

Global Sourcing Strategy and Performance of Knowledge-Intensive Business Services: A Two-Stage Strategic Fit Model

Janet Y. Murray*
E. Desmond Lee Professor for
Developing Women Leaders and Entrepreneurs in International Business
Professor of Marketing
Department of Marketing
College of Business Administration
SSB 458
University of Missouri-St. Louis
One University Boulevard
St. Louis, MO 63121-4499
Phone: (314) 516-6537
Fax: (314) 516-6420
E-mail: murrayjan@umsl.edu

Masaaki Kotabe
The Washburn Chair of International Business and Marketing
Temple University
The Institute of Global Management Studies
349 Speakman Hall (006-00)
Philadelphia, PA 19122
Phone: 215-204-7704
Fax: 215-204-8029
Email: mkotabe@temple.edu

and

Stanford A. Westjohn
Ph.D. Candidate
Boeing Institute of International Business
John Cook School of Business
Saint Louis University
3674 Lindell Blvd., Cook Hall 332
Phone: 314-977-3810
Fax: 314-977-7188
Email: westjohn@slu.edu

* Contact Author

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Abstract

This research contributes to the understanding of global sourcing strategy of knowledge-intensive business services (KIBS) by offering an explanation for the differential performance among firms, even when they use similar global sourcing strategies. Based on a systems integrator as the sourcing firm's perspective, the authors argue that complex KIBS involve a complicated mixture of interfaces in that the performance of an individual KIBS is insufficient in defining the overall performance of the integrated KIBS system. The theoretical framework uses a two-stage strategic fit model highlighting the conditions under which global sourcing of KIBS influences performance. Firms that strategically co-align sourcing strategy with KIBS attributes for each KIBS activity should perform better than firms lacking such a co-alignment. After selecting an appropriate sourcing strategy, the firm's dynamic capabilities, (i.e., absorptive capacity and integration capability) may accentuate or attenuate the performance of the strategy at the integrated KIBS system-level. Thus, while managers may be tempted to globally source KIBS on the basis of reducing labor costs, they must examine both the KIBS attributes and the firm's dynamic capabilities.

Keywords: global sourcing strategy, knowledge-intensive business services, systems integrators, strategic fit, dynamic capabilities

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In an era of knowledge economy, firms increasingly utilize their global access to talent and innovation capabilities as a critical source of competitive advantage (UNCTAD 2007). As such, both large and small firms are outsourcing and offshoring various services that were traditionally performed within the firm and sourced from domestic suppliers. Current measures of services offshoring are limited by a dearth of relevant data. Nevertheless, some studies point to a significant growth. For example, offshoring of services to emerging markets was expected to grow 30% annually between 2003 and 2008 (McKinsey Global Institute 2005a). Indeed, according to the Offshoring Research Network's (2007) annual survey, the number of firms offshoring services grew 25% year over year from 2004 - 2006. The core driver of the latest form of global (i.e., both onshore and offshore) outsourcing is the heightened organizational and technological capacity of firms in decoupling and coordinating a network of remotely located external suppliers performing an intricate set of activities (Levy 2005).

Of all types of services, knowledge-intensive business services (KIBS thereafter) contribute over 30% of the total value added from services in the U.S. and the UK (Bettencourt, Ostrom, Brown, and Roundtree 2002). Global sourcing of KIBS is predicted to continue to grow, with a shift toward offshoring higher value-added services, such as software and information technology services (McKinsey Global Institute 2005b). The extant literature has described KIBS in various ways. OECD (1999) has described knowledge-based industries as those industries that are relatively intensive in inputs of technology and/or human capital. Bettencourt et al. (2002: 101) defined KIBS as value-added service activities that consist of "the accumulation, creation, or dissemination of knowledge for the purpose of developing a

customized service or product solution to satisfy the client's needs," and KIBS are complex, unstructured, and highly customized to meet a customer's unique needs. Miozzo and Grimshaw (2005) stressed that KIBS are those business services that rely on social and institutional knowledge (e.g., accountancy or management consultancy) or technological knowledge (e.g., computer, R&D and engineering services). Although the term KIBS has been in use for more than 15 years and that KIBS will increasingly account for a larger share of innovation and value creation, researchers have examined KIBS mainly from the perspective of the supplying firm (Bettencourt et al. 2002; Muller and Doloreux 2009), to the neglect of the sourcing firm's perspective. This represents a notable gap in KIBS research; consequently, we do not have an adequate understanding of how sourcing firms can capitalize on KIBS sourcing to create a competitive advantage.

Any value chain needed to produce products for a customer can be seen as a bundle of activities governed by a nexus of treaties, and these activities are performed either internally or externally (Aoki, Gustafsson, and Williamson 1990; Williamson 1995). So for every individual activity a governance choice must be made (make or buy) and the sum of all governance choices determines a firm's overall level of outsourcing, which will differ for every individual firm (cf. D'Aveni and Ravenscraft, 1994).

In the business-to-business marketing context, many service firms provide integrated solutions to their business customers by organizing their own internal and external activities globally, as their customers are demanding more complex integrated solutions that often involve technologies and services from multiple suppliers. These firms, as systems integrators, act as a prime contractor organization that is responsible for the overall system design and the integration of product and service components from both internal and external suppliers globally into a

functioning system for an individual customer (Davies, Brady, and Hobday 2007). In most instances, these firms integrate complex, knowledge-intensive products (Kumar, van Fenema, and von Glinow 2008). For example, software development involves the following service activities: software concept, requirements analysis, architectural design, detailed design, coding and debugging, and system testing.

As the demand for faster design and integration of increasingly robust systems, systems integrators must compete on new development processes such as rapid application development, extreme programming and agile software development (McFarland 2008). “As the process of disintegration and reintegration continues, there is an emerging need for entities that have the knowledge and skill to manage functionally diverse and geographically dispersed supply networks” (Bitran, Gurumurthi, and Sam 2007: 37). Through global sourcing of KIBS, a firm (i.e., systems integrator) is able to create value propositions to gain a competitive advantage through the differential use of its own knowledge, combined with the knowledge obtained from members of the service chain (Vargo and Lusch 2004). Indeed, systems integrators, especially those in developed nations, have increasingly capitalized on global sourcing of KIBS for market performance advantages.

Given the predicted growth in global sourcing of KIBS, its increasingly important role in innovation and value creation, and the recognition of KIBS as a unique sector (Muller and Doloreux 2009; Tether and Hipp 2002), the examination of global sourcing strategy of KIBS is of utmost urgency. Our research provides important theoretical and managerial implications that differ from those related to other services. Specifically, we contribute to the understanding of global sourcing strategy of KIBS by offering an explanation for the differential performance among firms, even when they use similar global sourcing strategies for KIBS. Based on a

systems integrator as the sourcing firm's perspective, we argue that complex KIBS involve a complicated mixture of interfaces such that the performance of an individual KIBS insufficiently defines the overall performance of the integrated KIBS system (Miozzo and Grimshaw 2005). Furthermore, after acquiring valuable external knowledge, a firm needs to utilize its absorptive capacity in exploiting externally generated knowledge, transforming and commercially applying knowledge to create firm value (Zahra and George 2002). Because the selection of the global sourcing strategy for one KIBS may pose a binding constraint on other KIBS, the sourcing firm must manage these interdependencies by achieving integration across the internally and externally sourced KIBS (Kretschmer and Puranam 2008).

We contribute to the literature by developing a theoretical framework, using a two-stage strategic fit model, that highlights the antecedents and conditions under which global sourcing of KIBS by a firm (i.e., systems integrator) influences performance. We theorize that firms that align the type of sourcing strategy for each KIBS activity to a specific sourcing attribute (i.e., a KIBS attribute) should perform significantly better than those that do not achieve the requisite match (Venkatraman and Prescott 1990). However, after an appropriate sourcing strategy for each KIBS activity is selected, a sourcing firm's dynamic capabilities (i.e., absorptive capacity and integration capability) may accentuate or attenuate the desirable sourcing strategy-performance effects at the integrated KIBS system-level.

CONCEPTUAL FOUNDATION

Despite the paucity of research on services in general and on global sourcing of services in particular, a limited number of studies on global sourcing of services have been valuable. Kotabe, Murray, and Javalgi (1998) examined the performance implications of global sourcing of core and supplementary services. They found that service innovativeness positively affected

performance, while external availability of supplementary services negatively affected performance, likely because the availability of outside suppliers negated any competitive advantage for the sourcing firm. Using a modified-TCA framework, Murray and Kotabe (1999) found that inseparability of services and transaction frequency moderated the relationship between asset specificity and global internal sourcing of supplementary services. Recently, in differentiating global sourcing strategies of pure (e.g., legal, telecommunication, consulting etc.) vs. non-pure (e.g., restaurants, retailing, construction etc.) service firms, Kotabe and Murray (2004) found support for differences in both global sourcing drivers and sourcing strategies, including a lower tendency for pure service firms to use offshoring than did non-pure service firms. The findings of these studies suggest that different factors affect the sourcing strategy of different types of services, resulting in differential performance.

Other studies on the performance outcomes of outsourcing and offshoring have yielded mixed results (e.g., Hsieh, Lazzarini, and Nickerson 2002; Lacity, Willcock, and Feeny 1995). For example, a link between offshoring and performance does not appear in the case of IT-enabled services (Bhalla, Sodhi, and Son 2008). Indeed, Gottfredson et al. (2005) found that about 50% of firms in their sample reported that their outsourcing programs fell short of expectations. Only 10% were highly satisfied with the cost savings, and only 6% were highly satisfied with their offshore outsourcing overall. Similarly, Booz Allen Hamilton found that the success rate of outsourcing deals from the customer's perspective was only 12% (*Fortune* April 3, 2006). Interestingly, despite a much lower foreign labor cost, some firms have found that the overall costs of the offshored processes turn out to be higher than prior in-house costs (Stratman 2008). Recently, Bhalla, Sodhi, and Son (2008) failed to find a direct link between firm performance and the extent of offshoring. Other researchers have even suggested that global

outsourcing may not be related to performance (Leiblein, Reuer, and Dalsace 2002).

Practitioners have started to question whether universally prescribing global outsourcing is appropriate (Doig et al. 2001).

One plausible argument for the inconclusive sourcing performance is that desirable sourcing performance necessitates the sourcing strategy to achieve a strategic fit with the environment. Indeed, researchers have theorized that the *appropriateness* of a particular strategy is based on its 'coalignment' or 'fit' with environmental contingencies (Drazin and Van de Ven 1985; Katsikeas, Samiee, and Theodosiou 2006; Lukas, Tan, and Hult 2001; Murray, Kotabe, and Wildt 1995). The strategic fit perspective asserts that the environment and strategy interact in a dynamic coalignment process, and a match between them would exert a positive impact on performance (Venkatraman and Prescott 1990). Many researchers have argued that it is best to use contingency theory to examine the environment-strategy coalignment effect on performance (e.g., Hambrick and Lei 1985). Contingency theory stresses that firms should achieve strategic fits with their environments through an appropriate strategy (Lewin and Volberda 1999). Hence, we adopt contingency theory in examining such a coalignment effect on sourcing performance.

Another crucial argument for the inconclusive sourcing performance is that researchers and managers alike have generally not included integration costs when evaluating sourcing strategies (Anderson and Parker 2002), especially at the system-level. Integration costs are the costs incurred during the sourcing strategy implementation stage in addition to the sourcing costs for individual product components or service activities, since these individual components or service activities have to be integrated into a finished good or an integrated service system. In other words, if firms only focus on the *expected* outcome of a sourcing strategy at a product component- or a service activity-level when selecting a sourcing strategy, they may experience

unsatisfactory *actual* outcomes when performance is evaluated at the finished product- or integrated service system-level after they have implemented the selected sourcing strategy for a service activity. The performance gap is due to the failure to include integration costs when making sourcing decisions. As Johnson and Kaplan (1987) cautioned, failing to include integration costs leads to a wrong assumption of considering the costs as zero. Furthermore, as different sourcing firms have differential integration capabilities, they may incur different integration costs and affect the quality of an integrated KIBS system. Thus, in order to develop a better sourcing strategy for individual KIBS activities to achieve desirable KIBS performance, firms should also evaluate the effect of their integration capabilities during the sourcing strategy implementation stage on the integrated KIBS system performance.

In our research context, firms that align the type of sourcing strategy to a specific sourcing attribute (i.e., a KIBS attribute) should perform significantly better than those that do not achieve the requisite match (Venkatraman and Prescott 1990). Thus, managers should realize that the key to superior performance is by having a strategic fit between sourcing strategy and sourcing attributes, and *not* by having a particular sourcing strategy or attribute alone. The importance of maintaining a strategic fit between a sourcing strategy and a sourcing attribute to achieve desirable performance is confirmed by Trent and Monczka's (2005) recent finding that *not* all firms benefit from advanced sourcing solutions, and strategic planning processes should be used to determine appropriate levels of sourcing.

Venkatraman and Camillus (1984) have cautioned that effective strategy implementation depends not only on the fit between strategy and structure, but also on managerial processes. Similarly, Bartlett and Ghoshal (1991) have emphasized that it is imperative to incorporate organizational processes in examining strategic fit because structural terms *alone* are inadequate

in capturing the complexities of integrating operations and coordination across national boundaries. Therefore, we argue that simply examining the sourcing-strategy performance relationship as a one-stage process at the KIBS activity-level would fail to capture the complexities involved in such a relationship. In resolving the seemingly contradictory performance implications of KIBS sourcing, we contribute to the literature by developing a theoretical framework that highlights the antecedents and conditions under which global sourcing of KIBS influences performance using a two-stage strategic fit model. We theorize that after an appropriate sourcing strategy is selected, a sourcing firm's dynamic capabilities (i.e., absorptive capacity and integration capability) may accentuate or attenuate the desirable sourcing strategy-performance effects at the integrated KIBS system-level.

CONCEPTUAL FRAMEWORK AND PROPOSITIONS

In developing a conceptual framework that highlights the antecedents and conditions under which global sourcing of KIBS influences performance using a two-stage strategic fit model, we draw on the extant KIBS research and the dynamic capabilities perspective.

The emergence of KIBS was credited to the institutional formation of an actual market for knowledge (Antonelli 1999) in that these are knowledge-driven services that go beyond information-based services (Muller and Doloreux 2008). Indeed, KIBS are recognized as a unique sector (Muller and Doloreux 2008), as KIBS differ from other services in that these service activities are complex, unstructured, and highly customized to meet a customer's unique needs (Bettencourt et al. 2002). KIBS are considered as those services that involve non-routine tacit knowledge, innovation, and customization. Although a remote access to KIBS is possible using new communication technologies, transactions that involve KIBS display a high level of interactions between KIBS suppliers and customers (Muller and Doloreux 2009; Camacho and

Rodriguez 2005). In our conceptual framework, we examine the relationship between KIBS attributes (i.e., variability, inseparability, tacitness, and innovativeness) (Bettencourt et al. 2002; Miozzo and Grimshaw 2005; Muller and Doloreux 2009; Muller and Zenker 2001) and two aspects of global sourcing strategy: (1) ownership (i.e., insourcing or outsourcing) and (2) locational (i.e., onshoring or offshoring).

Despite the popularity of using global sourcing strategy to enhance performance, the outcomes of outsourcing or offshoring have been mixed. In addition, even when the same “appropriate” sourcing strategy is used, firms may experience differential performance. Even more puzzling is that if outsourcing or offshoring were significantly related to higher performance, then one should question why not all firms would elect to use outsourcing or offshoring to improve performance. The dynamic capabilities perspective helps explain why firms may encounter differential performance when implementing the “appropriate” sourcing strategy.

Teece et al. (1997: 516) defined dynamic capabilities “as the firm’s ability to integrate, build, and reconfigure internal and external competences to address rapidly changing environments.” The dynamic capabilities perspective is an extension of the resource-based view (RBV) of the firm in that firms that accumulate a large stock of valuable technology resources may still not possess useful capabilities. To succeed in the global marketplace, systems integrators must demonstrate timely responsiveness to develop rapid and flexible product innovation, and possess the management capability to effectively coordinate and redeploy internal and external competences, as in the case of sourcing KIBS (Teece et al. 1997).

Hence, RBV is inadequate in explaining how and why certain firms possess competitive advantage in rapid and unpredictable conditions (Eisenhardt and Martin 2000). Many scholars

(e.g., Mosakowski and McKelvey 1997; Priem and Butler 2001) have criticized the inability of RBV to describe the mechanisms by which resources contribute to a firm's competitive advantage. Thus, the dynamic capabilities perspective enhances RBV in that it focuses on how firms possess unique and idiosyncratic strategic and organizational processes, such as absorptive capacity, by manipulating resources into new value-creating strategies. However, resources are the necessary inputs that form the basis of unique value-creating strategies that enable a firm to respond to specific markets and customers in distinctive ways, thus leading to a competitive advantage over its rival (Eisenhardt and Martin 2000). This logic applies to our research context in which the systems integrator needs to possess absorptive capacity in utilizing the KIBS sourced from external suppliers, and also integration capability in combining both internal and external knowledge to enhance performance at the integrated KIBS system-level.

Thus, the dynamic capabilities perspective suggests that performance variance between firms may be due to the heterogeneity of capabilities across firms. Firms with resources and capabilities that are valuable, rare, imperfectly imitable, and non-substitutable are able to have a sustained competitive advantage over their rivals (Barney 1991), and obtain rents (Peteraf 1993) or positive results. However, a firm's capabilities are dynamic and evolve over time as they are adapted, redeployed or recombined with other resources and capabilities (Helfat and Peteraf 2003), thus a firm's level of competency regarding a particular capability will vary over time. Peteraf (1993) suggested that superior resources and capabilities lead to improved performance. Using the dynamic capabilities perspective, we argue that as firm capabilities evolve and vary over time, so will their effects on performance.

Our conceptual framework is a two-stage strategic fit model based on a synthesis of the KIBS literature and the dynamic capabilities perspective. The first stage—the sourcing strategy

selection stage—examines the effects of KIBS attributes (i.e., variability, inseparability, tacitness, and innovativeness) on the sourcing strategy-performance relationship at the KIBS activity-level. The second stage—the sourcing strategy implementation stage—examines the effect a firm’s dynamic capabilities (i.e., absorptive capacity and integration capability) on the sourcing strategy-performance relationship at the integrated KIBS system-level. Using a two-stage strategic fit model, we argue that a particular sourcing strategy is not *always* related to a higher market performance. Instead, performance will be enhanced only if there is a coalignment between a sourcing strategy and the sourcing firm’s dynamic capabilities at the KIBS activity- and integrated KIBS system-level. We present our two-stage strategic fit model in Figure 1 which involves disintegration and reintegration (Bitran, et al. 2007) of KIBS activities in the sourcing strategy selection and implementation stage, respectively.

Insert Figure 1 here

In the following sections, we first provide discussions on different types of sourcing strategy. We then develop propositions on the performance implications based on a coalignment between a sourcing strategy and the KIBS attributes at the KIBS activity-level and with the sourcing firm’s dynamic capabilities at the integrated KIBS system-level. Finally, we provide both theoretical and managerial implications.

Global Sourcing Strategy

When applied to KIBS, global sourcing strategy refers to the management of (1) logistics identifying which service units will serve which particular markets and how service activities will be supplied for production, and (2) the interfaces among R&D, production, and marketing on a global basis. The primary objective of global sourcing strategy is for the firm to exploit

both its own and its suppliers' competitive advantages and the comparative locational advantages of various countries in global competition (Kotabe, Murray, and Mol 2008). When firms choose to take advantage of the benefits of global sourcing, there are several important decisions to make, including which service activity should be sourced, where it should be sourced, and from whom it should be sourced.

For the locational aspect of sourcing, in some cases, co-location of customer and supplier matters, and superior performance is more likely to occur when the service activity is sourced domestically (i.e., onshoring). In cases where co-location does not matter, firms may source from foreign suppliers (i.e., offshoring) with lower cost, better quality, or other benefits. Onshoring and offshoring have both advantages and disadvantages. The advantages of offshoring (i.e., the disadvantages of onshoring) are: (1) lower production costs, especially for labor-intensive services, (2) increased size of potential supply base, (3) increased technical expertise, especially for high-tech services from specialized locations, (4) increased proximity to customer markets, and (5) technology only available for foreign sources. The disadvantages of offshoring (i.e., the advantages of onshoring) are: (1) constraints imposed by foreign institutions, (2) difficulty in communication due to cultural differences, (3) increased transaction costs and supply chain uncertainty, (4) difficulty in controlling quality due to geographical and cultural distance, and (5) service inseparability (Kotabe, Murray, and Mol 2008). Several studies have shown that *how* (i.e., the ownership aspect), but not *where* (i.e., the locational aspect), to source major components significantly affects market performance (Kotabe and Swan 1994; Kotabe, Mol, and Murray 2008; Mol, van Tulder, and Beije 2005; Murray, Kotabe, and Wildt 1995). Thus, global sourcing (i.e., both onshoring and offshoring) is used in cases where both

domestic and foreign suppliers are viable alternatives, as they do not provide differential performance to the sourcing firm.

For the ownership aspect of sourcing, service activities can be sourced internally (i.e., insourcing) within the corporate system, from the corporate parent or related subsidiaries. When external sourcing (i.e., outsourcing) of service activities is used, the sourcing firm sources them from independent suppliers (Kotabe, Murray, and Javalgi 1998). For example, when a U.S. bank uses the loan processing services of its subsidiary in India, it is engaged in *insourcing*. Conversely, when it sources the same services from an independent supplier in India, it is engaged in *outsourcing*. It appears that both insourcing and outsourcing produce both benefits and drawbacks. The arguments for outsourcing (i.e., against insourcing) are: (1) strategic focus/reduction of assets, (2) complementary capabilities/lower production costs, (3) strategic flexibility, (4) avoiding bureaucratic costs, and (5) relational rent. Conversely, the arguments against outsourcing (i.e., for insourcing) are: (1) Interfaces/economies of scope, (2) hollowing out, (3) opportunistic behavior, (4) rising transaction and coordination costs, and (5) limited learning and innovation (Kotabe, Mol, and Murray 2009).

Thus, this two-dimensional approach suggests four sourcing strategies based on the locational and ownership aspects of sourcing: (1) onshore insourcing, (2) onshore outsourcing, (3) offshore insourcing, and (4) offshore outsourcing. However, this two-dimensional approach does not capture the situation when performance is not significantly different based on sourcing locations, in which case firms utilize global sourcing (i.e., both onshoring and offshoring), and the sourcing strategy is reflected as global insourcing or global outsourcing.

Factors in the Sourcing Strategy Selection Stage: KIBS Attributes

As stated earlier, not all firms benefit from advanced sourcing solutions (Trent and Monczka 2005). Relying on contingency theory, we suggest that one possible reason for this lack of performance is the suboptimal alignment of strategy and environment. The premise is that there is no single best sourcing strategy, and different alignments of strategy with service attributes will yield different results. In our research context, we suggest that the path to superior market performance is with the optimal co-alignment or strategic fit between KIBS attributes with sourcing strategy. In other words, the strategic co-alignment (i.e. strategic fit) of KIBS attributes and sourcing strategy (as proposed in P₁ - P₄) will result in superior market performance.

Variability

Variability (i.e., heterogeneity) of services refers to the property that the standard or nature of the service delivery varies. The degree of variability should influence a firm's sourcing strategy as it relates to the ownership aspect. Unlike manufactured goods rolling off an assembly line that have a high degree of uniformity, service experiences are more likely to differ from one occasion to the next. The behavior and performance of service providers may vary not only across providers, but also within one provider across multiple customer interactions and is particularly problematic in labor-intensive services (Regan 1963; Zeithaml, Parasuraman, and Berry 1985). Customers prefer consistency and reliability in service delivery. Research suggests that customers value reliability more than any other feature in evaluating service quality (Berry, Parasuraman, and Zeithaml 1994). However, because of the variability of human labor inputs, services are inherently variable to one degree or another. Due to the high levels of customization in KIBS, the problem of variability tends to be much more pronounced.

The issue of variability suggests increased monitoring and controlling costs for highly variable services and favors internalization as a means for reducing variability (Hsieh et al. 2002). Internalization is preferred for many KIBS because quality control is difficult and would therefore increase monitoring and controlling costs. Thus, in order to maintain consistency, reliability, and the confidence of consumers, firms are motivated to internally manage quality as a result of variability (Casson 1982). In sum, we suggest that firms will rely more on insourcing with highly variable KIBS activities, regardless of the sourcing locations.

P₁: The more variable the KIBS activity, the more the sourcing firm will rely on global insourcing (i.e., onshore insourcing and offshore insourcing), as opposed to global outsourcing (i.e., onshore outsourcing and offshore outsourcing) to achieve higher market performance for the KIBS activity.

Inseparability

Inseparability is the degree to which the production and consumption of a service may occur in a different time and space. In other words, inseparability refers to whether or not the customer is required to be physically present (i.e., space), and whether or not the production and consumption of the service must occur simultaneously (i.e., time) (Regan 1963; Zeithaml, Parasuraman, and Berry 1985). KIBS vary in their properties of time and space requirements. For example, customer service call centers can be thousands of miles away from the customers they serve; therefore, it is very separable in regards to space. However, generally the customer must be on the phone simultaneously with a customer service representative in order for the service transaction to occur; therefore, it is not very separable in regards to time. However, customer service can be provided via other modes of communication such as e-mail. In the case of e-mail customer service, few have expectations of an immediate reply. Therefore, e-mail customer service would have a lower inseparability of time than telephone customer service. If the level of inseparability is low and the location of supplier and customer does not matter, then

firms should have more available options of choosing a service provider. Because the service provider and customer are not required to occupy the same space, the service provider can be located in another city or even a foreign country, thus facilitating the global option (i.e., using global sourcing which involves offshoring *and* onshoring) for the locational aspect of sourcing.

Similarly, the level of inseparability based on time can also facilitate global sourcing of KIBS. When inseparability is high, the flow and timing of service requests can create problems if they exceed capacity. However, at low levels of inseparability, service requests can be handled as capacity allows and at any hour of the day. The need for firms to reconcile service supply and demand is more critical when inseparability is high than when it is low (Zeithaml, Parasuraman, and Berry 1985). Thus, constraints of capacity and even time zone differences in other countries are effectively removed when inseparability is low.

When the level of inseparability is high, it is unlikely that there is much external availability of sourcing suppliers because of the customization that normally accompanies KIBS (Kotabe and Murray 2004). Therefore, given a high level of inseparability, firms may rely more on insourcing. High inseparability of KIBS also suggests that firms are more likely to rely on onshoring because of the location boundedness of a customer and its supplier (Murray and Kotabe 1999). However, when inseparability is low, a firm's available options of service providers are broadened, and in particular the constraints of using only onshoring are removed/reduced, making global sourcing a viable alternative.

- P₂: The more inseparable the KIBS activity, the more the sourcing firm will rely on onshore insourcing, and the less on onshore outsourcing, offshore insourcing, and offshore outsourcing to achieve higher market performance for the KIBS activity.

Tacitness

Knowledge has two forms: explicit and tacit. These two types of knowledge manifest themselves as opposite ends of a scale along the dimensions of teachability, complexity, and codifiability (Kogut and Zander 1993). Tacit knowledge is generally less teachable, more complex, and more difficult to codify. Knowledge includes both information and know-how (Kogut and Zander 1992), and KIBS thus will vary in their required amounts of tacit knowledge, or know-how. We focus on the level of tacitness because explicit knowledge (more teachable, less complex, and easier to codify) is easier to transfer or acquire than tacit knowledge.

When knowledge is highly tacit, it becomes difficult to transfer or acquire because one cannot easily articulate it in a tangible form. It corresponds to the difference between “know-what” (i.e., information) and “know-how.” It takes time and more experiential learning for tacit knowledge to be acquired. In their investigation of entry mode choices, Kogut and Zander (1993) found that firms are able to transfer knowledge at lower costs internally to wholly-owned subsidiaries, compared to transferring knowledge externally. Specifically, as complexity increases and codifiability and teachability decrease, firms are more likely to acquire knowledge internally within the firm, instead of externally from independent suppliers. Although we are not investigating entry mode decisions, the rationale of Kogut and Zander’s (1993) findings relate to the ownership aspect of sourcing strategy, suggesting that the more tacit the KIBS, a sourcing firm should use a higher level of insourcing.

Scholars and practitioners have cautioned that successful knowledge transfer or acquisition is difficult. The tacitness or “stickiness” of knowledge often makes codification, transfer, and subsequent replication of routines and standard operating procedures inherently difficult (Kotabe, Martin and Domoto 2003; Nonaka 1991), even when the parties involved

belong to the same corporate system. In investigating how tacit knowledge was acquired by a subsidiary from its parent firm, Sunaoshi, Kotabe, and Murray (2005) empirically confirmed that demonstrability and drawability are appropriate constructs to capture the multi-dimensionality of a knowledge's tacitness. They found that locational boundedness is important for such knowledge acquisition in that both the transferor and the transferee were located on the same factory floor. In addition to providing codified documents by the transferor, he/she could present ad hoc drawings of certain unpredictable conditions right at the moment when problems arose. In addition, by having the transferor showing what could be done and also having the transferor and transferee solving the problems together, more effective knowledge transfer and acquisition can be achieved when the two parties are co-located.

Likewise, Kumar et al. (2008) asserted that due to the geographic and time gaps between work locations in using offshoring, it is impossible for one actor to observe other actors' tasks performance directly, as in onshoring work. Thus, learning by observation is impossible, although it is crucial in the case of tacit KIBS. In addition, problems that could have been unobtrusively resolved internally through subtle interactions and mutual adjustments at co-located work locations can no longer be resolved, thus impeding a common understanding of the KIBS activity. Thus, we propose that the more tacit the KIBS, a sourcing firm should use a higher level of onshore insourcing.

P₃: The more tacit the KIBS activity, the more the sourcing firm will rely on onshore insourcing, and the less on onshore outsourcing, offshore insourcing, and offshore outsourcing to achieve higher market performance for the KIBS activity.

Innovativeness

Innovative KIBS represent potential opportunities for firms to achieve a competitive advantage. However, in a high-velocity environment in which KIBS is embedded, few firms have the

necessary capital to develop all the innovations that are needed to remain competitive. Indeed, Quinn (2000: 13) has asserted that “no one company acting alone can hope to out-innovate every competitor, potential competitor, supplier or external knowledge source around the world.” He further recommended that in order for firms to survive in a high-velocity environment, they should capitalize on the innovations provided by external knowledge leaders. Indeed, due to the faster rate of technological obsolescence of KIBS, it is near impossible for a firm to be able to match the sum of all the external suppliers innovating in its value chain. Furthermore, rapid technological changes may destroy the continued relevance of a firm’s existing competencies; therefore, it should outsource from suppliers that possess new and complementary competencies (Murray, Kotabe and Zhou 2005).

By sourcing from specialist suppliers, a sourcing firm can gain access to the in-depth knowledge, skills, investment infrastructures and innovative capabilities of each supplier in different stages of the value chain. Conversely, if firms use only insourcing for highly innovative KIBS, they tend to “cut themselves off from both a continuing stream of innovations and the opportunity to switch rapidly if a new value-added service appears” (Quinn 2000: 17). In this sense, KIBS providers play an important role as co-producers of knowledge and innovation and become a “second knowledge infrastructure” (Hertog 2000). Furthermore, while firms cannot afford the development risk of every desired innovation, their specialist suppliers are able to spread the risk across their current and future customers. Hence, we propose that the more innovative the KIBS, the more the sourcing firm will rely on outsourcing from best-in-class suppliers worldwide.

- P₄: The more innovative the KIBS activity, the more the sourcing firm will rely on global outsourcing (i.e., onshore outsourcing and offshore outsourcing), as opposed to global insourcing (i.e., onshore insourcing and offshore insourcing) to achieve higher market performance for the KIBS activity.

Factors in the Sourcing Strategy Implementation Stage: Dynamic Capabilities

Absorptive Capacity

As one of the most important organizational capabilities, absorptive capacity refers to a firm's ability to acquire and assimilate new external knowledge, to transform and exploit learned knowledge, and apply it to commercial ends (Cohen & Levinthal, 1990; Zahra & George, 2002). Absorptive capacity can be developed cumulatively and built upon prior related knowledge. It is a strategically valuable capability that is path-dependent, firm-specific and socially embedded (Cohen & Levinthal, 1990). Specifically, after acquiring valuable external knowledge, a firm needs to utilize its realized absorptive capacity in exploiting externally generated knowledge, transforming and commercially applying knowledge to create firm value (Zahra & George, 2002). We argue that it is only through a firm's absorptive capacity that the performance advantage using an appropriate sourcing strategy can be realized.

The sourcing firm's absorptive capacity moderates the relationship between a coaligned sourcing strategy and performance for a KIBS activity. Knowledge acquisition is complex with a sourcing firm successfully acquiring knowledge resulting from a function of the sender's disseminative capacity, the receiver's absorptive capacity, characteristics of the knowledge, and the nature of the relationship between the exchange parties (e.g., Szulanski 2003; Minbaeva 2007). Indeed, absorptive capacity has explained increased competitive advantage (e.g., Argote and Ingram 2000; Iwasa and Odagiri 2004) and innovative performance in firms (Kotabe, Hinkler, Parente, and Mishra 2007).

Existing research supports the argument that the ability to apply knowledge affects firm performance in international joint ventures (Lane, Salk, and Lyles 2001). Further, Mahnke, Pedersen, and Venzin (2005) have found that absorptive capacity has a strong positive impact on

knowledge inflows, which in turn have a strong positive impact on business performance for MNC subsidiaries. Thus, a sourcing firm's absorptive capacity is proposed to moderate the relationship between a sourcing strategy and performance for a KIBS activity.

P₅: A sourcing firm's absorptive capacity moderates the relationship between a coaligned sourcing strategy and performance for a KIBS activity, such that a high level of absorptive capacity increases the coaligned sourcing strategy-performance relationship for a KIBS activity, while a low level of absorptive capacity decreases such a relationship.

Integration Capability

The essence of organizational capability is the integration of specialist knowledge to perform a productive task (Grant 1996). Capabilities are high-level routines or bundles of routines that are embedded in the dynamic interaction of multiple knowledge sources, and are firm-specific and less transferable (Zollo and Winter 2002). A systems integrator needs to identify and manage the key linkages among various KIBS activities, so that an integrated KIBS system can be created to satisfy the customer's unique need (Helander and Möller 2008). After a firm has sourced KIBS activities effectively from both internal and external suppliers, it still needs to possess integration capability to combine these activities into an integrated KIBS system. In other words, although a firm has achieved desirable performance at the individual KIBS activity-level, a sourcing firm's ability to integrate all the sourced KIBS activities into an integrated KIBS system may accentuate or attenuate the effect of a selected sourcing strategy for a KIBS activity on the performance of an integrated KIBS system.

While many firms may achieve a desirable performance at the individual KIBS activity-level, many firms have reported that the overall sourcing performance has been unsatisfactory. This is because many firms lack the capability to integrate the globally sourced KIBS activities into an integrated KIBS system. "[A]s the specialization of tasks proceeds, the interdependency

of the specialized parts increases” (Simon 1991: 42). A key capability that determines firm performance heterogeneity to manage the interdependency is integration capability, which is the ability to acquire and manage business resources on a continuing basis (e.g., Helfat and Raubitschek 2000). Recent empirical research has examined the effects of integration capability on acquisition strategy (Mitchell and Shaver, 2003) and that integration capability is the key in determining acquisition outcome (e.g., Jemison and Sitkin 1986). Thus, a firm derives its competitive advantage over its rivals not only from the resources, but also its coordination and control capabilities (Collis and Montgomery 1998). Furthermore, a firm’s ability to integrate different activities helps safeguard its knowledge (Liebeskind 1996), as in the case of the integration of various globally sourced KIBS activities into an integrated KIBS system.

- P₆: A sourcing firm’s integration capability moderates the relationship between a coaligned sourcing strategy for a KIBS activity performance and an integrated KIBS system performance, such that a high level of integration capability increases the positive effect of KIBS activity performance on an integrated KIBS system performance, while a low level of integration capability decreases the positive effect of KIBS activity performance on an integrated KIBS system performance.

DISCUSSION

Rapid technological developments have drastically altered the competitive landscape in the global economy. In this highly competitive global environment, many firms have increasingly set up production facilities in lower-cost locations or outsourced service activities from lower-cost suppliers globally. Thus, increased global sourcing of service activities has become a prominent part of the restructuring of a firm’s supply chain. Global sourcing of KIBS remains in the early development stage; however, according to the McKinsey Global Institute (2005a), services (including KIBS) sourcing growth is set to increase substantially in the near future.

This latest form of global (i.e., both onshore and offshore) outsourcing is facilitated by the heightened organizational and technological capacity of firms in decoupling and coordinating a network of remotely located external suppliers performing an intricate set of activities (Levy 2005). Indeed, many firms are leveraging their resources through strategically outsourcing those competencies that they either lack the ability or need to perform exceptionally well globally. However, the extant literature has reported that many firms are dissatisfied with the performance outcome of global sourcing. Thus, managers should be cautioned that global sourcing of KIBS activities does not *always* lead to higher performance.

To resolve these seemingly contradictory benefits and limitations of KIBS global sourcing, we argue that to realistically evaluate the sourcing-performance relationship of KIBS, one must examine the strategic fit of a sourcing strategy with a sourcing firm's dynamic capabilities. Furthermore, Venkatraman and Camillus (1984) have cautioned that effective strategy implementation depends not only on the fit between strategy and structure, but also on managerial processes. Similarly, Bartlett and Ghoshal (1991) have emphasized that it is imperative to incorporate organizational processes in examining strategic fit because structural terms *alone* are inadequate in capturing the complexities of integrating operations and coordination across national boundaries. Therefore, we theorize that superior performance is dependent on the *fit* between a sourcing strategy and a sourcing firm's dynamic capabilities. In addition, many firms often develop their sourcing strategies based on an individual KIBS activity at a time, without considering how the sourced KIBS activity will eventually be integrated with other KIBS activities to become an integrated KIBS system. Thus, superior performance of globally sourced KIBS will only materialize when a firm has the absorptive capacity to apply and transform the KIBS, and also the integration capability to manage the interdependency of its

globally sourced KIBS activities to form an integrated KIBS system to satisfy a customer's unique needs..

We also contribute to the sourcing literature by stressing the crucial role of a firm's dynamic capabilities, which lead to a more sustained performance advantage over those that arise from the locational advantages. In other words, a sourcing firm's locational aspect of global sourcing strategy (e.g., offshoring KIBS activities from India) can be easily imitated by its rivals, thus providing similar performance advantages across firms. However, it usually takes a sourcing firm a prolonged period of time to develop its dynamic capabilities, such as absorptive capacity and integration capability. Since these dynamic capabilities cannot be easily imitated and are path dependent, they help create a differential performance advantage over its rival.

Managerial Implications

The emergence of systems integrators offering multi-vendor solutions is driven by their business customers' demand for more complex integrated solutions. Increasingly, many systems integrators are organizing their internal and external activities to provide an integrated KIBS system for their business customers. As a systems integrator, the firm is responsible for designing the general system, selecting and coordinating a network of external KIBS suppliers, integrating these KIBS into a functioning system, and developing technological knowledge need for future systems upgrades (Davies, et al., 2007). Indeed, researchers have cautioned that “[w]hen rivals such as UPS and FedEx clash, it is not merely their individual capabilities, but rather the collective capabilities of their respective supply chains, that determine the outcome” (Hult, Ketchen, and Arrfelt 2007: 1035).

For systems integrators, one clear implication is the importance of a portfolio approach in developing sourcing strategies for KIBS. Specifically, we propose a two-stage strategic fit

model examining the *fit* between a sourcing strategy and a sourcing firm's dynamic capabilities in enhancing performance at the KIBS activity- and the integrated KIBS system-level. Without doing so, firms may face outsourcing traps that involve making sourcing decisions that improve its short-run cost position at the KIBS activity-level at the expense of paying a long-run penalty at the integrated KIBS system-level (Parker and Anderson 2002). Therefore, managers should not simplify the complexities of KIBS sourcing down to a 'one strategy fits all' perspective. It is imperative for managers to understand that, even when a proper coalignment exists between KIBS attributes and sourcing strategy, superior market performance may not materialize at the KIBS activity- and integrated KIBS system-level if a sourcing firm does not possess the required dynamic capabilities.

In addition, we caution managers that there is often a trade-off between short-term cost savings and long-term profitability by making sourcing decisions on a piecemeal basis without taking their firm's integration capabilities into consideration. Thus, an optimal global sourcing strategy for KIBS is the one that considers a firm's production, integration, and other capabilities. More importantly, we alert managers that even though firms may select the same sourcing strategy that has a *fit* with the KIBS attributes, it does not guarantee that these firms would enjoy the same performance outcome derived from the same sourcing activity. Thus, the differential performance outcomes at the integrated KIBS system-level are contingent on the differential integration capabilities among firms. Due to these trade-offs, it is imperative for managers to better comprehend how they can develop capabilities specific to the management of global sourcing of KIBS.

Although not included in our two-stage strategic fit model, one may expect that integration capabilities can be extended to those of a buyer and its suppliers. Higher

buyer/supplier integration enables firms to forge and exploit alliances with their most critical suppliers in their continual efforts to achieve a competitive advantage over their rivals (Porter 1997). Firms achieve a higher level of buyer/supplier integration when both buyer and supplier firms co-monitor the production of KIBS activities and communicate the hidden interdependencies among different KIBS activities in order to ensure that the sourcing firm can in turn offer its customers an integrated KIBS system seamlessly and satisfactorily.

Higher integration is manifested by the supplier's willingness to station key personnel inside the buyer's firm to ensure smooth coordination of different KIBS activities into an integrated KIBS system. For KIBS development purposes, high integration involves sharing information on technical details and mutually involving in service development and process improvements (Davis 1993). It is *this* distinct way of coordinating and integrating that explains how capabilities are embedded and why even minor technological changes can have a devastating effect on a firm's abilities to compete in a market. This is because systems-level or 'architectural' innovations require new routines to integrate and coordinate engineering tasks. Since these productive systems display high interdependencies, it is often impossible to change one level without changing others (Teece et al. 1997). Thus, buyer/supplier integration capabilities are critical to superior performance of globally sourced KIBS.

Conclusion

Global trade in services is growing (McKinsey Global Institute 2005a), and firms that can integrate and coordinate their sourcing strategies on a global scale should enjoy improved competitiveness in the marketplace (Samli, Browning, and Busbia 1998). While managers may be tempted to globally source KIBS on the basis of saving substantial amounts in labor costs, they need to examine both the KIBS attributes and the firm's dynamic capabilities. The

ownership and locational aspects of a sourcing strategy should depend upon those characteristics. The questions for managers to address are: (1) Do the KIBS attributes lend themselves more favorably to a particular combination of ownership and location? (2) Does the firm possess the dynamic capabilities to manage the sourcing strategy, given their specific circumstances, at both the KIBS activity- and integrated KIBS system-level? In addressing these critical questions, managers are likely to develop a sourcing strategy by considering the trade-off between short-term and long-term sourcing advantages.

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Figure 1
A Two-Stage Strategic Fit Model for Knowledge-Intensive Business Services Sourcing

