Available online at www.sciencedirect.com
ScienceDirect
Industrial Marketing Management 37 (2008) 37–45
INDUSTRIAL MARKETING MANAGEMENT

Outsourcing, performance, and the role of e-commerce: A dynamic perspective

Masaaki Kotabe [a,*], Michael J. Mol [b,c], Janet Y. Murray [d]

[a] The Washburn Chair Professor of International Business and Marketing, Temple University, The Fox School of Business & Management, The Institute of Global Management Studies, 349G Speakman Hall 006-00, Philadelphia, PA 19122, USA
[b] University of Reading, Department of Management, Po Box 218, Reading RG6 6AA, United Kingdom
[c] Visiting researcher, Management Innovation Lab, London Business School, United Kingdom
[d] E. Desmond Lee Professor for Developing Women Leaders and Entrepreneurs in International Business, Department of Marketing, College of Business Administration, University of Missouri-St. Louis, One University Boulevard, St. Louis, MO 63121-4400, USA

Received 1 September 2006; received in revised form 1 May 2007; accepted 1 June 2007
Available online 22 October 2007

Abstract

In a highly competitive global environment, many manufacturers respond by setting up outsourcing relations for components and finished products with lower-cost producers on a contractual OEM (original equipment manufacture) basis. In the last decade, we have witnessed a spectacular growth in outsourcing activities led primarily by U.S. and Japanese companies, although their approaches to outsourcing strategy and supplier relations are different. However, outsourcing strategy is not without drawbacks. We offer a dynamic perspective of outsourcing strategy and its performance implications, in which we argue that there is an optimal degree of outsourcing. The outsourcing-performance relationship takes on an inverted-U shape, implying that as firms deviate further from their optimal degree of outsourcing, by either insourcing or outsourcing too much, their performance will suffer disproportionately. We then discuss how e-commerce affects where the optimal point of any particular firm is located, hence explicitly linking developments in e-commerce to changing outsourcing levels. We provide implications for the practice and study of outsourcing and e-commerce.

Keywords: Global supply chain management; Outsourcing strategy; Performance; Dynamic perspective; E-commerce

1. Introduction

History has repeatedly shown that in a highly competitive global environment, many manufacturers begin to either set up manufacturing facilities in lower-cost locations or outsource components and finished products from lower-cost producers on a contractual OEM (original equipment manufacture) basis. Without established sourcing plans, distribution, and service networks, it is extremely difficult to exploit both emerging technology and potential markets around the world simultaneously. As a result, the increased pace of new product introduction and reduction in innovational lead time calls for more proactive management of locational and corporate resources on a global basis. Following this trend, increased outsourcing of manufacturing activities has become a prominent part of the restructuring of firms' supply chains since the 1990s. Many academics and consultancy firms seem to support the view of outsourcing as one of the key drivers of superior performance.

Outsourcing strategy is part and parcel of the value chain of corporate activities. Outsourcing strategy not only affects but is also affected by the other aspects of the firm's supply chain. Levy (2005) has asserted that the core driver of the latest form of global outsourcing is the increasing organizational and technological capacity of firms in decoupling and coordinating a network of remotely located external suppliers performing an intricate set of activities. Thus, executives should understand and appreciate the important roles that product designers, engineers, and production managers, and purchasing managers, among others, play in global

* Corresponding author.
E-mail addresses: mkotabe@temple.edu (M. Kotabe), m.mol@rdg.ac.uk (M.J. Mol), murrayjan@umsl.edu (J.Y. Murray).

0019-8501/$ - see front matter © 2007 Elsevier Inc. All rights reserved.
doi:10.1016/j.indmarman.2007.06.011

sourcing strategy development. Let us take a look at Toyota's global sourcing strategy as an example.

Toyota is equipping its operations in the United States, Europe, and Southeast Asia with integrated capabilities for creating and marketing automobiles. The company gives the managers at those operations ample authority to accommodate local circumstances and values without diluting the benefit of integrated global operations. Thus, in the United States, Calty Design Research, a Toyota subsidiary in California, designs the bodies and interiors of new Toyota models, including Lexus and Solara. Toyota has technical centers in the United States and in Brussels to adapt engine and vehicle specifications to local needs. Toyota operations that make automobiles in Southeast Asia supply each other with key components to foster increased economies of scale and standardization in those components—gasoline engines in Indonesia, steering components in Malaysia, transmissions in the Philippines, and diesel engines in Thailand. Toyota also started developing vehicles in Australia and Thailand in 2003. These new bases develop passenger cars and trucks for production and sale only in the Asia-Pacific region. The Australian base is engaged mainly in designing cars, while the Thai facility is responsible for testing them.

In addition to capitalizing on the comparative advantages of different sourcing locations and its own unique capabilities by designing and manufacturing certain components in-house (i.e., insourcing), Toyota also reaps the advantages of outsourcing. To outsource manufacturing activities, Toyota adopts both the arm's length and partner models in managing its external suppliers. It would purchase necessary, but non-strategic inputs from independent suppliers on an arm's length basis to obtain a lower cost for these inputs. Examples would be belts, tires, and batteries that are not customized and do not differentiate its products from its competitors. Strategic inputs that are of high value and provide differentiation (e.g., transmission, engine parts) are sourced from suppliers based on strategic partnerships to gain access to suppliers' capabilities, and yet other activities are still performed inside Toyota (Kotabe & Murray, 2004). In 2000 Toyota was approached by General Motors and Ford to jointly develop an online business-to-business (B2B) automotive components clearinghouse. Although Toyota declined to join as it was not convinced of the wisdom of standardizing parts with other automakers, General Motors and Ford, along with DaimlerChrysler, proceeded to create Covisint to jointly address escalating costs and inefficiencies in their supply chain management.[1]

In this conceptual article, we seek to bring together various empirical trends and to provide a coherent explanation for these. As the Toyota example shows, the first trend is that we see increased, yet not unlimited, outsourcing. The second trend, which we discuss relatively sparingly (for more details see for example Van der Valk & Wynstra, 2005), is in an increase in partnership-type supplier relations. And the third trend is the adoption of electronic commerce (e-commerce) in these supplier relations. In Section 2 we conceptualize global sourcing strategy. In Section 3 we raise the question on how outsourcing affects firm-level performance, by arguing that there is an inverted-U shape relationship between them. Section 4 takes up the theme of e-commerce, and describes how the introduction of e-commerce in supplier relations affects this inverted-U shape relationship. We conclude by sketching some managerial and research implications of our work.

2. Global sourcing strategy

Global sourcing strategy refers to identifying which production units will serve which particular markets and how components will be supplied for production, and thus includes a number of basic choices companies make in deciding how to serve various markets. One choice relates to the use of imports, assembly, or production within the country to serve a foreign market. Another decision involves the use of internal or external supplies of components or finished goods. Therefore, the term "sourcing" is used to describe how multinational companies manage the flow of components and finished products in serving foreign and domestic markets.

Sourcing decision-making is multifaceted and entails both contractual and locational implications. From a contractual point of view, the sourcing of major components and products by multinational companies takes place in two ways: (1) from the parents or their foreign subsidiaries on an "intrafirm" basis, and (2) from independent suppliers on a "contractual" basis. The first type of sourcing is known as insourcing. The second type of sourcing is referred to commonly as outsourcing. Outsourcing can further be broken down into two types: on an arm's length or strategic partnership basis. Similarly, from a locational point of view, multinational companies can procure components and products either: (1) domestically (i.e., onshoring), or (2) from abroad (i.e., offshoring).

In developing viable sourcing strategies on a global scale, companies must consider not only manufacturing costs, the costs of various resources, and exchange rate fluctuations, but also availability of infrastructure (including transportation, communications, and energy), industrial and cultural environments, the ease of working with foreign host governments, and so on. Furthermore, the complex nature of sourcing strategy on a global scale spawns many barriers to its successful execution. In particular, logistics, inventory management, distance, nationalism, and a lack of working knowledge about foreign business practices, among others, are major operational problems identified by multinational companies engaging in global sourcing.

Some studies have shown, however, that despite, or maybe, as a result of those operational problems, *where* to source major components seems much less important than *how* to source them (Kotabe & Swan, 1994; Mol, van Tulder, & Beije, 2005; Murray, Kotabe, & Wildt, 1995). Thus, when examining the relationship between sourcing and competitiveness of multinational companies, it is crucial to distinguish between insourcing and outsourcing, for these two types of sourcing will have a different impact on their long-term competitiveness.

[1] Although its success is debatable, Covisint today supports over 250,000 users, representing more than 30,000 organizations in over 96 countries in the global automotive industry (Applegate & Collins, 2005).

2.1. Insourcing

Multinational companies can procure their components in-house within their corporate system around the world. They produce major components at their respective home base and/or at their affiliates overseas to be incorporated in their products marketed in various parts of the world. Thus, trade takes place between a parent company and its subsidiaries abroad, and also between foreign subsidiaries across national boundaries. This is often referred to as insourcing. If such in-house component procurement takes place at home, it is essentially onshore insourcing. If it takes place at a company's foreign subsidiary, it is called offshore insourcing. Insourcing makes trade statistics more complex to interpret, since part of the international flow of products and components is taking place between affiliated companies within the same multinational corporate system, which transcends national boundaries. One-third of multinational companies' trade is accounted for by insourcing activities between the multinational parent company and its affiliates or among those affiliates (UNCTAD, 2002).

2.2. Outsourcing

Dyer, Cho, and Chu (1998) have observed that Japanese companies make a distinction of outsourcing as to whether it is based on an arm's length or a strategic partnership basis. In the 1970s, foreign competitors gradually caught up in a productivity race with U.S. companies. This coincided with U.S. corporate strategic emphasis shifting from manufacturing to finance and marketing. This strategic shift was based chiefly on a cost–benefit analysis that manufacturing functions could, and should, be transferred to independent operators and subcontractors, depending upon the cost differential between in-house and contracted-out production. A company's reliance on domestic suppliers for major components is basically a domestic purchase arrangement (i.e., onshore outsourcing). Furthermore, in order to lower production costs under competitive pressure, U.S. companies turned increasingly to outsourcing of components and finished products from abroad (i.e., offshore outsourcing), particularly from such countries as China, India, South Korea, Taiwan, Hong Kong, and Mexico. Initially, subsidiaries were set up for production purposes (i.e., offshore insourcing), but gradually, independent foreign suppliers took over component production for U.S. companies. This latter phenomenon is usually called offshore outsourcing (or offshore sourcing, for short). Although there are exceptions such as Philips and Sanofi-Aventis, many European firms have been relatively slow in adopting offshore outsourcing strategy.

Outsourcing helps reduce fixed investment in in-house manufacturing facilities and thus lower the breakeven point, which subsequently helps boost an outsourcing company's return on equity (ROE). Thus, if corporate executives' performance is evaluated on the basis of their contribution to the company's ROE, they tend to have a strong incentive to increase outsourcing. This financial logic appealed in particular to U.S. corporate executives who tend to be evaluated on relatively short-term results.

Unlike their U.S. counterparts who historically managed all suppliers in an arm's length fashion, Japanese companies managed their outsourcing activities based on the types of inputs sourced. Although many studies of supplier–assembler relationships in Japan implied that all suppliers are part of the keiretsu, this perception is inaccurate (Dyer et al., 1998). Japanese companies differentiate strategic suppliers (*kankei kaisha*) that fall into the keiretsu category from independent suppliers (*dokuritsu kaisha*) that do not. In utilizing both types of outsourcing, Japanese companies are able to achieve economies of scale using arm's length transactions. At the same time, they also gain access to their suppliers' capabilities for strategic inputs by using strategic partnerships for improved long-term performance (Dyer et al., 1998). Therefore, the performance implications of outsourcing strategy are multifaceted and require careful examination.

3. Outsourcing and firm performance

Outsourcing has become one of the buzzwords in managerial practice today. Similarly, it has received an increasing amount of academic attention (Domberger, 1998; Leiblein, Reuer, & Dalsace, 2002; Porter, 1997; Quinn, 1999). Yet, conflicting predictions have arisen over its performance implications with varying attention for its benefits and drawbacks. Practitioners are now beginning to doubt whether universally prescribing outsourcing is the right way to go (Doig, Ritter, Speckhals, & Woolson, 2001). Indeed, Gottfredson, Puryear, and Phillips (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 6% were highly satisfied with their offshore outsourcing overall. Similarly, Booz Allen Hamilton recently found that the success rate of outsourcing deals from the customer's perspective was only 12% (Fortune, April 3, 2006). Likewise, some researchers have even suggested that outsourcing may not be directly related to performance (Leiblein et al., 2002).

Thus, our thinking on outsourcing strategy and firm performance may have to be redefined. Watson, Zinkhan, and Pitt (2004) offer a useful theoretical framework for examining the performance implications of outsourcing strategy. When independent firms operate in a network, they face two kinds of costs (coordination costs and suboptimality costs) depending upon the level of their autonomy in the network. While their autonomous operations may lower coordination costs within a network (albeit maintaining their own respective capabilities), such autonomous operations may result in less than optimal performance for the network as a whole. On the other hand, while more coordinated operations by network firms may improve network performance, such coordinated operations may result in increased coordination costs.

The outsourcing strategy literature offers arguments both for and against outsourcing strategy. In essence, those who argue in favor of outsourcing strategy base their argument on the benefit of reduced coordination costs as a result of increased autonomous operations by firms in a network. This argument is based primarily on short-term benefits. On the other hand, those who

argue against outsourcing strategy derive their view primarily from increased coordination costs as a result of the network firms' increased attempt to accomplish an optimal network performance. Their argument is based more on long-term benefits.

Short-term vs. long-term views on outsourcing seem consistent with institutional perspectives on managerial innovations (Westphal, Gulati, & Shortell, 1997). Early adopters of outsourcing strategy indeed experienced efficiency gains as they were able to reduce fixed investment in in-house manufacturing facilities and boost their ROE. Later adopters may have bandwagoned on outsourcing to gain institutional legitimacy, or because of competitive pressures in the industry, despite some inherent uncertainties about the long-term costs and benefits of outsourcing strategy (Abrahamson & Rosenkopf, 1993). Naturally, some deviation from an optimal level of outsourcing is bound to occur and bandwagoning can provide one important explanation for it.

We posit that the outsourcing-performance relationship inherently takes on an inverted-U shape, implying that there is an optimal degree of outsourcing for every individual firm and as a firm deviates further from its optimum, either by insourcing or outsourcing too much, its performance will suffer disproportionately. Based on this perspective, we first address these arguments and then combine them to develop a dynamic perspective of the performance implications of outsourcing strategy for firm performance. Note that our focus is not on any single outsourcing decision or transaction, but rather on the overall extent of outsourcing of a business unit, across all of the activities performed to meet customer demand.

3.1. The case for outsourcing

Various arguments have been supplied to make the case for outsourcing. We briefly outline these arguments to explain why firms would want to outsource:

3.1.1. Strategic focus/reduction of assets

Through outsourcing activities, a firm can reduce its level of asset investment in manufacturing and related areas. Therefore, stock markets usually react favorably to outsourcing since more or less similar absolute profit levels can be obtained with lower fixed investments (Domberger, 1998). Furthermore, outsourcing can help the management of a firm redirect its attention to its core competencies, instead of having to possess and keep updated a wide range of competencies.

3.1.2. Complementary capabilities/lower production costs

External suppliers are often highly specialized in the production of components or products, allowing them to produce at lower costs than the outsourcing firm could due to scale economies. Therefore, a firm can improve production cost levels by outsourcing non-core activities (Hendry, 1995; Quinn, 1999). Firms are increasingly relying on third-party specialists to help with administrative matters, thus avoiding the high cost of new technology, and allowing their own human resources professionals to focus on transforming their human capital into a real strategic advantage (Corbett, 2006). Indeed, Everest Research Institute's recent study found that human resources outsourcing arrangements increased by more than 40% in 2005 alone (Corbett, 2006).

3.1.3. Strategic flexibility

Global outsourcing may increase the firm's strategic flexibility. By using outside sources, it is much easier to switch from one supplier to another (Harris, Giunipero, & Hult, 1998). If an external shock occurs, firms are better able to deal with it by simply increasing or decreasing the volumes obtained from an external supplier. If the same item were produced in-house (i.e., insourcing), there would not only be high restructuring costs, but also a much longer response time to external events.

3.1.4. Avoiding bureaucratic costs

Rising production costs are associated with internal production (D'Aveni & Ravenscraft, 1994). More generally, there is a lack of a price mechanism and economic incentives inside a firm (Domberger, 1998). To the extent that such incentives are missing, firm efficiency will suffer as a consequence.

3.1.5. Relational rent

In recent years, many researchers have argued that certain relationships with external suppliers can deliver competitive advantage (e.g., Dyer & Singh, 1998). By outsourcing items and then building idiosyncratic and valuable relationships with suppliers, firms may be able to innovate, learn, and reduce transaction costs.

3.2. The case against outsourcing

Extant literature on outsourcing strategy has also highlighted the disadvantages of outsourcing strategy.

3.2.1. Interfaces/economies of scope

Firms may benefit from internalizing production through scope economies (D'Aveni & Ravenscraft, 1994). Kotabe (1998) has suggested that manufacturing firms, in their outsourcing decisions, ought to reflect on the interfaces among R&D, manufacturing, and marketing. If there are important interfaces between activities, decoupling them into separate activities performed by separate suppliers will generate less than optimal results and potential integration problems.

3.2.2. Hollowing out

Firms that excessively outsource activities are hollowing out their competitive base (Kotabe, 1998). Once activities have been outsourced, it tends to become difficult to differentiate a firm's products on the basis of these activities. Furthermore, a firm could lose bargaining power vis-à-vis its suppliers because the capabilities of the suppliers increase relative to those of the firm.

3.2.3. Opportunistic behavior

External suppliers may behave opportunistically (Williamson, 1985) as their incentive structure varies widely from that of

the outsourcing firms. Opportunistic behavior allows a supplier to extract more rents from the relationship than it would normally do, for example by supplying a lower than agreed-on product quality or withholding information on changes in production costs.

3.2.4. Rising transaction and coordination costs

Hendry (1995) has emphasized the issue of the high coordination costs incurred due to excessive outsourcing. Firms are limited in their capacity to work with external suppliers as partners, and therefore have to prioritize external partners. If they simultaneously invest time in and pay attention to all external suppliers, this would induce very high coordination costs indeed. Rottman and Lacity (2006) recently concluded that U.S. customers micromanage their offshore suppliers to a much greater degree than they manage their domestic suppliers. They found that transaction costs for offshore projects neared 50% of contract value, compared to 5% to 10% for domestically outsourced projects.

3.2.5. Limited learning and innovation

A form of learning that is deemed especially important for attaining tacit knowledge is learning-by-doing. External suppliers will acquire tacit knowledge by performing the activity, but in this case the outsourcing firm cannot appropriate all benefits. Appropriation of innovations and rents is always a problem in buyer–supplier relationships (Nooteboom, 1999) because both parties will try to obtain as many private benefits as possible. Furthermore, it may become more difficult to innovate, given differing incentives and the subsequent lack of interfaces between firms.

3.2.6. Higher procurement costs due to fluctuating currency exchange rates

During the Asian financial crisis, many foreign firms operating in Asian countries learned an invaluable lesson on the negative impact of fluctuating currency exchange rates on their procurement costs and profitability. MNCs operating in Asian countries tend to procure certain crucial components and equipment from the parent companies and other suppliers using global outsourcing. When Asian currencies depreciated precipitously, these MNCs' subsidiaries were faced with imported components and equipment whose prices had increased enormously in local (i.e., Asian) currencies. In other words, the more dispersed these MNCs' assets, capabilities, and activities are due to global outsourcing, the more difficult it is for them to manage wild currency exchange rate fluctuations, and the higher the probability that they will suffer from increased procurement costs and lower profits (Kotabe, 2002).

3.3. A dynamic perspective

Given the conflicting predictions on the performance impact of outsourcing, with some arguments in favor of outsourcing yet others against it, there is a need to synthesize the arguments. We approach this by evaluating the proposed consequences of each. Proponents of outsourcing argue that firms which procure almost all of their activities internally will be so far removed from the market that their efficiency tends to suffer. In other words, if almost no outsourcing is undertaken, there will be no benchmark available that would permit a firm to judge how efficient its own activities are relative to the market. If outsourcing is undertaken, such a beacon exists. The less outsourcing, the more inefficient firms tend to be.

However, others have argued that insourcing has its merits. Put differently, outsourcing also seems to have negative effects on a range of performance indicators. Thus, there are reasons to argue for a negative relationship between outsourcing and performance. Opponents of outsourcing particularly warn of the long-term detrimental effects of excessive outsourcing. Firms that become hollow or virtual lack a solid basis for competing, and can neither innovate enough nor learn much. The disadvantages of outsourcing are at their worst when firms outsource (almost) everything.

In general, one could argue that there is a feasible range of outsourcing strategies where firms can uphold reasonable performance. If, however, they implement either very high insourcing or very high outsourcing, their competitive position and performance will suffer deeply. Simply stated, too little outsourcing tends to result in internal bureaucratic and other non-market inefficiency, while too much outsourcing tends to result in external relational inefficiency and technological dependence. Moving toward a high level of insourcing (i.e., vertical integration) implies that firms could lose touch with the efficient production propagated by markets. They could face staggering production costs as some U.S. and British conglomerates discovered in the 1980s and 1990s before being dissolved. The reverse can be equally true. As has been argued by Chesbrough and Teece (1996), *virtual* is not always virtuous. This is a lesson many dot.com firms have learned over the past several years. Their extreme degree of outsourcing, coupled with a lack of internal capabilities has led to very high transaction costs, for example, in terms of having to obtain those capabilities externally through acquisitions in the stock market, or even losing touch with reality (Doig et al., 2001; Krugman, 2001).

Combining these two perspectives, we expect an inverted-U shape relationship, since the extremes produce the worst possible outcomes, while there is some optimum in the middle (see Fig. 1). In other words, a firm has some overall optimal level of outsourcing that lies in between complete integration (i.e., insourcing) and complete outsourcing. This explains why firms never integrate all of their activities nor outsource them all. Also, one should note that we do not argue there is a universal single optimum. Rather, each firm will have its own optimal level, depending on factors at the country-, industry-, firm- and transaction-levels.

Another justification for this proposed relationship is to consider a firm as a bundle of activities needed to satisfy customer demand. To the left of the optimum we find activities which should be best outsourced, because the costs of insourcing do not outweigh the benefits. This includes, at very low levels of outsourcing (i.e., near the left hand extreme of Fig. 1), activities that are simply procured in an arm's length

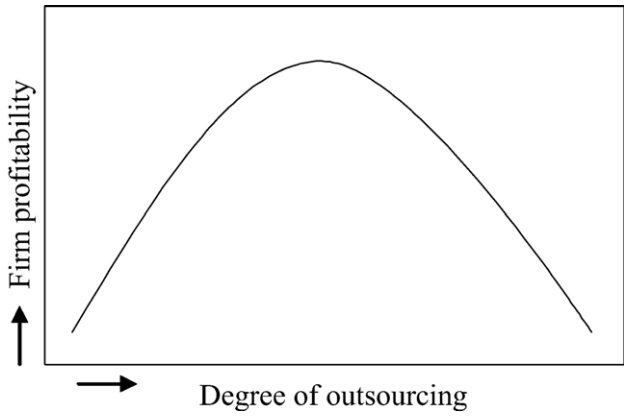

Fig. 1. The relationship between the degree of outsourcing and firm profitability.

manner. For these activities it is very costly to make the wrong decision, to insource when outsourcing is much more appropriate. As we move towards the optimum, we find activities where it becomes progressively less clear that outsourcing is the best solution. These activities should still be outsourced, but will be outsourced through partnerships with external suppliers. This involves reciprocal sharing of knowledge with the supplier undertaking production of the activity.

As we move beyond the optimum, on the right-hand side of Fig. 1, we will first find activities for which integration is the better choice, but not by a large margin. These will be produced by the firm itself but with inputs from suppliers and others (open innovation R&D activities could be an example). As we move closer to the right-hand extreme of Fig. 1, we find activities for which insourcing should be an increasingly obvious choice, and for which making the wrong choice (i.e., outsourcing instead of insourcing) is an increasingly costly mistake. Outsourcing of top management of a firm comes to mind as an example of this category.

3.4. Some empirical illustrations

In a separate paper (Kotabe & Mol, 2005), we tested this hypothesized relationship empirically and find compelling evidence in favor of it. The test involves around 1100 manufacturing businesses operating in the Netherlands. We regressed their overall performance on their overall outsourcing level and a range of control variables, in line with the level of analysis proposed in this article, and take into account a time lag to counter problems of reverse causality. The tests also showed that the steepness of this curve is moderated by the level of uncertainty the business faces, which confirms the importance of the dimensions suggested by transaction cost economics.

Other empirical research confirms that there is indeed a spread of activities similar to that suggested by the curve presented in Fig. 1. There are those activities that are almost always outsourced, and for which it matters more how outsourcing is organized. Poppo and Zenger (1998), for instance, investigate different types of supplier relations in IT outsourcing. There are activities which are closer to the optimal level and which can either be outsourced or integrated. The popular press regularly publishes stories on failed outsourcing attempts and management consultants have started to suggest there should be some balance in a firm's outsourcing levels, arguing that "[f]arming out in-house operations has become a religion. Now it must be tempered by reason" (Doig et al., 2001, p. 25). Abrahamson (2004) discusses how Cisco outsourced, integrated, and again outsourced a particular project over a 2-year time span. Parmigiani (2007) discusses why firms would simultaneously make and buy the same good, reminiscent of earlier discussions of taper integration in the literature. And there is still a class of activities, which is probably shrinking as we will discuss in Section 4, that is never outsourced, and therefore not researched in any detail either. A prominent example would be the making of outsourcing decisions and the subsequent management of outsourcing. Firms keep these activities in-house.

4. The impact of e-commerce

This hypothesized relationship can be further extended to bring in the other empirical trends mentioned in the introduction, partnership relationships with suppliers and the rise of e-commerce. We use the term e-commerce broadly to refer to exchanges culminating in transactions between buyers and suppliers based on computer and information technology. Examples might include electronic (web-based) auctions, EDI, file-sharing protocols for product design, and perhaps even video conferencing.

Technological change can alter the effectiveness of the make and/or buy options because it affects transaction and production costs and firm capabilities. [2] New technology can for instance enable instant contact with a supplier or electronic information sharing between buyers and suppliers (Eng, 2004). These types of information sharing can facilitate coordination between various players in a supply chain and thus lower transaction costs. As Hamel (2000, p. 99) succinctly put it: "the fact remains that vertical integration, which was in the past a response to high transactions costs (which could be lowered by bringing key functions inside the corporate boundary), is becoming less critical in a world where real-time information allows for transparency and trust between business partners." Hence e-commerce helps facilitate partnership relations with outside suppliers.

There is a long-standing debate around the possible effects of information technology (IT) and e-commerce on outsourcing levels. First, it is argued that that IT reduces the transaction costs associated with operating in the market (e.g., Malone, Yates, &

[2] We readily acknowledge that there are many other factors influencing optimal and actual outsourcing levels. These would include all kinds of other technologies than e-commerce, like transportation technology or managerial technology, as well as institutional factors. Institutional factors may include items like contract law, international trade regimes, intellectual property rights regimes, and economic liberalization. A full discussion of what causes changes in outsourcing levels over time clearly extends beyond the boundaries of this paper. So while we acknowledge these other factors, our focus will be on e-commerce alone.

Benjamin, 1987). Furthermore, reduced communication costs as a result of IT even permit smaller suppliers to extend their geographical market boundaries (e.g., Downes & Mui, 1998). Because of these lower transaction costs, it is argued that markets become relatively more beneficial when compared to hierarchies. Hence, the increasing use of IT should lead to more outsourcing, and developments in IT indeed are a prime, if not the prime, driver of outsourcing. On the other hand, other authors countered this notion. Clemons, Reddi, and Rowe (1993) spoke of the move towards the middle, by which they implied the formation of networks and partnership relations rather than either markets or hierarchies. Because information becomes so much easier to spread to many actors simultaneously through electronic means, for example by copying multiple recipients into an e-mail, IT supports electronic networks. Holland and Lockett (1997) described the formation of such networks in more details by explaining how the introduction of EDI solidified existing cooperative relations rather than leading to more market-like conditions. These authors therefore believed that the introduction of information systems further promotes the formation of inter-firm networks of perhaps changing composition in which cooperative ties are formed between buyers and suppliers. The option of creating networks of suppliers, facilitated by e-commerce, makes outsourcing an even more interesting option.

Regardless of the specific form that buyer-supplier relations takes on, whether it be arm's length market-like relationships or cooperative network relations, there therefore appears to be broad agreement that the introduction of new information technology supports more outsourcing, or put more negatively, makes vertical integration a less attractive alternative, although IT can also lower the internal costs of communication substantially. This impact may differ according to the stages of the sourcing process. E-commerce is particularly effective in reducing the costs and increasing the effectiveness of search. Internet technology, for instance, can now be used or to search for providers of offshore outsourcing services all over the globe. But the costs of evaluating these suppliers and their product and service offerings are harder to change through the use of e-commerce alone. Evaluation normally involves getting to know the other party in details, finding out about the other party's history of relations with other buyers through personal connections, and establishing effective communications. E-commerce now lends itself somewhat for these purposes, but virtual networks are and will remain at best an imperfect substitute for real networks. This is especially true in B2B transactions, where orders are normally specified.

All things considered, e-commerce has a positive impact on the degree of global outsourcing as well as the sophistication with which such outsourcing takes place. This implies that the introduction of e-commerce has two parallel consequences. First, it raises the optimal level of outsourcing. The curve we portrayed in Fig. 1 shifts towards the right-hand side as e-commerce is introduced into a supply chain. This confirms what so many observers have suggested: firms not only are outsourcing much more than in the past, say 20 years ago, but they can actually profitably do so. At the same time, e-commerce does not fundamentally alter the relationship between outsourcing and performance. That is, there are still very real limits to how much a firm should outsource and deviations from the optimum continue to be costly. Even in a world full of e-commerce, firms need to keep performing some activities in-house to maintain effective and differentiated in the eyes of their customers.

Second, as e-commerce gets introduced, and outsourcing levels go up, firms will increasingly engage in partnership relationships with suppliers. E-commerce enables the transfer of relatively more complex and made-to-order components and services to remote external suppliers. As firms outsource more activities, they also enter that range of more complex and made-to-order components and services, after having already outsourced their simple and off-the-shelf components and services at some point in the past. This is an indirect effect of outsourcing, and it implies that e-commerce creates more challenges in terms of managing supplier relations and supplier networks. In other words, there is a clear link between the introduction of e-commerce, increases in outsourcing, and more partnership relations and supplier networks. There is also a link to subsequent increases and decreases in firm performance, based on how well firms adapt to these changed circumstances.

5. Conclusions and managerial implications

We have presented a novel perspective on outsourcing and firm performance, arguing there is an inverted-U shape. Although this is based on the age-old notion that 'too much of a good thing may be a bad thing', or what is known as diminishing returns in economics, it provides newness in applying that principle to the study of outsourcing, and in detailing the advantages and disadvantages of outsourcing that help produce such a curve. It also helps us understand in a more systematic way how it is that e-commerce produces higher optimal, and actual, levels of outsourcing.

Based on our discussion, managers should rethink and redesign their global outsourcing activities. Many managers have a strong general sense for what constitutes a sound outsourcing policy. They realize that outsourcing every activity may lead to disasters, just as much as they recognize that not all activities should be insourced. However, we suggest the above can improve managerial decision-making in various respects.

There is currently a tendency in practice to describe (performance) problems related to outsourcing as "implementation issues." Managers often assume that outsourcing is the proper design choice, so they attribute the unsatisfactory performance to implementation problems in that suppliers are not well equipped, insufficient guarantees are built into contracts, or market circumstances change rapidly. We suggest that there are much more fundamental objections against outsourcing that have nothing to do with implementation problems. Rather, there are limits to outsourcing and many inputs of a firm should not be outsourced. Our work confirms managerial intuitions that there is an optimal level. Thus, we help lower the uncertainty surrounding managerial decision-making on outsourcing and also improve its quality.

Managers are often not conscious of the fact that there is an optimal degree of outsourcing for their entire portfolio. Instead of using this portfolio level, they tend to see the good or the evil of outsourcing or insourcing particular items or activities in that "[o]utsourcing is more than a bidding process. Companies don't do enough analysis before they jump into it" (Fortune, April 3, 2006, p.S4). This helps explain why in practice outsourcing often looks like a bandwagoning process. Likewise, many academic approaches have centered on analyzing single make-or-buy decisions. To some extent this is appropriate, since outsourcing decisions are made on an irregular basis. However, the performance advantages of outsourcing will only materialize when a firm has the organizational capacity to integrate outsourced items/activities into its operations. Furthermore, many companies make outsourcing decisions by evaluating only a few options on the basis of their previous experience and by what their competitors are doing (Farrell, 2006). For example, in June 2006, Apple Computer pulled the plug on a call center in India due to the high cost of operating there (Kripalani & Burrows, 2006), although many managers still perceive India as a low-cost location for call centers.

Managers are in need of guidelines as to where the optimal point lies for their particular business at a particular time. Based on the extant literature and our current research, we can suggest several indicators to help answer that question including asset specificity, uncertainty, firm competences, industry trends, and firm nationality and location. These factors will help determine what is optimal for a particular firm at a particular time. Timing is crucial, as the optimal point will change due to changes inside and outside the firm. In this article, we examined one particular type of change, the introduction of e-commerce. E-commerce increases optimal outsourcing levels, and managers ought to be cognizant of this. As new e-commerce opportunities arise in their environment, the pressure to outsource more activities will mount.

What would really be useful from a managerial perspective is a model that helps determine what the optimal degree of outsourcing is for a firm. Upon determining that, managers could prioritize their set of activities and outsource until they more or less reach optimality. Such a model provides the next challenge for the academic community. As outsourcing strategy is a dynamic process, competing firms may not accurately grasp the full benefit (and cost) of outsourcing activities due to causal ambiguity. Simply bandwagoning on the first-mover's current outsourcing strategy offers no guarantee for improved performance. We suggest that tackling that challenge involves a broader behavioral understanding of how outsourcing trajectories of firms change over time and within industries.

References

Abrahamson, E. (2004). Change without pain: How managers can overcome initiative overload, organizational chaos, and employee burnout Boston: Harvard Business School Press.

Abrahamson, E., & Rosenkopf, L. (1993). Institutional and competitive bandwagons: Using mathematical modeling as a tool to explore innovation diffusion. *Academy of Management Review*, *18*(3), 487–517.

Applegate, L. M., & Collins, E. L. (2005, June). Covisint (A): The evolution of a B2B marketplace. *Harvard Business School Case*, *1*, 1–29.

Chesbrough, H. W., & Teece, D. J. (1996). When is virtual virtuous? Organizing for innovation. *Harvard Business Review*, *74*(1), 65–72.

Clemons, E., Reddi, S. P., & Rowe, M. C. (1993). The impact of information technology on the organisation of economic activities: The 'move to the middle' hypothesis. *Journal of Management Information Systems*, *10*(2), 9–33.

Corbett, M. (2006, August). Solving the puzzle: Third-party specialists are helping globetrotting companies put the right people in the right places. *Fortune*, *7*, 58.

D'Aveni, R. A., & Ravenscraft, D. J. (1994). Economies of integration versus bureaucracy costs: Does vertical integration improve performance? *Academy of Management Journal*, *37*(5), 1167–1206.

Doig, S. J., Ritter, R. C., Speckhals, K., & Woolson, D. (2001). Has outsourcing gone too far? *McKinsey Quarterly*, *26*(4), 26–37.

Domberger, S. (1998). The contracting organization: A strategic guide to outsourcing Oxford: Oxford University Press.

Downes, L., & Mui, C. (1998). Unleashing the killer app: Digital strategies for market dominance Boston: Harvard Business School Press.

Dyer, J. H., & Singh, H. (1998). The relational view: Cooperative strategy and sources of interorganizational competitive advantage. *Academy of Management Review*, *23*(4), 660–679.

Dyer, J. H., Cho, D. S., & Chu, W. (1998). Strategic supplier segmentation: The next 'best practice' in supply chain management. *California Management Review*, *40*(2), 57–77.

Eng, T. Y. (2004). The role of e-marketplaces in supply chain management. *Industrial Marketing Management*, *33*(February), 97–105.

Farrell, D. (2006, June). Smarter offshoring. *Harvard Business Review*, 85–92.

Fortune (2006, April 3). *The global outsourcing 100* (pp. S2–S17).

Gottfredson, M., Puryear, R., & Phillips, S. (2005, February). Strategic sourcing — From periphery to the core. *Harvard Business Review*, 132–139.

Hamel, G. (2000). Leading the revolution Boston: Harvard Business School Press.

Harris, A., Giunipero, L. C., & Hult, G. T. M. (1998, September). Impact of organizational and contract flexibility on outsourcing contracts. *Industrial Marketing Management*, *7*, 373–384.

Hendry, J. (1995). Culture, community and networks: The hidden cost of outsourcing. *European Management Journal*, *13*(2), 218–229.

Holland, C. P., & Lockett, A. G. (1997). Mixed mode network structures: The strategic use of electronic communication by organizations. *Organization Science*, *8*(5), 475–488.

Kotabe, M. (1998). Efficiency vs. effectiveness orientation of global sourcing strategy: A comparison of U.S. and Japanese multinational companies. *Academy of Management Executive*, *12*(4), 107–119.

Kotabe, M. (2002). To kill two birds with one stone: Revisiting the integration-responsiveness framework. In M. Hitt & J. Cheng (Eds.), *Managing transnational firms* (pp. 59–69). New York: Elsevier.

Kotabe, M., & Mol, M. J. (2005). Outsourcing and firm profitability: A negative curvilinear effect. London: London Business School working paper.

Kotabe, M., & Murray, J. Y. (2004). Global sourcing strategy and sustainable competitive advantage. *Industrial Marketing Management*, *33*(1), 7–14.

Kotabe, M., & Swan, K. S. (1994). Offshore sourcing: Reaction, maturation, and consolidation of U.S. multinationals. *Journal of International Business Studies*, *25*(1), 115–140.

Kripalani, M., & Burrows, P. (2006, June). India: Why Apple walked away. *BusinessWeek*, *19*, 48.

Krugman, P. (2001, April). *Reckonings: Chip of fools : New York Times.*

Leiblein, M. J., Reuer, J. J., & Dalsace, F. (2002). Do make or buy decisions matter? The influence of organizational governance on technological performance. *Strategic Management Journal*, *23*(9), 817–833.

Levy, D. L. (2005). Offshoring in the new global political economy. *Journal of Management Studies*, *42*(3), 687–693.

Malone, T. W., Yates, J., & Benjamin, R. I. (1987). Electronic markets and electronic hierarchies. *Communications of the ACM*, *30*(6), 484–497.

Mol, M. J., van Tulder, R. J. M., & Beije, P. R. (2005). Antecedents and performance consequences of international outsourcing. *International Business Review*, *14*(5), 599–617.

Murray, J. Y., Kotabe, M., & Wildt, A. R. (1995). Strategic and financial performance implications of global sourcing strategy: A contingency analysis. *Journal of International Business Studies*, *26*(1), 181–202.

Nooteboom, B. (1999). Inter-firm alliances: Analysis and design London: Routledge.

Parmigiani, A. (2007). Why do firms both make and buy? An investigation of concurrent sourcing. *Strategic Management Journal*, *28*(3), 285−311.

Poppo, L., & Zenger, T. (1998). Testing alternative theories of the firm: Transaction cost, knowledge-based, and measurement explanations for make-or-buy decisions in information services. *Strategic Management Journal*, *19*(9), 853−877.

Porter, M. E. (1997). On Competition Boston, MA: Harvard Business School Press.

Quinn, J. B. (1999). Strategic outsourcing: Leveraging knowledge capabilities. *Sloan Management Review*, *40*(3), 9−21.

Rottman, J. W., & Lacity, M. C. (2006). Proven practices for effectively offshoring IT work. *Sloan Management Review*, *47*(3), 56−63.

Van der Valk, W., & Wynstra, F. (2005). Supplier involvement in new product development in the food industry. *Industrial Marketing Management*, *34*(7), 681−694.

Watson, R. T., Zinkhan, G. M., & Pitt, L. F. (2004). Object-orientation: A tool for enterprise design. *California Management Review*, *46*(Summer), 89−110.

Westphal, J. D., Gulati, R., & Shortell, S. M. (1997). Customization or conformity? An institutional and network perspective on the content and consequences of TQM adoption. *Administrative Science Quarterly*, *42*(June), 366−394.

Williamson, O. E. (1985). The economic institutions of capitalism New York: Free Press.

United Nations Conference on Trade and Invesment (2002). World Investment Report 2002 : Geneva.