Some Reasons for Failed Information Technology Outsourcing Initiatives and how Capital Budgeting and Value Chain Analysis can Help

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ABSTRACT

Outsourcing is a strategy used by many United States and worldwide firms. This trend is a reflection of the changing business environment. Businesses now face stiff global competition and are operating with extremely limited capital budgets. Outsourcing, when incorporated into the corporate strategy, allows companies to reduce costs, to focus on core business activities, and to possibly have access to relatively inexpensive skilled labor. The goals of outsourcing often include reducing labor and overhead costs, maximizing profits, dominating a market, and gaining a competitive advantage. While this strategy looks quite promising, it is surprising to find that "more than one-fourth of outsourcing deals fail in the first year" (MacInnis, 2003).

This paper explores businesses' Information Technology outsourcing efforts. A brief review of overall IT outsourcing experiences is presented. However, the paper's main purpose is to examine the reasons for the shortfalls and failures of various United States companies' offshore outsourcing efforts as they relate to IT. In addition, the paper introduces capital budgeting and value chain analysis and briefly explains how these tools relate to and can be used effectively to improve the outsourcing decision.

INTRODUCTION

Outsourcing essential corporate functions is nothing new. It has been done for years in all types of industries for both goods and services. The debate with respect to labor usually focused on non-union versus union. However, when it began to be done without regard to domestic or foreign sources, concerns for American jobs entered the debate more rigorously.

It should be no surprise that the same thing has happened to IT. In many organizations, IT has grown to be the largest cost center. Combine this with the fact that IT staff generally represents overhead, and that IT has experienced abnormal growth in the number of jobs for 50 years, and it becomes understandable why cutting costs in this area is a current mission of CFOs. One result is that India's software development sales are currently increasing at a 30% annual rate (McDougal, 2005). It has also been shown that factors unrelated to IT may often drive the outsourcing decision. Hall and Liedtka (2005) examined 51 firms that were major outsourcers of IT functions between 1993 and 2001 and found that "CEO stock options and overall compensation mix significantly

influence decisions to outsource." Other factors driving IT outsourcing include poor firm performance, poor cost control, and short term cash requirements.

One approach to IT cost reductions is to outsource not only new IT projects, but also ongoing IT functions, both domestically and offshore. Carried to its logical conclusion, "The job of the CIO after outsourcing more than three quarters of IT spending is to manage risks and preserve those parts of the IT organization that are the essential core competency for safeguarding future prosperity" (Strassmann, 2004). In a global economy, outsourcing IT from US organizations will continue. Observations of, and suggestions about how to improve, the decisions to outsource IT are the focus of this paper.

IT OUTSOURCING PROBLEMS

Major IT functions and projects are being outsourced all over the world. While offshore outsourcing by United States firms is highly controversial, any form of IT outsourcing carries with it concerns and risks. Within the United States, problems have developed between vendors and clients that have been likened to a failed marriage (Rath, 2001).

One such strained relationship resulted from a substantial 1995 contract in which New Century Energy of Denver outsourced virtually all its IT functions to IBM Global Services. The lack of flexibility in the contract for addressing the needs of the various business units of NEC led to the necessity to renegotiate the contract in 1999. Despite the problems with both the initial arrangement and renegotiating the contract, NEC still considered outsourcing beneficial. Anthem, a health insurer, established a five-year contract with Unisys in 1996 for various IT services, but quickly became dissatisfied with the level of service provided. After considering bringing the functions back in-house, they went out for bids on a new contract that included defined service levels and management processes, eventually awarded to Affiliated Computer Services. Adidas America had to face two of their three ASP's (application service providers) going out of business. They had to act immediately and selected a smaller firm that could respond quickly to their situation. This enabled them to not suffer any business interruptions. These examples all point to the need for adequate risk identification, planning, and management to make functional IT outsourcing successful.

A significant example of international failure was the attempt by British Petroleum (BP) Exploration to outsource its IT function to a consortium of firms, both US and European based. By the 1990s, BP Exploration deemed it prudent to outsource almost all of its IT function with the goals of reducing costs and increasing effectiveness. Providing IT services for the organization was no longer considered a core competency. After searching for over a year, BP Exploration determined that no single supplier could meet their requirements. It was therefore decided that a consortium of firms would be put together instead. This consortium consisted of the European firms, the Sema Group and British Telecommunications (BT) Syncordia, and the US firm, Science Applications International Corporation (SAIC), headquartered in San Diego, California. As might be expected, putting together a structured agreement between all these participants was difficult and European 'anti-trust' law eventually made it necessary for BP Exploration to enter into individual contracts with the three firms. Problems were encountered from the beginning. In addition to not meeting BP Exploration's expectations, consortium partners had trouble maintaining productive working relationships. After a few years, it became apparent that the consortium approach was not working well and was much too complicated. BP Exploration subsequently chose EDS as a single primary supplier to provide the service management of their entire IT infrastructure.

This history and one possible explanation for the failure of the consortium outsourcing arrangement have been offered by Kern and Blois (2002). They cite the absence of "norms" developing between all parties as significantly contributing to the eventual failure. 'Norms' are expectations of behavior and actions that can be largely cultural. They can also be expectations of how organizations will work together, as in this consortium. These types of norms can be classified in three dimensions (Heide and John, 1992):

1. Flexibility, the expectation of the willingness to adapt and change
2. Information exchange, the sharing of useful information, and
3. Solidarity, working to maintain the relationship
4.

The consortium lacked in information exchange and solidarity. They remained, to a great extent, competitors. The more traditional single-supplier relationship with EDS was one in which everyone understands what is expected of the various organizations involved. The risk in this case was with an untried, complex arrangement.

While outsourcing risky IT development projects with detailed firm price contracts may seem a reasonable approach to lessening an organization's own internal risks, there can be external risks associated with vendors. Natovich (2003) chronicles the case of Bezeq, an Israel based telecommunications company, outsourcing the development of its new billing system to the international software company AMS in the late 1990s. Anticipated enhanced competition due to pending deregulation in the telecommunications industry emphasized the strategic importance of this project to Bezeq. AMS was the primary vendor, but two others, as well as the IT staff of Bezeq, were involved.

Scope definition problems resulted from a three year lag between the original Request for Proposal (RFP) and the beginning of work. Renegotiation was constant throughout the project and led to the development of an adversarial relationship rather than a cooperative one. Indirectly, it could be argued that this well known risk of poor project requirements definition ultimately led to failure. However, occurring over a period of time, even minor disputes served to sour the relationship.

Additional pressures on the relationship appeared when it became evident to AMS management that continuing the fixed price contract would result in heavy financial losses unless scope or pricing adjustments were allowed by Bezeq. This represented a de-escalation of management commitment to the project by the vendor, not the client. The client's management was still heavily committed to the project. Exacerbating the situation was the change in corporate strategy by AMS to no longer consider large contracts with telecommunications firms as having future strategic value.

The project eventually reached a standoff with both AMS and Bezeq holding firm to their positions. When Bezeq felt AMS failed to meet a contractual milestone, they claimed a breech and terminated the contract. The resulting legal dispute was later settled out of court. Rather than mitigating project risks by outsourcing, Bezeq only exchanged internal development risks for a new set of external vendor risks.

REASONS FOR FAILURE

In addition to those already mentioned, many other reasons have been put forth to explain IT outsourcing failures. In the US, often mentioned in offshore outsourcing initiatives are the

complications brought about by communications issues in working with individuals and firms half way around the world. Direct contacts must be made extremely early and/or extremely late in the day, thereby stretching the workday for those in the US. Combining this with difficulties in adequately communicating the business problem being addressed can lead to productivity declines that adversely affect the monetary savings goals contributing to the outsourcing decision in the first place (Robbins, 2004).

For the purposes of this paper, a useful approach to categorizing the reasons for IT outsourcing failures is to group them into the three broad categories of having a short-term focus, failing to link critical decisions to the corporate strategy, and employing poor risk management/risk planning. These will be examined with respect to US offshore outsourcing.

Short-Term Focus

One reason that many outsourcing failures occur is due to the short-term focus of those involved in the decision. The managers and companies look to outsourcing as a way to quickly cut costs and to improve the company's financial status. Some view outsourcing as a "megatrend," but others cite numerous cases of having to pick up the pieces of a failed effort (Hall, 2003). This unreasonable expectation of a "quick fix" can prove to be quite detrimental. Offshore outsourcing is not always a best long-term decision. Some processes and services require frequent interaction with principals here and some are heavily dependent on logistics (Preston, 2004). An offshore outsourcing decision must be carefully thought out with well-defined processes, established measurement techniques, and improvement strategies. Also, a decision to outsource comes with many hidden, unexpected costs. Without an appropriate long-term analysis, these costs remain uncovered. They can, and will, eat up the short-term benefits for which the decision was originally made.

When managers make an uninformed, quick decision to outsource an activity overseas, they often fail to define and implement essential activity and management processes. Oftentimes, this results in problems that reduce the desired quality of the outsourced activity and are very costly to correct. For example, Otis Elevator, a branch of United Technologies, outsourced its application development to India in the early 1990s. However, they implemented the outsourcing decision before setting up essential processes, measurement techniques, and improvement strategies. One manager, David Wood, commented, "We should have had the basic processes well-thought-out, documented and understood by everyone before the team went offshore. If Otis's offshore development center was larger, that mistake would have been fatal; cost savings and quality would have been sacrificed completely" (Overby, 2003).

Additionally, the offshore outsourcing implementation phase may prove to be more costly than expected. This is the most prevalent of the hidden costs mentioned earlier. Facilitating a transition to outsourcing an activity causes "many outsourcing arrangements to fail before they even get off the ground" (MacInnis, 2003). Only a long-term focus will facilitate the visibility of these transition costs which include setting up the offshore center, changing the computer and accounting systems to reflect this new activity, transferring knowledge to the new supplier, and setting up a relationship-management process. The costs of these transition activities are magnified when outsourcing the IT function. Information technology is, in and of itself, a very complex function. Therefore, transferring knowledge of applications, designs, and customer support issues involves a great investment of time and money which businesses must include when analyzing the outsourcing decision.

Strategy Misalignment

An outsourcing effort is destined to fail if it does not reflect the corporation's strategy. For example, if a company's strategy is to offer low-cost, high quality services/products while maintaining high customer satisfaction, a decision to outsource an activity should reflect and support these goals. Therefore, offshore outsourcing an IT customer service/tech support function to a location where some of the employees may have difficulty with English and are not trained to quickly solve intricate problems would violate every aspect of its stated corporate strategy. The customers could be highly dissatisfied with the assistance received when they call for help. To make the outsourcing effort successful, the company would have to expend more funds to either train the employees, or to restructure the outsourcing deal. This could cause the price of its product/services to rise and defeat the objective of the outsourcing initiative.

Poor Risk Management/Risk Planning

Beasley, Bradford, and Pagach (2004) suggest that outsourcing of all business functions has reached a significance demanding the application of enterprise risk management (ERM) principles. The risks associated with IT outsourcing decisions should not be evaluated in isolation from other outsourcing initiatives. The total portfolio of risks must be monitored, managed, and procedures developed to deal with the possible consequences of outsourcing decisions.

Perhaps the greatest potential for risks exists when outsourcing IT functions overseas. Outsourcing to another country involves many issues including culture and geography, personnel behavior, competitive security, and public opinion. With these issues come many risks which must be identified, incorporated into planning, and dealt with in a timely manner.

Culture and Geography

When outsourcing to another country, it is essential that management plan for and identify potential risks associated with cultural differences and geographic barriers. Building software is inherently difficult and the added complications of time zone and cultural differences make it that much more so. It is not simply writing code. Most successful software development projects involve a high degree of interaction between end-users and developers and flexibility within the methodology (Dickerson, 2004). In order to maintain a good working relationship with the overseas supplier, consideration must be given to work ethics, mindsets, values, and religion. For example, many companies force their opinions, standards, rules, and time requirements upon their foreign employees instead of working with and around their already established culture. Forcing people to go against their culture will be met with resistance and conflict, two behaviors that are not known to bring with them much success. It is counterproductive to create conflicts with individuals upon whom your business success depends.

In addition, management must also consider the inherent geographical complications, such as time zones and communicating. A company that outsourced some of its IT functions to India did not realize that meetings would have to be held very early in the morning or very late at night because of time differences. Also, all of their meetings were held over the telephone, making number reporting and design issues difficult to discuss. As a result, the time to get services from India increased, and the domestic workers spent too much time on the telephone and not enough time performing necessary office work (Robbins, 2004). Thus the company's loss in productivity due to

poor planning for geographical differences and communication issues caused this outsourcing effort to fail.

Personnel Behavior

A major factor companies often overlook when making any critical decision is how the decision will affect the current employees. "The offshoring of IT labor is making onshore skills supplies somewhat less important, resulting in lower salaries (and reduced jobs) for IT workers in a number of positions" (Recipe for Offshore Outsourcing Failure, 2004). This said it is only natural for employees to resist offshore outsourcing initiatives. Instead of addressing their concerns by explaining the reasons behind offshore outsourcing, the benefits expected, and possible negatives, managers simply implement the decision. They often provide the employees with little justification for the decision and force them to comply. Their theory is one of "what they do not know will not hurt them." What managers do not realize is that they are exactly right. Not involving employees in major decisions will not hurt the employees; instead, the company's overall profitability will suffer. The uninformed employees will begin to feel deceived and will experience decreased morale. They will no longer put forth effort if they think that their job is going to be shipped overseas. As a result, the company's overall performance will decline, and the company's outsourcing efforts will prove to hinder, rather than help, success.

An organization moving quickly once the decision is made to go offshore, combined with fully communicating plans and rationale, can help to alleviate the uncontrolled spread of rumors and a severe negative impact on morale. It is not unusual for up to 70% of IT staff to remain with a firm that decides to offshore outsource. Spread out over a carefully planned transition period, job reductions can largely be made through attrition (Hayes, 2003).

Competitive Security

A major risk of outsourcing, whether domestically or offshore, is revealing confidential information and competitive strategies. Released information, when placed in the wrong hands, can have major consequences. For example, in the 1980s when IBM was developing its personal computers, it decided to outsource the production of its microprocessor and the development of its operating system to Intel and Microsoft, respectively. Although IBM did not know at the time, giving up control of these two components allowed competitors, like Dell and Compaq, to purchase the components and duplicate them. "The result is that IBM today is only the third-largest maker in an industry that it created" (Anderson, 2000). Therefore, to reap outsourcing's potential competitive benefits, it is essential that managers consider this business risk when deciding to whom to outsource, what to outsource, and how to outsource.

Public Opinion

Recently, offshore outsourcing has received much publicity, most of it negative. With the highly controversial political views and unemployment concerns, a decision to outsource can ruin a company's reputation. Although a less prevalent risk than the others, negative publicity can still cause a firm to lose customers, business partners, and business in general. Therefore, before deciding to send jobs overseas, managers should ensure that it is the best option, anticipate media attention, and plan for ways to counteract the public attacks. Effective planning, marketing strategies, and public announcements are ways that companies can protect their image and facilitate offshore outsourcing success.

CAPITAL BUDGETING AND VALUE CHAIN ANALYSIS

Monetary savings are more often than not the principal driver behind US offshore IT outsourcing. However attractive this may first appear, there are other concerns that cannot be ignored. "Successful offshore projects can save companies money, but the hidden costs and management pitfalls range from underestimating transition costs and additional travel expenses to security concerns, rising overseas labor costs, and IT governance problems" (Johnson, 2004, p. 18).

With saving money as the primary objective of most potential IT outsourcers, how can that goal be achieved in combination with successfully implementing organizational strategies? Capital budgeting and value chain analysis are two cost/management accounting concepts that help companies to evaluate and make strategic decisions. "While it is commonplace to do exhaustive financial analysis to determine the profit impact of these decisions, not nearly enough strategic analysis is done –largely because managers have lacked the means" (Raynor & Littmann, 2003).

Capital Budgeting

Capital budgeting is a process that helps determine from a financial perspective the viability of proposed projects. In addition to facilitating financial analyses, capital budgeting helps decision-makers to align decisions with corporate strategy, to generate different feasible alternatives, to identify risks and their impacts, to consider non-financial factors, to select the appropriate project(s), and to learn from previous decisions (NetMBA, 2005). Likewise, the IT offshore outsourcing decision can be a long-term, strategic decision that affects the company's reputation, profits, and competitiveness for years to come. Thus, it is a decision that in many instances should not be made solely for short-term cost-cutting gains, but is one that should be strategically analyzed as well. Strategically analyzing decisions increases the likelihood of success. Capital budgeting is one means to this end.

The use of capital budgeting techniques usually involves projects that require large expenditures of funds that are then expected to produce a cash inflow over a future period of time. Examples of such projects include acquisitions or development of property, large advertising campaigns, new plants and equipment, and research and development of new products and drugs. Steps of a typical capital budgeting process include:

- Identification of potential investments
- Selection of an evaluation method
- Collection of needed data
- Data analysis and interpretation
- Selection or prioritization of projects
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One of the principal techniques employed to select among potential projects is that of determining the net present value (NPV) of competing proposals and giving priority consideration to the project(s) with the greatest NPV. The goal of this technique is to identify those projects that will help to maximize the NPV of the firm without regard to the timing of the benefits. As such, the benefits may be realized over a short or long period of time. Though NPV is the technique that always maximizes shareholder value, other methods are also used (NetMBA, 2005). These include:

- Internal Rate of Return (IRR)

- Profitability Index
- Discounted Cash Flow
- Payback Period
- Return on Book Value

While using the payback period is suboptimal to NPV for investment decisions, the focus of IT offshore outsourcing has generally been short-term. Treating the decision to offshore outsource IT as a significant long-term capital expenditure project would help to bring to bear upon it the kind of analysis needed for a strategic decision of this magnitude. Of particular interest would be the handling of risk as previously discussed. Properly accounting for the risks involved in the IT offshore outsourcing decision could have a significant impact on the NPV of future cash flows. The following discussion is noteworthy (Ehrhardt and Daves, 1999):

> "If the risk of the project is similar to the risks of the firm's other projects, then the value of the project is the present value of the cash flows discounted at the firm's cost of capital. If the project's risk is different from that of the firm's other projects, then the discount rate should be adjusted. For example, many companies use divisional discount rates when divisions differ in risk, and some companies even adjust the discount rate to reflect the risk of individual projects. For certain types of projects, such as leasing analysis, different discount rates are used some times for different cash flows within a single project. In all cases, the principle remains the same: calculate the present value of the cash flows using a risk-adjusted discount rate."

This is but one possible benefit of applying the rigor of a strategic level analysis such as that provided by capital budgeting to IT offshore outsourcing decisions.

Value Chain Analysis

The concept of a 'Value Chain' was introduced by Michael Porter in his book "Competitive Advantage: Creating and Sustaining superior Performance" (1985). Organizational activities are separated into primary and support activities. Primary activities create and deliver the goods or services and they are linked to the support activities which improve their effectiveness or efficiency. The ability to perform the various activities and to manage the linkages between them determines the competitiveness of organizations within an industry.

Value-chain analysis is a tool that helps managers to understand the profitability and scope of their particular industry. It highlights critical relationships and interdependencies among various functions and key players in the business. When managers know where their organization stands in relation to others in its industry, they can more accurately predict how critical changes and decisions will affect their success. Value-chain analysis can help to identify activities that are not being performed at the same level as competitors are performing them. A company can then begin altering these activities in its value chain to become more competitive. A value-chain analysis might include (Recklies, 2001):

- Identifying the costs associated with each activity
- Identifying potential cost advantages over competitors
- Identifying potential value added for the customer
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Since Information Technology, in the form of the organizations' information systems, is linked to all primary activities, it plays a significant role in the value chain. With the degree of investment required in IT during the last several decades, it is only natural that efforts have been made to gain competitive advantage not only by direct application in primary activities, but by cost reduction efficiencies in the IT function itself. One way to do this with respect to the IT function is through outsourcing.

A Value-Chain Analysis Theory offered by Raynor and Littmann (2003) is designed to help organizations "answer three critical questions:

- What aspects of my IT value chain should I outsource?
- To whom do I outsource these functions?
- How do I structure the outsourcing deal?"
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(Answers to all of these questions would certainly have been helpful to BP Exploration in their outsourcing initiative previously reviewed in this paper.) According to the theory, the critical interfaces that existed between IT systems and functional departments within organizations justifying the retention of the IT function in-house no longer exist. The standardization of processes to conform to commercially available enterprise software, and the need for compatible multiple organization infrastructures to support business processes, have resulted in it often not being practical to maintain some aspects of the IT function in-house. In determining what might be outsourced, it is therefore advisable to look at the various interfaces between IT systems and business functions and their relationship to organizational performance. These value-chain links are often an integral part of an organization's means to be successful.

Understanding how IT functions affect organizational ability to compete in the market enables an assessment of how best to establish a more tightly integrated value-chain, in-house or outsourced. This addresses the first question of what to outsource. Based on a conclusion to outsource, an organization must then find a vendor that can provide the desired level of value-chain integration for those IT functions, thus answering the second question. Finally, care must be exercised in structuring any IT outsourcing arrangement to ensure that the organization's basis of competition, either current or near-future, remains in-house with appropriate consideration having been given to answering the third question in this context. In focusing on competitiveness, Value-Chain analysis can aid in making informed IT outsourcing decisions.

CONCLUSIONS AND RECOMMENDATIONS FOR FURTHER RESEARCH

Barthelemy and Adsit (2003) summarized "seven deadly sins of outsourcing." One or more of these are present in most failed outsourcing initiatives (Over half of the almost 100 firms in Europe and the US they studied were outsourcers of IT). These mortal sins include:

- Outsourcing Activities That Should Not Be Outsourced – no core activities that contribute to competitive advantage should be outsourced
- Selecting the Wrong Vendor – examine both hard (tangible) and soft (attitudinal) qualifications and gain first-hand experience prior to major commitments if possible
- Writing a Poor Contract – the contract should be as complete as possible, incentive based for the vendor, balanced, and flexible

- Overlooking Personnel Issues – communications concerning possible outsourcing decisions should be open and ethical
- Losing Control Over the Outsourced Activity – management of the vendor must be capable and active
- Overlooking the Hidden Costs of Outsourcing – the two main types of hidden costs are vendor search and contracting costs which can be expensive
- Failing to Plan an Exit Strategy – managers must anticipate the end of an outsourcing relationship and be prepared to switch vendors if it's in the best interest of the organization
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Smith and McKeen (2004) suggest five factors leading to successful outsourcing initiatives:

- Selective sourcing – of what to outsource and what to retain in-house
- Joint Business-IT sponsorship – produces much better results than either group acting alone
- Ensure a thorough comparison with internal operations – to identify hidden costs that can reduce expected savings
- Develop a detailed contract – including flexibility, evolution, and reversibility clauses
- Limit the length of the contract – to 1-3 years for the good of all involved
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Consideration of both sets of factors points to a best practices perspective for IT outsourcing and fits very well into the concepts of Capital Budgeting and Value-Chain Analysis. By examining both successful and unsuccessful outsourcing efforts, in terms of how much of the use of these two techniques can be implied in the way decisions were made, valuable insights could be gained as to the potential benefits of their use. It is doubtful that in most cases the decision to outsource IT functions is made without at least some analysis of the potential monetary savings expected. However, the literature was searched in an effort to determine how these decisions were made and only a few specifics were found. This was especially true for US offshore outsourcing.

A simple instrument could be developed and distributed to US organizations to answer some basic questions such as:

- What techniques or methods were used (if any) to help determine what IT functions would be outsourced (Some details of the different methods could be assessed; for example, the acceptable payback period.)?
- How vendors were selected and were they domestic or offshore?
- What was the nature and term of the deal?
- At what level in the organization were the outsourcing decisions made?
- Were these outsourcing initiatives considered successful or unsuccessful?
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Relating considerations and methods to the outcomes of IT outsourcing decisions would contribute significantly to the existing body of knowledge of how best to approach and make these decisions.

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