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# Adaptability in IT Sourcing: The Impact of Switching Costs

Dwayne Whitten  
*Texas A & M University*

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# **Adaptability in IT Sourcing: The Impact of Switching Costs**

## **ABSTRACT**

Firms have an increasing need today to develop a sourcing strategy that is more strategic than in years past. Firms need to maintain a strategy of adaptability in order to mitigate the risks associated with outsourcing. A major influence on the adaptability of a firm in the short- and long-term is the switching costs associated with bring an outsourced activity back in-house (backsource) or switching to another vendor. As switching costs increase, firms are increasingly “locked in” to a vendor. Firms should therefore work to decrease the switching costs so that they are more able to switch to another vendor or backsource if the market changes or an outsourcing relationship sours. Three strategies are presented for lowering switching costs.

## **Keywords**

Outsourcing, sourcing, adaptability, switching costs, agility, flexibility

## **INTRODUCTION**

Since the 1990s, considerable research has been done in the area of IT outsourcing, particularly in regards to what can be done to achieve a successful contract. Relatively little has been done in the area of switching vendors and bringing previously outsourced activities back in-house (backsourcing) (Lacity and Willcocks, 2000). Even less has been done specifically in the context of planning for the possibility of either of these two events. Based on recent statistics, which indicate that as many as 50 percent of all IT outsourcing agreements are discontinued in favor of backsourcing or switching vendors (Lacity and Willcocks, 2002), it seems apparent that research should be conducted to learn more about this phenomenon.

One key aspect of this phenomenon is the cost associated with switching or backsourcing and the role switching costs play in inhibiting the ability of a firm to adapt their sourcing strategies. Switching costs are the relationship-specific investments between buyers and suppliers (Farrell and Shapiro 1988). Switching costs also significantly influence managerial decisions. They have been shown to influence the competitive strategies that managers adopt (Eliashberg and Robertson 1988).

Previous research has shown that the presence of high switching costs can cause customers to stay in relationships in which they are dissatisfied (Jones, Mothersbaugh, and Beatty 2002; Morgan and Hunt 1994a; Porter, 1980; Weiss and Anderson, 1992; Willcocks and Lacity 1995). In situations where switching costs were not present, customers were more agile and reacted by switching vendors (Heide and Weiss 1995; Jones and Sasser 1995). Thus, previous research has shown that switching costs can hamper a firm’s adaptability.

Since it is a reality that firms may switch vendors or backsource, shouldn’t they maintain a sourcing strategy that promotes adaptability in order to make the change as seamless and low-cost as possible? The answer to this question was sought in a recent research project surveying application development managers.

The objective of this paper therefore is to investigate switching costs and ultimately their impact on a firm’s adaptability. Through a better understanding of the costs, strategies can be created to promote adaptability by decreasing the prohibitive costs of switching.

## **Literature Review**

Adaptability, or similarly flexibility, can be defined as the ability to change the extent, nature, or scope of sourcing arrangements (Tan and Sia, 2008). Adaptability is important as firms adjust to meet structural shifts in the marketplace and when firms have a need to change strategies, products, or technologies (Lee, 2006). This ability to adapt is critical in today’s ever-changing business environment as firms attempt to position themselves to mitigate uncertainty on the horizon. Many firms view this with strategic importance (Suarez, 1995). A good example of the benefits of being able to adapt is when labor costs increase in a given market (India) and firms subsequently move operations to lower-cost countries (China) or when the quality of service provided by a vendor decreases.

Switching costs become important when considering adaptability because the premature termination of an outsourcing relationship can be undesirable due to high switching costs (Ybarra and Wiersema, 1999). They can be thought of as the overall cost or difficulty of switching (Weiss and Anderson 1992), additional cost and effort in changing suppliers (Ping 1993), an undefined component of termination (Morgan and Hunt 1994) and investments that inhibit change (Nielson

1996). They can also include the perceived economic and psychological costs (Jones et al 2002), perceptions of time, effort and money in changing service providers (Jones et al 2000), onetime costs associated with switching providers (Burham et al 2003), and perceived disutility (Chen and Hitt 2002). Thus, switching costs can include relational and economic cost dimensions. Switching costs have been shown to be an important area in several research streams including interorganizational exchange, economics, marketing, and IT. The interorganizational exchange research defines switching costs as an attachment between transacting parties resulting from previous investments made by the exchange partners (Blau 1964; Williamson 1981). They have also been referred to as investment actions of transacting parties that hinder the termination of the relationship (Jackson 1985). These investments may be in the form of human assets (i.e. expertise), economic assets, and physical assets (i.e. fixed assets, procedures or processes) (Williamson 1981). As a result of increased investments in the relationship, there are stronger allegiances and more difficulty in discontinuing the relationship.

The marketing and economics literatures describe switching costs in a variety of contexts. They have been referred to as one-time costs associated with the termination of the current relationship and securing an alternative (Porter 1980) and also more generally as the disutility related to change (Weiss and Anderson 1992). Switching costs have been described as including psychological cost dimensions as well as physical and economic costs (Jackson 1985).

In the marketing literature, switching costs have been described as managerial perceptions of the costs involved with converting from an independent to a direct salesforce (Weiss and Anderson 1992). These costs have been measured as tangible expenses related to the conversion process including the investments of effort and time. More recent research has shown the importance of switching costs in customer retention models.

The IT literature explores switching cost from an array of perspectives. Chen and Hitt (2002) examine switching costs as a uni-dimensional factor in the personal online brokerage industry as one influence of customer switching behavior. Their findings indicate that switching costs significantly influence switching behavior in the online brokerage context. A broader definition of switching costs is needed though as multiple research streams have identified various aspects of switching costs. Thus, a higher-order switching cost factor may help explain variations in the literature. From a firm perspective, understanding how vendors can inflate the costs of terminating exchange relationships by effectively managing certain types of switching costs (e.g. loyalty, benefits) will lead to more efficient managerial decision-making in the outsourcing context. Whitten and Wakefield (2006) developed a multidimensional switching costs scale and tested it in the IT outsourcing services arena. A description of those scale dimensions follows.

Transaction Cost Theory (TCT) provides the theoretical foundation for a considerable amount of IT outsourcing research because it provides the economic rationale for entering and exiting interorganizational relationships. TCT describes how transactions represent the exchange of goods or services between parties with economic motivations, thus serving as the basic unit of analysis in organizations (Williamson 1975). TCT basically describes, from an economic perspective, the motivation for a company to either provide a good or service internally or purchase it externally. This theory is consistently used in the outsourcing literature to evaluate the choice of outsourcing or providing in-house IT services (Willcocks and Lacity, 1995; Aubert, Rivard, and Patry, 2004). Because successful interorganizational relationships depend on the efficient management of economic investments (i.e. switching costs), TCT provides an appropriate framework for evaluating the economic cost components in decisions to (dis)continue an outsourcing relationship.

#### **Uncertainty costs**

Uncertainty costs occur when replacing a known level of service with an unknown level gives rise to uncertainty. This is a relational cost described in social exchange theory as the value of an alternative based on expectations rather than knowledge. Managers unknowledgeable about the performance of another provider may hold certain expectations, but the gap between expectations and knowledge represents a risk or cost of switching. As one manager said, “we may not be completely happy with [company name], but we know it could be a lot worse with someone else.” This underscores the concern that some companies have with regard to switching from the current provider.

#### **Post-switching Behavioral and Cognitive Costs**

Post-switching behavioral and cognitive costs are intangible investments of time and effort related to learning and adapting to new service processes and routines (Jones et al 2002). These costs can be significant, especially in cases where there is unfamiliarity between the client and provider as in the case with switching to a new provider. Even back-sourcing can cause post-switching behavioral and cognitive costs if the internal processes are significantly different than the ones used by the original provider. A manager indicated that “getting everyone on the same page” after leaving the current provider is one of their biggest concerns. “Learning which forms to fill out and who to talk to” added to his concern.

### **Setup Costs**

Setup costs generally precede the actual contracted services or back-sourcing operations. These costs may include direct expenses or relate to human resource investments and/or acquisitions of durable assets (i.e. machines, production facilities) (Spekman and Strauss 1986). Setup costs also include relational investments of time and effort to initiate and establish the exchange relationship. The infrequency of contracting may increase transaction costs due to initial ‘relationship building’ activities (Cheon et al 1995).

Some companies who are in bad financial condition may outsource, and then in the process, sell technology assets to obtain financial capital and then either lay off employees or transfer them to the vendor. This does provide financial benefits in the short run, but makes setup costs for back-sourcing particularly high as new assets must be purchased. Even when switching to a new vendor, setup costs related to relationship-building can be significant. One client manager said “The time and effort required to change has always been a limiting factor for us. There is always so much to do to get things going.”

### **Hiring and Retraining Costs**

Outsourcing may represent an investment in human capital of a specialized nature as companies often outsource to access the technical talent not available in-house (Lacity and Willcocks 1998). One problem that can exist in the market is finding skilled IT employees (Violino and Caldwell 1998; Murray 2000). Special-purpose knowledge and expertise create human assets that can raise switching costs if alternative providers lack these skills.

No matter whether it is hiring new employees in a back-sourcing deal or hiring a new vendor when switching, a certain amount of hiring and retraining costs exist. This can be especially significant in those situations where employees were terminated or transferred at the outset of the outsourcing deal. One company interview said “We were fortunate to be able to rehire some of the people that we originally transferred to [outsourcing vendor], but not all of them came back. We still had to do a lot of rehiring before we could get off the ground.”

### **Management System Upgrade Costs**

Back-sourcing creates changes in overall management practices and routine operations when new employees are brought into the organization. The costs incurred to upgrade the management system may be monetary outlays to acquire additional system assets or human resources, or may be intangible disbursements of time and effort to integrate the assets. The management of new outsourcing arrangements (switching) may also require upgrades (i.e. systems or personnel) according to the nature of the services.

### **Lost Benefit Costs**

Lost benefit costs represent the loss of both tangible and intangible advantages that accrue and are directly related to continued patronage (Gwinner et al 1998). These benefits and privileges provide an incentive for the client to remain in a service relationship with the provider (Beatty et al 1996).

### **Search and Evaluation Costs**

Search and evaluation costs occur prior to the decision to terminate an exchange contract. The IT outsourcing search process is initiated with a formal RFP (request for proposal) to elicit both internal and external bids (Lacity and Willcocks 2002). These actions represent transaction costs associated with the make-or-buy decision. Both economic and cognitive resources are expended to gather information to evaluate the alternatives. Search costs include the time and effort to locate alternatives (Lacity and Willcocks 2000) and extensive cognitive effort may be required to assess viable alternatives in order to arrive at an informed decision (Shugan 1980).

### **Sunk Costs**

Sunk costs are economic and relational outlays of non-recoverable time, money, and effort invested in the exchange relationship. According to economic theory, considering historic and non-recoverable costs is irrational and only future costs and benefits should be included in decisions (Gaumnitz and Emery 1980; Howe and McCabe 1983; Soman and Gourville 2001). However, sunk costs may represent a psychological cost (Guiltinan 1989) that managers find difficult to ignore and may complicate the decision making process (Jackson 1985; Keil et al 2000).

## **HYPOTHESES**

Previous research has shown that the presence of high switching costs may lock customers into a relationship in which they are dissatisfied (Willcocks & Lacity, 1995; Morgan & Hunt, 1994). Customers may feel dependent upon a provider if they have little experience with other vendors, thus increasing their uncertainty about switching from the current vendor. The switching costs they fear may be described as both economic and social.

Two theories, transaction cost theory (TCT) and social exchange theory (SET), provide detail on the importance of switching costs. TCT shows a direct relationship between the transaction cost of outsourcing to one firm versus outsourcing to another vendor or back sourcing. If the total switching cost plus the anticipated transaction cost of switching or back sourcing is relatively low, then the client firm would naturally be expected to terminate the existing outsourcing relationship. SET indicates that a decision-maker might also consider the real as well as the perceived switching costs. The perceived costs would include the perception of how well the new provider can provide the service, how good the relationship can be, and if the new provider will perceive the relationship to be important. Thus, one expects that switching costs, actual or perceived, are negatively associated with the decision to end an outsourcing arrangement and conversely, positively associated with the decision to continue in an outsourcing relationship. Support for this proposition has been shown in environments where switching costs were not present. In these situations, customers reacted by switching vendors (Heide & Weiss, 1995). Thus, the following hypotheses are offered:

Hypothesis 1a: Lower switching costs are negatively associated with clients who continue with the same vendor.

Hypothesis 1b: Lower switching costs are positively associated with clients who switch vendors.

Hypothesis 1c: Lower switching costs are positively associated with clients who backsource.

## DATA COLLECTION

Contact data for application development managers was gathered from the Directory of Top Computer Executives (Grover et al., 1996). The survey sample were asked in the cover letter to respond to each survey item in regard to an outsourcing relationship in which they were involved in the past three years. A total of 160 responses were received for a response rate of 26%. The respondents represented a range of industries such as manufacturing, education, healthcare, and public administration. Approximately a third of the respondents had previously outsourced application development before subsequently choosing to backsource (bring the previously outsourced activities back in-house); roughly a quarter had switched vendors during the course of an outsourcing contract, and the remaining firms had continued with their application development outsourcing arrangements. Each respondent was involved in the decision to continue or discontinue with the outsourcing contract. The firms in this study were, on average, large, experienced with application development outsourcing (6.8 contracts in the last 5 years), and outsourced a sizeable amount of application development (23.8% of the IT budget). See Table 1.

	Total # of org employees	Total # of IT employees	% of IT / org employees	Outsourcing contracts in last 5 years	% of IT budget outsourced
Backsource	2878	87	3.0%	5.5	14%
Switch	5543	86	1.7%	8.5	34.5%
Continue	5762	155	2.7%	6.6	27%

## ANALYSIS AND RESULTS

### Non-response Bias

A test for non-response bias was conducted. Respondents were categorized by their response time. Early responders were those whose instruments were received in the first 25% of responses, while late responders were considered those whose instruments were received in the last 25% of responses. A comparison of the means of classification and summary variables for the two groups was conducted using one-way analysis of variance (ANOVA). Variables that were used in the analysis included the number of employees and IT employees in the organization, the number of years the organization has practiced outsourcing, the number of previous outsourcing contracts the organization has signed in the last five years, and the total dollar amount of the contracts. Each of the comparisons among the groups resulted in insignificant differences. This indicates that non-response bias has not impacted the data set.

Factors / dimensions	Cronbach's	IFI	TLI	CFI
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	Alpha	AVE			
SWITCHING COSTS			0.91	0.89	0.91
Management System Upgrade Costs	0.79	.068			
Hiring and Retraining Costs	0.82	0.83			
Uncertainty Costs	0.79	0.53			
Post-Switching Behavioral and Cognitive Costs	0.86	0.64			
Lost Performance Costs	0.87	0.77			
Setup Costs	0.83	0.74			
Search and Evaluation Costs	0.95	0.86			
Sunk Costs	0.88	0.85			

### Internal and External Validity

The factor analysis was conducted using AMOS 4.0. Items whose factor scores were less than 0.40 (Hair, Anderson, Tatham & Black, 1998) or had correlated error terms were removed from further analysis following an iterative process to refine the scale (Joreskog, 1993). A total of 13 of 77 items were removed. After these items were removed, the scales were assessed once again. The individual item loadings indicate a strong correspondence between the observed variables and their factors with all loadings at or above the 0.40 minimum (Hair et al., 1998).

The goodness-of-fit indices IFI, TLI, and CFI were utilized to determine how well the factor structure fit the data. Goodness-of-fit scores above the generally accepted 0.90 threshold (Bentler, 1992) indicate an acceptable fit of the model to the data. Goodness-of-fit measures are provided in Table 2. All of the indices except TLI (0.89) for the switching costs scale, were above the 0.90 threshold. Table 2 also shows the Cronbach's alpha measure of reliability for each scale. Consistent with traditional guidelines of scores greater than 0.7 being significant (Hair et al., 1998), all scales were determined to be reliable.

Construct validity was assessed using convergent and discriminant validity. Convergent validity is supported by the highly significant loadings ( $p < .01$ ) (Bagozzi, Yi, & Phillips, 1991) and the factor regression coefficients ( $R^2$ ) being greater than .50 (Hildebrandt, 1987). Discriminant validity is established when measures that should not be related actually do not relate. Discriminant validity can be assessed by calculating the Average Variance Extracted (AVE). AVE represents the amount of construct-related variance captured in relation to the error variance. The average percentage of variance extracted for each construct should be higher than .50 (Hair et al., 1998). This indicates that the variance accounted for by each construct is larger than the variance accounted for by measurement error (Hair et al. 1998). The AVE for all measures exceed 0.50 (Table 2), thus providing evidence of discriminative validity of the measures.

### ANOVA and Scheffé's Test

An analysis of variance (ANOVA), significant at the 0.01 level, verified that differences exist among responses between the three groups (those who backsource, switched, and continued). Scheffé's post-hoc test was then used to investigate all specific mean differences between groups (Hair et al., 1992). Tables 3-8 displays the results from multiple comparisons between groups. As seen in the tables, a significant difference exists across all switching cost dimensions between those who switched or backsource and those who continued with the same vendor with the exception of post-switching costs.

Table 3. Scheffé's Test Results  
Pre-switching Costs

DECISION	Subset for alpha = .05	
	1	2
Backsource	2.5765	
Switch	3.0634	
Continue		4.2740
Significance	.241	1.000

Table 4. Scheffe's Test Results  
Sunk Costs

DECISION	Subset for alpha = .05	
	1	2
Switch	4.4095	
Backsource	4.4769	
Continue		5.4494
Significance	.966	1.000

Table 5. Scheffe's Test Results  
Lost Performance Costs

DECISION	Subset for alpha = .05	
	1	2
Switch	2.7284	
Backsource	2.8525	
Continue		4.2962
Significance	.903	1.000

Table 6. Scheffe's Test Results  
Hiring Costs

DECISION	Subset for alpha = .05	
	1	2
Switch	2.3675	
Backsource	2.5294	
Continue		3.5358
Significance	.865	1.000

Table 7. Scheffe's Test Results  
Post-switching Costs

DECISION	Subset for alpha = .05	
	1	2
Backsource	3.1274	
Switch		3.7746
Continue		3.9412
Significance	1.000	.810

Table 8. Scheffe's Test Results  
Management Costs

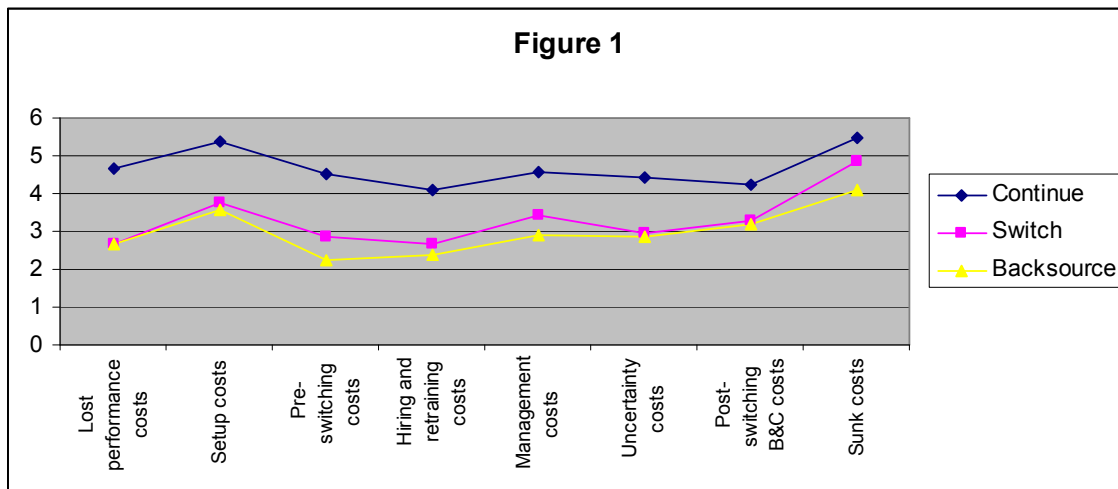
DECISION	Subset for alpha = .05

	1	2
Backsource	2.9990	
Switch	3.3096	
Continue		4.1563
Significance	.638	1.000

**DISCUSSION**

Based on survey instruments returned from 160 application development managers, it became apparent that firms do make sourcing changes and in the process, the costs of switching weigh in as an important consideration for these managers. With the exception of post-switching costs (Table 7), all of the switching costs were significantly different between the switching and backsourceing groups as compared to the group that continued (Tables 3-8). These results generally support Hypotheses 1a-1c.

This evidence indicates that high switching costs are positively associated with continuing in the same outsourcing relationship. Some firms may want to switch or backsource for various reasons but be prevented from doing so due to high switching costs. Thus, they may be locked in to that one source for the provision of the service. Other firms which have lower switching costs and thus can more easily transition to a new source are able to be more adaptable in their sourcing. This is evident in Figure 1, where firms which continued with their existing contract had higher switching costs. When costs were lower, those firms chose to switch or backsource. Thus, the data supports the proposition that lower relative switching costs can promote adaptability.



Based on these findings, three strategies are presented for firms wanting to develop a strategy of adaptability. A brief description of these strategies follows:

**Strategy 1: Maintain an internal workforce.**

Although one of the most cited goals of outsourcing is to decrease costs by reducing the internal workforce, it is not recommended to reduce the workforce to near zero. By maintaining internal IT human resources capabilities, backsourceing can take place with relative ease. For example, setup costs, pre-switching costs, and hiring and retraining costs will be kept to a minimum. Further, in order to continue to build internal human resource capabilities, it is recommended to divide some processes into two parts (Lacity and Willcocks, 2001). One part is outsourced while the other is completed in-house, thus allowing the firms to retain and build process expertise. As an example, a large bank in Singapore outsourced the non-sensitive part of network maintenance to IBM while maintaining the sensitive network service in-house (Tan and Sia, 2008). Table 1 shows that for those firms which backsource, their IT staff to overall firm staff ratio was nearly double that of the firms who switched.

**Strategy 2: Maintain hardware and software to support operations in-house.**



Many firms reduce ongoing costs and bring in additional cash at the start of an outsourcing contract by selling hardware to the outsourcing vendor, especially those firms in financial trouble. While it may be acceptable to reduce the hardware level to a certain extent and not renew software contracts, internal capabilities must be maintained so that back-sourcing can happen. Without internal hardware and software capabilities, the setup costs especially can be considerable. This is very similar to Strategy 1 in regards to maintaining in-house abilities.

**Strategy 3: Maintain relationships with multiple vendors.**

In many cases, firms contract to one vendor only. A better strategy is to work with multiple vendors (multi-sourcing) so that if one relationship fails, you have experience with other vendors already. This reduces dependencies and raises competitiveness among competitor vendors (Lacity and Willcocks, 2001). This makes it much less difficult to switch. In situations where a firm has experience with multiple vendors, the following costs are reduced due to the knowledge of already working with that vendor: lost performance costs, pre-switching, uncertainty, post-switching, among others. Examples of this strategy include British Petroleum using SEMA, Syncordia, and SAIC to perform upstream and downstream accounting and JP Morgan signing a seven-year \$2.1 billion contract with four major suppliers (Tan and Sia, 2008). In both cases, these firms were able to possess a good exit strategy with lower switching costs if a change needed to be made.

In sum, by following these three strategies, firms can reduce switching costs which can ultimately increase their adaptability. As adaptability increases, firms are then better able to react efficiently and effectively to change which can lead to increased competitiveness.

**FUTURE DIRECTION**

Although interesting results have been found, more development of the research needs to occur. First, the expansion of the theoretical foundation is needed. TCT has been applied, but needs more integration into the paper. A second direction of continued efforts for this research is in regards to the broader application of the strategies suggested near the end of the paper. More time is needed to more fully understand and describe these strategies.

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