

# Examining the contribution of internal customer service to improved e-procurement performance: A Case Study investigation

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## Abstract

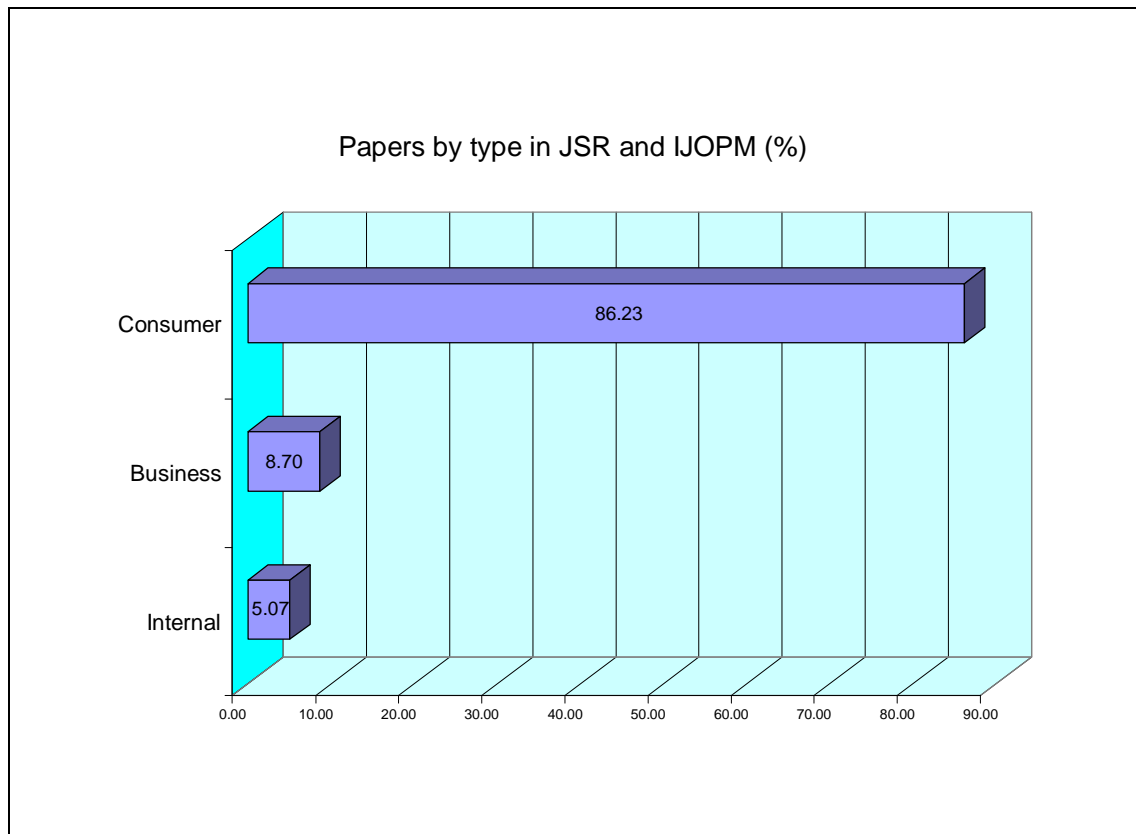
Much of the existing published research into the impact of electronic procurement has focused on the cost efficiency or implementation issues of its adoption. Issues relating to the significance of improved compliance on procurement performance were noted in our earlier paper [7], yet little if any research has so far set out to quantify the impact of electronic procurement on internal customers' perceptions of service quality. This paper provides an examination of the impact of e-procurement adoption on internal users perceptions of service quality. Employing Johnston's [15] 15 service quality criteria, we compared users perceptions of pre- and post-electronic procurement processes for two categories of supply: computer consumables and stationery. Using an online survey (appendix 1) a pilot study was conducted in a single organisation that has employed 'supply-side' electronic procurement for 18 months. We found that users expressed 'delight' in many aspects of the service provision relating to the design characteristics of the e-procurement system, but dissatisfaction with issues concerning the actual system delivery (particularly related to IT infrastructure and networks).

This paper only provides early results from the pilot study, so further conclusions from our research must be deferred until a more significant sample of responses have been analysed.

## 1. Introduction

Over the last 20 years a significant at body of literature has developed on service quality and customer satisfaction. It is generally accepted that customer satisfaction has a significant impact on customer retention and loyalty (see for example [2], [18], [25]) on customer attraction (see for example [25]), staff satisfaction (see for example [13], [26]) and therefore on an organisation's financial performance (see for example [23], [10]).

Most service research however has been predominantly concerned with business to consumer (B2C) services; in particular retail services and banking. Few papers deal with business to business (B2B) or internal service issues. Indeed a analysis of 15 back issues of the *Journal of Service Research* and the *International Journal of Service Industry Management* reveals that over 80 per cent of recent papers are concerned with B2C services (see figure 1).



Furthermore, despite the recent rise in web based delivery channels and the rise in interest in e-business it is surprising that few research papers have so far been published in this area. Recent publications such as [32], [20], [28], [31] and [34], for example, have all been concerned with, in the main B2C service and, exclusively, external customers.

Data from research organisations such as Forrester Research and Gartner, has demonstrated that the greatest potential from e-business will be in B2B and internal services. It is interesting to note that research in the manufacturing area has been predominantly focused on internal activities (see for example [1], [9], and [12]).

Although the notion of internal service is not new (see for example [5], [11], [17]), there are few papers on e-service applied to internal services (notably [30], [3], [29] and [6]).

The purpose of this paper, which results from an ongoing research project into e-business, is to build on an earlier paper concerned with the application of e-service in internal services and continue to try to add some knowledge to this important but largely neglected area. We focus in this paper on an investigation of internal

customers' perceptions of the impact on service quality of e-procurement.

## **2. The Impact of E-Service on Internal Customer Satisfaction**

The purchasing and supply (procurement) activity of organisations is an important internal service found in all organisations, public, private, governmental and charities and can be responsible for a large amount of spending on, for example materials components, facilities, subcontract capacity, IT equipment and supplies, consumables, stationery, travel and insurance. Indeed most organisations spend at least one third of their turnover/income on the purchase of goods and services ([33]; [16]).

Procurement is traditionally an internal service provided by a dedicated team of professionals. The function is usually responsible for the identification of (internal) customer's needs, translation of those needs into specifications, management of the delivery of goods and services and an assessment of the (internal) customer's satisfaction with those goods and services. The other elements of the process involve communication with suppliers –

sourcing, requests for tenders, price negotiation, ordering receipt and invoicing.

Electronic procurement systems in essence mirror the procurement process through the provision of two distinct, but connected, infrastructures - internal processing (via, for example, corporate intranet) and external communication with the supply base (via, for example, Internet-based platforms) [8]. The critical difference is that such systems allow individual employees to order goods and services directly from their own PCs through the web. Requests and orders are channeled through various forms of 'hub' or database which acts as an online catalogue of specifications, prices and often, authorisation rules. Such systems allow individual employees to search for items, check availability, place and track orders and initiate payment on delivery.

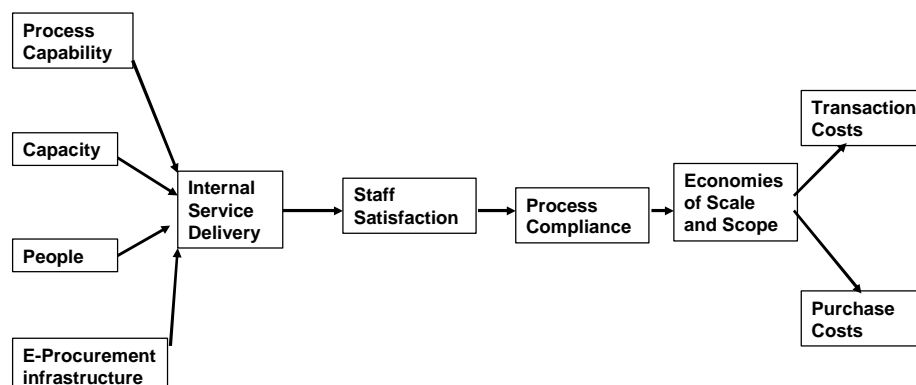
In our earlier paper we investigated the impact of changing internal services into e-services, concentrating on the evolution of procurement processes to e-procurement. Whilst there are numerous e-procurement system platforms in use, our study took a broad definition of e-procurement as "the use of internet protocol systems to support both the internal and external stages of the traditional purchasing process". Our initial study was exploratory in nature, consisting of a study across 97 organisations investigating the impact of the change from traditional procurement functions

to electronic procurement (e-procurement) on internal service quality.

Based on surveys, telephone interviews and site visits and observations of IT and Purchasing executives and manager, as well as managers in a number of user departments across a total of 97 organisations we reached three main conclusions, that e-procurement led to significant reductions in costs, an improvement in reliability of the procurement processes and an improvement in internal customer satisfaction.

In terms of internal customer satisfaction in particular, respondents reported that the replacement of bureaucratic requisition and approval process with rapid IT-based systems enhanced customers' perceptions of service availability, speed, responsiveness, flexibility in particular. Customers also expressed satisfaction over their greater ability to exercise more control over their budgets. The increased levels of satisfaction were reported despite the fact that e-procurement systems usually required much greater personal intervention by the users themselves.

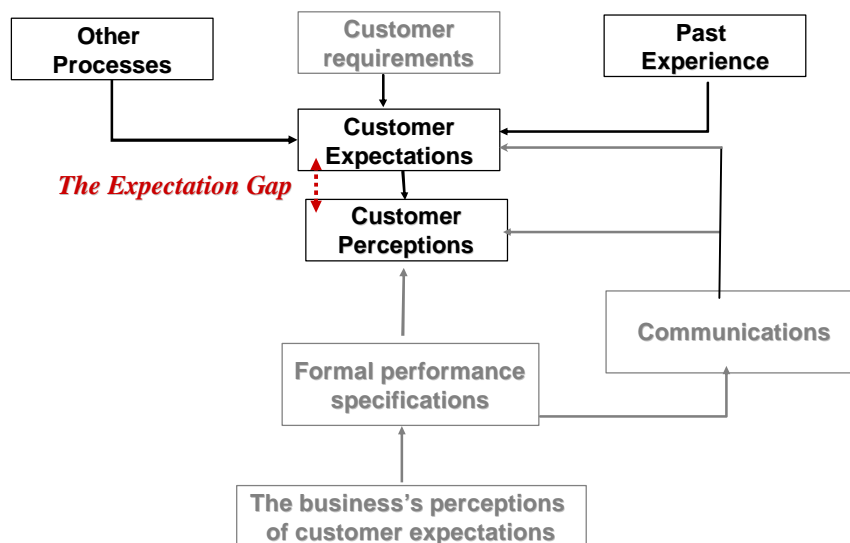
We concluded our initial paper with a proposed causal map of the relationships between the quality of internal service delivery, staff satisfaction, the level of compliance and the consequent results from e-procurement use. Figure 1 below shows this posited causal relationship.



**Figure 1: A Causal Relationship between Internal Customer Satisfaction, E-Procurement Compliance and Procurement Costs [7].**

Whilst our earlier exploratory research [7] gave an indication that internal service quality was considered by managers in the providing functions (I.T. and Purchasing) to be a significant factor in supporting the performance benefits e-procurement performance, we had little evidence of internal end users' perceptions. In particular, since our study only included managers of user/internal customer departments rather than the operatives who regularly placed orders using the e-procurement system, we recognized that

opportunities to adopt a 'gap model' approach could offer further insights into the internal service dynamics associated with electronic procurement deployment. Utilising Slack et al's [27] interpretation of the Parasuraman et al's ServQual model, we amended the model to focus on *internal* customer service by highlighting the comparison internal users makes between different processes for placing orders and the potential for 'communications' to include policy statements and directives, figure 2 below.



**Figure 2: Modified Internal Service Quality Gap Model**  
(Adapted from Slack, Chambers & Johnston, 2001)

As our previous paper noted [7] much of the existing literature on e-procurement has concentrated on issues relating to the *implementation* of e-procurement – benefits, costs, returns and rollout strategies. Little research to date exists relating to the *operation* of e-procurement systems. In our previous paper we examined the *implementation* issues surrounding the impact of internal service on process compliance (and consequently on process performance). In this paper we concentrate on an *operational* issue by examining the 'expectation gap' of internal customers (encompassing administrators, administrative assistants, secretaries, finance department staff and technical staff) who carried out the day to day ordering of supplies using an electronic procurement system. Our focus is to identify the characteristics and scale

of the impact of e-procurement on internal service quality.

### 3. Method

The initial contention motivating this study is that enhanced internal service quality leads to greater compliance with an organization's desired procurement procedures. We thus set out to investigate internal users perceptions of the performance of e-procurement in a single case organization (Company A) for two categories of supply, stationery and computer consumables, since these are now solely purchased using e-procurement. Company A introduced e-procurement approximately 12 months before the date of this study, so respondents had recent experience of non-

electronic procurement. The process for both categories of supply is described as 'supply-side' e-procurement, that is, the catalogue and ordering process is hosted on the supplier's servers. Most users surveyed also had responsibility for other categories of supply that were not available via the e-procurement system. Thus we contest that comparison between 'e' and 'non-e' procurement is valid given the users experiences of both scenarios.

In line with our earlier research [7] we again used Johnston's [15] 15 service quality criteria to investigate internal service relationships. A questionnaire was developed (Appendix 1) in which respondents were invited to contrast their perceptions of the performance of the e-procurement system with their previous (non-electronic) method of procurement. Data collection was via on-line delivery of the survey instrument to all active users of the organization's e-procurement *intranet*. Results were transmitted to us directly via email for each respondent, all responses were anonymous. The raw data was entered onto an Excel spreadsheet to facilitate data manipulation and analysis.

As with previous research into service quality (see for example [13], [22], [19]) we used a Likert scale to assess customers' perceptions of their experiences. We chose a 9-point semantic scale (as used in the second

generation SERVQUAL instrument [21], with 1 meaning completely unacceptable and 9 meaning always exceeds my requirements (see appendix 1). We plotted a simple difference score between the e-procurement and previous system. Three potential outcomes naturally exist – 'delighted' (i.e. the e-procurement process is perceived to offer greater service quality), 'satisfied' (i.e. there is no perceived difference between the previous system and current e-procurement process) and 'dissatisfied' (i.e. the previous process offered a greater perceived level of service quality). In evaluating the results from our survey we adopted Johnston's [14] notion of the 'zone of tolerance' to delineate between the three outcomes.

At the time of writing we had completed our pilot investigation of 12 primary users. The survey is ongoing and we therefore anticipate presenting analysis of a larger sample during the conference.

#### 4. Findings

We found that each of the three outcomes was evidenced across the service quality criteria. Figure 3 provides a bar chart summarizing the sum of differences between the e-procurement system and the previous (non-electronic) system, identifying the three 'zones' of delighted, satisfied and dissatisfied perceptions relating to the e-procurement system.

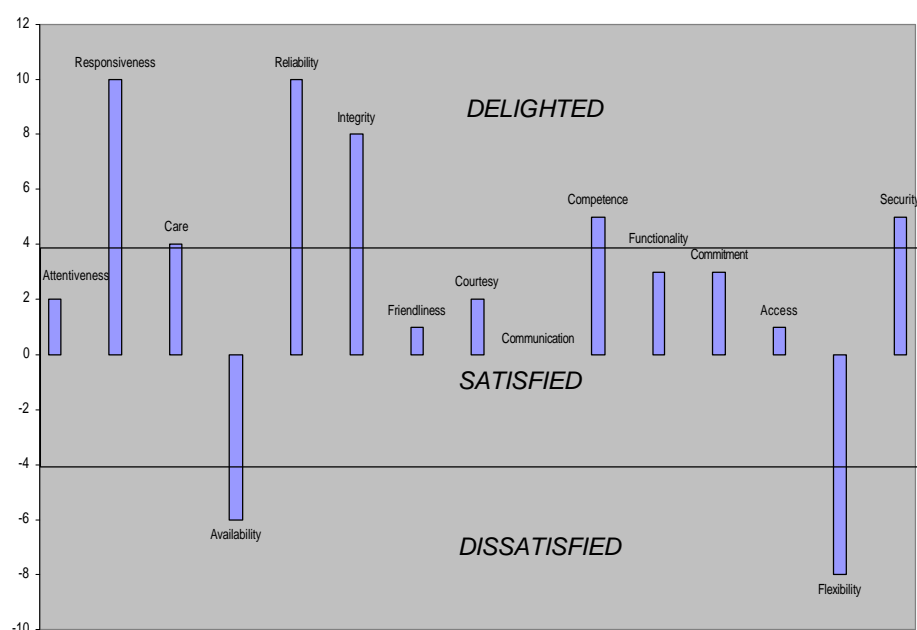


Figure 3 Service Criteria Sum of Differences

From figure 3 we see that the advent of e-procurement adoption had impacted on users perceptions of service quality in the following manner:

#### **‘Delighted’**

The e-procurement system was found to ‘delight’ users in five specific criteria of e-service delivery: responsiveness, reliability, integrity, compliance, and security.

#### **‘Satisfied’**

Seven criteria showed little if any difference between the old and e-procurement processes. Users were found to be ‘satisfied’ in the characteristics of: attentiveness, care, friendliness, courtesy, communication, commitment and access.

#### **‘Dissatisfied’**

The e-procurement system was found to have led to dissatisfaction in users in two criteria of e-service quality: availability and flexibility.

## **5. Discussion**

This paper set out to explore the impact of electronic procurement on end users perceptions of internal e-service quality. Little if any prior research has examined this aspect of e-service and we thus based this preliminary study on an analysis of the gap between pre and post-e-procurement *operation* on Johnston’s 15 service quality criteria. We concluded by setting out three categories of criteria according to the impact on users’ perceptions of the change to e-procurement operation: Delight, Satisfaction and Dissatisfaction.

The advent of e-procurement had improved perceptions of internal customer service quality to ‘delight’ users in the attributes directly related to the fundamental process capability of the system. Responsiveness, reliability, integrity, compliance and security may all be considered to reflect the design of the procurement process. The e-procurement system is perceived to be quick, easy to use, accurate and confidential.

Users were ‘satisfied’ with seven criteria reflecting high contact aspects of the procurement process. Where interaction with a

provider (including purchasing officer, supplier or system administrator) is necessary, there appears to be little discernable difference between the e-procurement system and previous process. In essence the high contact service criteria are ‘system neutral’.

Users were ‘dissatisfied’ in two respects. Firstly, due to problems associated with server downtime and system reliability, the e-procurement system was perceived to be more likely to be unavailable to users than the previous system. This concern with the e-procurement infrastructure, particularly network downtime, is compounded by the lack of flexibility – the e-procurement system provides ‘only one way’ to order items.

Once a user has gained access to the system, the e-procurement process offers a significant improvement in their perceptions of service quality related to the design aspects of the process. Service quality in the high contact elements of the e-procurement process do not appear to offer any significant advantage or disadvantage over the previous non-e procurement process. However, users find the performance of the network and communications infrastructure to be significant dissatisfiers.

## **6. Summary**

This study has indicated that e-procurement influences internal customers’ perceptions of the service quality they receive. However, this study so far is limited by the fact that the study is merely a pilot study and further data collection is necessary before we can posit statistically significant conclusions. However, at this stage in the research our initial indications are that e-procurement enhances internal customer service satisfaction in those aspects of service quality directly related to the *design* of the system – the ‘functionality’ of the system as it is often described in practitioner literature. Internal customers expressed dissatisfaction in aspects of the *delivery* of the process, i.e. network and communications infrastructure reliability.

This research is ongoing and further data collection is anticipated to provide a far larger data sample base.

## **7. Appendix**

### **Survey of Purchasing Processes at Company A**

#### **Stationery and Computer Consumables Supplies**

The questionnaire contains 15 questions. Each is posed in the form of a statement about the processes and we would like you to use the 1 – 9 scale shown to reflect your opinion, based on your own experiences, of the current online process and the previous purchasing process you used **for stationery and computer consumables supplies only**.

1 = Completely unacceptable  
2 = Very poor  
3 = Poor  
4 = Slightly below my requirements  
5 = Meets my requirements  
6 = Slightly exceeds my requirements  
7 = Sometimes exceeds my requirements  
8 = Often exceeds my requirements  
9 = Always exceeds my requirements

[illegible]

15. The level of confidentiality possible in the process																		
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