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IT Outsourcing and Competitive Advantage: A Competency-based View

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ABSTRACT
The study reviews research on the impact of Information Technology (IT) outsourcing on developing organizational competitive advantage. The paper examines the impacts of outsourcing based on a competency-based model of sustainable competitive advantage. Both negative and positive impacts of outsourcing on three different types of organizational competency are explained and research questions for future exploration are offered.

Keywords
IT outsourcing, competitive advantage, competency-based model.

INTRODUCTION
IT Outsourcing is defined as the transferring the responsibility of delivering IT enabled services from internal IT functions to a third-party vendor (Hirschheim and Lacity, 2000). Since Kodak outsourced its IT in 1989, IT outsourcing has become a widely adopted practice. A various array of IT functions are now being outsourced, ranging from applications packages, contract programming to telecommunication management and system integration and systems operation (Grover, Cheon and Teng, 1996).

A survey indicates that outsourcing practices have gained momentum for the past three years (CIO research report, 2002). More than half of the respondents in the survey reported that they began outsourcing no sooner than 2002. In addition, organizations has embraced offshore outsourcing quickly. Gartner Group predicts that more than 40% of U.S. enterprises will be outsourcing IT service offshore (Gongloff, 2003).

IT Outsourcing has been regarded as a tool for attaining and maintaining competitive advantage (Elmuti, Kathawala and Monippallil, 1998). The motivation for outsourcing IT has evolved from operational cost saving to strategic business performance improvement (DiRomualdo and Gurbaxani, 1998). IT outsourcing is applauded as “a harbinger of the transformation of traditional IT departments and provides a glimpse at the emerging organizational structures of the information economy” (McFarlan and Nolan, 1995). If properly managed, IT outsourcing can help organizations to gain competitive advantage by accessing sophisticated IT capabilities and reducing time to market (Eckenrode and Kopp, 2003).

The IT outsourcing phenomenon has attracted much interest from IS researchers as well as practitioners. Researchers, drawing largely from transaction cost theory and resource-dependency theory, have focused on the determinants, risks and strategies of outsourcing (Willcocks, Lacity and Fitzgerald, 1995; Roy and Aubert, 2002; Wang, 2002). The three types of benefits of IT outsourcings are strategic, economic and technological (Loh and Venkatraman, 1991, McFarlan and Nolan, 1995). However, few studies examine the impact of IT outsourcing on organizations’ competitive advantage. To fill the gap, the paper builds an integrated framework for depicting how IT outsourcing can influence organizations’ ability to sustain competitive advantage.

The purpose of the paper is to review the literature involving the outcomes of IT outsourcing and explain how IT outsourcing impacts an organization’s competitive advantage. Building on a competency-based model of sustainable competitive advantage (Lado, Boyd and Wright 1992), three types of organization competency are examined: input-based competency, output-based competency and transformation-based competency. It is believed that the role of IT outsourcing can be understood in terms of its impact on the development of the three competencies.

The paper proceeds as follows: first, the competency-based model is introduced. Then, the impacts of IT outsourcing in developing or impeding the three types of competencies are elaborated. Finally, conclusions and implications are presented. Suggestions are provided on how organizations can use IT outsourcing to gain competitive advantage.
COMPETENCY-BASED MODEL

One model of sustained competitive advantage in strategic management literature is Porter’s framework rooted in neoclassical economics. Porter (1985) advocates that firm can achieve competitive advantage if it can change the industry’s parameters. The five major parameters are: rivalry among existing competitors, threat of new entrants, threat of substitute products or services, bargaining power of suppliers and bargaining power of customers.

However, Porter’s model ignores the distinctive competencies of the organizations. Instead, resource-based model recognizes the idiosyncratic capability of every organization. It suggests that organizations can gain sustained competitive advantage through facilitating the firm-specific resources and capabilities. The resources and capabilities should be rare, valuable and non-substitutable (Barney, 1991).

Within the resource-based literature, the concept of organizational competencies has evolved from focusing on skills and capabilities of a firm to distinctive competence, which are things that an organization excels compared to its competitors (Selznick, 1957; Reed and DeFillippi, 1990). This study focuses on three types of competencies proposed by Lado et al (1992): input-based competency, output-based competency and transformation-based competency. The definition of the three competencies will be discussed below. Researchers have analyzed the impact of information technology in achieving sustained competitive advantage by examining the three types of competency (Zhang and Lado, 2001).

Input-based competency

Input-based competency includes the physical resources, organization capital resources, human resources, knowledge, skills and capabilities which can be transformed by an organization to deliver products and services to customers (Lado et al, 1992). An organization needs to be able to utilize existing resources and accumulate new resources more efficiently compared with its competitors. For needed resources not within the organization, outsourcing is an option (Grant, 1991). By IT outsourcing, organizations can quickly access to human and non-human resources, both tangible and intangible, which will be difficult for them to obtain otherwise. One of the reasons that organizations outsource IT is financial slack (Ang and Straub, 1998). In addition, lack of IT personnel and skills is another motivation for outsourcing.

The impacts of IT outsourcing on input-based competency are analyzed in three aspects: cost control, technological resources consideration and human resources consideration.

Cost Saving

To establish and maintain an organization’s IT resources is expensive. Costs associated with IT can include direct cost of technology, cost of hiring skillful IT expertise and indirect cost of supporting the administration of the organization (Loh and Vehkatraman, 1992). Pouring enormous investment in IT without seeing much return is a frustration for most CEOs. As a result, IT functions, or sometimes the whole department, is outsourced to a third-party vendor. A vendor can lower IT operation costs by providing service to many clients and getting volume discounts on hardware and software. Lacity and Hirschheim (1993) report that outsourcing can reduce IT costs by 10% to 50%. However, it may only represent short-term savings and not all organizations can achieve that level of cost saving.

Although researchers argue that cost savings is not the dominant benefit for successful outsourcing (Saunders, Gebelt and Hu, 1997, Beaumont and Costa, 2002), cost saving is still one of the most important dimensions of outsourcing success (Lee, 2001; Lee and Kim, 1998; Lacity and Willocks, 1998). Although IT outsourcing can result in transaction costs, which are the costs of creating, negotiating and monitoring among the parties (Ang and Straub, 1998), it is usually agreed that outsourcing is an effective strategy to lower IT costs.

Technological Resource

Although IT commodity services such as help desk, UNIX administration or system administration are likely to be outsourced, projects and tasks that organizations do not have adequate technology resources to accomplish are also outsourcing candidates. As organizations experience pressures from improving products and services and tailoring customer

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1 In the original model, there is another type of competency: managerial competency. It is not discussed in this study since the paper focuses on the impact of IT outsourcing on business operation.
requirements, they rely more and more on the cutting-edge information systems. Developing in-house technological capability takes time and resources, which may impede organizations from focusing on their core competencies. IT outsourcing enables an organization to access to key information technologies, reduce the risk of technological obsolescence and enhance economies of scale in technological resources (Loh and Venkatraman, 1995). For example, many organizations have outsourced the e-business and Internet initiatives because the technologies are entirely new to them. Unlike outsourcing help desk function, e-business and Internet initiatives can strategically influence organizations’ operation because the technologies may change their business models.

On the other hand, some vendors can only provide legacy systems and legacy skills (Earl, 1996). Organizations complained that the technologies that the vendors provide are obsolete and outdated (Palvia, 1995). Therefore, organizations need to conduct due diligence on their vendors before contracts are signed.

Human Resource

A survey indicates that the biggest reason for IT outsourcing is “lack of adequate in-house expertise”, especially for small organizations. About 57% of small organizations outsource because they do not have the required IT skills (Sharma, 2003). Another reason to outsource IT employees is that organizations need to be flexible to the dynamic economic and technological changes (Ang and Slaughter, 1998). IT skills are continuously renewed and replaced. Besides, IT jobs have a high turnover rate (Igbaria and Greenhouse, 1992). It often happens that many IS employees leave organizations after the organizations invest a large amount of money on their training (Lucas, 1989). Thus, it is difficult for an organization to find and acquire the necessary IT employees.

Organizations can outsource the required technical expertise by contracting indirectly with consulting firms or IT providers (Slaughter and Ang, 1996). In this way, organizations can have access to the required IS expertise and skills (Beaumont and Costa, 2002). Meanwhile, organizations can better utilize its own IS employees for developing firm-specific IT capability. The problems of high IT turnover and high IT training cost are also minimized (Beaumont and Costa, 2002).

There are also downsides of outsourcing IT employees. First, outsourcing IT personnel may have a negative effect on in-house IT employee morale. Those in-house employees may experience anxiety and insecurity and potentially seek jobs elsewhere (Palvia, 1995). Second, outsourcing the vendor’s technical talent may be limited since vendors may still employ an organization’s previous staff (Lacity and Hirschheim, 1993) or the vendors do not possess the appropriate skills.

Summary and Potential Future Questions

Substantial costs can be saved by reducing fixed overhead from IT outsourcing. Organizations can concentrate their limited resources on their core competencies and their best-in-world capabilities. In addition, through IT outsourcing organizations are not confined by their own IT resources. They can have access to the needed technical and human resources to fill in the gaps and develop new capabilities (Grant, 1991). By outsourcing the business activities that are not the core competencies of the organizations, organizations will have dynamic efficiencies in configuring and deploying their resources strategically. Grant (1991) argues that outsourcing can not only maintain organizations’ existing resources, but also arguments them and extend organizations’ positions of competitive advantage.

More empirical research is needed on how IT outsourcing relates to developing input-based competency. In addition, questions such as how to assess the vendors’ technology and skill, how to treat in-house IT employees and how to evaluate the vendor’s service qualifications remain to be answered.

Transformation-based Competency

Transformation-based competency is an organization’s capacities that can convert inputs into output. These capabilities include innovation, organizational culture and organizational learning (Lado et al, 1992; Lado and Wilson, 1994). Innovation enables an organization to design new products, processes and service faster to differentiate from its competitors (Nelson, 1991). Organizational learning includes knowledge acquisition, information distribution, information interpretation and organizational memory (Huber, 1991). Organizational culture is the “core and glue binding the diverse corporate activities together” (Thompson and McHugh, 1990). It can enhance or hamper the capacity for organizational learning and adaptation (Fiol and Lyles, 1985).
Organizational Learning

Organizational learning can provide direction to organizational action (Robey, Boudreau and Rose, 2000), enhance organizational effectiveness and change organization’s potential behavior (Argyris and Schön, 1978). Learning is considered as an important source of competitiveness (Leavy, 1996).

IT outsourcing facilitates organization learning by focusing on core competencies (Leavy, 1996). By concentrating on core competency, organizations can develop in-depth technical know-how and ensure their performance in bettering than that of their competitors. Quinn (1999) postulates that organizations can develop their best-in-world capabilities by focusing on a relatively few knowledge-based core competencies. Through the facilities and program investments of outside vendors, organizations can expand their knowledge (Quinn 1999). When two or more organizations work in an open environment, they can shore explicit knowledge and implicit knowledge by joint activity and exploration (Miles, Snow and Miles, 2000). Lee (2001) empirically proves that explicit and implicit knowledge sharing is significantly related to IT outsourcing success. Organizational learning (Sengupta and Zviran, 1997) and engagement success (Gable, 1996) have been used as criteria for measuring user satisfaction in IT outsourcing.

However, some researchers do not think that outsourcing can improve organizational learning from vendors. Although an organization can depend on vendors to overcome knowledge barriers, there is little incentive for vendors to provide their specialized knowledge to their customers if organizations and vendors are not strategic partners (Lacity and Hirschheim, 1993). As a result, organizations may lose their internal skills and will not harness the benefits of IT in the future (King and Malhora, 2000). Earl (1996) argues that organizations learn to manage IT by doing. Organizations can lose their IT learning capability by outsourcing. Robey et al (2000) also think that although there may be a large knowledge component in the services where vendors bring to organizations, it is difficult for organizations to use that knowledge to gain competitive advantage.

Organizational Innovation

Researchers have different views about impact of outsourcing on organizational innovation. Quinn (1999) states that the diverse expertise provided by vendors can increase the innovation capabilities of organizations. Organizations can take advantage of the rich innovation skills that vendors can offer. As a result, organizations can decrease their innovation cycle time and costs by 60 to 90 percent. A positive relationship is found between outsourcing and innovation in IT usage (Loh and Venkatraman 1995).

However, there is also a possibility that the ability to innovation is impaired by outsourcing because of lack of “organic and fluid organizational processes and experimental and intrapreneurial competency” (Earl, 1996). Innovation requires the synergistic nature of interrelated set of capabilities (King and Malhora, 2000). The IT unit that is outsourced does not belong to the organizational network. The internal knowledge, practice and capability of the IT unit are difficult for other units to access to foster innovation. Therefore, IT outsourcing may deprive the close inter-cooperation among different units within organizations which is essential for innovation development.

Organizational Culture

Schein (1992) divides organizational culture into three levels: aspects which can be easily discerned but are hard to understand, conscious strategies goals, and philosophies and basic assumptions which are difficult to discern. Little research has focused on the impact of IT outsourcing on organizational culture. Physical presence and a sharing of experience and circumstance are integral for communication between organizational members (Hendry, 1995). When an organization starts to outsource, the vendor it employs may not be a part of organizational culture if it has no link with the organization. One possible solution is that vendor employees can stay in the clients’ organization for long periods to become accepted (Earl, 1991). Also, Humphries (2003) suggests that organizations need to perform an assessment on vendor’s culture including attitudes, morale, value systems and paradigm before outsourcing. Lee (2001) proves that compatible culture and policy between vendor and client is important for success of IT outsourcing.

Summary and Potential Future Questions

Transformation-based competency is important as it converts the input-based competency to output-based competency. Organizations can access to a variety of resources through IT outsourcing but organizations need to know how to utilize the resources to create value for customers. Researchers have different and even conflicting ideas about how IT outsourcing can influence organizations’ transformation-based competency. The conflicting views exist because vendors are assumed
different roles by their clients: some regard vendors as service or commodity providers and some regard them as strategic partners. Organizations which view vendors as strategic partners are more likely to yield organizational learning and innovation and share a compatible culture.

Much of the existing research focuses on the tangible or intangible resources that IT outsourcing provides. More research should be conducted beyond the surface benefits of outsourcing. Questions remain to be explored are abundant: How can vendors and clients learn from each other without leveraging the proprietary knowledge of each party? How tight should the collaboration be between organizations and vendors to accelerate innovation creation? What dimensions of organizational culture should be considered when choosing a vendor?

Output-based Competency

Output-based competency includes not only an organization’s physical outputs that deliver value to customers, but also intangible outputs such as reputation for product and service quality, brand name and customer loyalty (Lado et al, 1992; Lado and Wilson, 1994). Because the value created for customers determines organizations’ survival and growth, maintaining the output-based competency can generate competitive advantage. In this study, the two outputs examined are service quality and information quality.

Service Quality

Service quality is defined as how well service provided by vendors meets or exceeds users’ expectation. Users here include both internal users in the organizations and customers of the organizations. Improving service quality is one of the drivers of outsourcing. Low IT performance is reported to be one determinant of outsourcing (Loh and Venkatraman, 1992). Organizations who desire better performance with their IT department often turn to outsourcing for solutions. Henry Pfendt, the former director of IT management at Kodak mentioned that outsourcing facilitates the needed services to business managers (Lacity, Willcocks and Feeny, 1996). IT Outsourcing can also provide direct service to end customers. A lot of retailers have outsourced Amazon.com’s e-business solutions including Toy “R” Us, Borders.com, American Online and Virgin Megastores. Amazon’s strong web presence draws customers to its site and its partners can sell their products to customers more quickly.

Since improved service quality can enhance organizations’ value and allow organizations to respond to customers more rapidly, service quality is one of the indicators of successful outsourcing (Lacity and Willcocks, 1998; Domberger et al, 2000). Strategies for improving service quality include customer feedback or survey, inspection by third-party and random monitoring (Lee et al, 2003).

However, vendors do not always deliver the expected services. Internal Revenue Service chose Computer Science Corp (CSC) to help transform its IT infrastructure and business applications. However, the project has been delayed and cost has been increased by $200 million. Part of the reason is that CSC did not understand tax collection business and the complexity of the project (Varon, 2004).

Information Quality

Information quality is defined as the quality of information that is produced by outsourced systems. Dynamic environment requires timely and accurate information. Teng, Cheon and Grover (1995) prove that the gap between an organization’s information needs and the ability of its internal resources to meet these needs is one important determinant of IT outsourcing. Information quality is also regarded as one of the dimensions of outsourcing success (Lee, 2001; Lee and Kim 1999). The attributes of information such as reliability, relevancy, accuracy, currency, completeness and timeliness contribute to customers’ satisfaction (Sengupta and Zviran, 1997). For example, Schlumberger can provide its clients reliable and relevant information about drilling activities, costs, trends and discovery (Quinn, 1999). However, there is little empirical research on how and to what extent IT outsourcing influences the quality of information provided by the vendors.

Summary and Potential Future questions

The ultimate purpose of IT outsourcing is to add values to internal users and end customers. When considering outsourcing, organizations should describe clearly the future state, the evaluation criteria, the goals and target metrics. A service level agreement should be reached between the parties.
Although researchers state that IT outsourcing can improve service and information quality, few studies have been done on what organizations need to do to guarantee the required and desired service quality and information quality. There is also a lack of research on how outsourcing can affect an organization’s brand name or image. Will an organization’s image improve if it has several prominent outsourcing partners? How can offshore outsourcing affect an organization’s image?

**CONCLUSION AND IMPLICATION**

Cost saving is used most frequently to measure the impact of outsourcing. However, as mentioned above, cost saving is only one dimension of input-based competency. ROE is used to examine the relationship between organization’s performance and outsourcing (Loh and Venkatraman, 1992), but this is not a very good measure either because outsourcing removes assets from balance sheet, which causes ROE to increase even if returns stay the same (Palvia, 1995). The impacts of IT outsourcing are beyond some financial figures. Figure 1 illustrates the conceptual model of the impacts of IT outsourcing on three types of organizational competencies.

![Figure 1: Conceptual Model](image-url)

The article has great implication for the business managers. Business managers should consider the impacts of the IT outsourcing on organizations’ three types of competencies. For input-based competency, organizations need to conduct due diligence on potential vendors to evaluate their technical capabilities and employee skills. A report from Gartner (2002) suggests that organizations need to raise the standards for vendor qualification to make sure that vendors’ resources are up to challenge. At the same time, some internal IT employees should be kept in-house to audit the vendors’ performance and communicate business-specific knowledge to vendors. The management should make the efforts to keep up the morale of these internal IT employees.

Strategic partnership between organizations and vendors are necessary for developing transformation-based competency. Long-term commitment provides incentive for the parties to share risks and rewards, develop effective communication plan and participate actively in the decision-making process. Innovation capabilities for both parties can be fostered by accessing the diverse expertise from each other. The problem of culture clash will be solved and trust will be developed if both parties are committed to a long-term relationship.
For output-based competency, organizations should specify service baseline, required service requirement and desired quality level. All aspects of outsourcing arrangement should be carefully defined. At the same time, vendors should make sure that the expectations from the clients are realistic. Vendors need to understand and respond to customers’ expectation. In addition, trust between business partners can also increase service levels. The unwritten and informal psychological contract consists of unspoken expectations, which vendors often strive to meet because of the strong ties between the parties.

Most IS research on outsourcing have focused on the impacts of outsourcing on input-based competency. In order for researchers to look at a more comprehensive picture, Table 1 summarizes the potential research questions concerning each competency.

### Table 1: Future Research Questions

<table>
<thead>
<tr>
<th>Competency</th>
<th>Research Questions</th>
</tr>
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<tbody>
<tr>
<td>Input-Based Competency</td>
<td>1. How do organizations access vendors’ technology and skill, balance the skills of in-house employees and outsourced employees and evaluate vendors’ qualifications?</td>
</tr>
</tbody>
</table>
| Transformation-Based Competency | 1. How can vendors and organizations learn from each other without leveraging the proprietary knowledge of each party?  
  2. How tight the collaboration should be between organizations and vendors to accelerate innovation creation?  
  3. What dimensions of organizational culture should be considered when choosing a vendor? |
| Output-based Competency  | 1. What should the organizations do to have desired service and information quality?  
  2. How do domestic outsourcing and offshore outsourcing influence organizations’ image? |

The study presents a framework for IT managers to plan and manage outsourcing projects. While examining the impact of outsourcing on each competency, managers can explicitly guide the practice at the start and during the course of IT outsourcing. Managers should not only look at the balance sheet for immediate cost-saving, instead, they should also examine if the outsourcing strategy will contribute to their organizations’ learning and innovation, and ultimately provide values for customers.

IS researchers can benefit from the potential research questions. Although a lot of research has been done on IT outsourcing, few studies have investigated the impact of outsourcing in sustaining competitive advantage. More empirical research on strategic impact of outsourcing is called for.

**REFERENCES**

Proceedings of the Tenth Americas Conference on Information Systems, New York, New York, August 2004