



E-GOVERNMENT: STRATEGIES FOR SUCCESSFUL E-PROCUREMENT

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ABSTRACT

Companies and Governments use ICTs to deliver better services, and a web presence can add value through the provision of online services. Information and communication technologies (ICTs), in particular the Internet, have the potential to bring about profound changes in the ways that government is managed and organized, its services are provided, and its business is conducted. The Internet can overcome barriers of distance and time to bring together information from multiple sources, creating the possibility of reorganizing and networking government services to make them more efficient, transparent and user friendly. E-government aims to make the interaction between government and citizens (G2C), government and the business sector (G2B) and government institutions themselves (G2G) more convenient, inexpensive and transparent. In addition, the impact of e-government on the economic and social environment is being increasingly explored. One important way in which the potential benefits of e-government can be realized is through procurement, by which government organizations procure/purchase goods and services from the private sector, advertise their needs, select vendors, manage service and fulfillment contracts, and effect payments. In most countries the public sector is the largest economic actor, whether in terms of employment, expenditure or revenue. Although most countries have some kind of e-government initiative, many developing countries do not have the transactional capabilities needed for public e-procurement. The present study will first provide an overview of e-government, including services and transactions and then introduce e-procurement as a service of e-government and lay out some specific implications of public e-procurement for e-business in developing countries. Lastly, it will address how developing economies can maximize the potential benefits of e-procurement

KEYWORDS: Information and Communication Technologies (ICTs), Internet, E-government, E-procurement.

INTRODUCTION

E-government aims to make the interaction between government and citizens (G2C), government and the business sector (G2B) and government institutions themselves (G2G) more convenient, inexpensive and transparent. In this sense, it is analogous to e-commerce, which allows businesses to transact with each other more efficiently (B2B) and brings customers closer to businesses (B2C). E-government is Internet-based, providing solutions that link the back and the front offices of government, including by moving from paper-based to electronic processes, and always considering the best interest of citizens (citizen-centric). Information and communication technologies (ICTs), in particular the Internet, have the potential to bring about profound changes in the ways that government is managed and organized, its services are provided, and its business is conducted. The Internet can overcome barriers of distance and time to bring together information from multiple sources, creating the possibility of reorganizing and networking government services to make them more efficient, transparent and user friendly. In addition, the impact of e-government on the economic and social environment is being increasingly explored.

One important way in which the potential benefits of e-government can be realized is through procurement, by which government organizations procure/purchase goods

and services from the private sector, advertise their needs, select vendors, manage service and fulfillment contracts, and effect payments. In most countries the public sector is the largest economic actor, whether in terms of employment, expenditure or revenue. Public e-procurement projects can significantly impact on the management of these vast resources, and thereby the overall efficiency of the economy and the competitiveness of local enterprises (public and private). However, although most countries have some kind of e-government initiative, many developing countries do not have the transactional capabilities needed for public e-procurement. The present study will first provide an overview of e-government, including services and transactions and then introduce e-procurement as a service of e-government and lay out some specific implications of public e-procurement for e-business in developing countries. Lastly, it will address how developing economies can maximize the potential benefits of e-procurement.

OVERVIEW OF E-GOVERNMENT

Companies and Governments use ICTs to deliver better services, and a web presence can add value through the provision of online services. However, the public sector has lagged behind the private sector in embracing the Internet for this purpose. Early e-government visions were premised on the notion that online services would cost less and offer a

more efficient and personalized service to citizens, but many of these visions lacked an effective implementation plan.

The implementation of e-government and the consequent changes in or reorganization of the administration and bureaucracy require thorough deliberation and planning. Owing to the complexity of comprehensive e-government implementation, at one end of the spectrum several e-government efforts have been stalled at a basic level, with an online presence that is limited to providing information on government activities and services. At the other end of the spectrum some e-government initiatives have resulted in the bundling of services, accessed through a portal and delivered by the Internet. The ultimate goal is government service integration, seamless delivery and electronically mediated procurement of goods and services. In pursuit of this goal, Governments have realized that successful e-government requires a transformation in the way they operate and the administrative culture. E-government is not just about utilizing the Internet for delivering government information and services to citizens, but about taking the conventional structure of government and removing the barriers that prevent the efficient and integrated delivery of services. E-government combines technology, people and processes so as to deliver services in a citizen-centric manner.

Economic considerations play a role in the development of e-government. New technology may help reduce the cost of some government activities, but e-government aims to optimize internal administration costs while at the same time improving citizen services. Although in the short term e-government may increase some costs, since services have to be offered both online and offline, there are savings and

other benefits from streamlined business processes, integrated operations and increased productivity. As the prevalence of online services grows in relation to over-the-counter transactions, which usually are costlier in terms of paperwork and staff time, cost reductions should become increasingly apparent. Other issues such as the opportunity cost of using offline services and facilities have also fostered the development of e-government. E-government is convenient for citizens who have growing demands on their time and have difficulties in attending government offices.

Political considerations also play a role, as Governments re-examine the way they serve their citizens because of higher public expectations with respect to what the Government should provide and the expansion of the Internet. E-government increases the accessibility of public administration for the population, and allows citizens to become informed at their own convenience and on their own initiative. Governments around the world are pursuing e-government in one form or another. For example, most European Union (EU) member States have developed strategies for online government and the EU has stated that e-government is one of its main objectives for the e-Europe initiative. The European Commission also benchmarks e-government progress every six months. A recent United Nations report on benchmarking e-government confirms that e-governance initiatives around the world are increasing (UNDPEPA, 2006). Such initiatives promote the prospect of faster, less costly and more efficient citizen-driven online government services. On the other hand, some of the factors that some countries might face which stall the progress of e-government are shown in table 1.

Factors stalling e-government

Factors	Symptoms	Consequences
Institutional weakness	Insufficient planning; unclear objectives	Inadequately designed systems; cost overruns
Human resources	Shortage of qualified personnel; lack of professional training	Insufficient support; isolation from sources of technology
Funding arrangements	Underestimation of project costs and recurrent expenditures	Unfinished projects; higher maintenance costs
Local environment	Lack of qualified technical support (vendor representation, back-up systems and/or parts)	Implementation and maintenance problems are difficult to resolve
Technology and information changes	Limited and/or inappropriate hardware and software	System incompatibility; overreliance on customer applications

Source: UNPAN (2004).

E-GOVERNMENT SERVICES AND TRANSACTIONS

E-government projects may include an online capability for non-commercial services as well as for commercial transactions. Non-commercial services may be useful for gaining experience in the development of online systems. Successful online services in developing countries include

public information (publication of academic results, information on nearby government facilities, tax self-assessment, online health information, public education content), facilitation of payments (electronic submission of tax returns, payment of fines), and other services (appointments for government services such as the collection

of refuse, reporting of crimes). Government services that are well suited to online commercial transactions include applications for identification documents (passport, electoral card) and licenses (driver's license, motor vehicle registration, TV license), as well as registration for the collection of taxes. UNCTAD's highly successful Automated System for Customs Data (ASYCUDA), which uses ICTs to improve the efficiency and transparency of customs operations in nearly 100 countries, provides an interesting example of the feasibility and impact of e-government initiatives in developing countries.

E-BUSINESS SYSTEMS AND INFRASTRUCTURE

As is the case in other large organizations, e-business systems can improve the exchange and management of information within Governments, as well as their delivery of services. E-business systems that are particularly relevant to e-government are those that help integrate the front and back office of government, namely communication and collaboration systems, internal business systems and e-commerce systems. Communication and collaboration systems, such as e-mail, voice mail and conferencing, are relatively easy to introduce. E-mail is ubiquitous and available to anyone with a computer and an Internet connection. Widespread adoption of communication and collaboration systems in the public sector requires that employees have access to the necessary tools –networked computers, digital telephone systems, and so forth.

E-commerce systems enable G2B or G2C transactions, the former of which may include electronic order placement and payments to suppliers. An appropriate transaction processing system can help Governments to, for example, overcome lengthy procedures for payment to suppliers and facilitate the payment of taxes and other levies by citizens. Therefore, key principles that e-government must adhere to are that: (i) services should be built around citizens' choices; (ii) government services should become more accessible; (iii) social inclusion should be facilitated; (iv) information should be provided in a responsible manner; and (v) government resources should be used effectively and efficiently (UNDPEPA, 2002).

E-PROCUREMENT

Private procurement and public procurement have a fundamental difference. While a private company may wish to have a fair and open process in order to obtain the best possible price, the public sector has a duty to its citizens to use open and transparent procedures that can bear scrutiny for fairness. Therefore, an open public procurement process should seek to ensure that all interested suppliers are aware of tenders, and that no one respondent has any kind of advantage as a result of, for example, inside information. Transparency requires clear and unambiguous requirements for a tender submission to be considered, and the evaluation and awarding of subsequent contracts must follow an established, consistent and documented procedure. The requirements should be reasonable and capable of being met by any qualified respondent, and the individuals responsible for evaluation should have no pecuniary or other personal

interest in the outcome. Additionally, procurement processes should strive to be responsive by delivering prompt decisions and communicating these decisions to all concerned parties in reasonable time. Providing feedback about winning bids is an important market signal that enables prices to be continually adjusted and so ensures a competitive market.

1. DEVELOPING AN E-PROCUREMENT STRATEGY

A key objective of a strategy for all countries is to ensure that e-procurement is approached consistently across all spheres of government and costs to suppliers are minimized. Furthermore, the process of developing an e-procurement strategy should go through a series of phases, each of which requires careful consideration.

Phase 1 – Goals and vision.

A strategy for public e-procurement needs to establish its main goals and vision, which might approximate the following:

- To automate the Government's procurement process and reduce duplication in purchasing;
- To achieve procurement transparency and accountability from an open system;
- To reduce procurement costs and ensure that government obtains better value for money from its suppliers;
- To increase the number (and thus the choice) of government suppliers;
- To provide all enterprises, including small and medium-sized enterprises (SMEs), equal access to government procurement information and equal opportunity for participation.

Phase 2 – Regulatory framework.

Once the goals and vision of an e-procurement strategy are clear, there needs to be stocktaking of the procurement regulatory framework, including statutes, case law and administrative laws.

Phase 3 – Analysis of existing processes

A review of existing procurement processes must include an assessment of the procurement needs of the Government and determine its readiness to implement e-procurement. It should also include an audit of government spending, an analysis of the items procured, an analysis of supplier profiles, and an assessment of staff capabilities and skills.

Phase 4 – Process re-engineering.

Following the review of existing procurement processes and the identification of bottlenecks or inefficiencies, a reengineering plan should be drafted with a view to achieving the goals and vision.

Phase 5 – Choosing a solution and platform.

Choosing the correct solution and platform will require a cost-benefit and/or risk analysis to compare various e-procurement solutions and their impact. Developing countries may benefit from exploring open system solutions and non-proprietary software, which are interoperable and scalable through all government agencies.

Phase 6 – Formulation and implementation of a plan.

The formulation and implementation of the chosen e-procurement solution will include the allocation and management of adequate resources (financial and human resources). In addition to technical training of human resources, implementation will often entail empowering lower-level management to take decisions (thus training for new responsibilities is also needed). Training is particularly important in order for government users to understand the benefits of the system and to change management cultures related to previous procurement processes. Cost savings

could be undermined if a system is not utilized to its full potential. In addition, the solution must be promoted among current and potential suppliers.

In order to implement its e-procurement strategy, the Government of Finland applied a model that follows seven steps towards e-government and e procurement, in which each step is associated with a level of transaction capability, as shown in Figure 1. The Finnish model shows the increased sophistication of each level of e-procurement, from network presence providing only tender contact information online (step 1) through to allowing the electronic application/submission of tenders and authentication of transactions (step 5), and their administrative follow-up (step 6). In step 7, fully supported and seamless e-procurement allows end to-end electronic automation of all previous steps, and there is optimal participation and empowerment of all users (purchasers and suppliers).

FIGURE 1

Steps to e-government and e-procurement: The Finnish model



Source: Finland Government, 2008

2. THE ROLE OF OPEN TECHNOLOGIES AND PROPRIETARY SOLUTIONS

To be sure, any e-procurement system will require a high level of interoperability, which can be enhanced by the use of open technologies and is consistent with the aims of making those systems more cost-efficient, open, transparent and accountable. The cost of commercially available e-procurement solutions will depend on whether the solutions involve applications that are focused on sourcing activities

(e.g. bidding, supplier registration, tender management) or purchasing activities (e.g. electronic invoicing and payments), or both. When building an e-procurement solution, the following costs will have to be considered: licensing (software costs are believed to be only 10 per cent of the overall project costs), external and internal resources, implementation and maintenance, integration into existing resource planning solutions, process design, configuration and customization, training and communication, internal

systems and bandwidth, software upgrades, and reorganization costs.

3. COSTS AND BENEFITS

Certainly, there are tangible benefits flowing from e-procurement in terms of reduction of prices (through competitive bidding and transparent negotiation with suppliers) and process costs. Users of e-procurement systems could maximize short-term benefits by limiting initial deployment, focusing on smaller categories first (e.g. office supplies) and on helping suppliers by, for example, offering payment upon receipt of notice of shipment.

Other benefits of e-procurement are in the areas of governance and administration. With respect to governance, e-procurement facilitates the implementation of transparent public decision-making and is an impediment to lack of compliance and to corruption. In terms of administrative processes, e-procurement may reduce bureaucracy (including “overheads”, or money spent on administration of

services rather than their delivery) and save expenses and time.

4. MECHANICS OF E-PROCUREMENT

There are four basic elements to e-procurement, as follows:

- **Online tenders:** Potential bidders should be able to search and identify tenders easily. Online tenders enable suppliers to have real time access and the Government to reduce paper and printing costs. Tender forms might also be available online and might be submitted electronically, or through an automated process.
- **Electronic invoices:** Where regulations and resources allow it, invoices might be received electronically.
- **Electronic payments:** Electronic funds transfers may require the approval of payments through authenticated digital signatures and a process management system.
- **Automated process integration:** End-to-end e-procurement requires electronic automation of all of the above elements.

TABLE 2

Best practice in e-procurement functions

Function	Best practice	Alternative
Quoting/tendering process	Open tender – buyer advertises the business opportunity online free of charge. Closed tender – buyer advises selected suppliers of the inquiry/tender. Buyer makes the tender information available online and (where applicable) allows the suppliers to submit their tender documentation electronically.	Buyer accepts inquiries and sends tender documentation by e-mail.
Ordering from the supplier	Buyer transmits orders to the supplier using open standards (agency must negotiate a contracted rate with supplier that is lower than the once off ordering price)	Buyer orders directly from a catalogue (e.g. from supplier website or e-mail offer) using e-mail, fax or hard copy. Agency negotiates a contracted rate with supplier that is lower than the one-off ordering price.
Making payment	Buyer pays suppliers by electronic means, e.g. through direct transfer – receipt sent electronically.	Payment made electronically and receipt sent by post.
Liaising with suppliers	Buyer and supplier liaise via secure e-mail.	Buyer and supplier liaise via e-mail and fax.
Browsing supplier catalogues	Supplier maintains an online catalogue, which can be browsed electronically (self-hosted or within an e-marketplace).	If supplier cannot establish an online catalogue, a buyer (government agency) may accept catalogue data electronically and upload then into shared internal systems, if cost-effective.
Internal approval process	The approvals process is automated and implemented electronically.	The internal approval process should be documented and objective criteria put in place for approving orders.
Receiving invoices/statements	The agency requires all suppliers to submit their invoices electronically and the invoice is then matched with the order. Invoice approved electronically.	Objective criteria implemented for approval of payment to suppliers on receipt of paper or e-mailed invoice.
Accessing e-marketplaces	Buyer accesses supplier catalogue in an open marketplace (open access, based on open standards).	Buyer accesses supplier catalogue in a closed marketplace (using a closed marketplace will make accessing the information more cost-effective for the agency concerned).

E-procurement systems typically run on an intranet, on which catalogues of goods and services can be made available, purchases requested and approved, purchase orders generated (for external vendors) or works orders (for internal services) routed through the intranet or by e-mail to

the appropriate supplier. Once supplied, delivery notes are reconciled with purchase orders and invoices, and payments are made and allocated. Purchases and moves can also be linked to asset management systems to keep track of the

location and condition of assets, and depreciation costs allocated accordingly.

Governments in developing countries must be aware that e-procurement does not necessarily mean a comprehensive e-procurement solution; rather, it could entail cost-effective process improvements that steer a government department in the direction of e-procurement and are tailored to the available resources. For example, orders can be placed by e-mail, or via an integrated online order management system that extends across the length and breadth of the supply chain. Table 2 lists a number of procurement functions viewed from a “best practice” and “alternative” perspective. The “best practice” column will generally require the implementation of a comprehensive e-procurement system with an ideal level of resources, and the “alternative” column can be an option for countries with more limited resources.

5. E-PROCUREMENT AS AN ENABLER OF E-BUSINESS

As a large purchaser, government is an attractive customer for large and small suppliers alike. The introduction of effective e-procurement systems by Governments may impact on the local economy both internally and in the way that it trades with others. Part of the developmental role of government is to ensure the provision of key economic infrastructure – roads, electricity and other utilities, ports, health facilities, and so forth – that enables or supports business formation, investment and growth. As

Governments – especially at the local level – move more of their own processes online, they also find it attractive to build telecommunications networks to link buildings and other facilities. Finally, efficient online transactions with government agencies can act as incentives for businesses of all sizes to install computers, improve networks and build up basic ICT infrastructure and skills.

E-procurement systems could also force local players to face foreign vendors that might compete on financial or strategic terms. That said, many multinational vendors have sought to establish partnerships with local companies in the more attractive markets, so that some of the implementation costs can remain in the local economy. In addition, public sector procurement could favour open source solutions, as these tend to better encourage local skills as well as costing less. Table 3 outlines the implications of e-procurement for e-business.

E-procurement allows fairer and equitable access to government contracts by a wider range of companies, as tenders and other requests for supply are more likely to be seen by potential suppliers. In addition, submission of responses is less onerous and more convenient for the potential vendor. In this context, increased SME participation in the supply of goods and services to government agencies should contribute to reducing the power of monopolies or favoured suppliers. The use of e-procurement systems could also reduce the bias towards urban businesses and open doors to suppliers in rural areas or non-capital cities/ towns.

TABLE 3

Implications of e-procurement

Implications of e-procurement for:	
Development of e-commerce and a national electronic marketplace.	The incentive for building an electronic marketplace is reciprocal with (and proportional to) increasing IT penetration and capability (Oliveira and Amorim, 2001).
Local business promotion	The selection of local suppliers can be encouraged, including SMEs.
Public resources	Internal coordination costs can be reduced and public resources freed to serve citizens in other areas.
Bureaucracy	E-procurement will help to expedite and/or overcome bureaucratic procedures.
IT readiness	E-procurement will require a scaling up of the IT readiness of government and enterprises.
Transparency	All vendors have equal bidding opportunities.
Business processes and regulations	E-procurement might require changes to business processes (e.g. regarding vendor minority participation) in order to comply with public sector purchasing laws and regulations.

CONCLUSIONS

There appears to be no doubt as to the benefits of at least a basic adoption of e-government for all countries insofar as it strengthens the relationship between government and an increasing number of citizens. E-procurement, as an application at a higher level of e-government (the transactional phase), has already brought benefits to public procurement in several countries through cost savings,

streamlining and increased transparency. However, in order to elucidate the suitability of any e-procurement strategies for developing countries, developing countries may need to consider more than the efficiency benefits, carefully evaluating the level of public and private sector e-readiness and the relevance of partial or fully integrated e-procurement to their own e-government and business development strategies. The potential of e-procurement as an enabler or

promoter of ecommerce in the economy might be an incentive. Developing countries should bear in mind that the adoption of e-procurement can be a scalable process that will limit the waste of limited resources and will allow users to gradually build up the relevant capabilities.

In order to ensure sustainability, it should be recognized that return on investment would be achieved over time in terms of cost savings and increased revenue. In the context of their e-government strategies and regardless of transactional capabilities, developing countries that have not already explored e-procurement could envisage the enhancement of G2B interaction by posting tender information and forms online, and promoting awareness within the business community and the registration of potential suppliers. A portal for transactional services can be a longer-term goal that will result from a general process reform that will entail consolidating, streamlining and enhancing the transparency of public procurement and related government processes.

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