Assimilation of Outsourced IT Capabilities: Gearing Their Strategic Capabilities

Jahyun Goo  
*Florida Atlantic University*, jgoo@fau.edu

C. Derrick Huang  
*Florida Atlantic University*, dhuang@fau.edu

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Jahyun Goo  
Florida Atlantic University  
jgoo@fau.edu

C. Derrick Huang  
Florida Atlantic University  
dhuang@fau.edu

ABSTRACT
This paper proposes a model that suggests how firms could create strategic capabilities through IT outsourcing. We suggest how a firm adds value and reaps strategic benefits from IT outsourcing arrangements. A primary proposition is that, in the process of penetration of the managerial and technical capabilities of external vendors, managerial and social factors act as facilitators or inhibitors of the process. When the client firm is able to integrate the IT capabilities of outsourcing vendors, these assimilated capabilities in turn become the strategic source of IT competence.

Keywords (Required)
IS outsourcing, competitive advantage, resource-based view, monitoring, coordination cost

INTRODUCTION
As information technology (IT) emerges as a strategic differentiator in the corporate environment (McKenney et al., 1995, Dhar and Sundararajan, 2009), firms start to seek ways to obtain and leverage IT resources and capabilities swiftly in order to create distinctive competencies. It is often argued that IT resources and activities can be obtained in a timely fashion from the outsourcing market but sustained competitive advantages led by outsourced IT bundles are by no means guaranteed. This view comes from the fact that most firms have leveraged comparable IT resources and capabilities through IT outsourcing, which has become prevalent and relatively easy to acquire in outsourcing markets (Mata et al., 1995, Ravichandran and Lertwongsatien, 1998). This leads us to naturally think that IT activities outsourced need to be leveraged to develop company-specific capabilities through the assimilation process. Thus, we believe that the processes that integrate outsourced resources or capabilities with existing ones are critical in understanding how firms develop competitive advantages from outsourcing practices and create or add value. In this paper, we propose a model of integrating outsourced IT activities with internal capabilities, which helps improve the performance of outsourced IT resources to gain and sustain a competitive advantage.

THEORY AND PROPOSITIONS
Recent studies in information systems support our basic premise that competitive advantage does not necessarily come from installing the newest technology or from systems done well. Lasting competitive advantage comes from using IT to support what the firm does well and to add value to the resources that the firm possesses (Clemons and Row, 1991). Complementarities between IT resources and the firm’s human and business resources explained significant variance in firm performance.

Therefore, emphasis is rapidly shifting from outsourcing parts, components, and hardware subsystems toward the even greater unexploited potential that an organization’s ability offers, such as assembly, integration, and deployment of valued resources (Quinn, 1999). We believe that internal internal sources of managerial skills for integrating outsourced resources or capabilities with existing ones are critical in understanding how firms develop competitive advantages from outsourcing and create or add value.

When a firm makes a decision regarding IS outsourcing, it has a task of properly integrating two sets of capabilities or resources: (i) IS resources brought in from the vendors and (ii) the internal IS managerial resources and capabilities of the client. If the outsourced IT assets are complemented by the existing capabilities of the firm and create opportunities for performance improvement, they themselves could be a source of competitive advantages. This process is, however, critically contingent upon the internal capabilities of the client in monitoring, coordinating, and managerially supporting the vendor’s activities. Figure 1 depicts this process.
The internal IT managerial capabilities need to be in sync with the new set of managerial capabilities brought in by the vendors. First, securing the internal IS business linkage in order to bridge between the business unit and the external provider is important. The current business linkage aids in the assimilation process of capabilities and resources that the vendor(s) bring in, by either facilitating or inhibiting the impact of the outsourced resources or capabilities. The assimilation process is also influenced by the contextual factors, such as, perceived trustworthiness, ease of monitoring, and coordination complexity. Perceived trustworthiness regarding the performance of the vendors affects the process by influencing the required level of monitoring and control over vendors’ activities. Coordination complexity is problematic as it increases costs of control and governance. Vendors’ activities would be most effective when monitoring engaged over the outsourced activities is not too little or too extreme. The vendor’s capabilities moderated by the internal capabilities and outsourcing context become the source of firm competences (system output competence and product/service competence) of the client firm. Again, the enhanced firm competence is the direct source of the competitive advantages of the client firm.

**EXTERNAL SOURCES OF IS CAPABILITIES**

**IS operating efficiency and strategic values of outsourced resources**

One of the primary drivers for IS outsourcing identified in prior research is an attempt to enhance the efficiency of IS. Companies want better performance from their core IS processes. They believe that outside vendors who use superior process and management methods are better able to operate IS resources and capabilities. Outsourcers are expected to achieve these IS operating efficiencies because of factors such as cost reduction, service quality improvement, and improvement of productivity of resources (DiRomualdo and Gurbaxani, 1998). Operational control involves enhancement of the quality aspects of services, which in turn promote end user’s computing activities that work well for the users in their own domain (Essex et al., 1998). Thus, the adoption of superior management practices from the vendor enables and enhances the client firm’s competences on enhancing the quality of IS services by providing better IS output such as reliability, responsiveness, and assurance of the content to support the decision maker’s needs (Pitt et al., 1995). In addition, outsourced IS resources must be strategic for the client to be used as sources of distinctive competence, having the traits imperfect imitability and strategic value to the firm. When the IS resources with such traits are brought into the client firm, these enhance the outsourcing-induced product/service values. Following Ross (1996), we posit that the evidences of internalization of the strategic resources take the forms of nimble market responsiveness, which requires the effectiveness and efficiency of IS practices to deliver the business needs of the firm faster than competition (i.e., product/service value enhancement).

**INTERNAL SOURCES OF RELATIONAL AND MANAGERIAL CAPABILITIES**

Outsourced IS capabilities may not directly lead to sustained competitive advantage. Rather, its influence may be complemented by the internal sources such as perceived trustworthiness, ease of monitoring, coordination complexity, and IS business linkage (Davis et al., 1992). In other words, they can be leveraged through internal sources to develop firm competences that are sources of competitive advantage (Ravichandran and Lertwongsatien, 1998). In doing so, we believe that the internal sources play a role as moderators, which has both direct effects on materializing competency of IS output...
and products/services and interaction effects (Chin and Gopal, 1995, Chin et al., 1996) among the constructs that are addressed in the following section.

**Perceived trustworthiness**

Perceived trustworthiness is the extent to which an entity expects fiduciary responsibility in the performance of their roles and believes that the partner will act in the best interest of the partnership (Anderson and Narus, 1990). It may act as an obstacle to opportunistic behavior, which may substitute for hierarchical governance and therefore provide a competitive advantage (Barney and Hansen, 1994). In fact, through 103 dyadic relationships, Smith and Barclay (Smith and Barclay, 1997) found that perceived trustworthiness affected trusting behaviors, which in turn, have an effect on perceived task performance. High trustworthiness often relates to system reliability, ease of use, reputation of the vendors, high quality of information, perceived delivery fulfillment, prior relationship, etc. with respect to the outsourced IS activities. Thus, high trustworthiness entails less structural arrangements and thus lower monitoring, search, and agency costs. More resources can be channeled into the idiosyncratic, company specific activities, which in turn increase the likelihood of generating product/service competence of the client.

Operating efficiency of the outsourced IS activities may be severely challenged under opportunistic, non-trusting environment. As more hierarchical governance structure is introduced in an effort to reduce opportunistic behavior, agility and flexibility of the outsourcing will be lost; consequently the cost control capability and operating efficiency of the outsourced activities are compromised. The presence of perceived trustworthiness lowers transaction costs by minimizing the need for the exchange partners to safeguard against opportunism (Robicheaux and Coleman, 1994). According to Zaheer et al. (Zaheer et al., 1998), trust mitigates the opportunistic behavior and the information asymmetries inherent in interfirm exchange, which in turn reduces conflict and costs of negotiation. Specifically, when unforeseen contingencies arise, such as costs not explicitly covered by the terms of contract, high level of trust facilitate the development of a common understanding about the contingencies and how they might be solved. This helps keep providing reliable, stable, and high performing outsourced IS activities, which in turn enhance IS output performance.

In addition, the enhancement of transaction value (Zajac and Olsen, 1993) – such as cooperation of new information and coordination technologies, new market opportunities, and product and service innovation – may account for materializing outsourcing induced product/service competence through the strategic value brought in by the external vendor (Zaheer et al., 1998). When there exists trust between partners, trust also replaces detailed contracts that can be costly and time consuming if done formally, and able to expand the realm of feasible alliances and allow outsourcing partners to enter into wide range of activities. Therefore, trusting relationship between the partners allows the client to assimilate the maximum potential of vendor’s capabilities. Strategic values associated with the outsourced activities can transfer to the client without structural barriers such a s risks, governance structure, coordination devices, etc., where these are kept minimal and replaced by mutual, tacit understanding. Therefore, we posit that perceived trustworthiness facilitates the blending of strategic values associated with the outsourced activities. Therefore:

**Proposition 1:** Perceived trustworthiness of the vendor(s) moderates the association between external sources of IS capabilities and IT outsourcing-induced strategic capabilities.

**Ease of monitoring over the vendor**

Monitoring ease has something to do with various factors; with two major reasons, one comes from similarities of organizational processes and culture between the client and the vendor (which will be discussed in the coordination complexity section). The other relates to the internal IS capabilities of the client. The ability of the client firm to assemble diverse expertise has direct impacts on both IS performance and product innovation. Kodak, for example, enabled the internal IS group to control the interface to the business units served by the outsourcing vendor, and consequently made it easier to assimilate the vendor’s expertise into its retained IS processes so as to improve the productivity of existing IS resources (DiRomualdo and Gurbaxani, 1998). Thus, monitoring ease can serve as a sign that the client has sufficient capability to control the assimilation process. A monitoring system placed over the vendors’ IS activities can effectively leverage managerial skills and know-how that are needed for the client and allow their integration with internal managerial skills (Aubert et al., 1998). By developing sophisticated performance metrics and adequate monitoring techniques upfront of the deal, many companies tap into the much richer operating skills that decrease their improvement cycle time and thus increase operating efficiency (Quinn, 1999). In addition, monitoring ease can also strengthen the product/service competence of the client firm by helping the client better materialize strategic values brought in by the vendor. Product/service competence of the client firm is nurtured through two processes, which are (i) assimilation of the idiosyncratic, valuable outsourced resources into the internal sets of IT skills and managerial capabilities, (ii) transformation to isolating mechanism of the firm.
that protect the firm from competition in the market. In this process, properly situated monitoring system is essential for the client firm to internalize the strategic values of the vendor’s IS capabilities.

The effectiveness of monitoring in inducing preferable results depends on the level of the monitoring ease exerted on vendors’ activities. For example, if the monitoring by a client firm over a vendor’s behavior is relatively easy, the client firm is likely to have sufficiently tight control to foster the expected results. But, a client firm that tries to maintain control over the process at every step will destroy the leverage a vendor can employ to produce the desired results (Bendor-Samuel, 2002). In contrast, if the monitoring is difficult, it may indicate that the control system exerted on the outsourcing relationship is ineffective. This also exacerbates the results. In a recent study, Sabherwal (Sabherwal, 1999) found that either too excessive or too light control over outsourced IS development projects hurts the performance. In light of this finding, we argue that a medium level of monitoring perhaps produces the best results in terms of creating the IS output competence. Thus, we posit that either too excessive or too light control over IS activities of the firm would hurt the client in realizing the operating efficiency, which in turn degrade IS output value and product/service competencies of the client.

**Proposition 2:** Ease of monitoring over the IS activities of the vendor(s) moderates (in the manner of an inverted-U shape) the association between external sources of IS capabilities and IT outsourcing-induced strategic capabilities.

### Coordination complexity

Coordination problems arise due to many reasons such as goal discrepancy among outsourcing partners, the inherent problem of information asymmetry and resultant moral hazard between the partners, and a lack of clear hierarchical arrangements for effective outsourcing management (Burgers et al., 1993, Parkhe, 1993). Coordination needs also occur at various levels of interface between the outsourcing client and vendors. At the task level, coordination requirements are affected by the characteristics of resource/information flows, task types and complexity, and workflow environments. At the strategic level, on the other hand decision-making environments call for coordination.

When an outsourcing contract requires the partners to make an investment in extensive structural restructuring and other alliance-specific assets, the firm risks incurred by the outsourcing arrangement are high and profit potential is low. The clients ought to recognize the downside of such outsourcing arrangements when anticipated coordination and restructuring requirements are substantial (Miles, Preece, & Baetz, 1999; Rule, Ross & Donougher, 1999). Moreover, when ex-post requirements of task coordination across widely diverse systems are also expected to be high due to extraordinary differences of unbalanced partners in resource configuration, organizational objectives and practices, and logistical complexities, these will be translated negatively in creating ex-post product/market competencies of the client.

High coordination complexity also interferes with the process in which the strategic value of the outsourced IT resources transforms into the product/service competence of the client. When tasks and sub-tasks across the partners are complex and highly inter-dependent, more control and coordination mechanisms are required. Such coordination mechanisms include communication and command structure, incentive systems, dispute resolution systems etc. (Gulati and Singh, 1998). More coordination mechanisms, once in place, are likely to lead to increasing information-processing costs (Galbraith, 1977) and possibly to a decline in performance (Ponyd, 1970). Moreover, when the outsourced activities need to go through various processes that are designed to filter such coordination difficulties, it entails increasing costs and declining efficiency and effectiveness of the outsourced activities. Under high coordination complexity, therefore, it becomes increasingly difficult for idiosyncratic, strategically valuable outsourced resources to realize their full strategic capacity and thus tarnish the relationship between the strategic value of the outsourced resources and the product/service competence of the client. Therefore:

**Proposition 3:** Coordination complexity of the outsourced activities negatively moderates the association between external sources of IS capabilities and IT outsourcing-induced strategic capabilities.

### Business linkage of IS

In general, firms whose IT unit are intricately woven into business units are regarded to be able to (a) integrate the IT and business planning processes more effectively, (b) conceive of and develop reliable and cost-effective applications that support the business needs of the firm faster than competition, (c) communicate and work with business units more efficiently, and (d) anticipate future business needs of the firm and innovate valuable new product features before competitors (Bharadwaj, 2000). With the same token, IS unit that has close linkages with business units may play an important role as “business liaison” or “service director” to communicate between a service provider and each of its business-unit customers in IS outsourcing context (Curtis, 2002). For example, some IS organizations have tasked senior IS managers with the additional role of “account manager” for one or more business units. The account manager works with business managers to gather
requirements, negotiate service levels and handle issues as they arise. This role requires excellent communication and negotiation skills, because the requirements of business initiatives often do not make sense to those with technical expertise, and the capabilities and limitations of technology are often lost on business managers (Rockart et al., 1996). The managerial ability to coordinate the multifaceted activities associated with the successful implementation of IT systems has been found to be a key distinguishing factor of successful firms (Ross et al., 1996, Sambamurthy and Zmud, 1992). Therefore, we argue that the presence of business linkage of IS will have positive impact on realizing outsourcing-induced IS system output and product/service competencies overall.

A strong presence of IS business linkage in the client firm is critical in materializing cost advantages, operating efficiency, and service quality improvement brought in by the vendor. When the IS department has an influence over the strategic process of the company, operating efficiency and cost control mechanism brought in by the vendor will be felt more widely and systematically in the client firm. For example, IS unit may figure out different levels of services can be delivered at different costs. These costs may be reflected in the amounts charged back to the individual business units based on their specific service-level requirements. Developing a service level agreement (SLA) that correlates to the costs associated with services evolves the IS unit toward a service provider model. This enhances the enterprise’s ability to better compare “apples to apples” in services that are internally sourced to those offered by external services providers. Moreover, the existence of IS champion in the client firm will expedite the stabilization process of the newly adopted IS, more quickly providing the end user’s needs. It is imperative for the IS unit to have regular and continuing communications with the business units it supports. When roles are defined, expectations are properly set and priorities are mutually understood, the IT infrastructure can most productively be tuned to support business-critical IT services. This atmosphere will also ensure that the IT infrastructure continues to perform as needed by the business units in response to changes in the product/service market. Thus, in order to garner successful IS outsourcing results, maintaining effective relationship with business units supported by top management and IS managers are important to be able to internalize such needs provided by vendors. We argue that a firm’s the ability to synchronize the new technologies and skills brought in by the vendor with existing business processes critically relate to its capacity to recognize the value of new, external skill set, assimilate it, and apply it to commercial ends (Cohen and Levinthal, 1990, Agarwal et al., 1997). Furthermore, in order for strategic value to emerge, i.e., non-imitability, non-tradability, or non-transferability, the client needs strong IS managerial skills as a facilitator. Therefore, strong IS business linkage of the client firm increases the possibilities that strategic values associated with the outsourced resources generate outsourcing-induced product/service competence of the firm.

**Proposition 4: Business linkage of IS in a client firm positively moderates the association between external sources of IS capabilities and IT outsourcing-induced strategic capabilities.**

**DISCUSSION**

We proposed the model that could articulate how firms can and do create competitive advantages through IS outsourcing arrangements, where the assimilation process within the client firm is inevitable and crucial. The propositions call for rich insights into IT outsourcing management: While opportunities to enhance the competitive posture through IS outsourcing arrangement will be increasingly compelling (Teng et al., 1995) as environments become more dynamic and volatile, the IS capabilities of the vendors become the competitive assets of the client firm, only when properly assimilated, which then provide the sources for competitive advantages.

We identified the internal managerial factors that influence this assimilation process. These moderating variables are manifested to act as facilitator or inhibitor in the assimilation process. For example, we posited that the existence of IS business linkage of the client and trustworthiness of the vendors by the client facilitate the assimilation process, enhancing the strategic values and the operating efficiency of the outsourced IT resources. In other words, in order to realize cost efficiency through IS outsourcing arrangements, it seems essential for the client to have a strong presence of IS managerial capability within the firm. In-house IT skills, for example, include detailed knowledge of IT projects to insure goal and value congruence, the risk and responsibility sharing capability to develop feedback systems to leverage and share knowledge and innovation, the relational skills to create mutual three-level contacts between managers, champions, and operating level personnel, etc. (Quinn, 1999).

The trustworthiness of the vendor by the client is also articulated to have powerful influence in the assimilation process. Trusting atmosphere in outsourcing engagement seems to help in assimilating the operating efficiency and the strategic value of the outsourced IT resources into the client firm. This affirms the necessity and the importance of strong strategic ties between the vendor and client. Prior research also confirms that strong strategic relationship is one of the keys in outsourcing success (Lee and Kim, 1999).
We also identified that some variables, on the other hand, act as inhibitors in the assimilation process. For example, we consider that coordination complexity makes it difficult for the client to realize the potential benefits of outsourcing. The presence of coordination complexity is found to diminish the impacts of the outsourced IT resources. For example, this could imply that strategic value of the outsourced IT resources might not be assimilated at all and fail to create outsourcing induced product/service competence, if the coordination process is highly complex between the involved activities and parties.

The ease of monitoring is proposed to act both as facilitator and inhibitor, depending on the level of ease. We posited that both too easy and too difficult monitoring level would penalize the client by making it difficult to assimilate the potential values of the outsourced IT resources. This proposition is consistent with the findings by Sabherwal (Sabherwal, 1999). This proposition implies that neither excessive monitoring level is favored nor is a meager level of monitoring desired. Rather, a moderate level of monitoring ease is recommended so that the vendors’ IT capabilities are fully utilized without interfering with the internal systems.

**CONCLUSION**

In this proposition research, we explored how a firm adds value and recoups the benefits from IS outsourcing arrangements. The primary proposition is that in the process of value creation, the assimilation of the technical capabilities of external vendors is critical. When the client firm is able to integrate the IS capabilities of outsourcing vendors, these capabilities in turn become the source of IS-enabled competence and competitive advantages vis-à-vis the competition. In contrast to the common perception that firms should resort to building entry barriers internally in order to produce competitive market position vis-à-vis competition, we have proposed that in an era when fast changing markets and technological breakthroughs easily nullify entry barriers, resource competence in IT is essential to maintain competitive market posture of firms. Furthermore, when fast changing technologies compel firms to find ways to align and cooperate with competitors, the boundary of firms becomes obsolete and blurred (Barney, 1999). Outsourcing arrangements and vertical as well as horizontal alliances are increasingly common in the market. In this situation, the notion of assimilation, which explains the internalization of externally provided resources and capabilities by vendors and partners, becomes of central concern. We demonstrated that, when properly assimilated, the capabilities and resources of vendors and partners can and do generate competitive advantages for the client firms.

**References:**


