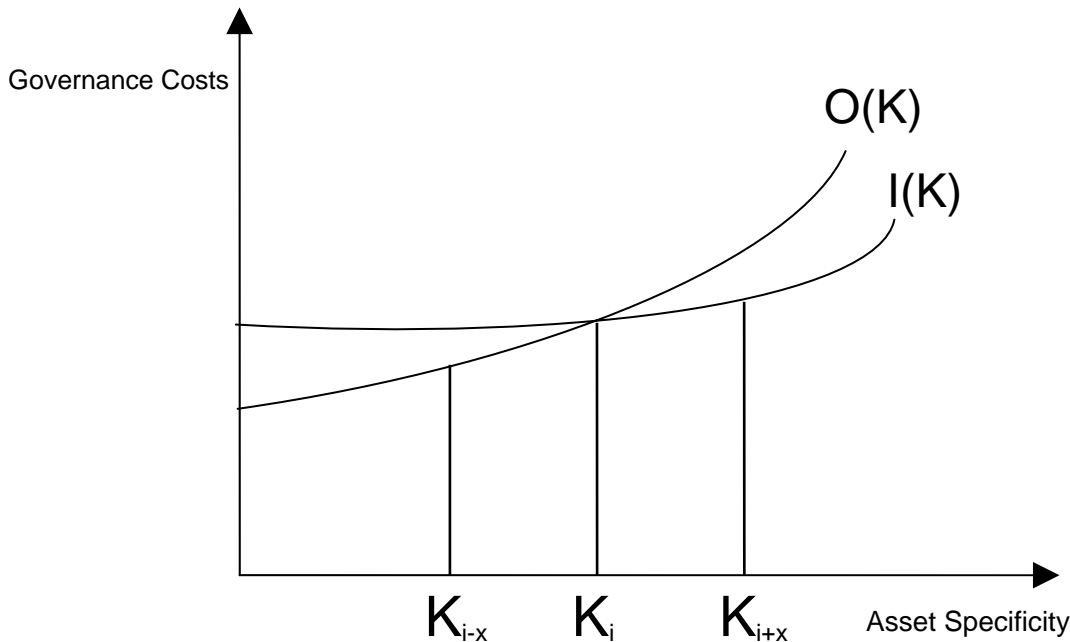


Figure 2. Outsourcing Cost Curves [Chiles and McMackin 1996]

We begin by delineating the key contextual variable in institutional theory, namely, the organizational field. According to DiMaggio and Powell [1983], organizational fields include

organizations that constitute a recognized area of institutional life, including key suppliers, consumers, regulatory agencies, and competitors. We believe that it is important to locate the outsourcing contracts within the organizational field in order to incorporate the institutional influences in a meaningful manner. For the rest of this paper, we use the term organizational field to refer to the set of organizations that form meaningful reference points for any activity within the focal firm (i.e., the firm of interest to us). For example, the banking industry could be considered as an organizational field and one could easily study the prevalence of institutional practices within this field [Ang and Cummings 1997]. On the other hand, one could also construe the organizational field more broadly and consider the firms that are part of the S&P 500 index to be an organizational field and easily study the dispersion of institutional practices within this set of firms. Thus, a relevant organization field has to be defined and clearly identified in carrying out empirical work in this domain.

In addition to the concept of the organizational field, most institutional theorists have arrived at a consensus on the various sources of institutional pressures within an organizational field. We have briefly alluded to them in the introduction (namely, mimetic, normative, and coercive) and now develop them in greater detail. In order to develop the sources of mimetic pressure, we rely on two concepts: "connectedness" and "structural equivalence" with respect to organizational fields [Davis 1991; DiMaggio and Powell 1983; Teo et al. 2003]. Specifically, we consider connectedness in terms of direct interactions between field constituents (such as board interlocks). In the context of outsourcing, any firm that interacts with an outsourcing firm due to a board interlock is being exposed to outsourcing by the first hand experience of the focal firm's executive on the board of the outsourcing firm. In addition to such direct exposures (through interaction), one may also consider indirect sources of institutional pressures from structurally equivalent organizations that may have no direct ties but have similar relational patterns within fields. In other words, a focal firm may be pressured to adopt outsourcing if other structurally equivalent firms that share similar ties to suppliers, regulators, consumers, and so forth begin to outsource.

In addition to mimetic pressures, institutional theorists also focus on pressures to conform that originate outside of connectedness or structural equivalence, and form the basis for normative acceptance of practices due to professionalization, education, and trade associations [Ouchi 1980; Teo et al. 2003; Useem 1979]. In the context of outsourcing, if a focal firm is part of a trade association that actively promotes outsourcing, then the focal firm will be more inclined to employ those outsourcing vendors adopted by members of the association. While some normative pressures are easily identifiable (promotion by a professional association), others form the bases of cognitive processes that may be taken for granted at the habitual level, reflecting the extreme form of normative pressures that become ingrained and codified in societal structures. This may happen through the education system that creates a class of individuals who think alike and can be easily interchanged, and given their common training come to accept outsourcing practices on a habitual basis [DiMaggio and Powell 1983]. Many Japanese automakers routinely outsource a large portion of the final product for habitual reasons, while many U.S. automakers, whose employees have not been raised in the outsourcing paradigm, continue to make a larger portion of the final product in-house [Grewal and Dharwadkar 2002].

Literature provides evidence to support the assertion that mimetic and normative institutional pressures lower governance costs [e.g., Cyert and March 1963; Teo et al. 2003]. When a firm realizes that most of its competitors outsource, it tends to adopt similar outsourcing practices in order to achieve legitimacy among its customers and business partners [DiMaggio and Powell 1983]. In doing so, the focal firm is less likely to engage in comprehensive screening and monitoring, and instead use the same vendors (less screening) and adopt standard, industry-sanctioned monitoring practices employed by its competitors or other firms belonging to the same professional organization [Cyert and March 1963; Teo et al. 2003]. For example, when a retailer decides to outsource its applications to *GERS Retail Systems* because of National Retail Federation's endorsement, it is not expected to engage in elaborate screening (*ex-ante*) or monitoring (*ex-post*). Because conforming to institutional pressures are said to make

organizations homogeneous [DiMaggio and Powell 1983], these organizations are therefore expected to adopt similar outsourcing practices.

The reason why a firm that would not find outsourcing attractive from a TCT perspective, but would find it appealing from an institutional perspective can be explained using Figure 3. Besides the  $O(K)$  and  $I(K)$  cost curves already discussed earlier in Figure 2, we introduce  $O^1(K)$  to represent the cost curve for outsourcing in an environment with strong institutional pressures. The curve  $O^1(K)$  emerges to the right of  $O(K)$  because of lower outsourcing governance costs (e.g., screening) when strong mimetic and normative pressures prevail. Hence, in a weaker institutional setting, the firm compares  $O(K)$  and  $I(K)$  cost curves at asset specificity point  $K_j$  to decide that insourcing makes the most economic sense. Conversely, in a stronger institutional setting, the firm compares  $O^1(K)$  and  $I(K)$  cost curves to decide that outsourcing makes the less costly alternative.  $C$  and  $C^1$  represent the corresponding governance costs in the insourcing and outsourcing scenarios, respectively.

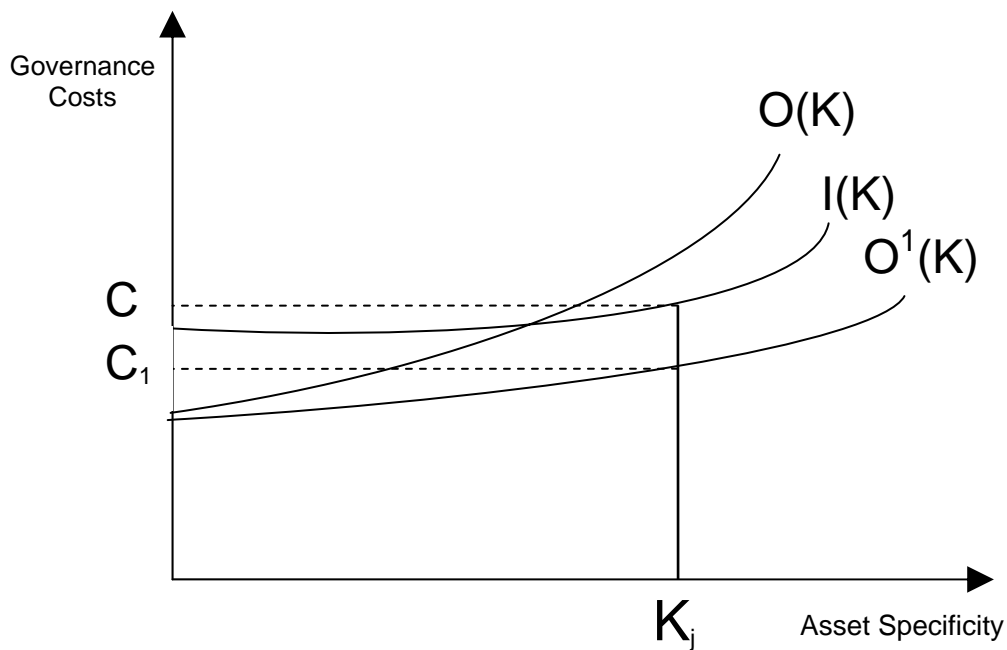


Figure 3. Outsourcing in a Strong Institutional Setting (adopted from Chiles and McMackin [1996])

We now turn our attention to the final institutional pressure, namely coercive. In extant institutional theory, coercive pressures mainly originate in governmental fiats and regulations or through the mechanism of inducement in the form of governmental subsidy [Grewal and Dharwadkar 2002; Tolbert and Zucker 1983]. What is of more interest in the outsourcing context is the influence of coercive pressure arising from technological changes that may initiate the beginning of new outsourcing cycles [Tushman and Anderson 1986]. For example, consider the component-based development (CBD) paradigm. A firm that is considering outsourcing its application development function might decide against adopting traditional solutions because of coercive pressures placed on it. Instead, it might decide to adopt a CBD approach to developing applications where the components are fabricated by outside vendors while the application assembly may be carried out by the firm in-house. In fact, the emergence of vendors such as *iCMG* that specialize in providing component development services leads to such technological changes [icmgworld.com]. Accordingly, when old technologies become obsolete and new

technologies emerge as a result of coercive institutional pressures, it is likely that firms will engage in more screening and monitoring (e.g., due to uncertainty).

### **STAGES OF INSTITUTIONALIZATION: LINKING TRANSACTION COSTS WITH INSTITUTIONAL PRESSURES**

In addition to the pressures noted earlier, institutional theorists also concur that the process of institutionalization follows a path in which there is (1) an early phase of acceptance of an innovation followed by diffusion; (2) a middle phase of complete acceptance and stability; (3) and a final stage involving de-legitimizing [Lawrence et al. 2001; Tolbert and Zucker 1996; Zucker 1977].<sup>11</sup> However, previous IS literature has largely neglected the role of institutional stages and varying pressures across these stages in influencing outsourcing decisions. Recent work by Lawrence and colleagues [Lawrence et al. 2001] describes the three stages of a typical institutional process using an “S”-shaped curve. The first stage is the “innovation diffusion” stage where innovations are adopted and eventually diffused within a field. Although the duration of this stage may vary, it is defined as “the length of time taken for an innovation to become diffused throughout an organizational field” [Lawrence et al., 2001, p. 627]. This represents a line from the origin of a Cartesian system in which no organization has adopted the innovation to the “top” of the S, where the percentage of organizations that has adopted the innovation is at its maximum. A steeper curve suggests a more rapid rate of diffusion. The second stage is described as the “stability” stage and is “the length of time over which the institution remains highly diffused and legitimated” [Lawrence et al. 2001, p. 628]. This refers to the top part of the S curve and the persistence of the innovation until the third stage, when “de-legitimization” could occur (where the top of the S falls).

The three institutional pressures, mimetic, normative, and coercive correspond with the three institutional stages, innovation diffusion, stability, and de-legitimization, respectively. At the early phase of the institutionalization cycle (i.e., innovation diffusion), organizations mimic each other to reduce uncertainties associated with emerging outsourcing technologies and practices [Scott 1987]. To address their common problems during the diffusion stage, organizations embrace solutions adopted by their peers [DiMaggio and Powell 1983]. Professional associations and educational systems representing the normative base for diffusion take time to materialize and therefore would only emerge after a particular outsourcing practice has archived stability in the organizational field. The beginning of the stability stage marks the point when the “impetus for diffusion shifts from simple imitation to a more normative base” [Tolbert and Zucker 1999, p. 177]. Finally, coercive pressures emanating from technological change help bring down previously institutionalized outsourcing practices during the deinstitutionalization stage. Brandes et al. [2005] provides further support for this correspondence between institutional pressures and institutional stages.

Although the contribution of institutional theory in explaining inter-organizational relationships such as outsourcing in a strong institutional context is widely applauded, when considered in isolation, it has limitations that fail to account for governance structures in certain situations [e.g., Roberts and Greenwood 1997].<sup>12</sup> In general, institutional theory is argued to represent an over-

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<sup>11</sup> As mentioned earlier, the institutional cycle as described here is most meaningful in the context of outsourcing of a particular IS service (e.g., Web-hosting, application development, etc.).

<sup>12</sup> At this point, we wish to distinguish our work with that of Roberts and Greenwood [1997]. First of all, although R&G refer to mimetic isomorphism and normative pillars, they do not address how adopted organizational designs fall out of favor due to coercive pressures. Secondly, Roberts and Greenwood [1997] do not discuss the stages of institutionalization and how different institutional pressures (mimetic, normative, and coercive) impact governance structures (outsourcing adoption decision, screening, and monitoring) during various stages. Finally, in their discussion of various organizational designs, R&G include “hierarchies, franchises, multidivisionals, conglomerates, holding companies, clans, networks, and market-hierarchy

socialized view on inter-organizational relationships [Granovetter 1985]. More specifically, institutional theorists fail to envisage how governance structures emerge in the case of weak or non-existent institutional settings. Toward this end, in the next section, we present evidence as to how rational, efficiency-based transaction cost perspective and non-choice based institutional perspective could be interlaced at various stages of the institutional process to better explain outsourcing governance.

### **Innovation Diffusion Stage**

According to Tolbert and Zucker [1996], the innovation diffusion stage begins when organizations are subject to external pressures due to legislation, technological change, or market forces (see the dashed segment in Figure 4). Furthermore, they also suggest that interorganization mimicking leads to eventual acceptance of the practices of interest (in our case, outsourcing). At the beginning of this stage, the number of adopters are “likely to be comparatively few in number, limited to a circumscribed set of similar, possibly interconnected organizations facing similar circumstances” [Tolbert and Zucker 1999]. The initial interorganization mimicking is facilitated through direct connectedness between the organizations [DiMaggio and Powell 1983]. Yet, at this early stage, a vast number of firms in the organizational field continue to assess governance structures based on transaction cost factors. However, as the stage progresses, the sources of institutional pressures can change from those emanating from direct ties (e.g., board-interlocks) to those stemming from indirect pressures due to structural equivalence [DiMaggio and Powell 1983]. In other words, in this stage, the nature and extent of mimetic pressure will vary within any organizational field.

We now highlight how increasing mimetic pressures emanating from network ties or structural equivalence could persuade firms that may not consider outsourcing attractive from a TCT perspective to adopt outsourcing arrangements. In the front-end of this stage, if the focal firm is exposed to a large number of firms adopting outsourcing through board interlocks, then the focal firm is more likely to mimic outsourcing practices of interconnected organizations [Haveman 1993]. Herein, we define the concept *mimetic connected density* as a count of firms that had adopted IS outsourcing and linked to the focal firm through board interlocks. Similarly, in the later part of this stage, the indirect ties come to the forefront in that as a larger number of firms that are similar to the focal firm or as a larger number of successful firms begin to adopt the outsourcing practices, they tend to acquire increased legitimacy, and consequently, the focal firm may feel the need to conform to the institutional pressures and adopt outsourcing. Thus, these two important institutional forces can be captured through *mimetic market density* (size and success), in that, if the number of similar firms adopt IS outsourcing (termed as size localized market density) or if the number of successful firms increasingly adopt IS outsourcing (termed as successful firm market density), then the focal firm is more likely to adopt institutionalized outsourcing [Haveman,1993].

More specifically, we argue that in the presence of strong mimetic pressures, the firm’s decision to adopt outsourcing and corresponding screening and monitoring efforts will be influenced by institutional forces rather than by transaction cost factors. For example, as mimetic density of a field increases, a focal firm may begin to adopt governance structures based on those adopted by its interlocked peers or its comparison peers instead of those based on classic transaction cost factors, namely, bounded rationality, opportunism and risk. As this happens, characteristics of governance structures may converge to institutional averages in a way that de-links them from these transaction cost factors. To use some specific numbers, consider two density scenarios:

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hybrids” (p. 347). We however focus on the decision to outsource together with levels of screening and monitoring. Moreover, R&G takes a micro-view on the organizations and their relationships in examining “organizational design adoption.” Our research on the other hand takes a more macro-view of the organization in examining their relationships with each other with respect to outsourcing.

15 percent versus 80 percent. When only 15 percent of the firms have adopted the practice, the focal firm is not intensely pressured to mimic others. Hence, in the absence of strong institutional mimetic pressures, the firm is likely to employ TCT prescriptions for IT outsourcing governance. In other words, in this scenario, the firm's outsourcing decisions will likely be influenced by bounded rationality, opportunism, and risk. On the other hand, if 80 percent of the firms have adopted an IT outsourcing practice, then the focal firm faces greater mimetic pressures to follow suit; as a result, it is likely to emulate other firms in adopting the IT outsourcing practice (i.e., conformance to institutional theory). Hence, we propose:

**Proposition 1a: The greater the density of the organizational field during innovation diffusion, the greater the possibility of transaction cost factors being replaced by mimetic institutional factors in explaining outsourcing governance structures.**

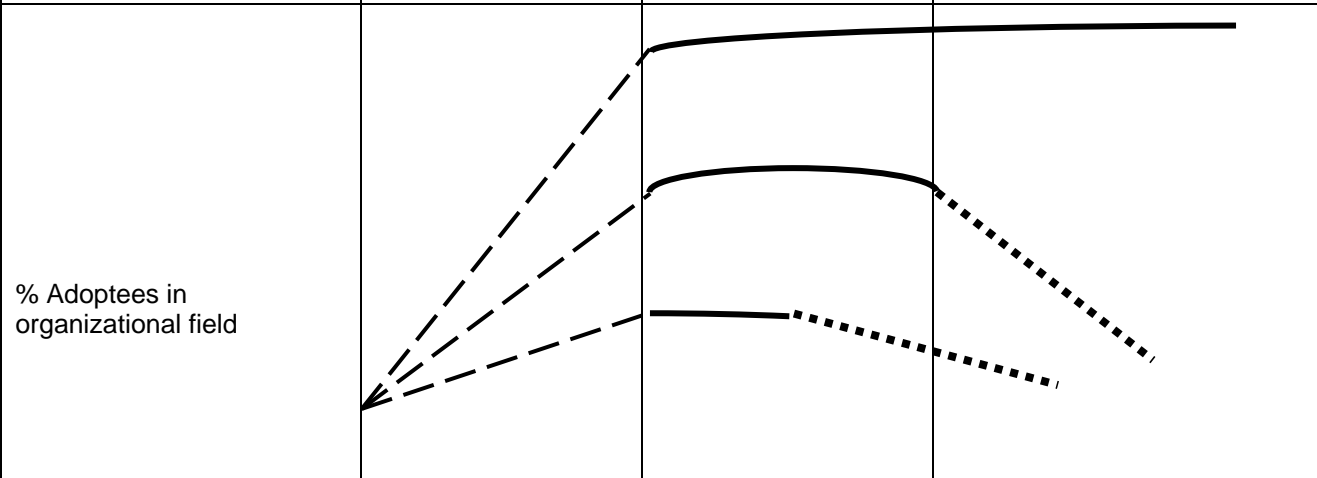
Stages of Institutionalization	Innovation Diffusion	Stability	Deinstitutionalization
			
	<p><b>Mimetic</b></p> <p>Density (% adopt)</p> <p>Pace (rate)</p>	<p><b>Normative</b></p> <p>Density (% adopt)</p> <p>Stability (time)</p>	<p><b>Coercive</b></p> <p>Density (% adopt)</p> <p>Deinstitutionalization (rate)</p>
<p><b>Governance Structures</b></p> <p>Outsourcing decision</p> <p>Screening</p> <p>Monitoring</p>	<p>Higher density to outsourcing governance as per institutional theory</p> <p>Greater pace to outsourcing governance as per institutional theory</p>	<p>Higher density to outsourcing governance as per institutional theory</p> <p>Greater stability to outsourcing governance as per institutional theory</p>	<p>Lower density to outsourcing governance as per transaction cost theory</p> <p>Greater rate to outsourcing governance as per transaction cost theory</p>

Figure 4. Institutional and Transaction Cost Explanation of IS Outsourcing Governance (based on Lawrence et al. [2001])

In addition to considering the cross-sectional density factors (i.e., from both direct and indirect ties), it also behooves researchers to capture the dynamic nature of the process in this stage. As mentioned earlier, dynamism at this stage refers to “pace” with which innovations get diffused within an organizational field. For example, in Figure 4 (dashed segment), one can clearly see three different rates of diffusion, ranging from low to high. When the diffusion rates are low, the institutional logics do not gain rapid acceptance within an organizational field. On the other hand, if diffusion rates are high, then institutional logics will begin to dominate within organizational fields.

We argue that this rate of diffusion will have implications with respect to the abilities of the firms to use transaction cost based governance structures. For instance, if the diffusion rate is low, then the focal firm will be able to adopt outsourcing arrangements that are suitable for its organizational context. If only a small number of connected or equivalent firms adopt outsourcing over an extended period during this stage, the firms will be in a position to make rational, efficiency-based choices (e.g., screening) rooted in transaction cost factors (e.g., bounded rationality). However, if diffusion occurs rapidly, such that the entire organizational field adopts outsourcing in a very short time period, then institutionalization will set in more rapidly, de-linking transaction cost factors from outsourcing contracts. For example, as the pace in which outsourcing is diffused increases, a focal firm may begin to adopt governance structures based on those employed by its interlocked peers or its comparison peers instead of those based on transaction cost factors (e.g., opportunism). Hence, we suggest that if we consider the pace at which firms in a particular organizational field adopt IS outsourcing, we will be in a better position to understand as to when outsourcing governance structures turn from TCT explanations. Accordingly, we propose that:

**Proposition 1b: The greater the pace of adoption of the organizational field during innovation diffusion, the greater the possibility of transaction cost factors being replaced by mimetic institutional factors in explaining outsourcing governance structures.**

### **Stability Stage**

According to institutional theorists, the stability stage begins when the rate of outsourcing adoptions reaches a plateau within a particular organizational field, and members use outsourcing widely and unquestionably (see the solid segment in Figure 4) [Lawrence et al. 2001]. However, normative pressures vary across organizational fields and over time. Higher normative pressures can result from professional association membership (i.e., industry-specific associations), as well as from the use of professional services (i.e., outsourcing consultants). Firms’ ability to influence the normative basis of outsourcing arrangements will impact structural aspects of outsourcing. As this stage unfolds, professional outsourcing consultants, as graduates of education and certification systems, serve as champions of outsourcing innovations [Pfeffer and Cohen 1984].

As we discussed in the previous stage, two aspects of stability will also be important in determining the influence of normative institutional processes in this stage. First, the level at which the outsourcing arrangements become stable in the organizational field will have crucial implications for the acceptance of the outsourcing practices. If only 20 percent of the relevant field has adopted outsourcing and consequently the normative acceptance of the practice is low, then professional associations and professionalization are unlikely to unleash institutional pressures that the focal organization cannot withstand. In such instances, the focal organization will be able to pursue efficiency-based rational governance structures rooted in transaction cost factors. On the other hand, if there is a high degree of normative legitimacy, then professional association and educational systems will pressure the focal organization to adopt normatively accepted structures that have societally sanctioned legitimacy. Until some external pressure delegitimizes such structures, organizations may be forced to comply with contracts that are based on institutional norms instead of efficiency-based rational ones promoted by TCT. Consider the National Grocers Association (NGA), the primary professional association for grocery stores in the US. In its Web site, NGA promotes IS service providers such as *Concord* to its members

[nationalgrocers.org]. Consequently, when a majority of its peers have outsourced their key tasks to *Concord*, a particular NGA member will tend to outsource relevant grocery services (e.g., inventory management, customer profiling, etc.) to *Concord* (e.g., less screening) and not engage in excessive monitoring once contracts are signed.<sup>13</sup> On the other hand, consider the variety of educational systems and training programs offered by Microsoft. The Microsoft Certified Application Developer (MCAD) certification is argued to provide industry recognition for professional developers who build applications using Microsoft Visual Studio® .NET and XML Web services [microsoft.com]. Hence, when the firm realizes that a vendor has relevant industry-accepted certification in application development, it is not likely to excessively screen or monitor the vendor. Hence, we posit that:

**Proposition 2a: The greater the density of the organizational field during the stability stage, the greater the possibility of transaction cost factors being replaced by normative institutional factors in explaining outsourcing governance structures.**

Once again, in addition to considering the level at which stability arises, it is important to consider the dynamic aspects of stability, especially, the time elapsed since outsourcing arrangements were considered stable within an organizational field. Paralleling our arguments with respect to rate in the innovation diffusion stage, we can contemplate time horizons with respect to stability. Some fields could have very low stability periods due to the inherently unstable nature of contracting arrangements while in other fields, contracting arrangements may continue on for a long time at a particular level. This dynamic aspect of stability will matter with respect to the power of the institutional logic within a given organizational field. When stability periods are short, institutional logics will not prevail as easily. In such circumstances, firms will consider governance structures (e.g., monitoring) according to rational, efficiency-based contracts advocated by TCT. On the other hand, if stability periods are long, then institutional logics will have dominant effects in determining structural aspects of outsourcing arrangements within the organizational field.

Based on the previous information, we would contend that when stability stage is shorter, the firm has greater opportunities to choose more rational, efficiency-based outsourcing arrangements. For example, assume the case in which 75 percent of the firms have adopted outsourcing during the stability stage. Now consider two stability scenarios: a) three months and b) five years. If the stability period has lasted only three months and the outsourcing has not caught on, then the impact of normative institutional pressures is rather weak. Normative pressures emanating from professional associations and education systems take time to cultivate. In such instances, the focal organization has greater latitude in designing outsourcing governance structures in accordance with TCT prescriptions based on bounded rationality, opportunism, and risk. On the other hand, if the stability period has lasted for more than five years, then the focal firm is greatly constrained by the institutional environment. In other words, as the institutional logics harden and get reinforced, the focal organization will be limited in its choices with respect to the outsourcing arrangements. Therefore, we propose that:

**Proposition 2b: The greater the stability of the organizational field during the stability stage, the greater the possibility of transaction cost factors being replaced by normative institutional factors in explaining outsourcing governance structures.**

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<sup>13</sup> The concept of “network externalities” might come in to play here. Network externality refers to the situation when the utility that a particular firm obtains from a good or service depends upon the number of other firms who are in the same network. For example, a grocer belonging to NGA indirectly benefits from the fact that *Concord* is not likely to be opportunistic when serving NGA-member grocers; hence, this particular grocer would not engage in excessive screening in selecting *Concord* ex-ante and monitoring of the vendor ex-post. Nonetheless, we believe that institutional perspective sufficiently captures both direct and indirect pressures on the focal firm.



## DE-INSTITUTIONALIZATION STAGE

The final stage in the institutional process begins when the level of stability begins to drop due to coercive pressures. It is entirely possible that in some instances, structural arrangements in the field may be taken for granted in a particular organizational field to such an extent that they are reified and take on a life of their own due to cognitive acceptance by the field constituents. However, in most cases, structural arrangements can get de-institutionalized. This can happen rapidly due to coercive pressures from regulatory changes, media backlash, or technological changes (see the dotted segment in Figure 4). During the period leading up to 2004 U.S. presidential election, there was media backlash about the loss of jobs due to outsourcing by American firms. Some have advocated tax incentives for firms that do not outsource work overseas.

Nonetheless, in a market economy, innovative technological changes could easily trigger deinstitutionalization and mark the beginning of a new outsourcing cycle. For example, as more firms began to use application service providers (ASPs) since the mid-90s, fewer firms had the need to develop their own applications. Hence, instead of outsourcing application development outright, these firms utilize services offered by ASPs. Sedona Corp.'s Web-based Intarsia system houses its clients' CRM applications and provides the bandwidth, security and service [ABA Banking Journal 2000]. In this particular case, the emergence of the ASP paradigm represents coercive pressures of the technological change causing deinstitutionalization of prevailing outsourcing governance structures. Before ASP model surfaced, firms had only two choices, either insource or outsource the application development process.

Once again, we consider the implications of both the density and the rate of deinstitutionalization for outsourcing from the perspective of the focal organization. If the deinstitutionalization from coercive pressures occurs to an extent that a large majority of the previous adoptees in an organizational field abandon outsourcing, then the focal firm that is considering outsourcing may be able to deflect existing normative institutional pressures and design governance structures based on transaction cost factors. Envisage the case where the focal firm is debating whether to outsource its payroll function during the deinstitutionalization stage when a large number of current adoptees have already switched to the purchase of configurable commercial-off-the-shelf (COTS) software (i.e., low density scenario). In such a case, the focal firm will resort to TCT factors such as risk and opportunism to decide whether to go ahead with outsourcing of payroll systems.<sup>14</sup> Because the normative pressure emanating from a fewer set of adoptees is considerably lower, firms have the freedom to carefully examine outsourcing governance structures (decision to adopt outsourcing, screening for a suitable vendor and monitoring the vendor) from a TCT perspective.

On the other hand, if the density or the level of acceptance is still high, then existing normative institutional pressures might pervade for a longer time before caving in the face of TCT prescriptions. In contrasting the above example with the case when only a few of the current adoptees have switched to COTS (i.e., high density scenario), because of prevailing normative institutional pressures, there is a greater likelihood that the focal firm will adopt outsourcing as there are still a large number of current adoptees, or screen potential vendors or monitor selected vendors based on normative institutional prescriptions.

As information technologies change from object-oriented development to ASP service model to mobile commerce, coercive institutional pressures impact IS outsourcing governance structures. We suggest that as the deinstitutionalization process unfolds, one is likely to see the emergence of transaction cost-based explanations as rational, efficiency-based analysis will begin to dominate the institutional pressures. Hence, we propose that:

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<sup>14</sup> In this case, the emergence of COTS itself typifies coercive forces that trigger technology change. Before COTS emerged, the focal firm had only two options for securing payroll software, either insource or outsource.

**Proposition 3a: The lower the density of the organizational field during deinstitutionalization, the greater the possibility of normative institutional factors being replaced by transaction cost factors in explaining outsourcing governance structures.**

Finally, we turn our attention to the rate of deinstitutionalization. Our earlier arguments relating to the level of institutionalization suggest that deinstitutionalization occurring from lower levels will result in the quicker re-emergence of transaction cost explanations to governance characteristics in contrast to the one occurring from higher levels within the field. However, it is not just the level that is important, but also the rate at which deinstitutionalization unfolds. If outsourcing practices get delegitimated rapidly, then the pressure on the focal firm to reconsider outsourcing from the institutional perspective will be great. For example, consider the case of 50 percent density at the time the focal firm is debating whether to outsource its payroll function when others have started to purchase COTS. Now consider two rate scenarios where 8 (low rate) and 75 (high rate) firms in the organizational field abandon outsourcing within the last month. In the first scenario when only a smaller fraction of firms abandoned outsourcing during the past month, the institutional influences on the focal firm is still greater as more firms (*vis-à-vis* second scenario) are expected to remain committed to outsourcing in the future, at least in the short term. However, when a higher number of firms have abandoned outsourcing over the last month as in the case of the second scenario, the institutional influence on the focal firm is much less as fewer firms are expected to remain committed to outsourcing in the immediate future. When normative institutional pressures diminish much faster when deinstitutionalization rate is high, firms will revert back to more rational, efficiency-based TCT outsourcing governance structures. If the focal firm is already outsourcing, then deinstitutionalization will effect its monitoring at a higher rate. In this scenario, the focal firm is more likely to revert to transaction cost factors (bounded rationality, opportunism, and risk) to structure outsourcing contracts as normative pressures to adopt institutional contracts subsides. Hence, we propose:

**Proposition 3b: The greater the rate of deinstitutionalization of the organizational field, greater the possibility of normative institutional factors being replaced by transaction cost factors in explaining outsourcing governance structures.**

### III. DISCUSSION

In this article, we augment the rational, efficiency-based perspectives on outsourcing with the non-choice based sociological perspective in order to describe outsourcing in the IS context. Although we used TCT because of its wider application in the outsourcing domain, one could certainly employ any of the other rational, efficiency-based theories such as resource-based or agency to complement institutional settings that force organizations to conform to institutionalized norms, beliefs and taken-for-granted practices. In adopting the institutional theory, we are heeding the call of scholars like Orlikowski and Barley [2001], Teo et al., [2003], and Miranda and Kim [2006] who have highlighted the need to account for the institutional context in research on information technology and organizations.

We seek to extend research in IS outsourcing by incorporating the institutional context in terms of the implications of mimetic, normative, and coercive forces as well as by incorporating the temporal dynamics of the institutionalization process by considering pace, stability, and deinstitutionalization of IS outsourcing practices. We began by identifying the implications of transaction cost factors on outsourcing governance structures. We then argued that as IS practices diffuse in organizational fields, institutional explanations are able to expose intricacies of outsourcing governance structures. Finally, to answer our research question, we theorized about the relative impact of transaction cost factors and institutional pressures on outsourcing governance structures during various stages of institutionalization.

The impetus to integrate transaction cost theory and institutional theory arises from the limited empirical support for either theory in isolation [Ang and Cummings 1997; David and Han 2004; Oliver 1997b]. While transaction costs focus exclusively on rational approaches to decision-

making, institutional theory relies singularly on non-choice behavior under all circumstances. By taking such isolated positions, both theories fail to fit the real world phenomena that are driven by both sets of factors. Consequently, one finds weak empirical support for the theories in applied setting. That is, by merely seeking to isolate the transaction cost factors in understanding outsourcing governance and by completely ignoring the institutional bases of such structures, one would not find meaningful results especially in an institutionalized organizational field with respect to outsourcing. Similarly, institutional empiricist will be hard pressed to find valid empirical results in highly innovative industries wherein the institutional processes are weak at best. What we propose in this article is the isolation of the context, which enables us to understand the appropriate implications of the two theories in isolation as well as in combination.

We also believe that it is necessary to point out some caveats regarding our theorizing. First, certain organizations may have engaged in other types of outsourcing prior to IS outsourcing. For example, General Motors may be using outsourcing in the manufacturing process and consequently may feel very comfortable in dealing with vendors. Similarly, a firm that has engaged in other types of outsourcing (e.g., telecommunications) is more likely to consider outsourcing application development in the future than a firm that has never engaged in any sort of IS outsourcing. While we have not accounted for this contingency in our model, the institutional perspective is certainly well equipped to handle such situations. Specifically, institutional theorists have developed a literature stream on habitualization where cognitive bases of phenomena override the economic bases. That is, some firms may habitually outsource IS practices consistent with their outsourcing philosophy in other domains.

Second, and perhaps a more important issue concerns the differentiation of contracts that may be determined based on the transaction cost and institutional perspectives. We do not mean to say that the contract characteristics will be different for the two perspectives at all times. From a rational perspective, imitation can be an uncertainty reduction mechanism and therefore firms may copy successful IS outsourcing practices, whereas institutional theory literature views such mimicking as a legitimacy gathering mechanism [Scott 1987]. Most institutional theorists do recognize that legitimacy frequently goes hand-in-hand with success [DiMaggio and Powell 1983]. As the link between effort and performance becomes more ambiguous, it is often difficult to separate success mimicking from legitimacy mimicking [Scott 1995].

Finally, we did not specially mention trust in our discussion. The impact of trust in interorganizational relationships is well documented [e.g., Chiles and McMackin 1996]. We believe that the transaction cost factor "risk" adequately captures the trust component of outsourcing governance when firms and vendors engage in long-term contractual relationships. Nonetheless, future studies should incorporate trust within the TCT and institutional context to examine its relational impact on rational, efficiency-based and non-choice based contract governance structures.

#### **IV. FUTURE RESEARCH AND IMPLICATIONS**

Our framework provides a starting point for understanding when transaction cost and institutional explanations will influence outsourcing contracts during various phases of institutionalization. There are several research issues that deserve attention. First and foremost, the propositions put forth in this research need to be stated in the form of testable hypotheses, so they could be validated empirically. To do so, it is important to develop and test empirical measures for the key constructs in our model. We have suggested some measures in Table 1. For example, density which is a key construct in several propositions could be measured in terms of the percentage of peer firms who have adopted IS outsourcing. While research in TCT would aid us greatly in refining the transaction cost constructs, the institutional theory constructs are perhaps a bit more ambiguous and underdeveloped. Hence, careful attention needs to be paid to refining the institutional constructs. Second, as mentioned earlier, future research needs to consider other theoretical perspectives besides TCT as an alternate rational, efficiency-based view and inter-link them with the institutional perspective. For example, the resource-based view could easily

Table 1. Construct Measures

Construct	Potential Measures
Adoption	Binary (adoption or non-adoption)
Screening	Number of screening methods employed and level of screening expenditures.
Monitoring	Number and frequency of reports the firm requests from the vendor.
Density	The percentage of peer firms of interest (e.g., successful firms or firms in the professional organization) who have adopted IS outsourcing.
Rate	The percentage of peer firms of interest who have adopted IS outsourcing within a given period of time (e.g., month, year, etc.).
Opportunism	Provan and Skinner [1989]; example items include “I have always provided my primary supplier a completely truthful picture of my business.”
Risk	Steensma and Corley [2001]; example items include “We have a tendency to support projects where the expected returns are certain.”
Mimetic Pressures	Number of interlocked firms that use the potential outsourcing arrangement under consideration by the focal firm <b>OR</b> number of firms within the industry that use the potential outsourcing arrangement under consideration by the focal firm.
Normative Pressures	Extent of active membership in a professional association of the focal firm considering outsourcing.
Coercive Pressures	Emergence of new technologies or abandonment of existing technologies. <sup>15</sup>

complement the institutional one and aid our understanding of how organizations with unique (i.e., strategic) resources respond to institutional pressures in order to maintain their competitive advantage. Third, future research needs to examine the theoretical fit between the decision to adopt and corresponding screening and monitoring levels. For instance, a firm might decide to adopt outsourcing based on normative institutional pressures, but then craft monitoring mechanisms based on TCT prescriptions. Although intuition might tell us that such a misfit would make outsourcing less effective, future research is needed to examine such assertions. Fourth, future research must investigate the costs of realizing and managing institutional pressures depending on the stage of institutionalization for a particular IT outsourcing practice. It could just be that by devoting more resources for realizing and managing institutional pressures, organizations may be able to more effectively control costs in screening and monitoring vendors. Further research is needed to explore this assumption. Finally, and more importantly, existing research needs to be considered in lieu of the interplay between rational TCT prescriptions and non-choice behavior in institutional theory. In the past, scholars have examined IT outsourcing issues ranging from determinants of outsourcing to consequences of outsourcing. For example, besides determinants from the rational TCT view point, what are the possible determinants that manifest from the institutional theory perspective? Similarly, researchers could examine whether the presence of strong institutional pressures impact consequences of outsourcing (e.g., cost

<sup>15</sup> For the purpose of this research, coercive pressures do not need to be measured. One only needs to know that the deinstitutionalization period has commenced. The reason for this is that the two propositions 3a and 3b for the deinstitutionalization stage state that greater density and rate lead to normative institutional pressures being replaced by transaction cost factors. Nonetheless, it should be noted that the factors that led to deinstitutionalization can only be known after the fact; they could not be known *a priori*.

savings, retention of core competences, etc.). With a few exceptions, most of the earlier research have examined these research questions without due consideration to institutional pressures that are inherent in organizational fields.

Our research has key implications for practitioners. This study provides an alternative explanation to TCT parameters such as bounded rationality, opportunism, and risk traditionally considered in IT outsourcing governance. It is important for managers to realize that there could be situations where strong institutional pressures prevail during the three stages of institutionalization. In such scenarios, managers need to assess the density and pace of adoption of the IT outsourcing practice of interest. To do so, managers are wise to allocate resources to realize and manage institutional pressures. Depending on the level of density and pace of adoption or de-institutionalization, managers could adhere to corresponding prescriptions to IT outsourcing. In the long run, managers who account for these institutional pressures and manage them in light of the rational TCT recommendations are likely to succeed in IT outsourcing.

Specifically, our framework helps managers in deciding whether to outsource and the corresponding levels of screening and monitoring. For example, a bank manager employing an ABA-sanctioned vendor might consider appropriate levels advocated by ABA (instead of those proscribed by the transaction cost factors) in dealing with the vendor. As noted earlier, our framework can also assist managers to identify the implications of not only the institutional forces but also the diffusion processes (i.e., density and rate). If managers fail to identify the institutional pressures, then these pressures might affect them adversely. For example, excessive mimicking of unstable outsourcing technologies may be harmful in the long run as they may not suit the focal organization's context. Finally, our framework could also assist managers in devising strategic responses to manage the institutional environment by understanding how to avoid and/or respond to the institutional pressures.

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## REFERENCES

- ABA Banking Journal. (2000). "E-CRM Solution Lets Marketing Take Aim," 92, 12, pp. 70.
- Ang, S. and L. Cummings. (1997). "Strategic Response to Institutional Influences on Information Systems Outsourcing," *Organization Science*, 8, 3, pp. 235-256.
- Ang, S. and D. Straub. (1998). "Production and Transaction Economics and IS Outsourcing: A Study of the U.S. Banking Industry," *MIS Quarterly*, 22, 4, pp. 535-552.
- Aubert, B. A., M. Patry, and S. Rivard. (2002). "Managing IT Outsourcing Risk: Lessons Learned," in *Information Systems Outsourcing*, R. Hirschheim, A. Heinzl and J. Dibbern (eds.), Berlin, Germany: Springer-Verlag, pp. 155-176.
- Bergen, M., S. Dutta, and O. C. Walker. (1992). "Agency Relationships in Marketing: A Review of the Implications and Applications of the Agency and Related Theories," *Journal of Marketing*, 56, 3, pp. 27-30.
- Brandes, P., R. Dharwadkar, and D. Das. (2005). "Understanding the Rise and Fall of Stock Options Compensation: Taking Principal-Agent Conflicts to the Institutional (Battle)Field," *Human Resource Management*, 15, 2, pp. 97-118.

- Bryson, N. and O. K. Ngwenyama. (2006). "Managing Risks in Information Systems Outsourcing: An Approach to Analyzing Outsourcing Risks and Structuring Incentive Contracts," *European Journal of Operations Research*, 174, pp. 245-264.
- Carmel, E. and B. Nicholson. (2005) "Small Firms and Offshore Software Outsourcing: High Transaction Costs and Their Mitigation," *Journal of Global Information Management*, 13, 3, pp. 33-54.
- Chaudhury, A., K. Nam, and H. R. Rao. (1995). "Managing Information Systems Outsourcing: A Bidding Perspective," *Journal of MIS*, 12, 2, pp. 131-159.
- Chiles, T. and J. McMackin. (1996). "Integrating Variable Risk Preferences, Trust, and Transaction Cost Economics," *Academy of Management Review*, 21, 1, pp. 73-99.
- Choudhury, V. and J. L. Sampler. (1997). "Information Specificity and Environmental Scanning: An Economic Perspective," *MIS Quarterly*, 21, 1, pp. 25-53.
- Clemons, E. K., S. P. Reddi, and M. C. Row. (1993). "The Impact of Information Technology on the Organization of Economic Activity: The 'Move to the Middle' Hypothesis," *Journal of MIS*, 10, 2, pp. 9-35.
- Cyert, R. M. and J. G. March. (1963). *A Behavioral Theory of the Firm*, Englewood Cliffs, NJ: Prentice-Hall.
- Davis, G. (1991). "Agents without Principles? The Spread of the Poison Pill through the Intercorporate Network," *Administrative Science Quarterly*, 36, pp. 583-614.
- David, R. J. and S. K. Han. (2004). "A Systematic Assessment of the Empirical Support for Transaction Cost Economics," *Strategic Management Journal*, 25, pp. 39-58.
- Dhar, S. and B. Balakrishnan. (2006). "Risks, Benefits, and Challenges in Global IT Outsourcing: Perspectives and Practices," *Journal of Global Information Management*, 14, 3, pp. 39-69.
- DiMaggio, P. J. and W. W. Powell. (1983). "The Iron Cage Revisited: Institutional Isomorphism and Collective Rationality in Organizational Fields," *American Sociological Review*, 48, 2, pp. 147-160.
- DiRomualdo, A. and V. Gurbaxani. (1998). "Strategic Intent for IT Outsourcing," *Sloan Management Review*, 39, 4, pp. 67-80.
- Dyer, J. (1997). "Effective Interfirm Collaboration: How Firms Minimize Transaction Costs and Maximize Transaction Value," *Strategic Management Journal*, 18, 7, pp. 535-556.
- Galaskiewicz, J. and R. S. Burt. (1991). "Interorganization Contagion in Corporate Philanthropy," *Administrative Science Quarterly*, 36, 1, pp. 88-105.
- Geyskens, I., J. E. M. Steenkamp, and N. Kumar. (2006). "Make, Buy, or Ally: A Transaction Cost Theory Meta-Analysis," *Academy of Management Journal*, 49, 3, pp. 519-543.
- Granovetter, M. (1985). "Economic Action and Social Structure: The Problem of Embeddedness," *American Journal of Sociology*, 91, 3, pp. 481-510.
- Grewal, R. and R. Dharwadkar. (2002). "The Role of the Institutional Environment in Marketing Channels," *Journal of Marketing*, 66, 3, pp. 82-97.
- Grover, V., M. J. Cheon, and T. C. Teng. (1996). "The Effect of Service Quality and Partnership on the Outsourcing of Information Systems Functions," *Journal of MIS*, 12, 4, pp. 89-116.

- Grover, V., T. C. Teng, and M. J. Cheon. (1998). "Towards a Theoretically-based Contingency Model," in *Strategic Sourcing of Information Systems*, L. P. Willcocks and M. C. Lacity (eds.), Chichester, UK: Wiley, pp. 79-101.
- Haveman, H. (1993). "Follow the Leader: Mimetic Isomorphism and Entry into New Markets," *Administrative Science Quarterly*, 38, 4, pp. 593-627.
- Hitt, M. A., R. E. Hoskisson, and R. D. Ireland. (1990). "Mergers and Acquisitions and Managerial Commitment to Innovation in M-Form Firms," *Strategic Management Journal*, 11, pp. 29-47.
- Jacobides, M. G. and D. C. Croson. (2001). "Information Policy: Shaping the Value of Agency Relationships," *Academy of Management Review*, 26, 2, pp. 202-223.
- Jayatilaka, B. (2002). "IT Outsourcing – A Dynamic Phenomenon: Forming an Institutional Theory Perspective," in *Information Systems Outsourcing*, R. Hirschheim, A. Heinzl and J. Dibbern (eds.), Berlin, Germany: Springer-Verlag, pp. 100-130.
- Jones, G. R. and C. W. Hill. (1988). "Transaction Cost Analysis of Strategy–Structure Choice," *Strategic Management Journal*, 9, pp. 159-172.
- Jurison, J. (2002). "Applying Traditional Risk-Return Analysis to Strategic IT Outsourcing Decisions," in *Information Systems Outsourcing*, R. Hirschheim, A. Heinzl and J. Dibbern (eds.), Berlin, Germany: Springer-Verlag, pp. 177-186.
- King, J. L., V. Gurbaxani, K. L. Kraemer, and F. W. McFarlan. (1994). "Institutional Factors in Information Technology Innovation," *Information Systems Research*, 5, 2, pp. 139-169.
- Kishore, R., H. R. Rao, K. Nam, S. Rajagopalan, and A. Chaudhury. (2003). "A Relationship Perspective on IT Outsourcing," *Communications of the ACM*, 46, 12, pp. 87-92.
- Klein, H. (2002). "On the Theoretical Foundations of Current Outsourcing Research," in *Information Systems Outsourcing*, R. Hirschheim, A. Heinzl and J. Dibbern (eds.), Berlin, Germany: Springer-Verlag, pp. 24-44.
- Klepper, R. and W. O. Jones. (1998). *Outsourcing Information Technology, Systems, and Services*, Upper Saddle River, NJ: Prentice Hall.
- Lacity, M. C. and R. Hirschheim. (1993). "The Information Systems Outsourcing Bandwagon," *Sloan Management Review*, 35, 1, pp. 73-86.
- Lacity, M. C. and L. P. Willcocks. (1998). "An Empirical Investigation of Information Technology Sourcing Practices: Lessons from Experience," *MIS Quarterly*, 22, 3, pp. 363-408.
- Lacity, M. C. and L. P. Willcocks. (2001). *Global Information Technology Outsourcing*, Chichester, UK: Wiley.
- Lawrence, T. B., M. I. Winn, and P. D. Jennings. (2001). "The Temporal Dynamics of Institutionalization," *Academy of Management Review*, 26, 4, pp. 624-645.
- Lee, J. (2006). "Outsourcing Alignment with Business Strategy and Firm Performance," *Communications of the AIS*, 17, pp. 1124-1146.
- Lee, J., M. Huynh, R. Kwok, and S. Pi. (2003). "IT Outsourcing Evolution: Past, Present and Future," *Communications of the ACM*, 46, 5, pp. 84-89.
- Lee, J. and Y. Kim. (1999). "Effect of Partnership Quality on IS Outsourcing Success: Conceptual Framework and Empirical Validation," *Journal of MIS*, 15, 4, pp. 29-61.
- Levina, N. and J. W. Ross. (2003). "From the Vendor's Perspective: Exploring the Value Proposition in IT Outsourcing," *MIS Quarterly*, 27, 3, pp. 331-364.

- Miranda, S. M. and Y. Kim. (2006). "Professional versus Political Contexts: Institutional Mitigation and the Transaction Cost Heuristic in Information Systems Outsourcing," *MIS Quarterly*, 30, 3, pp. 725-753.
- Mishra, D. P., J. B. Heide, and G. C. Stanton. (1998). "Information Asymmetry and Levels of Agency Relationships," *Journal of Marketing Research*, 35, 3, pp. 277-295.
- Murthy, S. (2004). "The Impact of Global IT Outsourcing on IT Providers," *Communications of the AIS*, 14, pp. 543-557.
- Oliver, C. (1991). "Strategic Responses to Institutional Processes," *Academy of Management Review*, 16, 1, pp. 145-179.
- Oliver, C. (1997a). "Sustainable Competitive Advantage: Combining Institutional and Resource-Based Views," *Strategic Management Journal*, 18, 9, pp. 697-713.
- Oliver, C. (1997b). "The Influence of Institutional and Task Environment Relationships on Organizational Performance: The Canadian Construction Industry," *The Journal of Management Studies*, 34, 1, pp. 99-124.
- Orlikowski, W. J. and S. R. Barley. (2001). "Technology and Institutions: What Can Research on Information Technology and Research on Organizations Learn from Each Other?" *MIS Quarterly*, 25, 2, pp. 145-165.
- Ouchi, W. G. (1980). "Markets, Bureaucracies, and Clans," *Administrative Science Quarterly*, 25, 1, pp. 129-141.
- Pfeffer, J. and Y. Cohen. (1984). "Determinants of Internal Labor Markets in Organizations," *Administrative Science Quarterly*, 29, 4, pp. 550-572.
- Poppo, L. and T. Zenger. (1998). "Testing Alternative Theories of the Firm: Transaction Cost, Knowledge-Based, and Measurement Explanations for Make-or-Buy Decisions in Information Services," *Strategic Management Journal*, 19, 9, pp. 853-877.
- Provan, K. G. and S. J. Skinner. (1989). "Interorganizational Dependence and Control as Predictors of Opportunism in Dealer-Supplier Relations," *Academy of Management Journal*, 32, 1, pp. 202-212.
- Roberts, P. W. and R. Greenwood. (1997). "Integrating Transaction Cost and Institutional Theories: Toward a Constrained-Efficiency Framework for Understanding Organizational Design Adoption," *Academy of Management Journal*, 22, 2, pp. 346-373.
- Scott, W. R. (1987). "The Adolescence of Institutional Theory," *Administrative Science Quarterly*, 32, 4, pp. 493-511.
- Scott, W. R. (1995). *Institutions and Organizations*, Thousand Oaks, CA: Sage.
- Sharma, A. (1997). "Professional as Agent: Knowledge Asymmetry in Agency Exchange," *Academy of Management Review*, 22, 3, pp. 758-798.
- Simon, H. A. (1961). *Administrative Behavior*, 2<sup>nd</sup> Edition, New York: MacMillan.
- Smith, M. L., S. Mitra, and S. Narasimhan. (1998). "Information Systems Outsourcing: A Study of Pre-Event Firm Characteristics," *Journal of MIS*, 15, 2, pp. 61-93.
- Spence, M. (1974). "Competitive and Optimal Responses to Signals: An Analysis of Efficiency and Distribution," *Journal of Economic Theory*, 7, 3, pp. 296-332.
- Spence, M. (1974). *Market Signaling: Informational Transfer in Hiring and Related Screening Processes*, Cambridge, MA: Harvard University Press.



- Spence, M. (1976). "Competition in Salaries, Credentials, and Signaling Prerequisites for Jobs," *Quarterly Journal of Economics*, 90, 1, pp. 51-74.
- Steensma, K. and K. Corley. (2001). "Organizational Context as a Moderator of Theories on Firm Boundaries for Technology Sourcing," *Academy of Management Journal*, 44, 2, pp. 271-291.
- Teo, H. H., K. K. Wei, and I. Benbasat. (2003). "Predicting Intention to Adopt Interorganizational Linkages: An Institutional Perspective," *MIS Quarterly*, 27, 1, pp. 19-50.
- Tolbert, P. S. and L. G. Zucker. (1983). "Institutional Sources of Change in the Formal Structure of Organizations: The Diffusion of Civil Service Reform, 1880-1935," *Administrative Science Quarterly*, 28, 1, pp. 22-39.
- Tolbert, P. S. and L. G. Zucker. (1999). "The Institutionalization of Institutional Theory," in *Studying Organizations: Theory and Method*, S. R. Clegg and C. Hardy (eds.), London, UK: Sage, pp. 169-185.
- Tushman, M. L. and P. Anderson. (1986). "Technological Discontinuities and Organizational Environments," *Administrative Science Quarterly*, 31, 3, pp. 439-465.
- Useem, M. (1979). "The Social Organization in American Business Elite and Participation of Corporation Directors in the Governance of American Institutions," *American Sociological Review*, 44, 4, pp. 553-572.
- Uzzi, B. (1996). "The Sources and Consequences of Embeddedness for the Economic Performance of Organizations: The Network Effect," *American Sociological Review*, 61, 4, pp. 674-698.
- Wathne, K H. and J. B. Heide (2000). "Opportunism in Interfirm Relationships: Forms, Outcomes, and Solutions," *Journal of Marketing*, 64, 4, pp. 36-51.
- Whang, S. (1992). "Contracting for Software Development," *Management Science*, 38, 3, pp. 307-324.
- Willcocks, L. P., G. Fitzgerald, and M. Lacity (1996). "To Outsource IT or Not? Recent Research on Economics and Evaluation Practice," *European Journal of Information Systems*, 5, 3, pp. 143-160.
- Willcocks, L. P. and T. Kern (1998). "IT Outsourcing as Strategic Partnering: The Case of the UK Inland Revenue," *European Journal of Information Systems*, 7, 1, pp. 29-45.
- Willcocks, L. P. and M. C. Lacity. (1998). "The Sourcing and Outsourcing of IS: Shock of the New?" in *Strategic Sourcing of Information Systems*, L. P. Willcocks and M. C. Lacity (eds.), Chichester, UK: Wiley, pp. 1-41.
- Willcocks, L. P., M. C. Lacity, and T. Kern. (1999). "Risk Mitigation in IT Outsourcing Strategy Revisited: Longitudinal Case Research in LISA," *Journal of Strategic Information Systems*, 8, 3, pp. 285-314.
- Williamson, O. E. (1975). *Markets and Hierarchies: Analysis and Antitrust Implications*, New York: Free Press.
- Williamson, O. E. (1981). "The Economics of Organization: The Transaction Cost Approach," *American Journal of Sociology*, 83, pp. 539-577.
- Williamson, O. E. (1985). *The Economic Institutions of Capitalism*, New York: Free Press.
- Williamson, O. E. and S. G. Winter. (1993). *The Nature of the Firm*, New York: Oxford University Press.

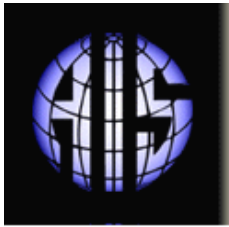
Zucker, L. G. (1977). "The Role of Institutionalization in Cultural Persistence," *American Sociological Review*, 42, 5, pp. 726-743.

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