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Electronic Government Procurement

Definition, Implementation and Roadmap

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Executive Summary

E-GP is the use of information technology (especially the Internet) by governments in conducting their procurement activities with suppliers for the acquisition of works, goods, and consultancy services required by the public sector. The adoption of e-GP has the capacity to increase the **transparency** and **efficiency** of government procurement. This is done in three ways: by making public transactions' information available for consultation and recorded for auditing, by rationalizing public spending, and by diffusing technology in the economy.

This note highlights why e-GP is an important element of the reform of the public administration. The note will describe the theory, practice and case studies of e-GP implementation and identify its implications, costs and benefits. It will also look at the role of the World Bank, among other multilateral development institutions, in promoting procurement reform and e-GP adoption, under specific conditions.

The note is organized along three chapters: Chapter one will introduce the background information to understand what is meant by e-government procurement (e-GP). It will present a tentative definition of e-GP, as well as an analysis of its impact, costs and benefits. Chapter two will cover the implementation of e-procurement along three main aspects: operational, procedural and technical. *Operational aspects* introduce procurement assessments; private and public leadership and management issues; business process reengineering; promotion of participation among stakeholders in setting up and running e-GP and the accelerator effect on the economy. *Procedural aspects* present issues related to legal and regulatory reform, the e-GP lifecycle and other functionalities of existing e-GP implementations. *Technical aspects* cover the standards, security, integration and design options for e-GP.

Chapter three will give a practical example of an e-GP roadmap, along the blueprint adopted by most multilateral development institutions on their joint e-GP website.

Chapter I.   DEFINITION AND ANALYSIS

**A Definition of e-government procurement**

E-government procurement (e-GP) is the use of information technology (especially the Internet) by governments in conducting their procurement activities with suppliers for the acquisition of works, goods, and consultancy services required by the public sector. e-GP is important because it has the capacity to increase the **transparency** and **efficiency** of government procurement, which represents a large portion of Government expenditure. Due to less human interference, e-GP can ensure **compliance** with procurement policies and contribute to reducing the opportunities of corruptive and fraudulent practices. The development of efficient and transparent public procurement systems can result in **public trust and political return** and be incorporated in a broader procurement reform process.

E-GP covers a broad range of applications such as **online information portals** for the publication of business opportunities, contract awards, and other procurement-related information; **interactive e-Tendering portals** with download/upload facilities for bidding documents/bids; and **fully automated procurement transactions** for catalogue-based e-Purchasing including e-Reverse Auctioning, e-Ordering, e-Invoicing, and e-Payment.

Information and Communication Technology (ICT) can contribute to disclose public procurement information and automate the public procurement process, but few changes will occur simply through the acquisition of hardware and software. A thorough reform of the administrative environment is necessary **upstream** to change public sector procurement. This will affect, downstream, the successful adoption and deployment of e-GP. Procurement reform will encompass changes across areas of regulations and legislation, operational policies, financial reporting, business and executive behavior, personnel, skills.

E-GP can improve the quality of government procurement outcomes, at a lower cost and with historical track records which can be audited more easily. By improving accessibility and interoperability of the government procurement information, e-GP makes possible:

> Improving transparency, accountability, and fiduciary compliance with less opportunity for corruptive or fraudulent activities.

> Increasing business access and competition for government expenditure (creating commercial benefits for businesses; price and quality gains for the government),

> Improving efficiency and reducing processing costs by integrating and automating workflow processes for transactions and other supply chain management activities.
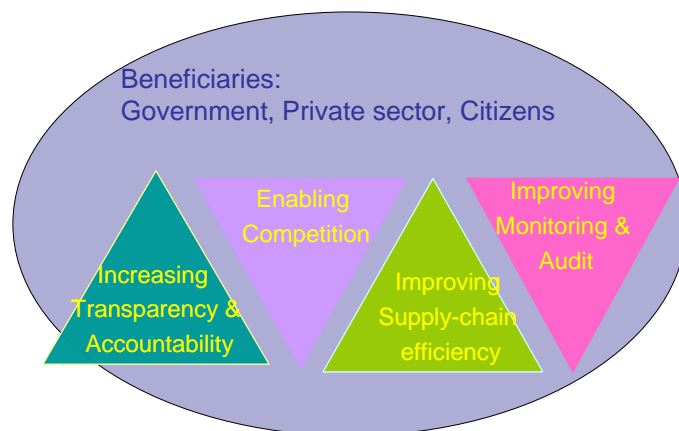
> ➢ Increasing and facilitating access to real time and historic information for management and audit (enabling better decision making, planning, monitoring and reporting).

Countries undergoing procurement reforms and whishing to adopt e-GP can find additional information on a joint e-GP website (www.mdb-egp.org) set up by several Multilateral Development Banks. An e-GP toolkit, an interactive map with e-GP country information and a discussion forum can be found on this website. Other sources of information are the E-government assessments carried out by supranational or national agencies (www.oecd.org, www.europa.eu.int) as well as by individual national governments (www.consip.it, . More specifically, the World Bank supports the adoption of e-GP as part of public procurement reform through:

- **Operational support:** The World Bank can help promote e-GP in the client-countries; provide analytical advice on how to prepare the introduction of e-GP (readiness assessment, legal and organizational framework, capacity building); and assist in implementing e-GP (roadmap, sustainable business models, standard procedures).

- **Project components ;** In line with a country strategy, e-GP can be a component of any e-/ICT-Development or other Project financed by the World Bank (e.g. Vietnam, Armenia, Tunisia). The World Bank can also offer Institutional Development Funds (IDF) Grants to client-countries in order to start the process of **e-GP program adoption**. (e.g. Azerbaijan, China).

- **Training :** In the area of e-GP the Bank is fully harmonized with other Multilateral Development Banks and can organize/facilitate joint e-GP learning events for the client-countries. In addition, the Bank's e-GP thematic group offers a good platform for **sharing knowledge and building capacity among Bank staff** through BBL's, workshops, or seminars on selected e-GP topics.

Impact, Costs & Benefits

A first[1] cost benefit analysis of e-GP can be carried out through the information gathered among the administrations which have been adopting e-GP and their comparison. The ongoing experiences shows, among the benefits, an improvement of transparency in public transactions, notably through their track record; the creation of new economic activity; a downward incidence on the volume of public spending; a diffusion of technology in the economy through buyer and supplier adoption and through outsourcing. Regarding the costs, the main ones identified relate to difficulties of implementation and to the risks of underestimating the volume of initial and ongoing costs of implementation (see also, the 4 e-GP case studies benchmarked below).

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[1] A more thorough analysis will be carried out following the results of the 2006 survey, funded by the World Bank, the Asian Development Bank and the Inter-American Development Bank, aiming to generate information on e-procurement systems and idiosyncratic e-GP strategy implementation experiences in selected countries across three regions (Americas, Asia-Pacific and Europe). These countries were selected for their ranging engagement in e-Government Procurement. The survey is expected to provide valuable information on the functionality, infrastructure and implementation of e-procurement systems

e-GP improves transparency in public transactions

E-GP and the use of technology provide the opportunity for auditing a great volume of smaller transactions which were previously ineffectively auditable, and this proves to be a major enhancement to transparency. Among the benefits gained by the introduction of electronic processes for public procurement are:

- Accountability

Public procurement data, information and processes, as well as decision making are made available for consultation and recorded for auditing. Increased accountability can result in political return from the taxpayers' side. Increased verification of contract compliance and track record of buyer-suppliers' interaction reduce the opportunities of corruptive and fraudulent practices.

- Competition

Visibility of transactions stimulates competition between suppliers and cooperation between buyers, also favoring clustering or specialization of small enterprises to meet increased demand or supply more competitive products.

- Value creation through strategic sourcing

Refocusing the administration on its core activities and outsourcing the secondary ones contributes to increase time and economic efficiency in carrying out operations and processes.

e-GP generates new economic activity

E-GP adoption directly and indirectly produces an extended demand for new services, thus fostering new activities and professional specializations. A need arises for strategy and management consulting to define the needs of the administration, the type of reform and the timetable. Then, equipment is required to fulfill the new electronic activities of the administration, including the need for security and confidenciality of databases and data exchange. Other, indirect activity arises from a demand for transformation of existing paper documents in electronic format. All these activities have an accelerator effect on the economy, as well as contributing to diffuse the use of technology among administrations, firms and citizens. A partial list of identified activities is :

E-gp related consulting	Companies and Firms whose activity is accelerated by e-GP
Strategy consulting	Generic Electronic equipment producers
IS Management consulting	PC producer
Commercial IS transactions	Software producer
Financial IS solutions	Web Portal/ site Developer
Legal ICT	Numerical Document Reproduction
Graphics and Design	e-mail certification and storage
Accounting IS solutions	e-commerce monitoring
Certification IS solutions (billing/ receipt)	Product intelligence
Public finance	media and cross-industry services
E-tendering consulting	b2b publishing company
e-commerce consulting (payment solutions)	Lifelong learning
Telecom infrastructure consulting	Health and medical providers
Systems integration consulting	Pharmaceutical companies and distributors
	Office suppliers
	Food and facilities suppliers
	Logistics companies

Source: own elaboration

and the key lessons learned by the countries involved. It is intended to provide a practical guide for those countries intent on developing their own e-procurement systems..

e-GP reduces public spending

E-GP generates considerable savings for the administration. This is due to the reduction of transaction costs (e.g. time savings from the automation of procurement procedures, including approvals and repetitive tasks) and to the reduction of prices generated by more effective or increased competition. In addition, the online publication of contract award results as an effective tool for price transparency thus avoiding the conclusion of overpriced contracts.

The reduction of personal decision power over the procurement process reduces the potential for corruption practices, which also represent a cost for the administration. Additional saving generated for the suppliers and society are represented by time, accessibility, accuracy of information and goods provision.

A four step measurement of the e-gov impact (Brazil) identifies four steps which lead to a modeling of the cost savings generated by the adoption of e-government and e-GP systems:

1. **Process Map** - Identify Activities for traditional vs. new processes

The identification of activities allows for separating activities where the impact is expected to be greater, as well as identifying processes, stages of processes and their traditional costs. The methodology preferred for the estimation is Activity Based Costing (ABC), a method of measuring the cost and performance of activities and costs objects.

2. **Cost Map** - Cost Activities for traditional vs. new processes

The cost analysis includes numerous steps such as the elaboration and diffusion of a questionnaire, the research and elaboration of data gathered, the integration of information through interviews & workshops, a qualitative and quantitative analysis, a scenario analysis and forecasts, the data interpretation and the final reports.

3. **Investments**

These are the investments made to streamline the processes and deploy the informatized systems such as e-GP. This will provide the benchmark against which the net benefits of the reform of the procurement process and the adoption of e-GP will be measured.

4. **BINPS ®** – Benefits on Investments in Public Sector

The formula used to measure the net benefits is the following: BINPS ® = {[(G-G') + (CS-CS')] * N}/(ISED + OIF);

Where: G is the Government Unit Costs before innovation; G' is the Government Unit Costs after innovation; CS is the Supplier Unit Costs before innovation; CS' is the Supplier Unit Costs after innovation; N is the Units; ISED is the IT and training investments depreciated according to accounting standards; and OIF are the Other fixed investments and maintenance (such as those related to premises).

The savings on the cost of transactions (workflows) has been estimated starting from 12%. Brazilian e-GP-generated net benefits (BIPS) of 4.774%, only for the region of São Paulo (www.bec.sp.gov.br), which translates in a 2-days payback period a of the public investment (see Annex 2 for a detailed cost accounting breakdown)..

Box 1: Saõ Paulo, Brazil, Benenefits (BINPS) of Public Investment in e-GP

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e-GP drives technology into the economy

Shifting government procurement online has the potential to provide major impetus to the roll-out of ICTs throughout the economy. If governments go online for their procurement, this is an incentive for many companies, including SMEs, to become connected. In addition to this motivation for suppliers, governments

play of course an important role in planning the development of large-scale IT infrastructure when rolling out their e-Government programs (e.g. online procurement).

Public sectors typically represent between 15 and 35% of national economies[2] and are strategically placed such that their impacts on the business environment may be even larger. Hence, government adoption of technology, including e-GP, is one of the largest drivers of technology into the economy. In terms of economic impact, since the cost of transactions are estimated to account for 45% of GDP in a modern economy[3], government's efforts to facilitate transactions (through technology adoption) represents an important contribution to generate economic gains (reducing transaction costs).

e-GP is difficult to implement

Difficulties to implement e-GP systems are related to the necessity of a relevant change in the management process among the Public Administrations and between the PA and suppliers.

The stickiness and the resistance to change of consolidated behaviors might reduce or hamper the success of the strategy implementation. In addition to this, a "digital divide" exists on hardware and software diffusion among different part of the same administration, and usage potential can be different. These differences highlight, in the medium run, the necessity of training and lifelong training, and in the long run, the change in the profile of the administration's personnel, who must become computer literate and possibly proficient.

Initially, the mandatory legal framework might also create tensions between suppliers and PA markets.

e-GP implementation is costly

Overall it is difficult to determine the full cost of an e-GP strategy and implementation, which depend from the advancement and specific conditions of each administration. Among the costs we have identified the choice of the e-GP system (specifically conceived, a modification of the existing one and/ or the adoption of an off-the shelf solution), the operations trials and the system outsourcing. All this requires a considerable level of initial investment, a period of operation and a constant maintenance of the e-GP system[4]. Other costs relate to training and lifelong training of administrative personnel, enhancements and specific modifications while in operation. Costs can be related to application or other aspects; they can be initial or ongoing[5]. There is a large spread between e-GP costs for different countries, in Italy the system costed 10.4 M Euros (2002) and 4 years before the system reached full operability.

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[2] Source: E-GP Toolkit, Overview Module, www.mdb-egp.org

[3] Wallis, John J and Douglas C. North (1986) "Measuring the Transaction Sector in the American Economy" in S.L. Engerman and R.E. Gallman, (eds) Long Term Factors in American Economic Growth, Chicago, University of Chicago Press. See also Nobel Economics Prize speech, Douglas North, 1993.

[4] Such as purchasing license rights and maintenance from software vendors, implementation, catalogue and marketplace participation costs

[5] Initial costs are the costs incurred by an organization to implement an e-GP application, including the costs of system installation, initial training, and consulting. Ongoing costs are the total costs associated with the long term support of an e-GP solution, including annual maintenance, additional consulting and ongoing training.

Buying and installing the e-GP application represents a small fraction of the total expense of implementing e-GP, while the larger share is in the implementation, product data and catalogue management, as well as in the ongoing maintenance. These less visible costs are 5 to 10 times higher than the initial buying and installing costs.[6].

The cost structure has to do with the selected business model, be it public-private partnership (PPP), IT outsourcing, ASP or keeping everything in-house the government (see role of the private sector analyzed below). For instance, typical ASP does not require much initial investment. There are different ways of financing e-GP, e.g. transaction fees, participation fees, registration fees, government budget, or a mixture of some of them. Such fees could be charged only to the suppliers or to both, purchasing agencies and suppliers.

Application costs are the costs related to the acquisition and configuration of the technological support required to conduct e-GP. **Other costs** include: Implementation costs; Content aggregation, rationalization and maintenance; Catalog/search engine; Transaction; End-user training; Process re-engineering; Associated licensing — e.g., additional DBMS fees, integration ware licensing; Marketplace participation.

The following checklist is sometimes used as a preliminary guidance tool to estimating costs:
- ➢ Are the true procurement costs understood? How are they measured? Is there an historical trend record?
- ➢ Can savings be achieved without software?
- ➢ Have you considered process impacts?
- ➢ Are the suppliers dominant players with their supplier base?
- ➢ Who manages the catalogues? Which are the main problems encountered in catalogue composition and handling?
- ➢ Have you considered alternatives? Estimated opportunity costs of alternative solutions?
- ➢ Who will lead the e-GP effort?
- ➢ Are the total costs of implementation understood? How are they estimated? What is their historical trend?

Source: (Gartner, 2002)

Albeit technologies offer new prospects at an attractive cost compared to traditional infrastructure, the complexities and risks involved in their successful implementation are frequently misunderstood. Overall, administrative management and culture are the keys to improvement of the administration and the procurement function, not technology per se. If installing new technology can be simple, extracting the maximum benefit from it involves complex governance, management, organisational and behavioural changes.

A benchmark of 4 e-GP Case Studies

The two tables below benchmark Italy, New South Wales, New Zealand and Scotland along three dimensions of their e-procurement activities: their readiness, their diffusion and their impact.

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[6] Source: Elio Gullo – Italian Department for Innovation in the Public Administration, Technical challenges in implementing e-Procurement, Naples January 2006.

Readiness refers to the policy and legal environment which have led to the design and adoption of e-GP systems. Diffusion refers to the current use and potential levels of adoption of e-procurement in government, shaped and constrained by technological and institutional environments and events at the local, national and trans-national levels. Impact refers to the uptake of e-procurement, such as the size, growth and specific forms that are actually adopted. This concept addresses what e-procurement activities are currently being undertaken, including business designs, security and authentication.

The second table summarizes the main learning and challenges encountered by each of the four countries in their e-GP implementation and e-procurement use. From this taxonomy it emerges that: sector reform and a dynamic change at the managerial level are a necessary and preliminary condition for success of e-GP operability; e-GP can generate a reduction in public spending, conditional on a sound business and financial plan; flexibility in system development contributes to their efficiency. Major impediments to the implementation of an e-GP are a lack of skilled human capital, cultural and political resistance to change the difficulty of designing a sound business plan and that of identifying the right quantitative measures for the monitoring of its implementation.

	Italy	New South Wales	New Zealand	Scotland
READYNESS why decisions were made and activities were implemented	- The 2000 Budget Law approved a Program for Rationalisation of Public Spending - EU directives for harmonizing electronic exchange of information between public administrations - The uptake of e-commerce and IT was supported by a national strategy	- The 1998 Government Procurement Policy - The 2001 Government e- procurement implementation strategy; - The 2002 government procurement Reform Strategy	- The 2000 Government's e-commerce vision and strategy emphasized a need for e-government and e-procurement	- Devolution in 1999: public Scotland becomes the respon new Scottish Parliament - In 2000 the Scottish Procu Directorate approves the Nat eProcurement Scotl@nd pro
DIFFUSION Size and potential of the e-GP Market	Public expenditure on goods and services in 2003 was €100.619M in the following areas: State 15%; • Health 53% ; • Councils, Provinces 23% ; • Other entities 9% - 60,000 are the potential e-procurement users within public administrations. - The number of public administrations using e-shops and online auction was 648 in 2000, 41,966 in April 2004. Approximately 200 have won at least one tender. The number of public administrations using e-marketplace in April 2004 is 1042, the number of suppliers 156.	Public expenditure is $17 billion subdivided in: • goods and services 61% • capital assets, maintenance 38% In 2002, benefits after three years of procurement reform would equal $400 million/year along three initiatives: • Improved procurement practice $160 million • Increased aggregated buying $110 million • Increased adoption of e-procurement $130 million	• Public expenditure in 2000 on goods and services was $1.25 billion. • The target users of e-GP were 40 government departments, with the five large sized accounting for 61% of the nonspecialised spend in 2000. • Over 100 other entities e-GP users accounted for $3.5 billion in spending on goods and services. • Annual public expenditure processed through e-GP was approximately $250 million yielding an estimated cost saving of up to $6.5 million per annum.	• Public expenditure on go is £5 billion per year. • The Scottish Executive i achieve a 2 to 4% savings spend by using e- • As of June 2004, eight co in Central Government and Government authorities are system, currently rolled out • There are over 40,000 re 6,000 registered suppliers. cumulative to July 2004 ov were processed and spend million • E-tendering is routinely u Government by the Scottisl Directorate.

IMPACT what e-procurement activities are currently being utilised	E-procurement is based on a portal model underpinned by two major areas of service: • e-shops, catalogues and online auction for purchase of goods and services above and below EU threshold • e-marketplace. open to all Italian suppliers, enable administrations to purchase directly from supplier catalogues or submit a request for quotation. • Buyers'registration is completed online, and all must register a digital signature required to authenticate orders. Orders can only be placed online.	E-procurement is based on four technical components – • the Marketplace: hosts the catalogue, offers storage and management of trading partner information, analyzes and reports services, hosts e-procurement solutions • the eHub: facilitates document exchange between agencies with different connectivity requirements • the Catalogue Content Factory: manages, validates and transforms catalogue content • Procurement Reporting Services: provides facilities for data mining and reporting of procurement activities.	The initial focus of e-procurement (2000-2003) was based on three main initiatives: • Develop syndicated procurement practices • Share best practice procurement processes between agencies • Implement systems and technologies for enabling e-procurement across the procurement lifecycle. A transaction hub was initially developed to host online catalogues and coordinate purchase-to-pay transactions. It was terminated at mid project review, since it cost the Government half the funds allocated to the full e-procurement Project.	The focus of the Program is • achieve efficiencies throug procurement processes and savings to Government and taxpayer • raise the importance of pr business activity • improve the supplier exper with Government • provide benefits to Goverr by developing common pro processes, sharing of procurement kno experiences • establish collaborative pro practices, where appropriate

	Italy	New South Wales	New Zealand	Scotland
LEARNINGS	• E-procurement implementation needs policy reform • Public procurement can benefit from a centralised approach • Collaborative behaviour can promote usage and understanding	• Proactive change management can promote usage	• Solid business case can provide the framework for an e-procurement program • Securing buyers and suppliers is critical when implementing e-procurement • The technical implementation can impact the success of the project	• E-procurement can reduce procu • Structure of procurement organi affect e-procurement Flexibility in of systems and processes can enab procurement • E-procurement requires the ongo processes and systems
CHALLENGES	• Overcoming cultural and political resistance to e-procurement • Improving frame contracts to satisfy outcome criteria • Managing technical issues in an environment that prefers verbal interaction	• Acquiring and maintaining suitable skilled personnel • Promoting use through competent technology • Communicating benefits to promote buyer engagement • Developing effective strategies that deliver supplier value • Managing the competing priorities in government • Developing and implementing e-procurement metrics	• Justifying the return on investment (ROI) • Understanding the role of government • Promoting procurement process improvement • Persuading experienced agencies to try something new • Gaining supplier adoption and readiness when buyer adoption is slow • Identifying data standards	• Developing and/or hiring qualifi • Educating participants in online • Managing system integrations fo

Chapter II.   IMPLEMENTATION

II. 1   Operational Aspects

Assessment of the existing environment and practice

To ensure its effectiveness, e-GP needs to be linked to broader public management objectives. The initial step is a preliminary e-GP assessment to identify the current status of the public procurement environment. This allows to determine the level of procurement readiness and set up enabling measures to make an appropriate transition to e-GP. A realistic timetable will be then designed against the assessment results, and the progress made will be benchmarked through quantitative indicators.

Monitoring and evaluating e-GP is complicated but necessary to increase its attractiveness to stakeholders. Typically, the measures used to benchmark traditional government procurement can be expanded to e-GP as long as they review and assess the capacities and performance of the following:

- Government Leadership
- Human Resource Management
- Planning and Management
- Policy
- Legislation and Regulation
- Infrastructure and Web Services
- Standards
- Private Sector Integration
- Systems

There is a need to develop monitoring indicators that can be tied to the strategic framework and can measure the long-term evolution of the project. This connection will allow for a realistic assessment of costs and benefits over different stages of the project without creating illusions about short term payoffs.

The introduction of e-GP requires a comprehensive review of the whole public procurement system, procurement processes, procurement regulations, procurement market evolution and whole-of-government reform process. The data collected to set up and subsequently form an e-GP system can be synergistically exploited in other public management aspects. These data can be used to reduce organizational spend, manage contracts and improve customer- supplier relationships. The quality of data in historical, accessibility and accuracy are essential to maximize impact of the reforms, and harnessing good information requires the development of information policies and procedures to ensure this occurs.

The introduction of technology is a good opportunity to fully review the administrative business process, measure and evaluate its inefficiencies and to reform, simplify and streamline it. Evidence (Western Australia) suggests that public governance and innovative change are complementary rather than conflicting approaches. As a result, a thorough review of the administration's supply and demand chain can be carried out through e-GP assessments, and the weaknesses of the administration identified even beyond the specific procurement aspects.

E-government procurement country surveys/ assessment are carried out along different conceptual frameworks. Three examples are quoted below (for a more detailed explanation of the methodology see Annex 1)

Multilateral Development Banks	Australian Government	OECD
1) Government leadership and planning	1) e-readiness (levels of adoption in government)	1) Regulatory framework
2) Direct and supporting legislation	2) e-intensity (uptake of e-GPe-GP by type of activities undertaken)	2) Organizational framework for implementation
3) Regulation	3) e-impact (effects on value chains and business models in government agencies)	3) Simplification and re-engineering of administrative procedures
4) Infrastructure and technology		4) Technical challenges in implementation
5) Industry development		5) Skills and human capacities
6) Procurement management		
7) Environmental influences (such as human resources quality and management)		
8) Current e-GP initiatives		
9) Other relevant issues		

Preliminary Policy and Strategic reform

A broader policy and strategy context must be analyzed in setting up e-GP systems. This is necessary to cover all aspects of administrative business process reengineering, since the progress made possible by e-GP is only realised when the system is effectively and efficiently used by all stakeholders.

In this framework, five distinct (vertical) elements of an e-GP policy have been identified: leadership, functionality, technical design and standards, private sector activation, infrastructure and web services. In addition are (horizontally), three important issues of governance, management and legislation. Strategies are required for all of these elements. The horizontal level is particularly important, since an integrated approach between whole-of government and e-GP initiatives can create a functionally coherent network of activities and standards; minimise competing priorities and objectives; and promote balanced benefits for all stakeholders.

An integrated policy that mandates common purchasing strategies and methods provides the best results. In addition to this, an incremental introduction of technology-based e-GP tools can facilitate the success of the transition to an e-enabled administrative environment.

Figure 1: E-GP models, a possible first taxonomy

E-GP models	
Activity-based model:	**Organization based model:**
Indirect Procurement System (IPS) ▪ Contracting subject do not coincide with the ordering administration	Centralized Model ▪ purchasing procedures are centralized
Direct Procurement System (DPS) ▪ Contracting subject coincides with the ordering administration	Decentralized Model ▪ purchasing procedures depend on each administration unit

Government's operational leadership and Management scheme for implementation

The leadership by the highest government level is extremely important in order to achieve collective agreement among buyers (i.e. government agencies across sectors, levels, and geographical areas) and suppliers.

The Government will have to define upfront the organizational structure and responsibilities for e-GP. In more than 90 % of the countries, the introduction of e-GP is being led by a public procurement unit either in the Ministry of Finance or the Ministry of Economy. Only a few countries developed e-GP under the leadership of "non-procurement" people (e.g. in Romania under the Ministry of Communications and Information Technology). Independently from who is leading this process, the skills required need to be identified primarily in relation to the business process (i.e. public procurement) together with a sound understanding of IT. The success of the organizational deployment and the maintenance of new e-GP systems depend on the capacity of a government to ensure effective cooperation between these two.

The implementation (adoption and continued use) of e-GP needs to be proactively managed, communicated (see below) and fostered. Change management needs to anticipate and administer the psychological, cultural and technological resistance which can arise. This includes taking an incremental and improvised approach to implementation, encouraging the teams to appreciate the diversity of cultures and systems, managing the expectation gap as not to deceive actual and potential users.

Supplier and Buyer adoption

Supplier and buyer adoption are central to the success of an e-GP program. The appropriate environment for adoption should: a) support government and business priorities, b) provide online access for commonly procured goods and services, c) link to agencies' existing FMIS or ERP systems, d) be easy to use, e) communicate benefits to stakeholders.

Improving suppliers' adoption contributes to have a larger, more diversified offer, which will also represent an incentive for buyers to use the system. The participation of the private sector, the supplier side, cannot be taken for granted unless the adoption of e-GP practices is mandatory. Experience shows that the private sector should be involved upfront to validate the key aspects of the e-GP and to formulate a credible business case that offers

lower costs and /or greater opportunity. Supplier participation can be influenced, among others, by the following factors:

- E-ready suppliers- capable or interested in communicating electronically and investing the resources to do so.
- Sufficient buyers to make the supplier's investment financially viable. A lack of buying activity may result in suppliers taking a wait and see position.
- Support for the supplier throughout the adoption process to ensure understanding of benefits of joining the marketplace and overcome reluctance to join. A business awareness, consultation and orientation programme for suppliers is vital.
- Fees should not be seen as a deterrent as it is proven that suppliers agreed to pay a fee for cXML connection once they understood the benefits involved (Scotland).

Buyer adoption is another important factor in the success chain. As more buyers use the system, more transactions move through the system and more efficiencies and savings are realised. To facilitate buyers' adoption:

- Buyers (or the buying organisations) must be e-ready, with undergoing efforts to decentralise purchasing and finance responsibilities, review the typical silo structure of governments, use independent financial management information systems (FMIS) or enterprise resource planning system (ERP) tools. Agencies without significant investment in their own FMIS or ERP tools are more inclined to join their government's e-GP system.
- Buyers also need support throughout the adoption process and this requires an understanding of the purchasing needs. In a mandated environment, systems should be functional to the needs of the buyers and user-friendly.

In France, for buyers with less than six bidding processes per year, the bidding and purchasing process can be followed on a private commercial website managed by a private firm (http://www.achatspublics.fr/), there are also other examples, of a public nature (https://www.marches-publics.gouv.fr/), which are used for larger/ more frequent (with more than six processes per year).

AchatsPublics.fr

Fichier des Fournisseurs et Candidats aux Marchés Publics

Site à usage des Acheteurs et Décideurs des Administrations et Services Publics

Le portail de services : achats*p*ublics.fr, *(Fichier des Fournisseurs et Candidats aux Marchés Publics)* centralise, par région et département, les seules **entreprises à vocation nationale** souhaitant soumissionner aux Marchés des Administrations, en présentant en ligne, les renseignements sur chacune d'elles.

A usage des Acheteurs et Décideurs des Administrations Nationales et Services Publics, achats*p*ublics.fr leur permet de consulter un choix plus large d'entreprises et de prestataires de services

Tout en respectant les règles de mise en concurrence édictées par le Nouveau Code des Marchés Publics, le portail de services achats*p*ublics.fr transmet régulièrement aux utilisateurs et entreprises référencées, des **informations** sur l'évolution de la **réglementation**, sur les **appels d'offres**, sur les différents besoins identifiés et favorise la mise en relation des divers intervenants

ENTRER

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* Appels d'Offres - Marchés - Réglementations
* Nouveaux Produits - Offres-recherches

LES ADMINISTRATIONS
* Organigrammesnominatif des Administrations avec lien vers les sites
* Recherche par NOM de DECIDEUR ou d'ORGANISME

Role of the private sector

The role of the private sector in the implementation of e-GP has implications for the e-GP programme's structure (and the level of risk), its financial sustainability and for the technological spill-over.

Risk: The structure of the e-GP implementation programme determines the private sector's level of uncertainty and the benefits to participate in it. A fully integrated e-purchasing strategy is likely to be relatively complex and expensive for business to integrate, whereas e-tendering is easily picked up by businesses at little or no cost and represents an effective means of activation of the private sector, forming a foundation on which higher value services can be built. A business activation strategy will address contracted suppliers, non-contracted suppliers and may also work with the service industry that supports business applications.

Financial sustainability: The overall success of e-GP depends also on its financial sustainability over time. This sustainability can be secured through private sector involvement and/ or through the government's keeping of the operation of e-GP in-house. There are a variety of business models applying to e-GP systems and going from full

private management (rare) to fully public management. In India, most e-GP systems are based on Application Service Providing based on transaction fees to be paid by the participating suppliers to the company who operates the e-GP system. Other countries started with outsourcing the operation of the e-GP system to the private sector (Brazil, Chile), but after a while the private company dropped out as they were not gaining any profit (Brazil). Alternatively, the business model was revised with the private company being no longer paid from the insufficient transaction fees but from the government budget (Chile). Finally, there are countries where the e-GP system in operated by a government agency (e.g. Romania). There is no commonly agreed-upon best-practice model.

Technological spillover: Through the private sector governments can gain access to a larger pool of skilled and technical resources. In this respect, working with private industry is an alternative or complement to working exclusively in-house. The private sector also provides access to new or evolving technologies. Innovative arrangements entailing shared risks and rewards can be useful to assist in responding to changing technologies and arising opportunities.

Since the role of the procurement professional has evolved from a purely transactional to a more strategic role, e-GP as an end-to-end business solution requires a multi-functional team with members who can understand public procurement policies and practices, benchmark and re-engineer business processes, build and maintain relationships with suppliers, buyers and other stakeholders, understand the business requirements and the technical capabilities, coordinate management change and develop training programs.

Business Process Reegineering

The back office re-organization, prior to setting up an e-GP system, can be time-consuming and needs to be gradually phased-in. As long as the public procurement processes and methods are clearly defined, and in line with good practice, it does not require much of process reengineering to publish procurement information online and implement basic tender functionalities on the web (e.g. download of bidding documents, electronic submission of bids). Nonetheless, the more e-GP systems become transactional (from the initial informational stage) and include e-ordering and e-payment, the more back office re-organization issue may emerge (e.g. electronic catalogue maintenance, supply-chain management). The Korean Republic 6-months-long process reengineering project prior to the development of their e-GP system presents a good example of this.

At the front-office level, one of the biggest advantages of the Internet is to offer centralized services in partnership with decentralized organizational structures. Many public procurement systems are of decentralized nature, with thousands of public contracting agencies. While agencies may have to follow the same public procurement policy and law, they could develop independently as long as there is no mandate to use one single e-GP system. The risk, with numerous contracting agencies, is that thousands of independent e-GP systems may be developed. This would entail a multiplication of efforts and confusion of suppliers (requested to create multiple user accounts and maybe acquire multiple digital certificates). A customer-friendly one-stop shop concept could

appear attractive but such approach needs collective agreement among ministries and public agencies, and is often the cause of problems and delays (strong government leadership is therefore a pre-requisite).

The indications supplied by the case studies reviewed suggest that smaller countries usually have a single e-GP system (e.g. Mexico, Romania, Korea) whereas larger countries go for multiple systems (e.g. India, China, Brazil). In the Ukraine, the public procurement law allows practically every single contracting agency to have an own e-GP system as long as this meets certain technical requirements to be approved by the Government.

Human capacity and awareness-raising communication

The case studies' review indicated that numerous governments identified a need for skilled resources in their e-GP implementation. Ongoing professional development for procurement personnel is generally lacking in public administrations, hence it is necessary to build human capacity inside the government's agencies prior or in parallel to setting up a procurement/ e-GP reform.

This can be done through designing and setting up training programs to identify, attract, support and retain staff with the necessary skills and/or partnering with the private sector to seek technological spillovers (see paragraph above on the *Role of the private sector).* This challenge can be addressed through developing staff's e-GP capabilities, especially in :

- understanding public e-GP policies and practices
- understanding technical requirements (e.g. technical/programming/help desk skills)
- developing managerial skills and process knowledge related to new systems
- building and maintaining relationship with suppliers and other stakeholders

Awareness-raising of the potential of e-GP among all parties including buyers, suppliers, and the public at large (taxpayers) is a pre-requisite to gain a large support, build confidence in the system and facilitate mandated or optional adoption. Using an effective communications program to promote these benefits can also promote e-GP across government departments and support policy reform. Once the system is in place, the next challenge is to improve communication throughout the implementation process, including feedbacks on usage and user-friendly changes, and maintain that communication as the relationships grow. This is key to facilitate maintenance, monitoring and benchmarking aimed at improving the quality of procurement while building and maintaining supplier and buyer confidence.

II. 2   Procedural Aspects

Legal and regulatory reform

The revision of existing laws and procedures to build up a sound national regulatory environment for e-GP is a lengthy and costly process essential to its successful implementation. To ensure e-GP is effectively deployed, it has to fit in the national legal and regulatory framework. This imples allowing e-auctions or e-bidding processes to be introduced in a framework where legal requirements for identification of bidders and suppliers are already defined. The timing for the introduction of legislative change may differ depending on the leadership and the priorities at the government level. In the box below can be found an example of legislative changes in Egyptian procurement law to allow for e-GP implementation.

Egyptian procurement is currently based on law 89-1998 which regulates the procurement processes of tenders and auctions. This law is subject to change in the near future to reflect the use of E-GP in Egypt after numerous concerned organizations reviewed the 89-1998 and defined which articles need to be changed to reflect the use of E-GP.

Current Practice	Prospected Changes
Tenders announcements must be in 2 wide spread newspapers.	Tenders announcements can be published on the internet.
Bids must be presented by the supplier in 2 closed envelopes till the unsealing session.	Bids can be presented electronically and they will be encrypted till the unsealing session.
Supplier bids are identified by the supplier stamp.	Supplier bids are identified by the supplier e-signature.

Source: Eng. Nevine Gamal- E-GP Project Manager, Ministry of State for Administrative Development- Egypt

Box 2:Egyptian procurement law and prospected changes (2005)

Procedural aspects are essential to enabling e-GP's benefits. The case studies identified the authentication process of foreign suppliers to be a major bottleneck in e-GP implementation. Authentication should be opened to domestic and foreign suppliers in an indiscriminate way, and should not limit the principle of open and fair competition, unless it will undermine the benefits of e-GP. Yet, a lack of international standards for digital signatures including cross-certification, complicate further the timing and best practice in legislative reform for e-GP implementation across countries.

In Mexico, foreign companies had to travel to Mexico to get a digital certificate which would allow them to participate to e-GP; the World Bank has only approved the use of Compranet, after Mexico had agreed to remove this requirement. The process of online registration and authentication can be simple, without having companies to authenticate themselves by legal documentation prior to the bid submission -if appropriate post-qualification mechanisms are in place before awarding a contract.
Romania started with e-Reverse Auctions without any provision in the public procurement law. Based on a few governmental decisions, the country introduced e-Reverse Auctions as mandatory for specified contracting agencies and products. Other countries, such as the Ukraine or Russia, developed a new public procurement law including e-GP provisions and the challenge is now to implement the new legislation. In addition to the procurement legislation, e-related legislation such as electronic documents and signatures play a role for e-GP as well. It is even possible to start developing an e-GP system (e.g. an online procurement bulletin to publish public procurement related information including procurement notices and contract award results) without having a legal framework in place.

Box 4 : Timing for Legislative Reforms, International Experience

Phases of the e-GP lifecycle

Cycles' level of sophistication and complexity vary according to the domestic practice. Nonetheless, the graphic representation above is an indicative way to group the-GP cycle . Its activities represent the procurement practices that an e-GP must cover. They are specified more in detail below:

1.   Electronic distribution (downloading) of bidding documents

2.   eNotification: Preparation and publication of notices to official electronic notice boards

3.   Registration Process: Methods for creating user (buyer and suppliers) accounts and profiles with related roles

4.   Questions & Answer session: Online execution of Q&A sessions between Buyers and Suppliers

5.   Short-listing of suppliers: Supplier qualification mechanisms based on the criteria that have been defined in the call for tenders notice

6.   Submission of bids: Mechanisms that enable the online preparation and submission of tenders

7.   Bid-opening: Mechanisms for allowing the secure opening of tenders, following simultaneous actions of two or more procurement officers

8.   eAuctions: Mechanisms for conducting electronic auctions

9.   Offline activities: Option for suppliers to perform certain activities outside of the system without being excluded from the competition or disadvantaged against other suppliers

10. Publication of contract award results

Processes and Functionalities

In most jurisdictions there is a separation between transactions that are simple and low value, and those that are large and often complex. To each one of these procedural types corresponds a different implementation and different features of e-GP. e-GP opens the way for substantial re-engineering of the traditional procurement process but it rarely will overturn the separation shown in the diagram.

Government transactions	
Frequent procedures	**Rare procedures**
High volume	Low volume
Low Value	High Value
Off the shelf	Custom made
Simple commodities	Complex commodities
Simple Services	Complex Services
Competitive markets	Limited markets
Fixed price	Performance-based price
Short-term contracts	Long-term contracts
Tactical Contracting	Strategic Outsourcing

This variety of transaction will imply to develop technological functionalities that meet all these requirements. Most transactions will be of low value and high volume (i.e. office supplies). Case studies suggest that 90% of procurement transactions are for less than US$3000 and account for only 15% of the total procurement value.

The low value/high volume transactions will be undertaken either through simplified quoting systems (which includes RfQs) or through a pre-existing contract (e.g. framework or common-use contracts) which often includes e-catalogues from which purchase orders can be issued. Electronic reverse auctions are also used for those transactions.

For higher value procurement a public tendering process is usually required. These transactions require high level of expertise related to specifications, performance and risk management. In addition, the e-purchasing systems with electronic ordering and invoicing are much more complex to implement than e-tendering systems.

II. 3   Technical Aspects

Standards and operability

Standards do not only refer to technical standards but also to legal and procedural standards. The interoperability of systems and standards is an ongoing challenge facing all e-GP systems. Without technical standards, managing this integration is difficult, specifically in the area of data format. It is important to involve all appropriate stakeholders including public agencies, the software industry, private companies as well as national and international institutions.

Examples of standards aiming at facilitating integration include the UNCITRAL model laws of e-commerce and of electronic signatures or the EU Directives for Public Procurement, as well as standard bidding documents and procedures in order to ensure common electronic forms and templates.

Standards development remains a controversial subject between supporters of open source and those of proprietary solutions.

Figure 2: Standards and Interoperability

In Italy, new South Wales, new Zealand, Scotland and Western Australia, the lack of standards and evolving classification systems around catalogues, suppliers and cost codes created difficulties in achieving interoperability across and within government. The debate around standardization revolves around :
- Contributing to the standardization of data exchange and their components.
- Adopting and enforcing existing international standards, while contributing to the development of international standardization groups

Standards Purposes
- Identify and harmonize public sector practices related to procedures and information flows, in such a way as to insure cross-sectoral convergence and interoperability of solutions.
- Develop and maintain main processes and transaction models independently from syntaxes
- Insure a smooth transition from specification of main processes towards the sinthaxic solution (such as XML)
- Ensure that the model processes and transaction's documentation are coherent to the UN/CEFACT methodology.
- Keep ongoing relations with other UN/CEFACT groups and organizations involved with the e-administration standardization activities (i.e. OASIS/UBL).

Working Groups on Standards
- UN/CEFACT TBG 19, eGovernment -> Lyon, Forum UN/CEFACT, September 2005
- CEN/ISSS/EEG 13, eGovernement -> Bruxelles, Plénière eBES, October 2005

First Subjects of Discussion (2006)
- Public procurement (eGov 2010)
- Declaration of DC5 candidate: Candidate Identification, Informations related to her financial situation and declaration on her fiscal and social obligations
- Electronic filing (eGov 2010)
- Development of inter-archive communication documents and processes and research of needs manifested by other public administrations (France)
- Data Model of the World Customs Organization
- Study on how to integrate data related to goods circulation required by other governmental agencies
- Civil status, elections, subventions, territorial and land data

In implementing e-GP, a country may choose a solution with multiple portals and e-GP systems, in which case the government should assume the responsibility of setting a standards framework to avoid incompatibility between systems. A standard framework may refer to electronic forms and templates, product classification

codes, xml technology). Countries should avoid developing their own product codification scheme rather than adopting international standards, such as UNSPSC or CPV.

On 17 June 2005 the United Nations Economic Commission for Europe (UNECE) - on behalf of the United Nations Centre for Trade Facilitation and Electronic Business (UN/CEFACT) - and the Organization for the Advancement of Structured Information Standards (OASIS) signed a cooperation agreement aimed at delivering coordinated standards to facilitate electronic business[7]. UN/CEFACT supports activities dedicated to improving the ability of business, trade and administrative organisations to exchange products and relevant services effectively, while OASIS is a not-for-profit, international consortium that drives the development, convergence, and adoption of e-business standards.

UN/CEFACT and OASIS will work to deliver coordinated standards needed to facilitate e-business, by:
- Consulting each other and work to coordinate their activities in support of adoption and promotion of the ebXML technologies.
- Identifying and developing voluntarily coordinated approaches to the fulfilment of e-business and trade facilitation needs, in additional areas that may include, but are not limited to ebXML, semantic methodologies and web services.
- Appointing representatives to jointly develop and recommend an OASIS-UNECE-UN/CEFACT project alignment and coordination plan, addressing areas of common technical interest such as for instance the harmonisation of core data components and Universal Business Language (UBL).

Along these lines, the European Commission's e-Procurement Action Plan (January 2005) also aims to promote the development of interoperable technical standards. The Commission's IDABC Programme has carried a number of actions to facilitate the efficient introduction of e-procurement solutions in compliance with the new European public procurement regulatory framework. Among other things, the Programme has released two sets of XML schemas designed to enable public e-procurement systems used across Europe to interoperate with each other.

Authentication and security

Security and authentication are critical aspects of an e-GP system. Developing, maintaining and communicating these technical policies and solutions is difficult in the public sector's heterogeneous environment.

The security measures for information systems are variable, as is the intensity of the dangers encountered by the users. These measures are:
- Technical -> set up of IT mechanisms of protection (antivirus, firewalls, etc.)
- Physical -> supervised access to important areas, protection against accidents
- Organizational -> clear procedures and directives to staff, attribution of responsibilities

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[7] Source: http://ec.europa.eu/idabc/en/document/4423/357

- Juridical -> Specific contractual rules binding software providers and installers
- Human-resource related -> awareness-raising on security, training on procedures and set up of IT tools, confidentiality agreements (particularly for external providers, conflicts of interest.

The above-mentioned measures need to be established in an environment which allows for their enforcement and use. In this sense it is essential to:

- Deter eventual attacks via severe penal or disciplinary sanctions, through active prevention of illegal access, through authentication and tracking of actions and raising awareness of this procedure among users;
- High-level protection for systems against attacks and break-down: access controlled, access rights management, security mechanisms, good functioning assurances, back-up;
- Detect accidents and/or identify their origin when achieved, this implies that all transactions carried out must be recorded, to manage reconstructing the events which would have brought the accident (this requires large folder-analysis tools to detect anomalies in the flow of transactions); set-up a real-time attack-detection system;
- Repair damages having eventually affected the system: have a back-up system and restoration tools.

The definition and resolution of other technical challenges can be addressed through assisting government authorities, on the basis of international best practice:

- Developing technical standards (e.g. for data exchange) and requirements to allow systems interoperability.
- Providing best international practice on the main technical challenges in maintaining and developing IT systems which support procurement solutions.
- Deciding the best solutions for e-GP (e.g. shared IT platform for e-GP vs individual agencies developing own solutions, system integration with buyer agency systems (i.e. ERP) and supplier systems).

Follows a partial identification of the most evident security needs on the public and private side :

- The documents produced by the public administration must be incorruptible and can be contested;
- The firms' offers must be incorruptible, confidential and contested;
- The competing firm's list must be confidential;
- Nothing must prevent, either on the public administration side or on the firms' side, the submissions to be presented in the established deadlines. This requires a large system for reception of submissions;
- Specific actions by the public administration or by the firms' must be traceable in a trustworthily fashion and with sufficient precision, including the time in which they have been realized.

A taxonomy of the security needs can be organized according to their consequences:

3: invalid procedure when there is a risk of non-competitiveness (publicity of a firm's offer, prevention of certain firms from participating).

2 : significant impediment to the procurement process when there is divulgation of confidential information (such as list of admitted suppliers)

1 : minor impediment

Regarding the availability of the system to users in case of a security issue, for instance, the system could be unavailable for a maximum limit of 2 hours time in case 3, 12 hours in case 2 and 24 hours in case 1.

Technical integration and technical standards management

Application integration is a core enabler of e-procurement and goes beyond purely technical terms. It is in fact as much a business as a technical issue, strategy, and subject. Application integration is the methodology and technology of tying all the specialized software functionality together into one seamless procurement systems. All the applications should be talking to each other and exchanging data and processes just as humans do when they are collaborating with their diverse and dispersed expertise, talents, and skills.

In this sense, developing and implementing an e-GP system must incorporate tools and procedures that support technical, business and work practice requirements. The technology used in public e-GP systems needs to be aligned with industry standards, a process which can be difficult due to the lack of agreed standards in the industry.

It integrates with buyer agency systems (i.e., FMIS / ERP) and supplier systems. This integration will ensure all participants have access to the data required to complete the transaction. In many examples, the diverse technical requirements of different agencies were underestimated, and technical delays eroded the value proposition to those buyers. A graphic example of the integration requirements of a technical system is shown below[8].
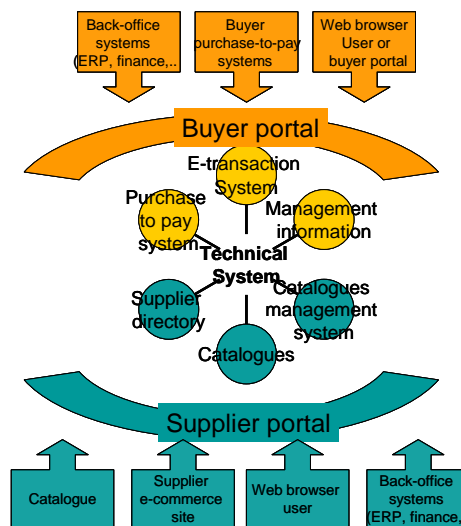
End-to-end integration

In many government organizations, the tools necessary to complete the procurement transactions (e.g., search, requisition and payment) often reside in different departments or agencies. Related policies and procedures may also reside outside the procurement organization. Therefore, the full integration of the complete end-to-end process and the deployment of usable policies and procedures to support this process remains a key challenge.

Variable technology design

E-GP technologies and business designs cannot be applied in a uniform way because different procurement, technological, institutional and temporal contexts influence options and decisions. Public e-GP is strongly shaped and driven by social, cultural and political factors: government priorities are different, and shifts in those priorities impact the choices made and the progress of each system. Hence, several design options will determine the outcome of the e-GP system, such as:

- **Direct/ indirect -**The choice between direct and indirect procurement models defines which contracting subject is in charged and its coincidence or not with the ordering administration.

- **Centralized/ Decentralized -** The choice between centralized and decentralized implementation agencies affects the level of involvement of each administration unit versus a central implementation. E-GP strategies in Scotland and Italy were developed by a centralised agency within a broader policy scope and were integrated as part of an overall change management strategy. As a result, there was a greater potential for innovative change within these governments.

- **Subscription-based or open marketplace -** Scotland selected a model that used a subscription-based service for buyer agencies. Italy created an e-marketplace as a direct result of the perceived inequitable access to government business by small to medium enterprises (SMEs).

Chapter III. ROADMAP

The Roadmap presented here[9] has four consecutive phases. Each phase is able to produce an independent impact. However, the best e-GP performance and wider spillovers will be reached when all of them are operational. This road map is a basic tool that will have to be adapted to fit the specific conditions, strengths and weaknesses, and prior level of development of e-GP in each individual case in order to be applied in all countries, regions, and municipalities. The phases are, in sequential order, as follows:

E-GP Phases

0. Preparation 1. Tendering 2. Contract Management 3. Purchasing
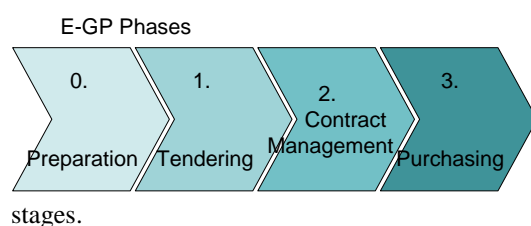
These phases advance from the simplest to the more complex issues in a gradual fashion. They will be explained in detail later on in the document. Each one of these phases has several stages.

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[8] Source: http://unpan1.un.org, the Zanzibar system
[9] Source: www.mdb-egp.org, e-GP toolkit, Roadmap module
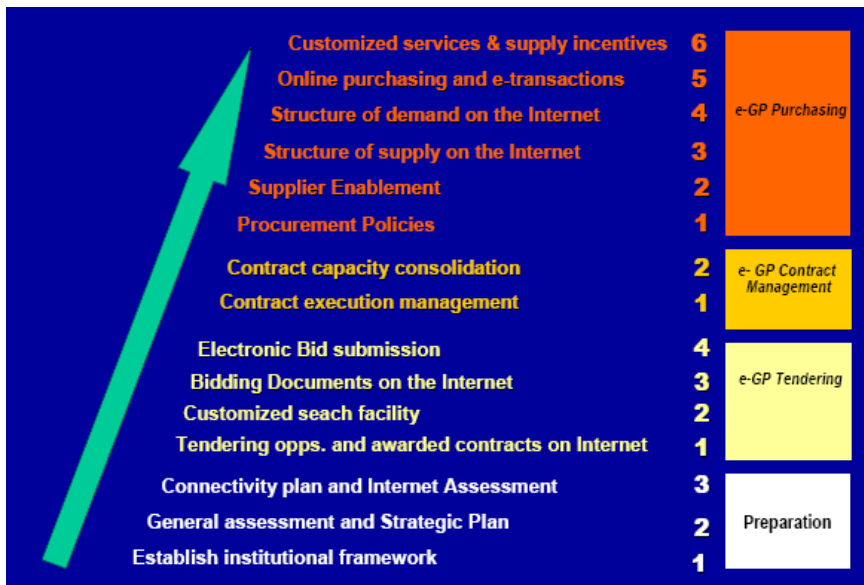
In addition to the four phases, which represent the horizontal dimension of e-GP implementation, the successful development of e-GP has six strategic foundations. These are indispensable and complementary and need to be developed in parallel to generate a balanced effect. The six dimensions are:

- Institutional Capacity
- Governance
- New functionalities
- Infrastructure & Web services
- Third Party Integration
- Evaluation

The graph below shows the strategic foundations of the e-GP development process and the evolution of e-GP along each of the four phases. It shows the starting situations and the achievements to be obtained.
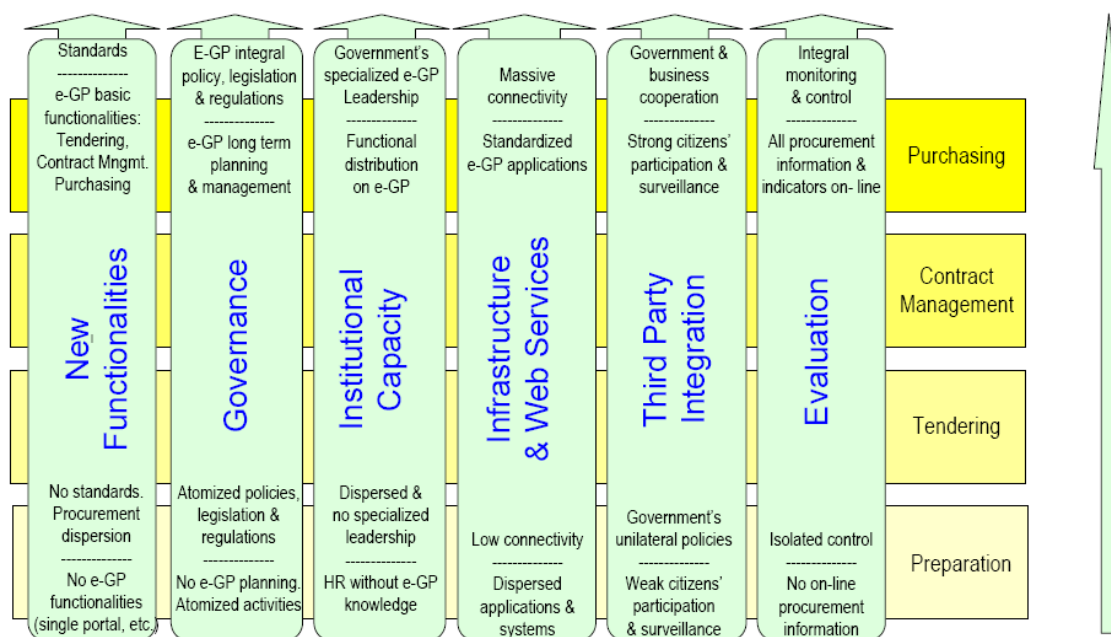
Figure 3: E-GP Strategic Foundations and achievements to be obtained

There are different ways to advance through the strategic foundations, depending on each country's specificities such as their culture, the starting point characteristics, the available experience and the e-GP leadership characteristics.

Two main methods to develop the strategic foundations have been identified: an integral one and a gradual one. The first sees the country define its foundations since the beginning of the process, by the adoption of a strongly structured policy, a new legal and regulatory framework, the adoption of basic standards, etc. The second sees countries gradually develop their strategic foundations through slow advances in the definition of the e-GP policies, successive legal reforms and, in general, cumulative processes.

In order to avoid the potential risks on both approaches, it is necessary to have:
- a vision of the objective from the very beginning,
- a strategic plan,
- a leader agency and
- a direction council that understand e-GP as an integral transformation process (and not just as a simple modernization of procurement leaded by technology).

For that reason, the preparation stage is crucial, conceived precisely to create the integral bases of the whole process. The Self Assessment Questionnaire of this series allows establishing the base line from which the governments can decide which of each approach is more suitable to the country or how to mix different approaches.

E-GP Roadmap

Phases	Stages	Activities /Products

0. Readiness

Establish Institutional Framework

Common Vision of e-GP → Identify key agencies. Establish an agreement for coordinated work → Designate Lead Agency

The e-GP Readiness Assessment Questionnaire is a useful guide for this phase

General Assessment and Strategic Plan

General Procurement Assessments → General Baseline (including quantitative indicators) → Business Awareness. Private Sector Activation → E-GP Strategic plan

Connectivity Plan and Internet Assessment

Internet capacity and Connectivity assessment → General Baseline (including quantitative indicators) → Connectivity Plan for e-GP → E-GP Strategic plan

1. Tendering

Publication of tendering opportunities and contract awarded information on a single Internet Site

Procurement Plan available online (annual or quarterly) → Online Publication of tendering opportunities → Publication of each tendering process' results → Publication of tendering statistics

Customizable additional services

Search engines → Customizable search in database → Customized information by e-mail or fax → Gathering and dissemination of best practices

Open access to all bidding documents via Internet

Set up a Procurement Committee → Standardize an simplify bidding documents → Establish electronic security mechanisms → Online access to all original bidding documents, clarifications and addenda (mail and fax also available)

Electronic bid submission

Standardize and simplify bidder's requirements and templates → Reinforce electronic security mechanisms → Bid submission over the Internet (in simplified format) → Access to information on the status and progress of each tendering process → Public Bid Opening

2. Contract Management

From page 1

Contract execution management

Ensure interoperability between FMIS and e-GP system → Performance management / Payments management → Management of contract completion → Management of final evaluation

Contract capacity consolidation

Consolidation of contract management and bidding policies, rules and regulations → Implement e-GP in all government levels (national, regional, local) / Implement e-GP in all Government branches (legislative, executive, judicial)

3. Purchasing

Procurement Policies

General Procurement policies → Policy for goods and services to be purchased by Agencies → Financing and payments policies → Ex-post revision policy

Supplier enablement

Detailed model for online purchasing and plans for institutional and informatics development → Codification and implementation of catalogues → Establish mechanisms for price reference settings → Security standards and mechanisms

Structure of Supply available on the Internet

Development of suppliers' capacity to handle online purchasing → Open registration for eligible suppliers → Regional and local eligible quotes available online

Structure of Demand available on the Internet

Development of Agencies' capacity to handle online purchasing → Common use goods → Common use contracts

Online purchasing and electronic processing of transactions

e-Purchasing infrastructure tests → Online processing of purchase orders → Online payment and inventory management → Online monitoring

Customized services and incentives for suppliers

Creation of public reports online → Automated sending of customized information → Statistics on supply, demand and government procurement → Policies for supply incentives

Annex 1: Examples of E-Readiness Assessments

E-government procurement country surveys/ assessment are carried out along different conceptual frameworks. Three examples are quoted below, they derive from the multilateral development banks' joint assessment, the Australian government's and the OECD's assessments.

The **Multilateral Development Banks's** one can be found integrally on www.mdb-egp.org , under e-toolkit, readiness assessment. It addresses the managerial and technical components that underlie the e-GP environment and adopts a procurement reform approach. It has five main strategic foundations and nine components.

STRATEGIC FOUNDATIONS			COMPONENTS
Institutional Capacity		1	**Government Leadership** — Vision, sponsorship, resources, stakeholder support and implementation support
		2	**Human Resource Management** — Education, skills development, expertise and career development
Governance		3	**Planning and Management** — Strategic planning and re-engineering of management protocols and processes
		4	**Policy** — Setting intent and guidelines that can be consistently applied
		5	**Legislation and Regulation** — Supporting rules and external and internal monitoring of the efficiency, performance and compliance in relation to the total approach to e-GP
Business Functionality and Standards		6	**Infrastructure and Web Services** — Ensuring reasonable access to, and quality of e-service and their sustainable development and maintenance
		7	**Standards** — Development of management, procurement and technical standards to ensure consistency of the approach to e-GP and interoperability across the systems involved
Third Party Involvem		8	**Private Sector Integration** — Suppliers are enables and have incentives to participate in e-GP
Application of technology		9	**Systems** — Planning, selection, development, implementation and support of e-procurement systems to provide tendering, contract management and purchasing services

The assessment is run on a scale of 1 to 4, corresponding to the level of readiness with which the components are addressed and supported. For each component a list of questions are circulated in the public administration. The Assessment should be addressed by a wide range of respondents from government, business and the community who are informed stakeholders in the government procurement environment. This would include people such as senior managers of government agencies, public and private sector procurement and IT managers, representatives of professional procurement associations, representatives of key business sectors involved in government procurement, watchdog organizations, consumer groups and representatives of education and training institutions. See an example of questions below for one of the nine components, government leadership.

SUBCOMPONENTS	FINDINGS				
The degree to which	Y	P	N	Comment	LoR
a) The government has set a vision and objectives for procurement.					
b) The government's vision and objectives were developed in consultation with the key stakeholders in procurement.					
c) The government's vision and objectives have been made public.					
d) The government has issued plans for procurement modernisation.					
e) The government has nominated a sponsor for procurement modernisation and change.					
f) A government lead agency is available to provide leadership for procurement management and modernisation.					
g) The government lead agency has adequate resources to provide its leadership role (for example, an implementation group).					
h) The government lead agency has the authority to manage and modernise procurement.					
i) The government lead agency is currently providing leadership to resolve some key issues in procurement (such as policies, governance issues, human resources management, standards adoption, third party involvement and application of technology).					
j) The government is involving a range of key public and private sector and community stakeholders to support procurement management and modernisation.					
k) Overall the government has the capacity to lead, resource and implement procurement modernisation.					
l) Other related subcomponents					

The level of readiness is assessed on a scale of 1(min) to 4(max), corresponding to the degree to which each component is being addressed. Issues considered relate to:

➢ Leadership, planning, implementation, regulation and monitoring

➢ Documentation and/or descriptions of policy outcomes

➢ Appropriateness of people's skills and other resources being applied to the issue

➢ Consideration of future implications for e-GP

➢ Technology and infrastructure available to support procurement

➢ Access to procurement processes by the users and the public

➢ Communication regarding the issues

➢ Monitoring and reporting on measures of procurement effectiveness or efficiency

Presence of supporting management strategies, training and education approaches, dissemination and application of sanctions or incentives.

The **Australian Government's** assessment unfolds along the three interrelated concepts of readiness, intensity and impact that are defined below.

Each government agency or department provided background documents and material such as proposals, progress reports and internal records. These documents and material were reviewed prior to each site visit along with additional desk research and publicly available information. During site visits, interviews were conducted with key participants in the e-GP systems. The data from each site was reviewed and analysed to determine what was accomplished, the issues, key learnings and challenges.

I. **E-readiness** refers to the current use and potential levels of adoption of e-GP in government, shaped and constrained by technological and institutional environments and events at the local, national and trans-national levels. This concept addresses why particular e-GP activities have been implemented, incorporating issues such as the:

> • procurement environment – structures (e.g., centralised versus decentralised), drivers (whole-of-government or e-government initiatives), and levels of support
> • legal environment – national and international jurisdictions
> • economic environment – supplier and buyer market forces
> • organisational environment – planned levels of adoption and financial considerations such as access costs for buyers and suppliers
> • technological environment – existing infrastructure available at varying levels.

II. **E-intensity** refers to the uptake of e-GP, such as the size, growth and specific forms that are actually adopted. This concept addresses what e-GP activities are currently being undertaken, including:

> • business designs – e-catalogues, e-tendering, e-marketplaces, complex (tendering) and simple purchasing
> • e-integration – the coordination of buyer and supplier relationships and activities
> • security and authentication

III. **E-impact** refers to the ways in which e-GP has transformed business models and value chains in government agencies. The concept addresses key outcomes from its use, major impediments to further progress and goals and objectives for the future, incorporating issues such as:

> • social – effects on employment, skill composition, work organisation, stakeholder satisfaction, learning and building coalitions of change
> • e-business performance – annual percentage of procurement using Internet, etc.
> • operational performance – faster delivery times, reduced transaction costs, etc.

The **OECD Assessment** carried out prior to the organization's high level e-GP seminar (Naples, December 30-31, 2005; http://www.oecd.org/searchResult/0,2665,en_2649_201185_1_1_1_1_1,00.html) invited countries to submit short country fact sheets in which they provided relevant background information for the meeting and will represent the basis for the OECD Secretariat to prepare country Action Plans. The country fact sheets followed a structure articulated in 9 questions encompassing the policy, organization, type of activities, electronic processes diffusion, technical standards, security and staff capabilities.

> ➢ Question 1: Have you introduced the necessary laws and regulations to support e-GP solutions at the national level (e.g. rules allowing e-auctions or e-bidding processes; legal requirements for identification of bidders and suppliers)? Which administrative tools and mechanisms (e.g. revision of existing laws

and procedures) have you identified and used to build up a sound regulatory environment for e-GP? What are the major barriers to building such a framework and how have you overcome them?

➢ Question 2: What are the main features of your country organizational approach to e-GP? Do you have a central e-GP authority or e-GP is decentralized across agencies and levels of government? What was the reason behind your decision to either centralize or decentralize e-GP in your country?

➢ Question 3: What is your definition of e-GP? What kind of procurement activity is enabled and at which stage?

- Public agencies can electronically a) submit, b) collect, c) and evaluate tenders (etendering).
- Public agencies can electronically access catalogues of services/goods from qualified suppliers (e-catalogues).
- Public agencies can make orders electronically, be invoiced and pay electronically (eordering).
- Public agencies can meet in an electronic marketplace to directly negotiate goods and services with suppliers (e-auctioning).

➢ Question 4: To what extent has the introduction of electronic processes for public procurement been accompanied by efforts to automate, simplify and re-engineer existing processes? Please briefly make a concrete example.

➢ Question 5: Has the introduction of electronic processes in public procurement led to any benefit to your organization (as listed below)? What criteria have you used to measure them?

- Greater simplification and transparency of procedures.
- Reduced duplication of procurement functions and offices.
- Greater transparency and accountability of decision making.
- Benefits of scale due to consolidated purchasing.

➢ Question 6: Do you have a shared IT platform for e-GP or have agencies developed their own solutions? Does your system integrate with buyer agency systems (i.e. ERP) and supplier systems? What are the main technical challenges in maintaining and developing IT systems which support procurement solutions?

➢ Question 7: Have you developed technical standards (e.g. for data exchange) and requirements to allow systems interoperability? Which actors have been involved (e.g. governmental agencies, private suppliers, national and international institutions) to develop them? How successful is the application of these standards?

➢ Question 8: How did you go about ensuring adequate protection of e-GP systems and networks? What solutions have you implemented to allow users to identify themselves and use the e-GP system?

➢ Question 9: How have you developed staff capabilities to handle the development, implementation, and maintenance of e-GP systems? Please refer to the list below:

- understand public e-GP policies and practices.
- understand technical requirements (e.g. technical/programming/help desk skills).
- develop managerial skills and process knowledge related to new systems.
- build and maintain relationship with suppliers and other stakeholders.

Annex 2: Benefits of e-GP Investment in the Public Sector (BIPS) in Sao Paulo (Brazil)

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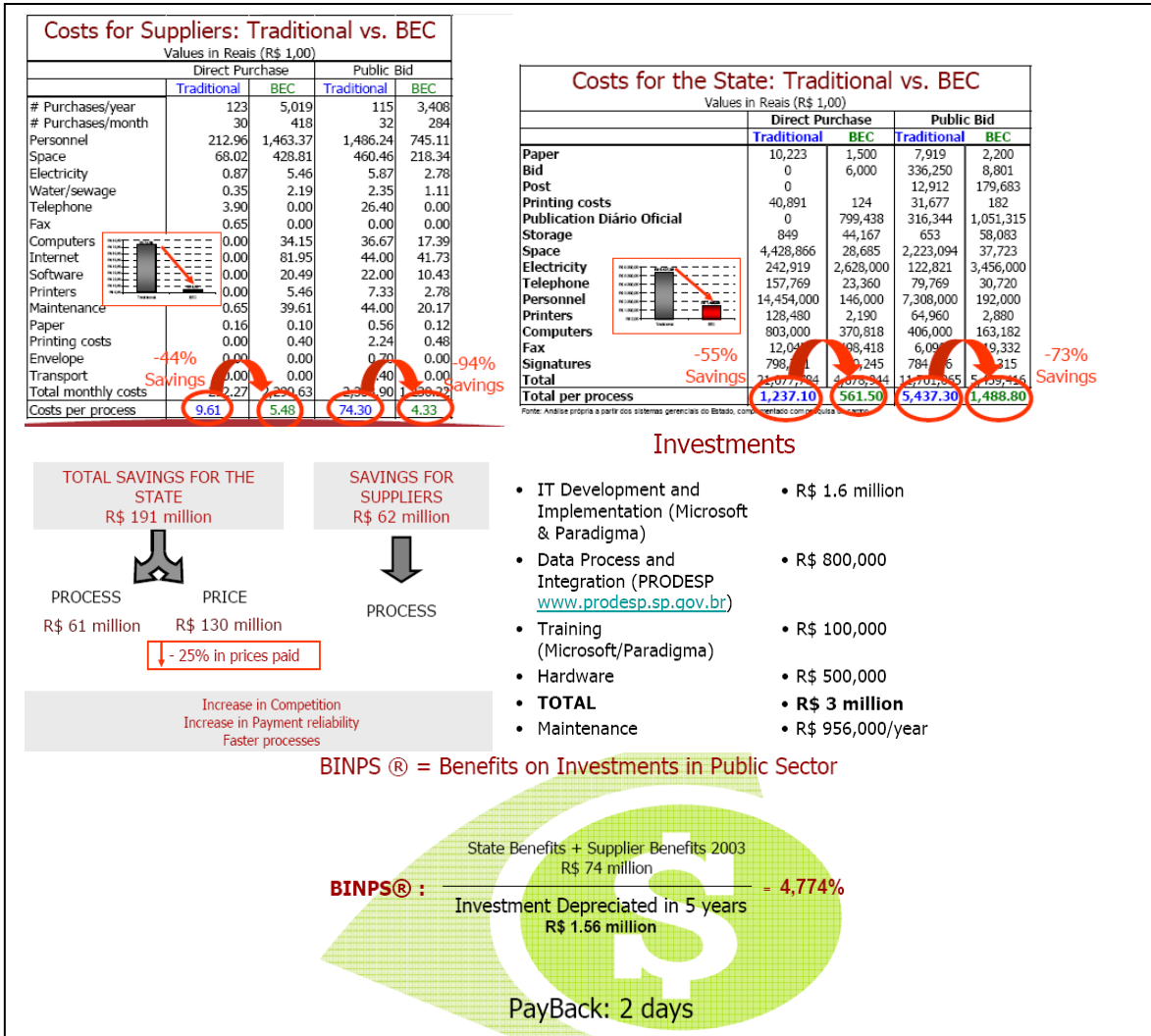
Annex 3: Communication and Collaboration Programs for e-GP Adoption

Scotland's adoption program promotes a type of collaborative behaviour between support staff, buyers and suppliers. Support staff in Italy is doing this by sharing experiences and participating in the wider European Union community.

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In Scotland, supplier adoption and enablement is supported by a range of procedures and supporting documentation. Maintaining the supplier-buyer relationship is the responsibility of the buying organisation. If a supplier is common to several buying organisations, one organisation will act as the sponsor for that supplier's adoption. The team also maintains a database of suppliers on the system to coordinate this process. The internet procurement management platform (PECOS) is required to support all suppliers regardless of size and technical capability. This includes fax transactions and the more sophisticated business to business (B2B) capabilities such as electronic data interchange (EDI) and cXML. The system can also support a variety of catalogue types.

The value of the B2B capability is that orders are entered into the supplier's system automatically, removing the risks associated with manual re-keying like manual errors and mis-shipments.
Currently, there are three broad groups of suppliers linked to the PECOS system:

• "advanced options suppliers" use advanced B2B options and connectivity such as cXML or punch out to supplier web site
• "electronic catalogue suppliers" provide electronic catalogues that are hosted on PECOS
• "bulk load suppliers" are connected to the system and capable of transacting, however, they have yet to be fully enabled through the supplier adoption process.

An example of checklist for supplier activation can include:

• Current readiness for and awareness of e-GP
• Contracted suppliers
  – Sell value proposition
  – Letters, online follow-up
  – Meetings and training
• Non contracted suppliers
  – Sell value proposition
  – Connectivity
  – Industry association involvement
• Service industry development
  – Catalogue development
  – Business systems integration
• Electronic Trading Associations support
• Business selection and listing policies
• Remote business strategy
• Charging policies
• Banking
• Supplier – supplier interoperability
• Catalogues
• Kiosk services

Source: Gartner Research, 2002