Exploring public IT procurement: Switching Costs in the wake of a turn-to-services

Johan Magnusson and Andreas Nilsson

University of Gothenburg and Stockholm University

Johan.magnusson@handels.gu.se, an@dsv.su.se

Abstract

Technological and business-model related developments have continued to push the view that services and not software packages are the upcoming commodities within IT. This can be seen in the wide-spread adoption of Service Oriented Architecture (SOA) as the de-facto standard for new systems, and the radical increase in Software as a Service and other Cloud Computing based technologies as the business-models of choice for IT procurement. This “turn-to-services” brings with it promises of a better fit between IT supply and the changing demands of customers, and an increased competition between interoperable services in the market. Public Sector IT Procurement (PSITP) has yet to see mainstream adoption of these new business-models, yet the promises of reduced price and increased fit are still there. This paper builds on the assumptions that high switching cost is a factor that reduces the competition on the market for PSITP (Porter, 1980; Frendell, 1995). The paper presents a design science (Peffers et al, 2007) approach towards studying PSITP switching costs. A model for estimating switching cost is developed and a roadmap for demonstrating and evaluating the model is presented.

Keywords: Switching cost, service, service oriented architecture, public sector, procurement, design science

Introduction

Public Sector IT Procurement (PSITP) in Sweden has an annual turnover of 4 Billion SEK (Tieto, 2010). During the last 10 years, the size of this market has increased dramatically and at present there are little indications that this development will come to a stop within the near future. As significant amounts of public resources are spent, it is of great importance that the procurement is done as cost-effectively as possible.

In the private sector, the trend towards Service Oriented Architecture (SOA) and consequent business-models have led to an increased presence of market forces in the procurement process resulting in increased price competition (Gartner, 2010). These trends do not appear to be as prevalent in the public sector.

IT has traditionally been seen as a difficult resource to both acquire and manage (Dearden, 1965; Weill & Ross, 2004) and significant resources have been invested in increasing our understanding of what constitutes “good” procurement practices (Nakamura, 2010). Within the private sector, IT has
traditionally been seen as mainly a cost, or in other words something that should be kept as low as possible. Hence, the development of IT Governance and Management practice has tried to create situations where the power of the buyer is increased over that of the seller (Weill & Ross, 2007).

This has, albeit, not been completely successful. On the contrary, the interdependence of the buyer-seller relationship is still high, the maturity in the relationship type associated with the business models applied by the sellers is still low, and the switching costs associated to the change of sellers is also still high (Jones, Mothersbaugh & Beatty, 2002).

Recent years technological developments do however hold with them some promises of change in the weak position of the buyer. Developments within SOA has brought with it changes in the preferred business models for IT, and these new, emerging, business models can be seen to counteract the previous strong position of the seller. With the rise of new, open, collaborative standards (Touzi et al, 2007), the previous technically related switching costs are in theory diminishing through a turn to services, i.e. smaller units. This is also emphasized in European policy, for instance through the Bangemann-report (Bangemann, 1995).

With the current situation, the pre-requisites for increased competition within PSITP are beginning to take form. Even though there is still a lag in the adoption of new business models for IT, there are, at present, massive potential in a decrease in switching costs associated to PSITP through the turn to services.

Switching costs (Porter, 1980) are traditionally seen as a determinant of competition, and high switching costs can be seen as a stabilizing force that increases the costs and decreases competition (Fornell, 1992) within the market. More recent studies claim that high switching costs in relatively new markets have a positive effect on the price for new entrants, but a negative effect on price for already locked in actors (Nakamura, 2010).

Previous studies of switching costs make a sharp differentiation between the type of customer (consumer/company) and the physical nature of the procurement (product/service). Table 1 below summarizes some of the previous research according to this differentiation.

<table>
<thead>
<tr>
<th></th>
<th>Product</th>
<th>Service</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Consumer</strong></td>
<td>Burnham et al, 2003</td>
<td>Jones et al, 2002; Lee &amp; Cunningham, 2001</td>
</tr>
<tr>
<td><strong>Firm</strong></td>
<td>Klemperer, 1995</td>
<td>Lam et al, 2004</td>
</tr>
</tbody>
</table>

Table 1. Overview of previous research on switching costs

According to Burnham, Frels & Mahajan (2003), Product switching costs can be seen as a typology consisting of the categories of procedural, financial and relational switching costs. This is described in more detail in Table 2 below.

<table>
<thead>
<tr>
<th>Procedural</th>
<th>Financial</th>
<th>Relational</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Economic risk costs</td>
<td>• Benefit loss costs</td>
<td>• Personal relationship loss costs</td>
</tr>
<tr>
<td>• Evaluation costs</td>
<td>• Monetary loss costs</td>
<td>• Brand relationship loss costs</td>
</tr>
<tr>
<td>• Set up costs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Learning costs</td>
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</tbody>
</table>

Table 2. Three categories of product switching costs
Jones, Mothersbaugh and Beatty (2002) complement this model through introducing six dimensions of switching costs related to services. Through taking the perspective of the service and introducing a wider view of the switching instance (pre- and post-switching), Jones et al (2002) evaluate their proposed model through a multidimensional scale through comparing hairstylists and banks. The approach is presented in table 3 below.

<table>
<thead>
<tr>
<th>Continuity costs</th>
<th>Learning Costs</th>
<th>Sunk costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Lost performance costs</td>
<td>• Pre-switching search and evaluation costs</td>
<td></td>
</tr>
<tr>
<td>• Uncertainty costs</td>
<td>• Post-switching behavioral and cognitive costs</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Setup costs</td>
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</tr>
</tbody>
</table>

Table 3. Multidimensional nature of service switching costs

This paper lays the foundation for an investigation of switching costs in PSITP. The aim of the paper is to provide a basis for discussion before submitting a project proposal to a call for the study of market competition within public procurement in Sweden.

As for the relevance of presenting this proposed research in a workshop on e-Government studies, we see PSITP as a key ingredient in the infrastructure necessary for enhancing the digitalization of government. PSITP is at present an under-studied field (Moe & Päivärinta, 2011) and will continue to be a delimiting factor for the increased spread of e-Government.

The research approach applied is that of design science (van Aken, 2004). This approach is directed towards prescriptive studies specifically designed to impact the phenomena in focus. According to Jönsson & Lucka (2007), this approach can be seen as an instance of interventionist research, a stream that highlights the necessity for obtrusive impact on the research setting in order to gain new knowledge.

A design science approach to PSITIP switching costs

A design science research approach according to Peffers (2007) is applied, building on the following set of activities.

1. Problem Identification and motivation
2. Definition of objectives for solution
3. Design and development
4. Demonstration
5. Evaluation

Each of these activities will now be presented in relation to the proposed project.

Activity 1: Problem identification and motivation

The rationale for this particular research project is based on the “turn-to-services” in both the technological and the business-model sense (Enquist & Juell-Skielse, 2010). If an increasing portion of the IT-need in the public sector can be provided as services from IT vendors, with the interoperability promised by the literature surrounding SOA, this would potentially decrease the switching costs within
PSITP. This in turn would lead to an increased competition among the vendors, and a decrease in price. Based on these assumptions, we propose the following research question for our continued research:

*Which switching costs exist within PSITP, and how do these differ between service and product PSITP?*

The value of the proposed solution would be a more informed buyer, less asymmetrical information in the buying situation and the possibility of better assessing alternative solutions. Hence in theory, this would open up the buying situation to a wider scope of solutions and a better bargaining position for the buyer.

At present, the buyer is limited in the turn-to-services through a lack of knowledge about how the turn could be implemented. New service offerings are in other words discriminated in relation to the established products delivered by vendors in an oligopoly position.

**Activity 2: Define objectives of a solution**

The solution will be a model describing the categories of PSITP switching costs and a method for applying the model. A key objective for the solution is the ability to compare switching costs for services with switching costs for products, to better aid the buyer in a utilization of e-services. A secondary objective is to increase the competition in PSITP through enhancing the knowledge of the buyer.

To facilitate the diffusion and use of the model and method, a web-based solution will be constructed and distributed to the public sector, making it possible for potential buyers to self-assess their current switching costs.

**Activity 3: Design and development**

As an initial step, we will through the use of literature reviews create a gross-list of different switching cost categories. These will take into account the differentiation of the installed base and hence contain categories for both products and services.

The next step will involve Delphi interviews with individuals well experienced in PSITP and result in the first version of the model.

The model will then be applied to a series of cases of recently conducted PSITP. Through interviews, the model will be applied in retrospect by individuals involved in the procurements, resulting in a method for using the model as well as a revision of the first version of the model.

The last step will include the design and construction of a web-based solution of self-assessment.

**Activity 4: Demonstration**

*Demonstrate the use of the artifact to solve one or more instances of the problem* (Peffer et al, 2007)

Together with three Swedish municipalities, we will apply the model, method and web-based solution. This will be done by carefully selecting procurement instances that reflect a general trend from product-to-product switching’s towards product-to-service switching’s. The following four instances of PSITP will be investigated:

<table>
<thead>
<tr>
<th>From</th>
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<tbody>
<tr>
<td>Product</td>
<td>Product</td>
</tr>
<tr>
<td>Activity</td>
<td>Evaluation</td>
</tr>
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<tr>
<td>Observe and measure how well the artifact supports a solution to the problem (Peffer et al, 2007).</td>
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</table>

The model and the results of the application of the model will be evaluated by interviewing municipal employees involved in the demonstration. This will result in a formal evaluation of the applied model, as well as input for redesign.

**Discussion**

As previously expressed, the aim of this paper is to initiate a discussion on a possible study of switching costs within PSITP. Through employing a design science methodology to the study of switching costs, we have strived towards making the study as concrete as possible. We are, at present, in the midst of writing a full application for project funding, and hope to be able to return to SWEG next year to share some of the findings that we by then will have.

**References**


Klemperer, P. 1995. Competition when consumers have switching costs: an overview with applications to industrial organization, macroeconomics, and international trade. Review of Economic studies, 62:515-539


