Outsourcing the Information Systems Function: The Impact on Competitive Advantage

KIRK P. ARNETT
MARY C. JONES
RODNEY A. PEARSON

MISSISSIPPI STATE UNIVERSITY

ABSTRACT

In recent years, information systems (I/S) have become increasingly crucial to the ability of an organization to compete effectively. However, the increasing importance of I/S has placed a strain on the ability of an organization to produce and manage information in a timely, relevant, and cost effective manner. Many organizations have begun to rely more heavily on external vendors to meet their I/S needs (outsourcing).

Relying on an external supplier for a resource may allow an organization to take advantage of economies of scale, thereby generating cost savings, but it also often means relinquishing some degree of control over that resource. Several factors must be considered by managers in order to make rational outsourcing decisions which do not adversely effect competitive strategy. This paper explores the relationship between outsourcing I/S activities and the ability of the organization to continue the use of I/S for competitive advantage. It also provides a framework within which the decision to Outsource can be evaluated.

INTRODUCTION

Over the last decade, the relationship between I/S and the competitive advantage of the firm has become an integral part of many organizations [11, 14]. While many believe that major gains in competitive advantage through I/S are increasingly difficult to achieve, the relationship between the two is still crucial to organizational survival [12]. Surveys of I/S executives and general managers indicate that these managers believe that strategic planning and competitive advantage are among the most important issues they face [12]. Much of the literature in this area addresses the role of I/S in creating the competitive framework necessary to respond to opportunities rapidly and effectively (e.g., [11]). Little work addresses the issue of factors that may affect the ability of an organization to use I/S as a competitive weapon. This paper provides an assessment of the implications of the use of outsourcing with respect to the competitive advantage of the organization. The paper also provides a framework within which outsourcing decisions may be made.

CONCEPTUAL BACKGROUND

Despite the recognized importance of information systems as a competitive weapon, there is a gap "between strategic (I/S) planning and competitive strategy" [3]. One reason for this gap is the relative lack of organizational knowledge about how to effectively utilize I/S as a strategic weapon [8]. However, even with better knowledge about strategic I/S, the capability to effectively use I/S to meet strategic opportunities is still constrained by increasing demands and a shortage of I/S professionals. Backlogs of two to three years are not unusual in organizations today. There are too many demands and too few I/S professionals [6].

The need for information in strategic aspects of the firm places increased strain on the already overloaded information systems function. One response to the overload is the use of external vendors who are able to provide needed services in a timely, cost effective manner (outsourcing). Max Hopper, architect of the American Airlines' classic SABRE reservation system, says that "outsourcing is a natural consequence of the IS business" [2]. He likens the use of outsourcers for the provision of basic I/S functions to the use of water and electricity.

Organizations are spending more and more of their I/S budget on outside consultants both for basic functions and for more sophisticated applications. Outsourcing is projected to

be a multi-billion worldwide industry by 1995, and includes activities ranging from facilities management and systems integration to hardware installation/maintenance and software development/support/training.

As a result of providing I/S outsourcing services, many non-I/S organizations have been thrust into *Datamation's* annual listing of "Top 100 IS Firms" (for example, American Express, Black & Decker, Ernst & Young, and Lockheed are all on the current Top 100 list) [7]. While external sources such as service bureaus and software vendors have long been a part of the I/S function, the growth in outsourcing that the industry has experienced in the last few years is relatively new. It is not, however, totally unexpected. In 1987 Dearden predicted that "within the next five years companies specializing in software will largely replace in-house resources in U.S. companies because the cost will be far lower, and the quality far higher than that which can be developed internally" [4,p.87].

Since outsourcing still constitutes a relatively small percentage of the total I/S activity, we can conclude that it has not grown as rapidly as Dearden predicted. If the phenomenon continues to grow at its current rate, however, his prediction may be realized within the next few years. The number of executives satisfied with outsourcing is strong, while the number opposed to outsourcing is decreasing [10]. Despite the apparent move toward outsourcing, this may not be the panacea for I/S that Dearden indicated. Based on their survey of I/S executives, Niederman, et. al. [12,p.491] predict that while outsourcing may alleviate some of the I/S overload, many companies will find that "IS in the 1990s will probably be too critical to their primary mission and too integral to their corporate strategy to be managed by outsiders."

When an organization relies on an external entity to supply a critical resource, there may be a negative impact on competitive advantage [13]. Organizations are beginning to see the detrimental effects on competitiveness caused by outsourcing the manufacturing function. If not properly managed, outsourcing the I/S function can pose an equally dangerous, although somewhat different, threat to competitive advantage. One study indicates that loss of control and competitive strategy are two reasons many organizations hesitate to use a third party for business applications [10].

As suggested by Newman and Brock [11,p.33], whoever controls the "fabrication and flow" of information possesses a distinct advantage over the competition. "The goal of ... (achieving competitive advantage) is to attempt to dominate the industry" [11,p.34]. While industry domination may not always be the end result, I/S can serve as an important weapon in a firm's competitive environment.

FORCES OF THE COMPETITIVE ENVIRONMENT

Michael Porter has described five "forces" which combine to form the competitive environment. Porter's description is broader than the traditional view of competition. While most people probably think of competitors as those businesses which sell a similar product and compete on a basis such as price or product differentiation, Porter includes forces such as suppliers and customers as competitors. "Competition in an industry is rooted in its underlying economic structure and goes well beyond the behavior of current competitors... The essence of formulating competitive strategy is relating a company to its environment" [13,p.1]. A brief overview of Porter's five forces is provided below.

Threat of Entry: The threat of entry into an industry depends on the barriers to entry into that industry, such as economies of scale, capital requirements, switching costs, entrenched product differentiation (brand loyalties), and access to distribution channels. When the barriers to entry into an industry are high, the threat of entry is low and an existing industry player can compete more easily.

Intensity of Rivalry among Existing Competitors: The intensity of rivalry within an industry depends on the number of firms in the industry, on the balance of power among those firms, on the stability or growth of the industry market, and on the existence of barriers to exit from the industry.

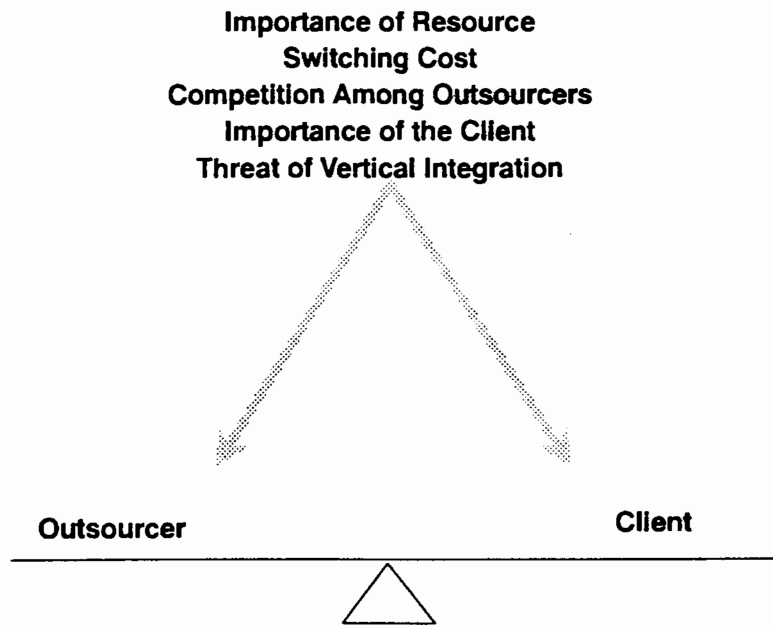
Pressure from Substitute Products: Any industry can be vulnerable to competition from an industry that offers a product which can perform the same function as its own product. The impact of substitute products is reflected by the industry's overall elasticity of demand.

Bargaining Power of Buyers: A buyer group (customer) can be a significant influence in limiting the competitive advantage and overall financial return of a company or industry if the buyer group's business constitutes a high percentage of the industry's sales. Additionally, if the buyer group has "perfect" market information and low switching costs, the buyer group possesses similar high influence.

Bargaining Power of Suppliers: A supplier group can be a significant influence in limiting the competitive advantage and overall financial return of a company or industry.

Each of these five forces may affect the way in which an organization chooses to compete. There is also a general consensus in the literature that these forces relate to the use of I/S as a competitive weapon. For example, Newman and Brock [11] outline a plan for creating an information system for competitive advantage based on Porter's five basic forces. However, one force in particular becomes especially important when a firm considers outsourcing: the *bargaining power of suppliers*. If an outsourcer possesses an unequal amount of bargaining power in the outsourcer/client relationship, then the client organization may be limited in its

Figure 1



ability to compete in its own marketplace.

Because outsourcing is still evolving, there are few proven examples of this situation arising. However, the possibility does not go unnoticed. For example, the Government Accounting Office (GAO) is currently investigating reports of reciprocal relationships between banks and their outsourcers [1]. There are reports of outsourcers having members on the board of directors of client banks, as well as, purchasing stock from and making deposits into these client banks. This situation could give rise to unequal bargaining power between banks and their outsourcers. Therefore, the FDIC is reported to be considering regulations on outsourcing in order to "improve the soundness of the banking industry and the competitiveness of the computer outsourcing industry" [1,p.12]. While these occurrences may not be widespread, evidence of unequal bargaining power does occur outside of the banking industry. Porter indicates that there are several ways in which a situation of unequal bargaining power may arise. Five of these ways are discussed below and illustrated in Figure 1.

Importance of Resource

A supplier group is powerful if its product is an important input to the buyer's business. Many organizations can not operate without ready access to their systems. A manager at Southern Pacific Railroad told us that "when our computer goes down, our company goes down." In such an organization, it is important that information be provided in a timely, relevant, and cost effective manner. Failure to provide this information may inhibit the capability of recognizing and responding to opportunities in the marketplace.

Note that some firms use I/S not to attain competitive advantage, but as more of an operational support tool. Many retail stores, for instance, have adopted point-of-sale technology, but they do not necessarily use the available capabilities to the fullest. Some stores may only use point-of-sale simply to generate sales receipts. The information system in this case may not be as "important" to the company as many other information systems are.

Operation or development of an I/S internally does not always insure that the quality of information will be enhanced. However, giving control of a vital resource to an external vendor, if not properly managed, may result in diminished quality. For example, there is a possibility that services provided by an external vendor may fail to meet quality standards such as timely delivery. In addition, there is little precedence for who has the legal liability for poor quality. Although outsourcing contracts are not lifetime commitments, they usually extend over a two to three year period; a long time to incur poor service. In addition, even if there is no

substantial penalty for breaking the contract, premature termination results in costs to the client in terms of either finding another outsourcer or bringing the outsourced activities back in-house.

Outsourcing contracts are binding commitments, and if clients are not careful, outsourcing can result in greater costs and lower quality. "While the outsourcing field is still in its infancy, experts say the deck is stacked against you. Unless the outsourcer is blatantly negligent, abuses information or has negotiated a particular liability in writing, there is very little for which outsourcing vendors can be held liable" [9]. Thus, if the outsourced activity is organization-critical, and the supplier (outsourcer) mismanages the activity, the client's business may suffer and there may be little retribution for the client. If a system is especially important to an organization, giving a high degree of control over that system to another party is risky.

Switching Costs

Unequal bargaining power may arise if a supplier has a built-up switching costs. When a firm agrees to let an external organization develop or operate a business-critical information system, these characteristics may exist. There may be substantial costs associated with switching a systems supplier. After significant time and dollars have been invested in one supplier's system, it is very difficult and expensive for an organization to basically "start over" with another supplier. Additionally, an organization may be somewhat "tied" to one supplier because of existing equipment or software, or because of organizational expertise with a particular system.

One company was recently penalized for breaking an outsourcing contract when the company moved from mainframes to client/server systems and the outsourcer could not support the new client/server architecture [6]. In this case, the client chose to switch, but the costs were substantial. However, remaining with the outsourcer would have inhibited the firm's ability to pursue a newer, perhaps more cost effective platform. If an organization's users are particularly comfortable with a particular operating system, environment, or application, then the users will certainly resist switching to another system — even if the other system is better (note the serious resistance of many users to switch from Lotus or Lotus-style menus to other spreadsheet programs).

Competition Among Outsourcers

A supplier may be powerful if the supplier group is dominated by a few companies and is more concentrated than the industry itself. When you purchase a system built on proprietary technology from a supplier, for instance, there may be absolutely no competition for that supplier for subsequent system purchases and changes. If your purchased system utilizes the supplier's special-purpose terminals, for instance, you may have no other source from which to purchase additional terminals. Mainframe computing users experience this situation far more frequently than do microcomputer users, who generally purchase much more "open" systems.

Importance of the Client

A supplier is powerful if the firm is not an important customer of the supplier. If the firm is one of many customers, and in particular, if the firm is one of the smaller customers, the outsourcer will be less likely to respond to the firm's individual needs and will possess greater bargaining power. Additionally, outsourcing is a secondary business to many firms and may thus be seen by them as less important than their primary business. In most outsourcing systems cases, the system and contract are large, and the business is in fact important to the outsourcer, thereby reducing the power that the outsourcer has in the relationship. Nevertheless, every supplier has some customers who are more important than others, and if you are a smaller, less important customer, then bargaining power is seriously reduced. Such an "insignificant" customer may have trouble getting prompt service or required changes to a system. For example, if a retail holding company such as Dayton Hudson, Inc. and a smaller chain of privately owned department stores are clients of the same outsourcer, then that outsourcer may give priority to Dayton Hudson, Inc. because it may be seen as more critical to the outsourcer's business than the smaller chain.

Threat of Vertical Integration

A supplier is powerful if it poses a credible threat of forward integration. Although there are very few cases of this outcome to date, there is always the danger that the outsourcing firm, having learned a great deal about the firm's business through its contact with the firm's information systems, will eventually enter the same business. When IBM contracted with MicroSoft to write the original MSDOS, they certainly could not have foreseen the extent to which MicroSoft would later extend their product offerings in both software and hardware. MicroSoft is now a threat to enter just about any market, and has significant power in dealing with virtually any other company.

SUMMARY

Outsourcing has become a big business that is expected to rapidly expand for the next several years. If properly managed, outsourcing can be used to enhance an organization's ability to use I/S in order to compete more effectively. However, before deciding to outsource, one

issue firms should consider is the potential effect on the firm's competitive position if outsourcing enhances the power of the supplier (outsourcer). Some of the factors related to this issue are (1) the importance of the outsourced activities to the client firm; (2) the cost associated with switching to another outsourcer either at the end of or during the current contract; (3) the extent of competition among relevant outsourcers; (4) the importance of the client firm to the outsourcer; and (5) the potential for the outsourcer to enter the client firm's business through vertical integration. Any one of these factors could counteract the benefits of outsourcing and, in a worse case scenario, could negatively effect the client firm's business.

Outsourcing decisions must be made with care regardless of whether the outsourced activities are basic functions such a hardware maintenance or are critical to the firm's strategic mission. However, firms should be especially careful if they decide to outsource activities related to their competitive position. Otherwise, they could encounter a variety of problems ranging from diminished quality to finding themselves actually competing with their outsourcer for business.

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ABOUT THE AUTHORS

Kirk P. Arnett *C.D.P., D.B.A.is an associate professor of information systems at Mississippi State University where he teaches programming, database technology, and management of information systems. Dr. Arnett worked in the information processing arena for 17 years prior to joining the academic community. He is an active member in Data Processing Management Association and the Decision Sciences Institute. He has recently published articles in the* International Journal of Man-Machine Studies, Information and Management, Computers and Security, *and* Datamation. *His current research interests are in human factors and management of technology.*

Mary C. Jones, *Ph.D. is an assistant professor of management and information systems at Mississippi State University where she teaches programming, systems analysis and design, and production management. She received her Ph.D. degree in operations management from the University of Oklahoma. She is an active member in the Decision Sciences Institute and the American Production and Inventory Control Society. She has recently published articles in* Information and Management, Datamation, *and* Information Resources Management Journal. *Her current research interests are in systems development methodologies and information technology.*

Rodney A. Pearson, *D.B.A., C.P.A. is an associate professor of information systems at Mississippi State University where he teaches programming, information center management, and database technology. He received his D.B.A. in management information systems from Harvard University. He is secretary of the International Business Schools Computing Association. He has recently developed an e-mail system, a self-grading spreadsheet package, and a business simulation for use in the classroom at Mississippi State University. His current research interests are in local area networks and distributed information processing.*