

AN INVESTIGATION ABOUT INFORMATION SYSTEMS OUTSOURCING AND OUTSOURCING DECISION

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—Abstract—

Organizations use outsourcing in information systems to provide many advantages. All risks and benefits of outsourcing are taken into consideration before an outsourcing decision. In this study, 14 organizations that belong to four different categories are investigated in terms of information systems outsourcing. These categories are: System integrators, outsourcing customers, and outsourcing vendors, firms that both procure and supply information systems services. The investigation is realized in two steps: First, general questions were posed in order to gather the characteristics of organizations, then, questionnaires were conducted. The information obtained in the first step of the study was used in order to describe the common findings for 14 organizations. Outliers and other findings related with 14 organizations were obtained through the questionnaires. Strategic drivers were examined within the framework of multiple case studies to determine the effects of information systems outsourcing on organizations. At the end of the study, some important inferences related with information systems outsourcing and outsourcing decision were made thanks to the results obtained through the case studies and these inferences were discussed in detail.

Key Words: *Information Systems Outsourcing, Four Different Categories, Strategic Drivers, Multiple Case Studies, Outsourcing Decision*

JEL Classification: M15 – IT Management

1. INTRODUCTION

1.1. Information systems outsourcing

Organizations prefer to use outsourcing in information systems (IS) in order to provide many advantages. Usually it is expected that all the risks and benefits of outsourcing are taken into consideration before an outsourcing decision. Organizations generally try to focus on their core businesses after outsourcing secondary activities. Besides, they can achieve substantial economical savings through outsourcing. Generally, outsourcing customers expect to obtain economical, strategical and technological advantages through outsourcing. Outsourcing vendors also expect various advantages by offering services to their customers. Thus, IS outsourcing usage can be evaluated from both customers' and vendors' points of view.

With information systems outsourcing, applications and information technology (IT) systems of companies are managed. Customers partner with the company to manage and operate their applications and IT systems, generally under a mutually beneficial agreement. The outsourcing agreement may include the transfer of IT employees and IT assets to the company. The company

provides service level assurances to ensure quality of service is attained and measured. Through outsourcing, the information technology services that a company needed is provided, operated and managed.

1.2. Strategic drivers

According to the literature, focus on core business, innovative use of IS functionality, knowledge acquisition, strategic alliances, flexibility are accepted as strategic drivers.

Smith, Mitra and Narashiman (1998) implied that focus on core business is the firm's facility to deal with its profitable area activities. By taking advantage of a quality IT service vendor, the organization can optimize the use of technology and focus the energies on the organization's core business goals. To determine the ability of focusing on core business with IS outsourcing; the qualitative definitions of focus on core business driver must be constituted by taking the literature surveys into consideration. The levels were similar to those used in the earlier surveys of Willcocks and Fitzgerald (1994), repeated by Willcocks and Currie (1996); Lacity and Willcocks (2000). The levels of focus on core business driver are significant improvement, some improvement, no change and worse.

Innovative use of IS functionality is another strategic driver. Venkatraman and Loh (1994) defined this driver as the usage of tools provided by the outsourcing vendor to build new applications in firm's information technology according to firm's usage area. Mason, McKenny and Copeland (1997) declared that the innovative use of IS functionality is perhaps the most important way in which IT can contribute to a firm. The levels for innovative use of IS functionality are high, medium and low.

DiRomualdo and Gurbaxani (1998) stated that knowledge acquisition is the process of eliciting, analyzing, transforming, classifying, organizing and integrating knowledge and representing that knowledge in a form that can be used in a computer system. Knowledge acquisition may reflect the incremental stock of knowledge in three areas: technical, managerial, networking.

DiRomualdo and Gurbaxani (1998), Feeny and Willcocks (1998) stressed that technical IT knowledge refers to the knowledge directly related to information technology obtained from the external source. Bharadwaj (2000) said that managerial IT knowledge is critical for the successful integration and implementation of the technology into the business operations. In the IT context, managerial knowledge includes effective management of the IT function, project management and leadership skills. Basselier, Benbasat and Reich (2003), Kale, Singh and Perlmutter (2000), Simonin (1999) defined networking knowledge as the knowledge cumulated through in prior experience in networking and partnering. Such accumulated knowledge will help identify the firm's IT outsourcing needs. Knowledge acquisition can be measured by adapting established items from several studies as Basselier, Benbasat and Reich (2003), Kale, Singh and Perlmutter (2000) and Simonin (1999) as well as new items.

Altinkemer, Chaturvedi and Gulati (1994) concluded that the organization has to protect its core competency, which is considered essential to its success, so as to become a member of the strategic alliance. Yoshino and Rangan (1995) concluded that; through collaboration and knowledge transfer, strategic alliances may lead to improved firm performance such as increased

productivity and innovation. Yoshino and Rangan (1995) stated that strategic alliance is a synergistic arrangement whereby two or more organizations agree to cooperate in the carrying out of a business activity where each brings different strengths and capabilities to the arrangement. David Knoke (2003) demonstrated that a strategic alliance is an interaction event where organizations are present or absent as partners.

Flexibility is the last strategic driver defined in the literature. Carlson (1989) declared, especially in the purchase of rapidly developing new technologies, the flexibility is the easiness of adaptation to the new technology. Besides, Harrison (1994) stated that outsourcing can provide organizations greater capacity for flexibility.

It is inferred from the literature that strategic drivers may have dependencies among them. For instance, knowledge acquisition may influence innovative use of IS functionality. Besides, strategic alliance may influence focus on core business.

2. CASE STUDY RESEARCH

2.1. Meaning of case study

Case study research method is used in the study. Benbasat, Goldstein and Mead (1987) defined that a case study examines a phenomenon in its natural setting, employing multiple methods of data collection to gather information from one or a few entities (people, groups or organizations).

Yin (1994) stressed that a case study is an empirical inquiry that investigates a contemporary phenomenon within its real-life context; when the boundaries between phenomenon and its context are not clearly evident; and in which multiple sources of evidence are used.

2.2. Description of the case study

Before the study, it was thought that there were two types of organizations to be investigated in terms of IS outsourcing: IS outsourcing vendor organizations and IS outsourcing customer organizations. By taking this situation into consideration, firstly, preliminary face to face interviews were made with the staff of 6 organizations. In other words, a pilot study was made. In this pilot study, it was realized that outsourcing vendors and outsourcing customers were not enough to represent IS outsourcing projects. System integrators and organizations which are both outsourcing vendor and customer also participate in outsourcing projects. As a result, this pilot study denoted that there were four categories of organizations in terms of IS outsourcing: IS outsourcing vendors, IS outsourcing customers, system integrators and organizations which are both outsourcing vendor and outsourcing customer. The definitions of these four categories were inferred from the pilot study.

System integrator is a company that builds and markets a complex solution using components from other companies. A system integrator sells these solutions and the service required to install the solution under their own name. System integrators provide complete end-to-end custom integrated solutions for the end purchaser. On the other hand, outsourcing vendor is an organization that provides software and/or hardware and/or firmware and/or documentation to their customers for a fee or in exchange for services. Outsourcing vendor gives outsourcing

services to its customers. IS outsourcing customer (purchaser) also can be defined as an organization which takes outsourcing services from outsourcing vendors and system integrators.

After the pilot study, organizations related with these four categories were searched for the case study. 22 organizations related with these four categories was found. They were also including 6 organizations that preliminary interviews were made with at the beginning of the study. The communication with the related staff of these 22 organizations was made by phone. 14 of them accepted to participate in the study. Then, face to face interviews were made with the staff of these 14 organizations. 5 of them were IS outsourcing vendors, 5 of them were system integrators, 2 of them were IS outsourcing customers and 2 of them were organizations which are both outsourcing vendor and outsourcing customer.

Data was collected in two steps. In the first step, the general questions were posed in order to gather the characteristics of organizations. 32 questions were prepared for the organizations, but the number of questions to be answered varied according to the type of the organization. IS outsourcing vendors and system integrators answered 12 questions and IS outsourcing customers (IS outsourcing purchasers) answered 21 questions. In addition to these, the organizations which are both IS outsourcing customer and IS outsourcing purchaser answered all 32 questions. In the second step, the questionnaires were prepared by taking the properties of organizations in terms of IS outsourcing into consideration. The questionnaire including 13 questions was applied to the system integrators and the organizations which are both IS outsourcing customer and IS outsourcing purchaser, the questionnaire including 8 questions was applied to the IS outsourcing vendors. Besides, the questionnaire including 34 questions was applied to the IS outsourcing customers.

3. FINDINGS

3.1. Common findings for all of the organizations

The common finding is adopted by all of 14 organizations in the case study. Before outsourcing decision, all of the organizations in the study execute cost - benefit analyses. Organization G executes cost-benefit and competitive analysis for its customers. In the context of the competitive analysis, they try to find the optimal vendor which can provide the most appropriate product in terms of price and specifications defined by the customer in the contract between Organization G and its customer. According to the results of the analysis, Organization G buys the product from the optimal vendor. In addition to the competitive analysis, they execute cost - benefit analysis for the product. The main aim of the organization G is to provide cost optimization opportunities to its customers. The other system integrators execute the similar analysis for outsourcing decision.

Organization M and Organization N also execute the cost - benefit analysis before outsourcing decision. While proposing outsourcing of certain IT functions to its customers, Organization K reports the results of cost - benefit analysis to them simultaneously. In the context of the analysis, Organization K makes a comparative analysis of outsourcing and insourcing decisions. Firstly, Organization K puts the expected results forward in the event of outsourcing decision. Secondly, they put the expected results forward in the event of insourcing decision. By comparing two alternatives, the customers give their decision. The other outsourcing vendors execute the cost - benefit analysis. Organization I also executes the cost - benefit analysis. The staff of the

Organization I claims that providing the same services insourcing instead of by outsourcing to Organization I brings disadvantages to their customers. Organization F executes cost-benefit analysis for server hosting. The first reason for executing cost-benefit analysis is the necessity of a special room which have to pass many approvals. The second reason is that high level security precautions have to be taken in this special room. The last reason is that high infrastructure cost is required for server hosting.

Consequently, all 14 organizations execute cost - benefit and similar analyses for outsourcing decision. Outsourcing customers execute these analysis for themselves. On the other hand, system integrators and outsourcing vendors execute these analysis for their customers. While selecting among outsourcing and insourcing alternatives, organizations evaluate the difference between expected IS outsourcing and insourcing costs.

3.2. Outliers and other findings

Organization N has difficulty in benefiting from economies of scale in practice. The staff of Organization N declared in the interview that the cost generally exceeds the expected benefit through the economies of scale and the vendor firm does not take responsibility for any financial losses and corruptions in the system.

Also because of reliability, the organization prefers to use its own personnel for some of the services related with information technology. Organization N tries to have a strategic agreement and wants to participate in strategic alliances, but in the monopoly or oligopoly market, there is no alternative for Organization N to select the optimal organizations according to its conditions.

Organization N cannot achieve knowledge acquisition completely. IS outsourcing generally affects negatively the focus on the core business in Organization N, for instance, it causes time losses and the overall satisfaction level for the user is generally low in organization N. Outsourcing affected the focus on core business in Organization F and I in a significantly positive manner. After outsourcing usage, no changes occurred about focus on core business objectives in Organization M. The innovativeness level was low in Organization M and N. Organization M achieved knowledge acquisition, but Organization F, I did not achieve knowledge acquisition. Organization F and I were not necessary to achieve knowledge acquisition as outsourcing customers. Organization F, I and M have strategic alliances about outsourcing services, but Organization N does not have strategic alliances about outsourcing services. Organization F and I have medium level flexibility.

4. CONCLUSION

The organizations execute cost and benefit analyses before outsourcing decision. System integrators and outsourcing vendors execute the analysis for their customers. On the other hand, outsourcing customers execute the analysis for themselves. Organizations behave according to the results of these analyses. System integrators and outsourcing vendors generally provide cost advantage to their customers through outsourcing. Their customers get the information technology services with less costs than insourcing. However, some outsourcing customers cannot utilize this advantage. System integrators and outsourcing vendors generally provide knowledge acquisition to their customers and they offer their retrospective experiences and studies related with outsourcing

projects to their customers. The customers of system integrators benefit from the economies of scale provided by system integrators. Their customers benefit from knowledge, experience and cost advantages of system integrators. The organizations which participate in outsourcing projects generally have strategic alliances and strategic agreements with some companies. Outsourcing can affect the focus on core business in some of the outsourcing customers in positive or negative manner. Some of the outsourcing customers do not have any experience to measure the flexibility level of their organizations in terms of outsourcing services, on the other hand, some of the outsourcing customers have flexibility since they adapt themselves easily to the new technologies which come together with outsourcing services.

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