A Knowledge Based View of Outsourcing

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A KNOWLEDGE-BASED VIEW OF OUTSOURCING

Abstract

Literature and practice have significantly underplayed the role of knowledge and learning in evaluating outsourcing decisions. We examine outsourcing from the knowledge-based view (KBV) and argue that activities that might seem appropriate for outsourcing from the perspectives of transaction cost economics or the resource-based view of the firm might not be from the KBV. We address the impact of outsourcing on knowledge and learning and consequently on a firm's ability to compete.

Keywords

knowledge-based view; knowledge strategy; knowledge transfer; outsourcing; sourcing

A KNOWLEDGE-BASED VIEW OF OUTSOURCING

Outsourcing has become an entrenched approach to reconfiguring organizations and their value chains, motivated primarily by operational cost saving (Aubert et al., 2004; Lacity and Willcocks, 1998) and more recently by strategic business performance improvement (DiRomualdo and Gurbaxani, 1998). However, when organizations perform some activity, they learn more about that activity as a by-product. Thus although outsourcing an activity may lower costs and improve the quality of service, it transfers the opportunity to learn experientially about those activities to the vendor. Quinn (1992) recommended outsourcing non-strategic activities, however if having greater knowledge about some area of business is central to how a company competes, then outsourcing the ability to maintain and enhance the knowledge associated with that activity may have a greater effect on an organization's long term ability to compete than merely outsourcing the activity itself.

The role of knowledge and learning associated with an outsourced activity has been significantly under-examined in literature and practice (Willcocks, et al., 2004). To redress this, we examine outsourcing from the knowledge-based view of the firm (KBV). Our focus goes beyond the strategic value of a particular activity (Lacity, et al., 1996) to the strategic value of the *knowledge and learning* associated with that activity. In doing so, we provide an additional perspective on the outsourcing decision, offering a broader understanding of outsourcing costs and benefits as well as providing a different point of view for making the outsourcing decision. We develop a knowledge-based framework for identifying those activities that lend themselves to being outsourced as well as identifying the particular outsourcing arrangements that may be most effective.

KEY THEORETICAL PERSPECTIVES ON OUTSOURCING

Most organizations outsource for economic or strategic reasons. Economically, outsourcing is attractive when the activities being outsourced can be performed by the vendor at a lower cost. Strategically, outsourcing is attractive when organizations have capacity and/or capability constraints that prevent them from servicing a market. When a firm does not have personnel of requisite quantity and skill, or sufficient physical capacity to deliver its product or services within a required time frame, it either has to postpone the work, or outsource to get the work done within the required time frame and level of quality. These rationales are supported theoretically by transaction cost economics (TCE) and the resource-based view of the firm (RBV) respectively [1]. While offering a significant contribution toward understanding the outsourcing phenomenon, we examine these theories to contrast their explanations for outsourcing with the KBV[2].

Transaction Cost Economics (TCE)

TCE (Williamson, 1975) has provided a theoretical foundation for addressing outsourcing from the cost perspective. TCE assumes that buying in the market (e.g., via outsourcing) typically offers lower production costs via vendors' use of specialized assets and economies of scale (Williamson 1991). However, markets have high transaction costs because vendors may behave opportunistically and therefore must be monitored. The goal per TCE is to find a governance structure (internal or outsourced) with the lowest overall production and transaction cost (Ngwenyama & Bryson, 1999). From this perspective outsourcing is preferred when the production cost advantages of markets outweigh their higher transaction costs. When transaction costs are too high, markets "fail" and firms produce internally.

TCE, while offering a useful framework for analyzing the costs associated with outsourcing, significantly underplays the role of knowledge in determining firm boundaries in general (Chandler, 1992; Langois and Foss, 1997, Williamson 1999), and more specifically the cost of forgone learning that may occur plus the cost to transfer that knowledge back to the client and to protect it from misappropriation by competitors. Williamson (1999) states that TCE "makes only limited contact with the subject of learning." (p. 1103) and although he calls for more inclusion of this perspective, his notion of learning is focused on learning more about the transaction itself – moral hazards, communication needs, etc., while we are referring to the learning associated with the focal activity being outsourced. Williamson (1999) similarly distinguishes between TCE and the "competence perspective" in that the former is focused on economizing on transaction costs, while the later on economizing on mind as a scarce resource, and agrees that TCE might benefit from introducing the effect of knowledge and learning on firm boundaries. He goes on to call for more investigation into the relationship between governance and competence (also see Mayer, and Salomon 2006), which we address in our framework.

Additionally, while TCE assumes that "the market" in general provides economics of scale not available to the firm, it does not address production cost heterogeneity across firms (e.g., competing outsourcing firms). However, Williamson (1991, 1999) suggested that heterogeneous endowments of resources and expertise may make particular firms in the market more efficient or effective producers, and should therefore be included in the market/hierarchy calculus. This perspective (addressed in the following sections) has direct relevance to the outsourcing decision in general and our framework in particular, which treats outsourcing as an arrangement between a client and a particular vendor having a particular knowledge endowment, not "the market" in general.

Resource-Based View (RBV)

Filling resource gaps is a second major rationale for outsourcing (Lacity and Willcocks, 1998; Leiblein, et al., 2002). This may be because of insufficient capacity or a disparity between the existing and required skills and capabilities (DiRomualdo and Gurbaxani, 1998; Ernst, 2000). The RBV (Barney, 1991; Wernerfelt, 1984) provides a theoretical foundation for addressing outsourcing from a resource-gap perspective (Espino-Rodriguez and Padron-Robaina, 2006). The RBV considers a firm as a collection of productive resources, and firms compete based on having or controlling resources that are unique, valuable and inimitable (Barney, 1991). Sustainability of the advantage depends on resource immobility, that is, the difficulty for other firms to copy, acquire, or develop those resources (Rumelt, 1984).

Outsourcing is about acquiring resources in the market. Those resources cannot, by themselves, be strategic according to RBV, as they are typically not unique and can be acquired by competing firms. However, RBV is concerned not only with the deployment of existing resources, but with their leverage as well (Grant, 1991). To fully exploit a firm's existing unique resources, the external acquisition of complementary resources may be necessary (Grant, 1991). Those resources would be acquired externally because they may be more costly or beyond the firm's capability to create internally[3]. A firm may still realize a unique benefit from a purchased resource when combined with an internal resource that is unique, especially if that acquired resource complements or supplements the firm's existing resources more effectively than it does for competitors (Dierickx and Cool, 1989). Thus filling resource gaps through an outsourcing strategy not only maintains the firm's stock of resources, but can also augment resources to enable a firm to remain competitive.

While the RBV explains how outsourcing can potentially be strategic, it too underplays the role played by knowledge and learning in developing a competitive advantage. A knowledge-based strategic advantage is based on a firm knowing more than competitors about how to integrate and deploy traditional or non-strategic resources (Romer, 1994) especially resources that are externally contracted for and thus commonly available (Zack, 1999), and organization learning is the process by which a knowledge advantage can be sustained (Zack, 2005). While more recent work on RBV has introduced the notion of dynamic capabilities (Teece, et al., 1997), suggesting that organizations have more or less ability to dynamically reconfigure their resources over time, RBV still underplays the most important resource of all – knowledge.

KNOWLEDGE, LEARNING, AND OUTSOURCING

The knowledge-based view (KBV) adds a valuable perspective to the theories we have discussed so far by accounting for knowledge and learning, while providing an additional point of view for considering the outsourcing decision. The outsourcing literature has significantly under-examined the KBV. For example, KBV was ignored in recent reviews of theories used to analyze outsourcing decisions (Dibbern, et al., 2004; Gottschalk and Solli-Saether, 2006). Although the outsourcing literature acknowledges that knowledge plays a role (e.g., Lee, 2001; Willcocks, et al., 2004; Berggren and Lars, 2004), it has neither placed sufficient emphasis on the strategic value of knowledge and organizational learning nor investigated this directly. Where knowledge has been examined it has been treated simply as a resource to be contracted for per the RBV (e.g., Poppo and Zenger, 1998; Quinn, 1999; Parmigiani, 2007). Several studies identified knowledge erosion as an outsourcing risk (e.g., Earl, 1996; McCray and Clark, 1999; Willcocks, et al., 1999), but none seriously considered the KBV in their analysis.

Taking the KBV, a firm's products or services are the result of applying value-creating knowledge. Firms, then, are characterized not by their existing product array, but by the knowledge they apply to produce a variety of products. Thus the knowledge the firm possesses, develops, and enhances represents the basis for its ability to compete (Boynton and Victor, 1991; Zack, 1999). Further, while traditional resources may confer a competitive advantage per the RBV, the *knowledge* an organization has about how to coordinate, combine and apply those resources (and the ability to acquire, integrate, apply and improve that knowledge) may be the most unique and inimitable resource (Grant, 1996). That is, knowledge is essentially a resource "trump card." Knowing more than competitors can provide a strategic advantage, even if the organization's underlying tangible resources are not unique (Penrose, 1959; Romer, 1992). And a strategic knowledge-based advantage can be sustained because knowledge is extremely difficult for competitors to imitate or even observe (Reed and DeFillippi, 1990).

Knowledge is also strategic to the extent that it (more or less) supports an organization's ability to execute its competitive strategy (knowledge strengths and weaknesses) and to the extent that it is more (or less) well developed than that of its competitors vying to compete based on a similar knowledge domain (knowledge opportunities and threats) (Zack (2005). The knowledge an organization requires to execute its strategy is called its knowledge position (Zack 1999), analogous to a product/market position in traditional strategy (e.g., Porter, 1985). Over time, the competitive environment changes and knowledge becomes obsolete, requiring an organization to change what it knows in support or defense of its competitive knowledge position. Organizational learning plays a particularly important role as it produces new knowledge to sustain organizational competitiveness (Leavy, 1996). This requires the organization to have a learning capability sufficient to meet that challenge, as well as superior to that of competitors

vying to be the first to move to the same knowledge position – so-called “first-learners” (Zack, 2005). A first-learner advantage is sustainable because to accumulate similar knowledge, competitors must engage in similar experiences over similar timeframes, and the learning time cannot be significantly compressed regardless of the level of investment (Dierickx and Cool, 1989). Further, organizations who start off knowing more than competitors - i.e., having a greater absorptive capacity (Cohen and Levinthal, 1990) - can learn more than competitors who undergo similar learning experiences (Dierickx and Cool, 1989). Thus being smarter than competitors is required to create a knowledge advantage, and being a better learner is required for sustaining that advantage (Nevis, et al., 1995; Ulrich, et al., 1993; Zack, 1999). Therefore from the KBV, it is strategically important for firms considering activities for outsourcing to also consider the impact of outsourcing on the firm’s knowledge position and the strategic learning associated with those activities.

While TCE takes the transaction as the unit of analysis, KBV (similar to RBV) takes the active, productive firm as the primary unit, thus the firm’s knowledge becomes more significant than transaction costs in determining the boundaries of the firm (Chandler, 1992). According to the KBV, firms exist because they are superior to markets for creating, transferring and integrating knowledge (Conner and Prahalad, 1996; Grant, 1996; Kogut and Zander, 1992). On the other hand, markets exist because economies require a diversity of knowledge yet individual firms are limited in what they can come to know and know how to do and therefore must augment their knowledge by collaborating with other firms (Langois and Foss, 1997). Thus per the KBV firms would insource activities associated with the most strategic knowledge and continue to insource until learning cost or learning capacity constraints outweighed the strategic value of the knowledge and learning. Firms would outsource when activities require more

(relatively non-strategic) knowledge than the firm has, or has the capacity to acquire or develop via learning.

Further, outsourcing implies some basis for partitioning activities between the firm and its provider. While neither TCE nor RBV directly address partitioning, each implies a particular basis. TCE implies that some end product or service is being sourced in the market (vs. produced within the firm) thus the partition is made on a task basis (von Hippel, 1990). The firm outsources the entire set of tasks required to produce the product or service being purchased. RBV implies that a resource or set of resources is being sourced, rather than an activity. Resources and activities may or may not align directly. In contrast, the KBV suggests partitioning based on *knowledge* (Takeishi, 2002). While task partitioning identifies the tasks that should reside within a firm and those that can be outsourced, knowledge partitioning identifies the knowledge that an organization should develop and preserve internally versus that which could be developed and provided by a vendor.

Interdependence or modularity of the components of an activity are important factors regarding partitioning (Sanchez and Mahoney 1996). From a task perspective, a set of tasks may be so interdependent that they are difficult to partition and must be performed entirely internally or externally. From a resource perspective, a set of resources may be so interdependent or complementary that one has little or less value without the others (Dierickx and Cool 1989; Teece 1984). Similarly, knowledge whose value or use requires close integration with other knowledge domains will be more difficult to partition than knowledge that is relatively independent (Teece 1984). Task and knowledge modularity often do not align. Tasks that are structurally or operationally modular and appear easier to outsource may be associated with knowledge that is not modular. For example, customer support may be an operationally

separable task, but the knowledge associated with and derived from customer support activities generally is not. Per TCE, it may make sense to outsource some or all of these tasks if transaction costs are low enough relative to performing those tasks in-house. From a knowledge-partitioning perspective, however, helping customers to solve problems with using a product may require not only knowledge of the product and its use, but also knowledge regarding sales, marketing, customer relations, product design, engineering, manufacturing, distribution, and even finance. More importantly, the learning derived from serving those customers is important for increasing the knowledge across all of these domains. Closely integrating these domains within customer service provides the ability to experiment and gain direct customer feedback to increase knowledge across these domains. That opportunity is lost when the domains of knowledge supporting the activity are partitioned.

In summary, our thesis relating the KBV to outsourcing is based on the premise that knowledge is a key strategic resource and that learning is required to sustain a knowledge-based competitive advantage (Zack, 2005). Coupled with the notion that organizational learning is a by-product of activity, i.e., "learning by doing," (Adler and Clark, 1991; Arrow, 1962; Hatch and Mowery, 1998), when a firm outsources an activity it also outsources the learning associated with that activity (Ernst, 2000). Outsourcing an activity, in essence, becomes a strategic decision to continue or discontinue defending a competitive knowledge position. This further implies the need to factor into the outsourcing decision the strategic costs of any forgone learning, the costs to protect competitors from appropriating outsourced knowledge, and, if applicable, the costs to transfer learning back to the client. KBV thus offers a different perspective for evaluating the outsourcing decision.

Outsourcing therefore will have a negative impact on a firm's ability to compete when the benefits from gaining access to additional resources and lower factor costs are less than the cost of foregone learning and knowledge transfer and protection. This relationship will be affected by the level of *strategic value of the knowledge*, its *maturity*, and the opportunities and costs related to *protecting and transferring knowledge* back to the client firm, all of which we discuss in detail in the next section.

A KNOWLEDGE-BASED VIEW OF THE OUTSOURCING DECISION

The outsourcing decision can be decomposed into two critical sub-decisions: which activities to outsource; and which organizational sourcing arrangements to use (Dalcher, 2005, Aron and Singh 2005). We first examine the decision of what activities to outsource based on two key characteristics of the knowledge underlying those activities: strategic value and maturity. We next describe the options firms have for outsourcing based on the proximity of the vendor, the governance relationship between the client and its vendor, and its impact on knowledge transfer and protection. We then combine these two analyses to generate a set of guidelines for developing a knowledge-based framework for the outsourcing decision.

Activities to Outsource

Aron and Singh (2005) proposed that the extent of value created by a process and the specifiability of that process (so as to mitigate exposure to operating risks) must factor into deciding what processes to outsource. Lacity et al. (1996) similarly proposed that the strategic value and maturity of an activity are two key considerations for deciding whether or not to outsource the activity. We take a similar stance, but focus instead on the knowledge underlying the activity, and the impact of outsourcing the learning associated with that activity on a firm's ability to compete. Thus, an organization that is considering an activity for outsourcing must

evaluate that activity across two dimensions – the strategic value of knowledge associated with the activity and the maturity of that knowledge – before it makes an outsourcing decision.

Strategic value of knowledge. We consider strategic knowledge to be knowledge 1) that the firm requires to execute its competitive strategy, and to execute it more effectively than competitors pursuing a similar strategy (Zack, 1999), and 2) that is also unique or rare, valuable, and difficult for competing firms to imitate or acquire other than through experience (Winter, 1987). For simplicity we treat knowledge as being either strategic or not strategic. However, as a practical matter, "strategicness" of knowledge can be treated as a continuous variable. The more strategic the knowledge, the less appropriate it is to outsource that knowledge. Knowledge once outsourced is exposed to other firms and is no longer entirely unique, rare, or inimitable – the fundamental characteristics of a strategic resource. Strategic knowledge that a firm does decide to outsource will require greater control over protecting and appropriating the knowledge as well as effective mechanisms for its transfer back to the firm, both costly endeavors that must be explicitly taken into consideration when making an outsourcing decision.

Knowledge maturity. Knowledge maturity refers to the extent to which an activity offers the opportunity to learn how to perform the activity more effectively or efficiently. Some activities are mature and stable enough that they offer little in the way of additional learning, while others may be novel and offer large potential for learning and improvement. Maturity can be expressed relative to the firm and to the industry's state of the art. A particular firm may have an opportunity to learn more about how to perform some activity more efficiently or effectively. However, from a strategic perspective, a firm must know at least as much as is considered common knowledge for its industry merely in order to sustain participation in that industry. Thus common industry knowledge is the minimum benchmark for maturity. Typically firms will

advance their knowledge about some activity beyond common industry knowledge to create some notion of better practice, and all should strive to know something unique to their industry – the most strategic knowledge position (Zack, 1999). Thus an activity could be mature because the firm is incapable of learning more even though other firms may be, or it could be mature because learning for the industry as a whole has leveled. The first would be a candidate for outsourcing as the firm is operating below the "efficient knowledge-frontier" and should be seeking to mitigate its competitive knowledge disadvantage, while the second would be a candidate as there is no competitive advantage associated with the knowledge underlying the activity.

The knowledge associated with an activity can also range in the degree to which it is well-structured and specifiable (Aron and Singh 2005). Specifiablity is an indicator of the level of maturity of knowledge about some process (Bohn, 1994). The more that is known about an activity, the easier it is to specify that knowledge and its linkages to other knowledge domains. The more specifiable an activity, the easier to document and explain to another organization, and the easier to document and transfer back any new knowledge that may have been created (Leiblein, et al., 2002). The more mature the knowledge, the less the potential learning opportunity, therefore highly mature and specifiable activities would appear to make the best candidates for outsourcing, as there is little learning to be had (and forgone), and what learning does take place is easier to transfer. The risks of exposing strategic knowledge are minimized.

Activities can range, then, from being based on non-strategic, highly mature knowledge and for which learning how to perform the activity better over time is limited and has little strategic significance for an organization to those that are intangible, hard to specify in a written procedure, and where the opportunity to learn from experience is both great and strategically

important. We map the strategic value of the knowledge associated with an activity against its maturity to produce four categories of potential outsourcing candidates (Figure 1).

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Quadrant I (High Strategic Value of Knowledge/Low Knowledge Maturity): These activities are based on knowledge that is highly strategic to the organization and that provides significant learning opportunity and thus the ability to maintain a knowledge advantage. They are the least desirable candidates for outsourcing.

Quadrant II (High Strategic Value of Knowledge/High Knowledge Maturity): These activities are based on knowledge that is highly strategic to the organization today, but offers little in the way of future learning and improvement. They may represent candidates for outsourcing under certain conditions (discussed in "Outsourcing Strategy" section below).

Quadrant III (Low Strategic Value of Knowledge/Low Knowledge Maturity): These activities are based on knowledge that is of low strategic value but which offer a significant opportunity to improve on that knowledge. They may represent candidates for outsourcing under certain conditions (discussed in "Outsourcing Strategy" section below).

Quadrant IV (Low Strategic Value of Knowledge/High Knowledge Maturity): These activities are based on knowledge of low strategic value and offer little opportunity for learning. They represent the most desirable candidates for outsourcing.

Organizational Sourcing Arrangements

While outsourcing arrangements are often considered in terms of mitigating operating or structural risks (e.g., Aron and Singh 2005), the KBV suggests that the key risks come from potential knowledge leakage and foregone learning associated with the client firm's strategic

knowledge domains. Knowledge transfer and protection thus become the key drivers for determining appropriate organizational arrangements.

Essential knowledge does not always reside exclusively within a firm. Even in cases where the knowledge and learning associated with an activity is strategic, it may be necessary to outsource the activity, most often because of severe resource constraints. From the KBV, a firm outsourcing a strategic activity may still be able to maintain a viable knowledge-based competitive position. In those cases, the ability to transfer back to the client strategic learning that may occur, as well as the client's ability to protect that knowledge is essential (Liebeskind, 1996; Williamson 1991). By protection, we mean the ability to restrict the appropriation of that knowledge only to the client and the vendor (Appleyard, 1996). A company therefore might choose to outsource a strategic learning opportunity if the ability to protect and transfer back the knowledge is not too difficult or costly.

Outsourcing arrangements in some cases potentially can enhance organizational learning of clients by "short-circuiting" the learning process (Mohr and Sengupta, 2002; Willcocks, et al., 2004). However, in those cases, the learning benefits associated with outsourcing do not accrue automatically; organizations require conscious action to transfer and protect knowledge, something which organizations often neglect (Winter, 1987). Thus the vendor often develops new knowledge which is not transferred back to the client. If knowledge is not transferred back over time it may create a knowledge gap between what a client knows and what it needs to know to execute its strategy. Clients may deplete their competence (Earl, 1996; McCray and Clark, 1999; Willcocks, et al., 1999) and absorptive capacity and may even enter a vicious cycle whereby they must outsource more and more as they know and learn less and less (Lei and Hitt, 1995).

The ease of transferring and protecting knowledge is influenced by two key dimensions of an organization's sourcing strategy: the proximity of the location where an activity is performed and the degree of governance or control the firm maintains over that activity (Martin and Salomon, 2003; Murray and Kotabe, 1999).[4]

Proximity. The proximity of a vendor relative to the client plays a key role regarding the ability and cost to protect and transfer strategic tacit knowledge and learning back to the client company (Mowery, et al., 1996; Simonin, 1999). If we think of proximity as similarity, then proximity is concerned not only with physical location, but also with organizational, relational, cultural, and institutional proximity (Si and Bruton, 1999).

The physical proximity between the parties can affect the ease, time requirements and cost of communicating knowledge across different media (Kraut et al., 2002). Complex, tacit, and socially embedded knowledge is difficult to transfer between organizations, requiring rich, direct and frequent interaction best supported by having the organizations involved in knowledge transfer be in close proximity (Decarolis and Deeds, 1999; Simonin, 1999). Close physical proximity also allows clients to monitor misappropriation of knowledge more closely. Organizational proximity refers to embedded relationships such as franchises, alliances, and networks. Organizations are able to transfer and protect knowledge more effectively within such relationships than with outsiders since embeddedness enhances the social ties, free-flow of communication, consistency in administrative controls, and levels of trust (Simonin, 1999). Relational proximity refers to the duration and quality of the experience that the two contracting parties have working together (Cummings, 2003). If the organizations have worked longer with each other and have positive experience, they will transfer knowledge and protect it from misappropriation more effectively and efficiently (Kotabe, et al., 2003). Cultural proximity

refers to the cultural similarity or differences between the two contracting parties (Simonin, 1999). Cultural differences between partners present key obstacles to interorganizational knowledge transfer (Javidan, et al., 2005; Krishna, et al., 2004). Institutional proximity refers to the degree of congruity between the institutional environments of the two contracting parties (Cummings, 2003), including legal, regulatory, and educational institutions. The regulatory environment within the vendor country can create significant barriers to knowledge transfer and protection (Spencer, 2000).

Organizations thus have a range of options for locating activities to be outsourced and which vary in proximity. For example, a firm might chose to outsource to a location that is in the same city, to one that is more distant but in the same country, to another country that is geographically close and similar along the dimensions of proximity identified above (e.g., U.S. to Canada), to another country that is geographically distant but otherwise similar regarding proximity (e.g., U.S. to Australia) or a country that is dissimilar along most or all dimensions of proximity (e.g., U.S to India or China). Thus, the greater the proximity of the activity to the client organization, the greater the ability and the lower the cost to transfer knowledge from vendor to client firm and to protect that knowledge from misappropriation.

Governance. A second key decision regarding outsourcing arrangements relates to governance. In addition to location, client organizations can chose the form of governance they wish to maintain over the particular activity and the sourcing relationship in general. Organizations may choose not to outsource and to continue performing an activity in-house. Yet even when not outsourcing, they still have the same opportunity to locate the work either domestically or overseas (e.g., in an overseas subsidiary). Increasingly, firms are beginning to choose the in-house overseas option by opening or acquiring overseas subsidiaries. Knowledge

protection and knowledge transfer between international locations of the same company tends to be easier and less costly than between separate companies because they are under the same governance structure (Almeida, et al., 2002) . Thus, the closer the governance of a sourced activity by the client, the greater the ability and the lower the cost to transfer knowledge from vendor to client firm and to protect that knowledge from misappropriation. Figure 2 illustrates four archetypical sourcing strategies by mapping governance (in-house vs. outsource) against proximity (local vs. distal).

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Quadrant A (In-house/Local) represents the decision not to outsource and also to keep the activity in close proximity to those organizational units that interface with the activity and the knowledge underlying it. Knowledge protection and interorganizational knowledge transfer is not required in this case.

Quadrant B (In-house/Distal) represents the case where an organization chooses to relocate an activity typically to realize cost or resource advantages of overseas units while also providing closer governance than outsourcing to an independent vendor. While low proximity provides a barrier to knowledge exchange, having the unit be part of the same firm mitigates some of the communication barriers as well as issues of strategic knowledge appropriation and protection.

Quadrant C (Outsource/Local) represents traditional outsourcing to a firm that is domestically located and generally proximate. While external governance poses knowledge transfer barriers, close proximity along all dimensions enables the firms easily and efficiently to protect knowledge and engage in whatever forms of communication, including face-to-face, are most appropriate for transferring knowledge from vendor to client.

Quadrant D (Outsource/Distal) represents what we refer to as offshoring. In this case, the activity is outsourced to an independent entity that is overseas, thus exhibiting low proximity along most or all dimensions. This creates the greatest barrier to knowledge transfer, and offers the least amount of protection.

Regarding ease of knowledge transfer and protection, then, the most effective and efficient transfer of knowledge and learning from vendor to client will occur in the insource/distal case and the least effective and efficient will be the outsourced cases (local and distal). Of the two outsourced cases, the local case would provide a more effective and efficient context for transferring knowledge than the distal case. The insource/local case requires no transfer.

Outsourcing Strategy

Outsourcing costs are a key factor in determining outsourcing strategy. We expand the scope of outsourcing cost to include those based on the KBV. What we refer to as the *Total Cost of Sourcing* (TCS) represents the cost to perform or contract for an activity plus the costs associated with coordinating the sourced activity, expanded to include knowledge protection and transfer, as well as the cost of foregone learning. By explicitly including the costs of knowledge protection, knowledge transfer and forgone learning we significantly augment the scope of costs identified by TCE as well as those recognized in practice.

Although we can make general assertions as to how the form of sourcing relates to the ability to transfer and protect knowledge (Figure 2), the factors affecting the choice of a particular sourcing option differ according to which quadrant on the strategic value of knowledge vs. maturity of knowledge matrix (Figure 1) the activity falls within. While the issue of knowledge transfer and protection applies primarily to the high strategic value/low knowledge maturity (high learning opportunity) quadrant (Figure 1, Quadrant I), we discuss sourcing options for all

four quadrants of Figure 1. Figure 3 combines the two matrices we have developed in the previous sections, enabling us to offer propositions regarding an overall outsourcing strategy from the KBV.

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High strategic value/Low maturity of knowledge. The less mature and more strategic the knowledge underlying an activity, the greater the negative impact on an organization's ability to compete when outsourced, and therefore the greater the incentive to perform the activity in-house. Thus for these activities, the most appropriate sourcing option is to retain the activity in-house to insure that the appropriation of knowledge and learning remains within the firm, preserving its strategic value, while eliminating the need for interorganizational knowledge transfer and knowledge protection. Organizations may fall into the trap of outsourcing such activities if they interpret their business solely in terms of its present product and service offerings or core and non-core activities rather than future learning opportunities (King and Malhotra, 2000; Zack, 2003). Organizations that rely on outsourcing such an activity may find themselves "locked out" from learning and acquiring new knowledge critical to competing effectively.

In those cases where the activity must be outsourced because of significant cost or resource constraints, the firm should choose the option that maximizes the effectiveness and minimizes the cost of transferring knowledge from vendor to client and protecting that knowledge. In most cases this would be in-house/distal sourcing, which maintains proprietary control over the knowledge as well as facilitating its transfer where needed. A second-best option is to use local outsourcing, which can facilitate tacit knowledge transfer although possibly at the expense of

knowledge protection and appropriation. Offshoring overseas to an independent firm poses the greatest barrier to knowledge transfer and the greatest risk of misappropriation, and therefore is the least desirable option.

High strategic value/high maturity of knowledge. Knowledge of high strategic value differentiates the organization from its competitors. If the activities built on this knowledge are outsourced, the knowledge will no longer represent as strategic a resource. Even though there may be minimal benefit from learning by performing the activity because its knowledge is mature, if preserving the proprietary strategic value of the underlying knowledge is important, then firms will not outsource the activity. However, it may be useful to outsource the activity for two reasons.

First, a forward-looking organization may want to shift its basis of competition to a less mature knowledge platform. It may consider outsourcing a strategic activity with little future learning potential so as to shift resources away from maintaining the existing strategic knowledge domain and towards developing new strategic knowledge domains through investment in learning initiatives. To do so, it may be necessary to reallocate resources to some new activity on which the future strategy depends. In that case, the organization is betting that it can learn faster about its new strategic knowledge position than the rate at which the strategic value of its old knowledge position will degrade (as well as learning faster than competitors for the same knowledge position) (Zack, 2005).

Second, an activity that appears mature to one organization, may in fact offer a learning opportunity to another who is able to conceive of the activity in a new and innovative way. The path dependency of learning suggests that organizations improve incrementally based on what they already know (Nelson and Winter, 1982). Vendor organizations with significantly different

historical experience, capabilities, or knowledge bases may be able to conceive of the activity in very different and more innovative ways and perform the activity more effectively and efficiently than the client.

In cases where an organization has chosen to relinquish a competitive knowledge position, the need for knowledge transfer from vendor to client is minimal; therefore clients should chose options that maximize protection of the strategic knowledge while minimizing TCS. In those cases, in-house distal will provide the best option. In cases where a firm is migrating to a new strategic knowledge position and does not need to protect the existing knowledge position, the sourcing decision will be dominated by TCS and the best option will be the one offering the lowest TCS among in-house distal, outsource local, and outsource distal.

Thus, we can conclude that for activities whose underlying knowledge is strategic but mature, the less constrained an organization's learning capability, the greater the incentive to insource. On the other hand, where the organization's learning capability is constrained either by lack of resources or by its existing knowledge path, there is a greater incentive to outsource.

Low strategic value/low maturity of knowledge. For activities whose knowledge has low strategic value and low maturity, firms face competing factors. An organization can outsource the activity without creating an immediate strategic vulnerability. However, because the knowledge maturity is low, the future potential of the knowledge may be unknown. Over time the knowledge may increase in strategic importance as it matures.

Organizations may therefore chose not to outsource if the currently non-strategic knowledge is expected to provide a strategic advantage in the future. Because the knowledge is not mature, the activity presents a learning opportunity, and the organization may need some time to experiment with the activity to gain enough understanding to determine if the knowledge

underlying the activity will be of future strategic value. The client firm must decide whether it should be the one to invest in and potentially benefit from the learning, or to let a vendor firm do so. However, the activity, because of the learning opportunity it represents, may represent added value to the vendor and therefore may give the client bargaining power to negotiate a lower service cost. The vendor, by consolidating the outsourced learning experiences of its clients (the knowledge-based analog to vendors accumulating scale per TCE) can learn to the point where it enjoys a strong knowledge advantage over its clients and its competitors, making its strategic knowledge position highly defensible.

The outsourcing decision has significant implications for an organization's knowledge strategy. Once a firm decides to discontinue performing and thus learning about an activity, it becomes extremely difficult and costly to catch up because of time compression diseconomies and increasing returns to learning (Arthur, 1996; Dierickx and Cool, 1989) discussed earlier, should the firm decide to re-engage in the activity. Were the firm to outsource the activity, learning would stop and the existing knowledge would become obsolete, given the low maturity level. Taking on the activity again at some future time would be difficult given the lack of sufficient knowledge and absorptive capacity. By keeping the activity in-house, the client is essentially investing in a "knowledge option" (Zack, 2005) - the option to remain knowledgeable about the activity as it improves and becomes more mature. This enables an organization to retain and grow the knowledge underlying the activity until its future strategic value becomes clearer.

Therefore, for activities whose underlying knowledge is neither strategic nor mature, the greater the expected future strategic value of the knowledge, the less the incentive to outsource, and conversely the greater the expected future strategic value of the knowledge to the vendor and

the less the expected future strategic value of the knowledge to the client, the greater the incentive to outsource. If the learning has no predicted future value, then the appropriate decision is to outsource the activity. In those cases, knowledge transfer is not an issue; therefore in that case TCS is the primary criterion for choosing an outsourcing option. In cases of uncertainty about future strategic value of the knowledge, the in-house distal option provides an ability to "stay in the game" and to transfer and protect the learning throughout the firm, while potentially lowering TCS.

Low strategic value/high maturity of knowledge. The knowledge associated with these activities is highly mature and therefore offers little opportunity to learn by doing. This may be because a client is not capable of improving the activity, or there is only an apparently small opportunity for improvement available. The knowledge also is of low strategic value and therefore does not create a strategic vulnerability if exposed. The activities that fall under this category therefore are, from the KBV, good candidates for outsourcing. Most of the learning has been accomplished by the industry at large, and outsourcing these activities presents little strategic disadvantage in terms of knowledge and learning. External vendors are likely to have achieved low costs and efficiency through standardization and economics of scale and scope. By outsourcing, an organization will get the benefits of high quality and low cost, which may improve its ability to compete when coupled with other more strategic resources. Not outsourcing those activities may drain its resources and reduce its ability to compete. Clients will gain by freeing up internal management time to focus on more critical activities.

Therefore, for those activities whose knowledge exhibits low strategic value and high maturity there is no benefit to the firm to keeping those activities in-house. The decision

becomes merely one of choosing the option with the lowest TCS. The need to transfer and protect knowledge is minimized.

DISCUSSION AND CONCLUSION

Although there is widespread consensus on the importance of firms' outsourcing decisions, the literature remains unclear whether or how these decisions affect various dimensions of firm performance (Leiblein, et al., 2002). For example, it is asserted that outsourcing capital intensive production activities improves a firm's ability to respond flexibly to changes in technology or demand, to accumulate external knowledge, to avoid coordination inefficiencies, and to compress product development cycle times. However, outsourcing also contributes to the hollowing of corporations, resulting in the depreciation of existing capabilities. We have investigated this paradox to suggest that the relationship is contingent on knowledge and learning. Effective utilization of a firm's resources requires active learning about those resources. This learning is done either by performing an activity or by transferring that knowledge from a vendor. Following an absorptive capacity argument, even if an organization is not concerned about accumulating a particular set of skills, it must still consider whether or not it will be able to absorb that knowledge so that it can be applied effectively to internal products or services.

We have argued that if knowledge is the most strategic resource, and if knowledge is increased via learning-by-doing, then organizations should not outsource activities that will compromise their ability to maintain current or future competitive knowledge positions. That argument is developed from two perspectives. From a knowledge strategy perspective, activities whose underlying knowledge is strategic and of a low maturity and therefore offer valuable opportunities for learning and improvement should be kept in-house. Outsourcing would undermine the competitive advantage of that knowledge resource and the ability to maintain a

superior knowledge position via learning. From a knowledge transfer and protection perspective, outsourcing those activities whose underlying knowledge is strategic and low-maturity would present the most difficult and costly scenario for knowledge transfer and protection.

We conclude that firms must take into account the strategic cost of foregone learning, the cost of protecting knowledge from misappropriation, and the cost to transfer knowledge from the vendor (and thus, the cost of potentially weakening a superior competitive knowledge position) when making an outsourcing decision. This represents a significant addition to the outsourcing decision calculus from the one based on TCE or RBV.

Examining Figure 3, we note a pattern in the issues driving the outsourcing decision and which help to bound where the KBV is more or less appropriate (Figure 4). For activities whose underlying knowledge is not strategic, TCS drives the outsourcing decision. The goal is to find the lowest net-cost factor market. For activities whose underlying knowledge is strategic, knowledge protection and appropriation drives the outsourcing decision. Additionally, where knowledge maturity is low and the activity provides a learning opportunity, knowledge transferability and transfer cost (part of TCS) also drive the decision. Therefore for activities whose underlying knowledge is both strategic (now or possibly in the future) and of low maturity, the outsourcing decision is driven by balancing knowledge transfer and knowledge protection.

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Insert Figure 4 about here
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Our thesis that organizations must consider the value of the learning realized from performing an activity that is being considered for outsourcing makes a significant contribution to the outsourcing literature. That literature has focused on outsourcing primarily from either a cost-reduction or resource-gap perspective, and has underplayed the role of knowledge and

learning. While making no pretensions to comprehensiveness, the framework and its concepts can guide future empirical research and be used to derive testable propositions. We indicated how our perspective relates to the prevailing theoretical approaches to outsourcing, forming a basis for a comparative or integrative examination of these theories.

Our framework provides guidance in making outsourcing decisions and therefore makes an important contribution to outsourcing practice as well. Our analysis also has an important implication for the ability of firms to sustain a competitive advantage in cases where they outsource activities whose underlying knowledge is strategic and evolving. At the extreme, we have observed cases where firms have essentially removed themselves from the process of strategic learning and innovation, placing themselves at a significant competitive disadvantage. The general logic we observed is that given a firm's (perceived or actual) inability to innovate or learn regarding some activity, it expects to realize only a small return for any investment in activity learning and innovation. Within the context of the firm's state of knowledge and learning capability, the activity and its underlying knowledge is considered mature. The alternative is to outsource the activity, assuming that a more innovative vendor will be able to significantly improve the activity and the quality of its output while lowering the cost to the client. Lower costs and higher quality output result in a significantly better return to the client firm – but at the expense of the client maintaining that knowledge and engaging in future learning. The knowledge and learning realized by the innovative vendor taking on ostensibly mature activities may in fact be quite difficult to transfer back to the client, as the client may not know enough to understand and absorb the new learning if radically different than its past way of operating (Cohen and Levinthal, 1990; Simonin, 1999). In the worst case, this dynamic may create a reinforcing spiral of dependency on the vendor. If the effectiveness of knowledge transfer

depends on the client's familiarity with the knowledge context and content (Simonin, 1999) and if that familiarity decreases over time, then knowledge will become progressively harder to transfer back, leaving the client even less knowledgeable about and familiar with the activity, creating an even greater need to outsource. Organizations outsourcing in the absence of effective knowledge transfer and protection will result in a cycle of increasing dependency on the knowledge and capabilities of the vendor, while weakening or eliminating their own competitive knowledge position. Therefore client organizations must take into account the cost of transferring knowledge back, the cost of the knowledge that can never be transferred back, the cost of controlling appropriation and leakage of the outsourced knowledge and learning, and the cost of forgone knowledge options to stay in the game.

Our framework has some limitations. In our analysis, we took a somewhat simplistic view of governance, assuming two discrete states: in-house or outsourced. In realty there are many intermediate collaborative arrangements, which also facilitate knowledge transfer and protection. These arrangements are sometimes referred to as "quasi-integration" arrangements and can include alliances, franchising, partnership sourcing, spin-offs and joint ventures (Salk and Simonin, 2003; Aron and Singh 2005). The blended option of forming collaboration with a vendor may offer a preferred strategy for cases where cost and resource constraints necessitate offshoring yet the learning opportunity is great and the strategic value of that learning is high. Firms may also choose both to insource and outsource the same activity simultaneously (Parmigiani, 2007) thereby maintaining their capacity to absorb the learning that may come from a provider firm as well as providing a "knowledge option" to take the activity entirely in-house in the future. All of these arrangements may provide an ability to outsource yet realize some advantage from vendors' learning or engage in co-learning. Regardless, if we consider these

quasi-firm arrangements to represent knowledge transfer mechanisms, then our basic framework still holds.

We have not explicitly addressed the issues of incentives. Outsourcing arrangements frequently include incentives for vendors to transfer learning to the clients. This may appear to make outsourcing of learning less problematic; however barriers to transfer still exist. As a practical matter, our interviews with several large providers suggest that client firms frequently do not enforce or take advantage of this provision.

Similarly, we characterized knowledge as being either strategic or not, and either mature or not. We adopted these extremes for the sake of making a clear argument; however both strategicness and knowledge maturity can be treated as more continuous and relativistic constructs. Additionally, these constructs pose significant measurement challenges. While some inroads have been made in assessing the strategic value (e.g., Kaplan and Norton, 2004) and knowledge maturity (e.g., Bohn 1996), more work is needed.

In summary, our analysis suggests knowledge and learning have significant implications for outsourcing decisions. With outsourcing growing at a rapid pace, these implications are critical as they may determine the ability to compete in today's knowledge economy.

NOTES

[1] Institutional theory (e.g., DiMaggio & Powell, 1983) has provided an additional lens for examining the outsourcing decision, suggesting that firms outsource in imitation of others in their industry (Hu, Saunders & Gebelt 1997, Lacity & Wilcocks 1998, Loh & Venkatraman 1992). However, as this represents a small portion of the theoretical literature on outsourcing and offers only a quasi-economic rationale, we do not include it in our discussion.

[2] Some treat the KBV as an extension of RBV (i.e., knowledge is just another resource) and even RBV as an extension of TCE, as ultimately all costs could be subsumed into TCE (e.g., Foss 1996). Others treat these theories as conceptually distinct (e.g., Chandler 1992, Connor 1991, Connor & Prahalad 1996, Kogut & Zander 1996, Teece 1998). Our aim is not to settle or even advance this debate; rather it is to use the KBV to expand on how a firm may frame the outsourcing decision beyond the perspectives offered by TCE and RBV.

[3] While TCE also addresses this cost issue, RBV, unlike TCE, takes the firm rather than the transaction as the unit of analysis, thus reintroducing the notion of productive activity and organizational capability into the theory of the firm (Langlois & Foss 1999), a key perspective on which our own analysis rests.

[4] While the form of knowledge (viz., tacit vs. explicit [Polanyi 1962]) also influences the ease and cost of transfer, we assume that all knowledge being transferred is that based on learning-by-doing and is therefore primarily tacit knowledge. Tacit knowledge is based on accumulated experience and is reflected in the expertise, skills, and routines acquired by organizational over time (Nelson & Winter, 1982; Winter, 1987). Tacit knowledge is difficult to articulate and codify, time consuming to teach and learn, complex in terms of having multiple interactive components and is difficult to transfer, but also difficult to imitate (Kogut & Zander, 1992; Winter, 1987). From the KBV, this inimitability confers strategic value to tacit knowledge (Lippman & Rumelt, 1982).

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FIGURES

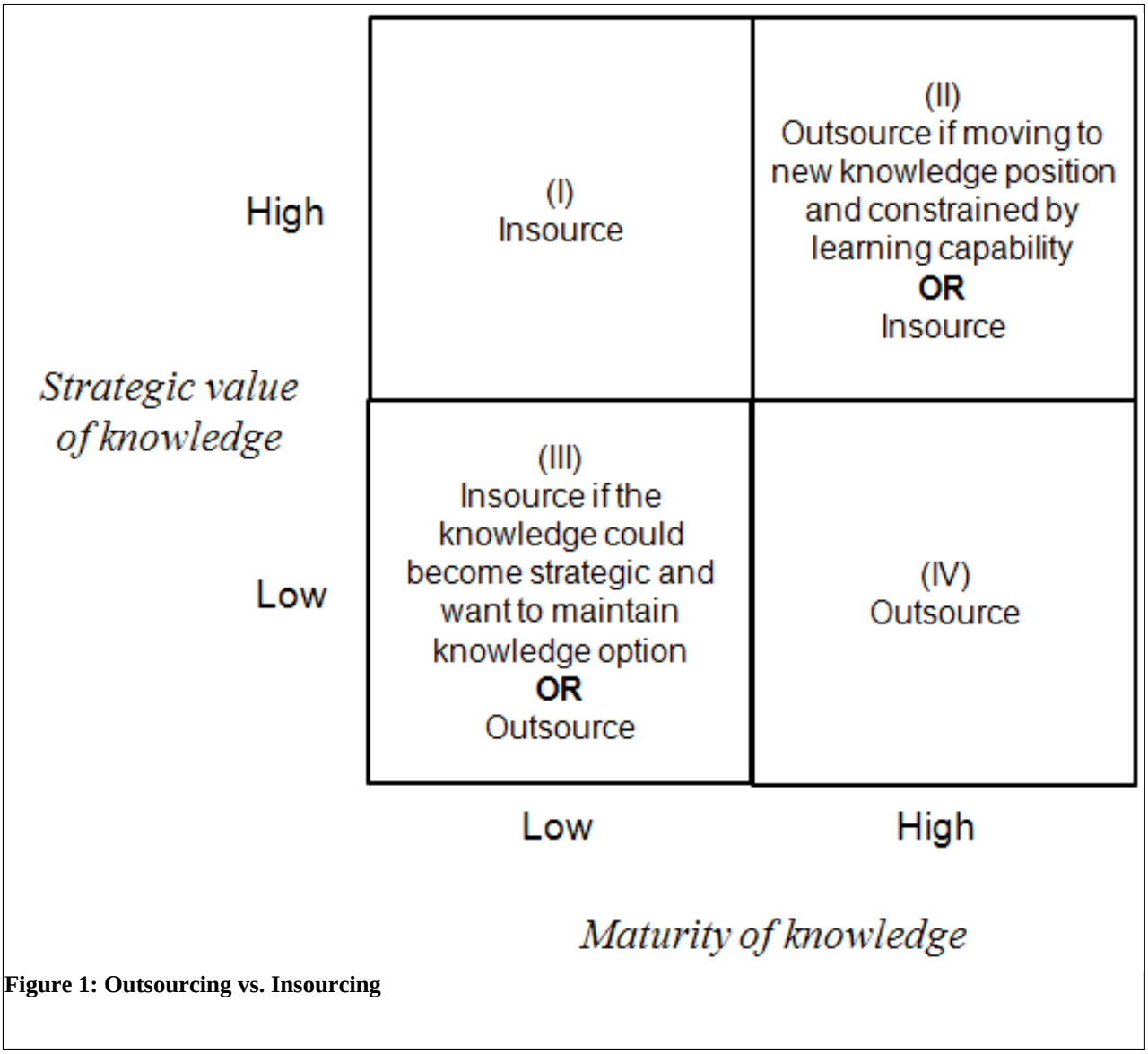

Figure 1: Outsourcing vs. Insourcing

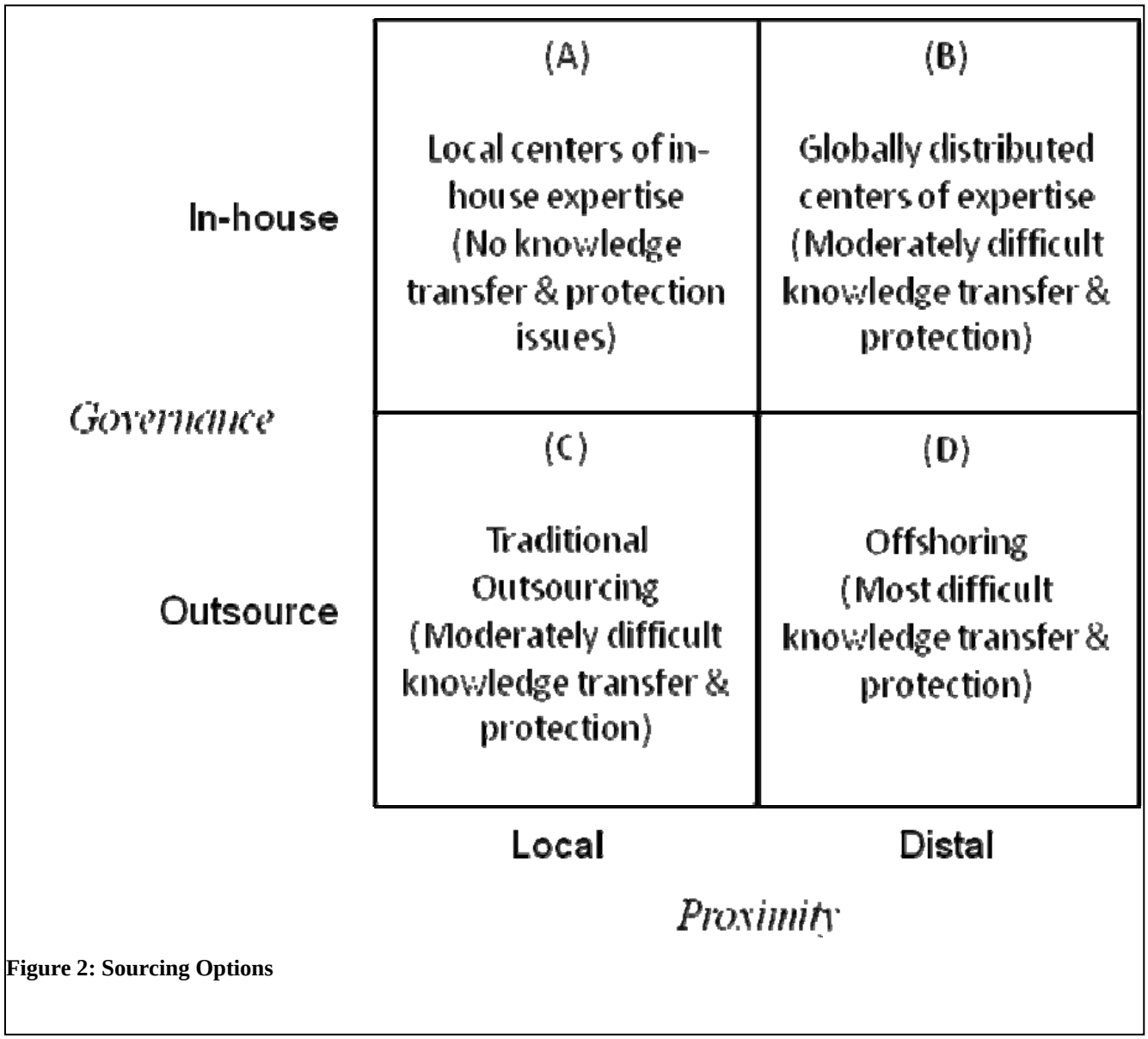

Figure 2: Sourcing Options

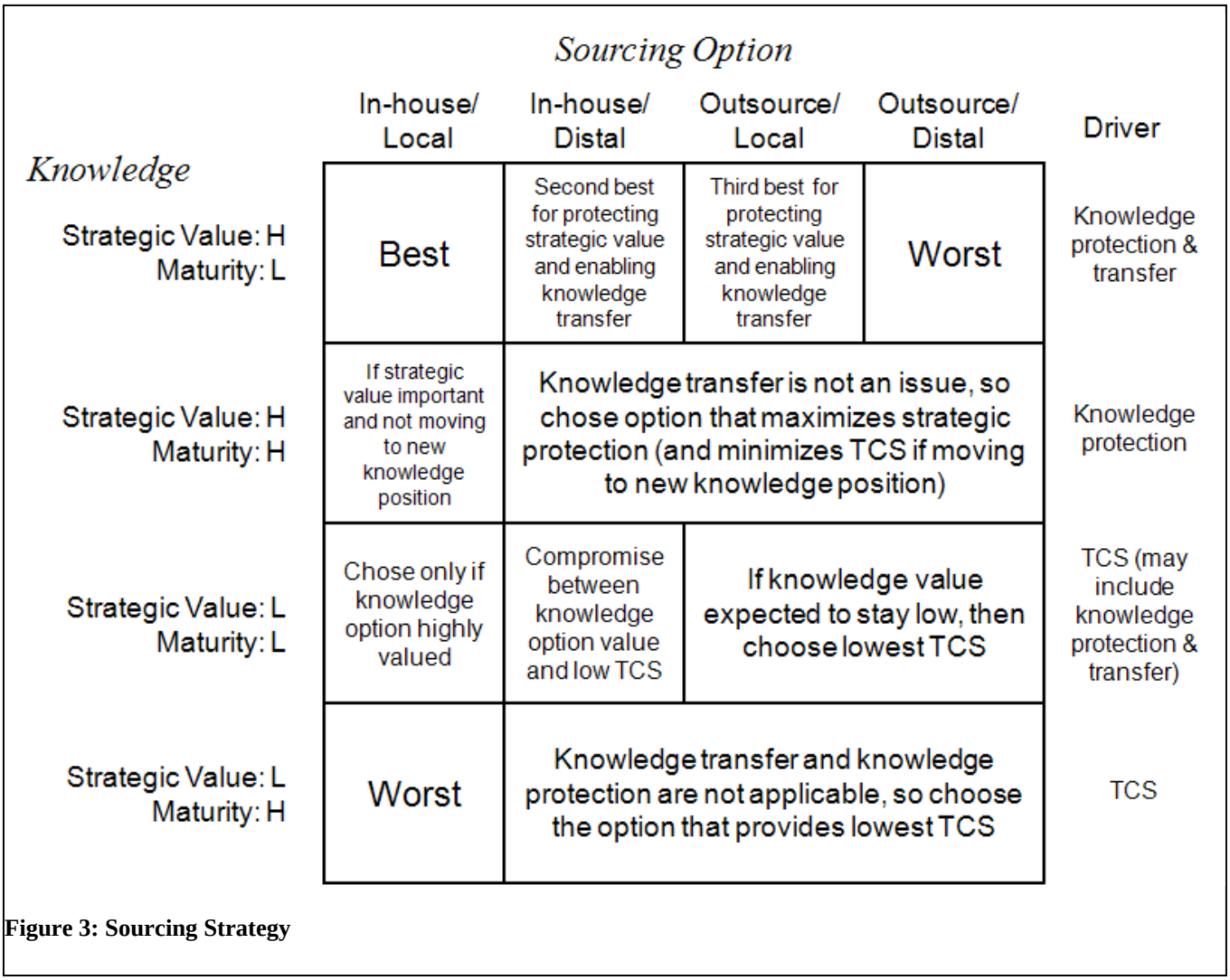

Figure 3: Sourcing Strategy

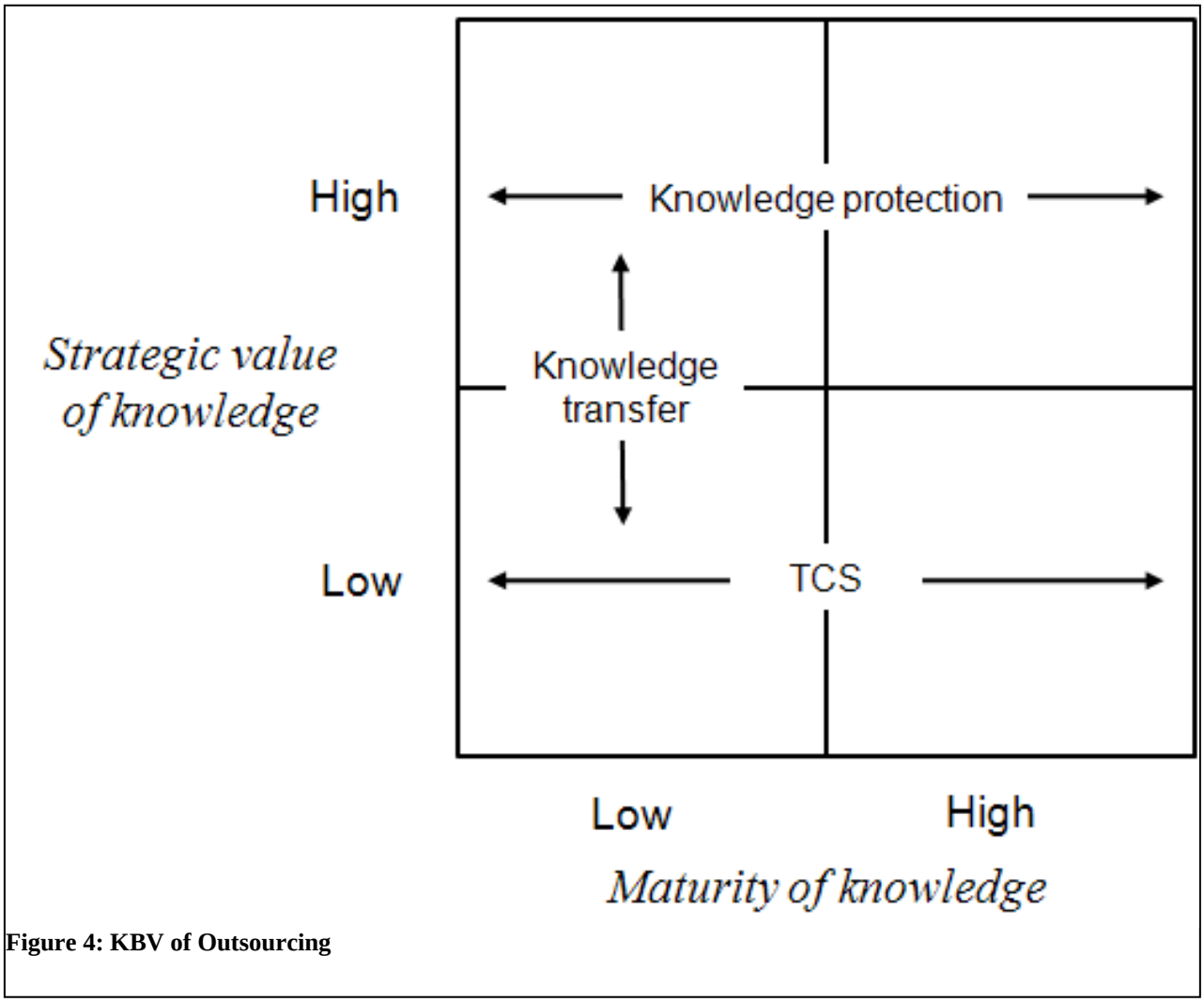

Figure 4: KBV of Outsourcing