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STRATEGIC ELECTRONIC GOVERNMENT PROCUREMENT

- STRATEGIC OVERVIEW:

AN INTRODUCTION FOR EXECUTIVES -

This document was prepared for the Procurement Harmonisation Project of The Asian Development Bank, The Inter-American Development Bank and The World Bank.

Disclaimer

Contents

Introduction

Until recently, a key investment focus of most governments has been on physical infrastructure. This traditionally has meant very large investments in roads, ports, etcetera, with long-term rates of return. However, this focus is changing with interactive and communication technologies playing an increasing role in productive capacity. Just one decade ago information technologies were a minor component of new capital investment worldwide but now represent more than half of such investment in some countries. These technologies are not just another piece of infrastructure or capital, but represent a profound shift in the means of production, the scope for broad community participation in commercial and social activity, as well as the methods and roles of government itself. Online technologies are increasingly providing the means for enhancing intellectual capacity, just as the industrial revolution has enhanced physical capacity.

The consequences of these developments potentially transform the ways in which governments interact with their constituents, manage their affairs, strengthen transparency and ensure good governance. Therefore, capacity building is increasingly also meaning the take-up, adaptation and exploitation of online technologies. Governments worldwide have recognised the significance of these developments as manifest in initiatives such as the e-Europe strategy and the Florianópolis Declaration.

Realising the full potential of these technological advances is a challenge in itself. To perceive these developments simply as technological issues is to misunderstand their reach and relevance for policy, training, infrastructure, service governance, design, production and delivery, as well as technical literacy and awareness. But established ways of doing business and managing government have long traditions, and significant change will often encounter professional and vested interests, so that the most important ingredient for change will be government leadership, vision and change management capabilities. This leadership in turn requires new understanding in government and it is here that this *Introduction* seeks to contribute.

The exploitation of these online technologies is not a predetermined phenomenon along a naturally emerging path. There are many possibilities with many potential benefits and many dead ends. Within the mature market economies of developed countries it is often preferred to allow the market to select the successes from the false starts, although even here governments are being expected to develop policies and legislation and build infrastructure to facilitate new processes.

Developing countries are faced with greater urgency to generate positive outcomes while at the same time have less investment capital and infrastructure available. Developing countries, already facing tensions reflecting deep divides in income, geography, education, literacy, and gender and demographic issues, can ill afford exacerbation of these tensions being compounded by a digital divide and other risks that they are exposed to through this phenomenon.

Government e-Leadership

E-government procurement (e-GP) exploits online interoperability to add value to the relationship between government buyers and business. An effective e-GP strategy can deliver a broad range of benefits to taxpayers, the economy and the community generally. It does this by facilitating new value-added services, cost savings and improved transparency and governance in the market place to enable changes in work practices and open new market possibilities. These changes affect management at all levels of the supply chain and potentially all businesses in the economy and need to be underpinned by appropriate legislation, infrastructure and training as depicted in Figure 1.

Government leadership has a role to play at two levels if the potential of these technologies is to be fully realised. First, public sectors typically make up 35% of national economies and are strategically placed such that their impacts on the business environment may be even larger than this. For this reason organisations such as the Economic Commission for Latin America and the Caribbean and the European Union explicitly recognise that one of the best drivers of technology into the economy is through government adoption, including e-GP.

Figure 1
Government E-Leadership
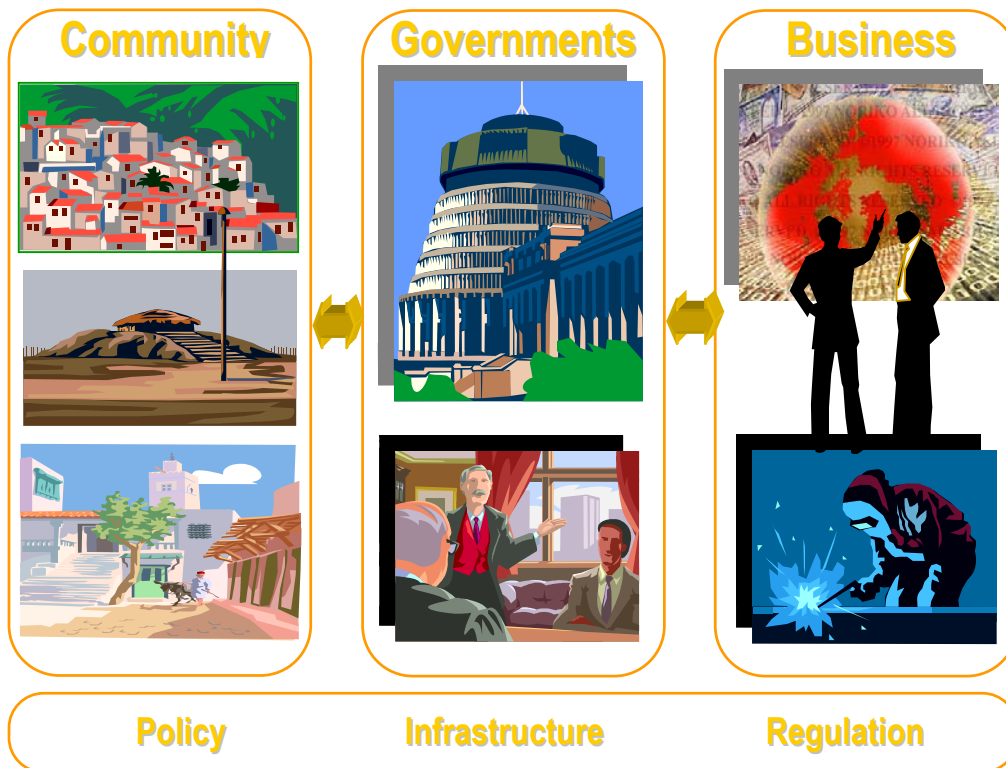
At a second level government leadership is important at the bureaucratic and policy levels if e-procurement is to be successfully implemented within government operations. Online technologies allow the production and distribution of public services to be

managed in new ways with improved governance and at costs that can make previously unaffordable services a possibility. These benefits will only be realized through significant changes in the organisation of government operations and as such will require effective change management and leadership, in the absence of which the outcome may be at a net cost with technologies operating alongside or simply replicating traditional operational methods.

Objectives and Challenges of E-GP

The objectives for an e-GP strategy can be defined in terms of the internal benefits to government operations and in terms of the externalities of technological take-up in the broader economy. Only the former will be the immediate focus of organisational management in the development of e-GP but government, through its policy settings, has the option of delivering broader benefits. Together, the fulfilment of these objectives would yield benefits for a range of stakeholders including greater transparency for the community, cost reductions for taxpayers and technological activation of business.

Economic Significance

The potential significance of government adoption of e-commerce might be gauged from the work of Douglas C. North who determined that for a modern economy 45% of GDP can be accounted for by the cost of transactions[*]. A strength of technology is its ability to substantially reduce the cost of transactions. Even conservative estimates of the productivity benefits from technology, if extended economy wide, could be expected, *a priori*, to have large gains on the productivity and competitiveness of the whole economy. With government accounting for a substantial proportion of the economy, the speed of take-up of technology by the economy will be significantly influenced by the rate of government adoption. It is also for this reason that the e-commerce model and standards adopted by government carry greater weight than the immediate applications intended within government. A strategic approach to technology by government which harmonises with its industry policies could enhance interoperability and connectivity throughout the economy as well as the community with potential gains in productivity and competitiveness. This would be promoting the so-called 'leap-frog' scenario through the 'network effect' of government business activities.

Governance

Complementing these economy-wide opportunities are important operational objectives internal to government operations. Technology offers the potential to substantially strengthen the transparency of government procurement, addressing an area of sometimes intense public interest. Government procurement is often identified with tensions between public expectations of high standards of governance, management requirements for performance, overt political influence and broader stakeholder interests particularly from the private sector. Compounding these issues are widespread misunderstandings within the executive structures of organisations and of governments as to what procurement actually entails, what skills are involved, what risks are implied and what opportunities may be available. Failure of awareness and expertise at this level commonly represents as great a risk to good governance as political interference. Even in

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[*] 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.

developed jurisdictions with mature administrations the issues are sometimes poorly appreciated and susceptible to systemic failure of accountability often because the agents of accountability themselves may have at best a weak appreciation of these issues.

Emergent technologies have now begun to offer relief for some of these problems, such that governments can begin to design government procurement regimes (e-GP) which offer greater consistency between the goals of high standards of transparency specifically and governance and performance generally.

Efficiency and Effectiveness

The benefits of online technology for the efficiency and effectiveness of government operations reflect, *inter alia*, the impact of e-GP on the cost of transactions and value-for-money outcomes. The beneficiaries in this case are taxpayers and the community generally. The potential impact of e-GP on the cost of transactions has been variously assessed as saving from 12% up to much greater estimates, depending on the measures used. These transactions savings relate only to workflow. At another level there is clear evidence that e-GP can increase competition in the market thereby reducing the prices paid by government: experience suggests that this factor can be expected to yield between 5% and 25% savings with the higher end of the range more likely to be found in developing countries.

In addition to these outcomes e-GP can be expected to provide significant but less quantifiable benefits through greatly improved management information and analysis, laying the foundation for innovation in sourcing, aggregation and service production. Currently most large government organisations will have only limited insights into the buying profiles of their staff, what they are purchasing, who they are purchasing from or where these purchases are going

Objectives

Three sets of objectives for an e-GP strategy therefore can be identified as illustrated in Figure 2. Frequently, developing countries have a stronger focus on the governance issues with others more interested in the effectiveness and efficiency goals. Most jurisdictions also have an interest in the third objective – economic and business development. In some cases, such as Korea, enhanced policy making capacity is defined as a further objective for e-procurement.

All three sets of objectives are mutually compatible and can be pursued simultaneously for much the same costs as aiming for just one of these levels alone. The issues are primarily about design, standards, management and policy rather than resources.

Figure 2
Reform Objectives for E-GP
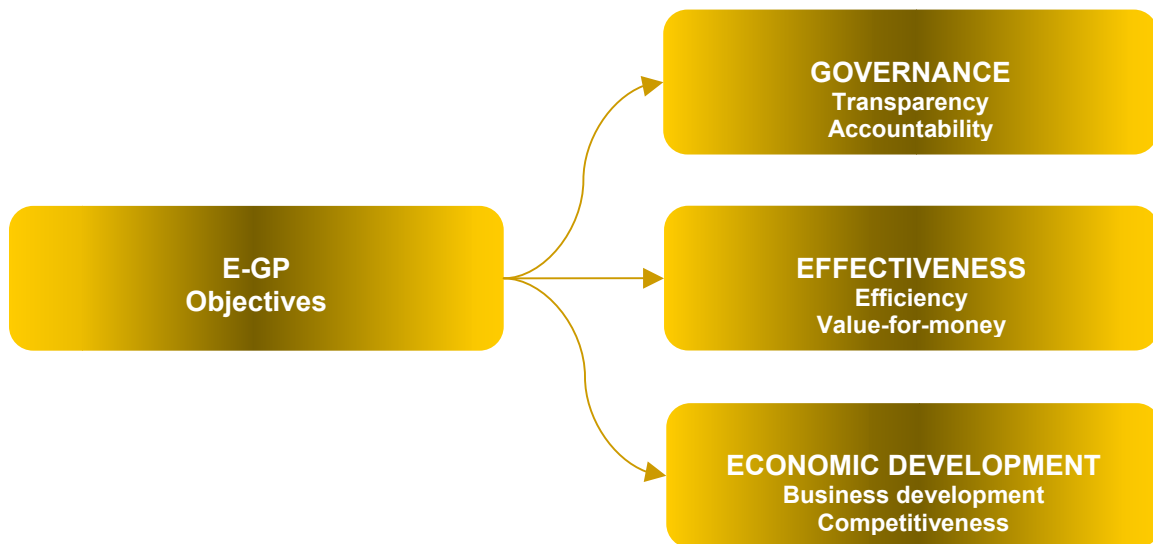
However while all three sets of benefits are mutually compatible it does not follow that the pursuit of just one or two will automatically deliver all three. For example greater transparency and accountability, as well as efficiency of transactions can be generated from an e-GP framework built around closed standards, but such a framework will have restricted interoperability and play less of a catalytic role in the broader technology take-up of the economy

Challenges

The development and implementation of e-GP strategies face several basic challenges. Common amongst these are:

- Weak policy and operational leadership. E-GP involves significant change management and a weak leadership framework will invite fragmentation of objectives, interoperability and methodologies.
- Weaknesses in management, planning and ambiguous or divided ownership of the reform programme, rigid processes and regulations, poor contract management, staff apprehension and departmental imperialism
- A misunderstanding that e-GP is primarily about technology and therefore is to be implemented by technologists.
- Regional economies that are often dominated by small and medium enterprises (SMEs) with widely varying, but commonly low awareness, understanding, or skill in relation to new technology.
- Apprehension that is often widespread amongst SMEs that sometimes perceive new online technologies as a threat to business. This apprehension is heightened

if Government buying agencies begin dealing directly with the online catalogues of major corporations thereby locking out small, offline and regional players.

- Government activity, especially procurement, that is sometimes subject to intense scrutiny and must be undertaken within a tight policy, accountability and probity framework – a framework that is poorly understood by private sector service providers.
- Confusion over standards or the emergence of competing closed trading environments or limited interoperability.
- Inadequate access and connectivity to communications infrastructure.
- Uncertainty about the legislative environment around e-commerce.
- Poor pre-existing procurement practice, legislation and regulation.

There is sometimes also a perception that e-GP is a technological system that should operate in a competitive environment such that multiple systems should prevail within government, all competing for government workflow. It is preferable to regard the technology supporting e-GP as infrastructure rather than a service and, like most infrastructure, efficiency is ensured through regulated management rather than expensive duplication which itself requires regulation to ensure interoperability. Equally it is viable to have alternative solutions between various regional or national jurisdictions, provided that they are based on open standards that allow efficient interoperability. This issue is more fully discussed in *Standards*.

Compounding these issues is the complexity of government procurement which precludes the possibility of a one-size-fits-all model for acquisitions. The sweep of government procurement is extensive and varied, ranging from the acquisition of minor items such as office supplies through to major construction, telecommunications, defence, hospital supplies and complex services. This supply side, or government procurement, affects thousands of suppliers, thousands of line items and is usually managed by hundreds or even thousands of procurement managers within numerous government agencies and authorities. This complexity and its associated governance are rarely well understood by private sector advisors and developers.

Finally, it is a common perception that the benefits of e-GP derive from the displacement of manual handling of the substantial processes associated with procurement. While these workflow savings may be significant for major organisations they can be secondary compared to the potential for new ways of doing business, the scope for innovation, consolidation, compliance, business intelligence and collaboration. The management of the technology issues will be secondary to the management of the business and personnel issues in a successful change strategy.

A Strategy for e-GP

An e-GP implementation strategy can be mapped in terms of five distinct elements including leadership, functionality, technical design and standards, private sector activation, the key enablers of infrastructure and web services, and finally the important issues of governance, management and legislation as shown in Figure 3. Strategies are required for all of these elements.

Figure 3
An E- Procurement Strategy
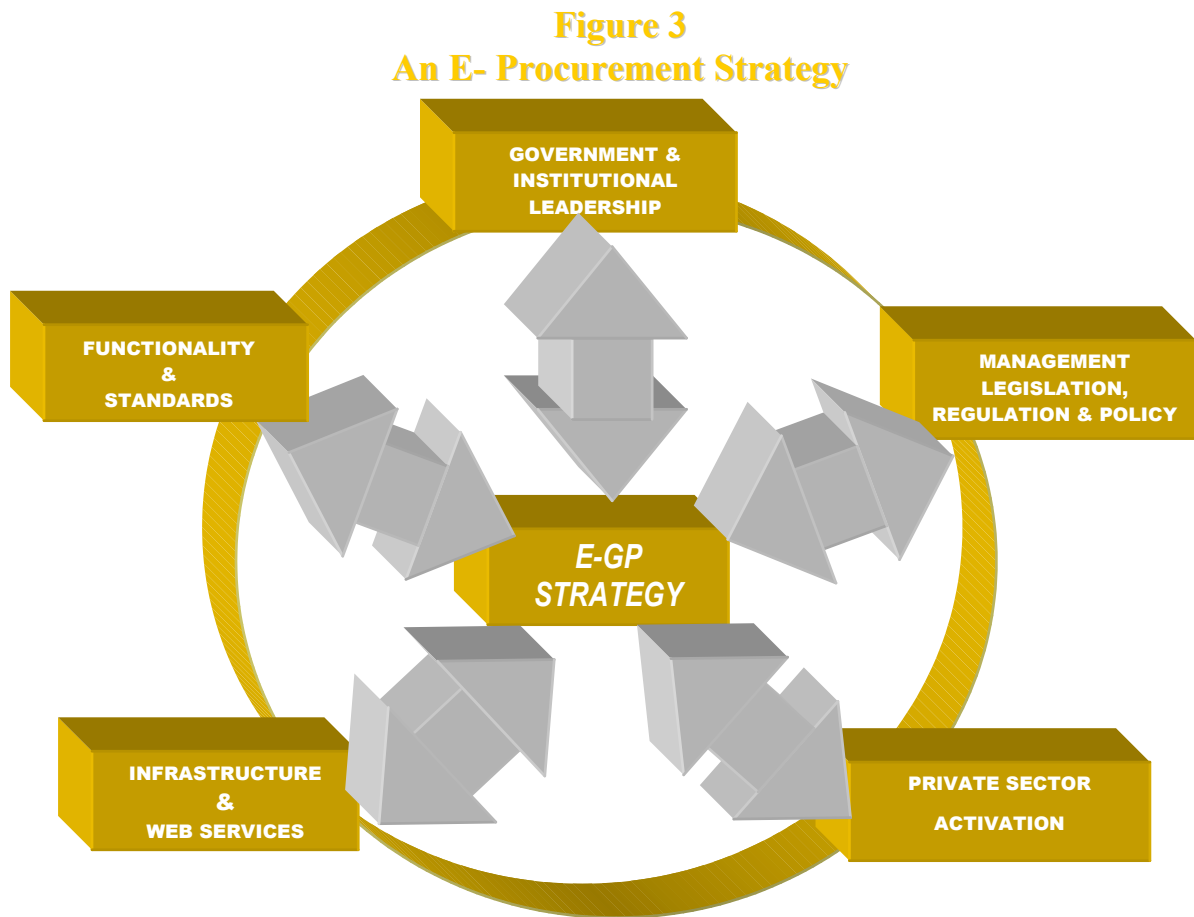
Jurisdictions will vary in their capacities for each of these parts and in some instances it may be that no reform will be required for some elements of the framework. Nevertheless this framework and its supporting toolkits are designed to be a checklist and roadmap that should assist with risk management for even the most prepared administrations.

Government and Institutional Leadership

An essential ingredient for successful e-GP implementation is unambiguous government leadership, with, for example, cabinet policy endorsement. Government leadership defines and drives the vision of what is to be achieved. The operational translation of this vision is also crucial and the government will need to nominate a lead agency to implement its policy and manage the risks. A suitable agency may already exist (a specialist procurement agency, for example, may be appropriate). Lead agency endorsement identifies and authorises a lead agency to lead and manage the transition to e-GP. The idea of a lead agency in this exercise is important for it defines the need for coordination and collaboration across government.

Conversely the introduction of effective e-GP cannot be expected to succeed through devolved implementation. There are many reasons for this. For example, for the online posting of tender opportunities, the prospect of numerous agencies maintaining equally numerous online tender sites would imply not only that costs, licences and maintenance be correspondingly multiplied but also an expectation that businesses search each of these numerous government sites on a regular basis instead of a single consolidated site. Similarly devolved implementation of e-GP is likely to include adoption of disparate standards, whether open or propriety, leading to difficulties of interoperability, costly licensing and lock-in or expensive re-alignment at a later date. Despite such risks, left to themselves without government leadership, this is the path that agency 'sovereignty and imperialism' can be expected to follow. Actual examples include government agencies within the same building lacking interoperability of even mundane applications such as email. The expertise required to guide government through these issues is scarce enough on a whole-of-government basis and does not exist on an individual agency basis in most cases. These difficulties are greatly enhanced when agencies move beyond e-tendering into e-purchasing.

For these reasons Cabinet sign-off and lead agency establishment are important first steps to establish leadership, coordination and effective outcomes as well as the mechanism by which the requisite expertise can be assembled.

This central lead agency role to ensure common standards and coordination essential for the technology to be able to be effective should not be confused with centralisation of business processes or control. The accountability for business processes remains firmly with agency managers and is not transferred to the technology or to the lead agency. Thus the systems should be preferably designed around common platforms or at least common open standards but retain flexibility to be customised around the individual business processes of each agency or decision points within agencies.

Complementing this political leadership is a requirement for institutional or organisational leadership. The lead agency requires resources and expertise not just in technical areas but also to undertake change management. A fear by procurement managers is that they will be 'disinter-mediated' by technology. Participation by procurement managers of the transition to this new environment as part of change

management is imperative. Without careful management at this level, issues of governance, standards and efficiency are at risk of compromise.

The change management process will recognise that for professional procurement officers these new approaches offer new opportunities and closer integration with management and, rather than 'disintermediation', will demand up-skilling.

Technology affects the skill requirements for procurement but is not a substitute for inadequacies in this area except at the periphery; instead it generates a requirement for education and training for procurement officers. Labour savings will be available but these will occur predominately with officials for whom procurement is mundane processing or is just one of a range of duties (smaller agencies) and for whom the disintermediation of their procurement processing will often represent welcome relief allowing for greater productivity in other responsibilities.

Management, Legislation, Regulation and Policy

Technology is not a substitute for poor procurement regulation, legislation or poor management practice. E-GP is best regarded as a business system rather than as a technology system. For it to deliver its objectives the technology needs to be founded and coordinated within effective legislative and management frameworks.

E-commerce in government also provides the opportunity for major enhancements to transparency for the great volume of smaller transactions which have hitherto been effectively unauditable. The potential for technology to enhance governance and transparency has been noted previously for public administration. The potential effect of new technology on transparency of process can transform procurement fraud control from a process that relies largely on chance to one based on audit sampling of 100% if required. Through the same mechanism it also provides the wherewithal for more meaningful management information for decision making about procurement methodologies ranging from spot purchasing, fixed term contracts, multi-agency aggregation or even outsourcing. Therefore the same technology brings together greater transparency on the one hand with the potential for improved management performance on the other, thereby relieving the tension between compliance management via regulation and performance management through devolution. This transformation will change the management and policies around government procurement with new audit and compliance regimes and greater management information available about all aspects of procurement.

Figure 4
Focus of Management Capabilities
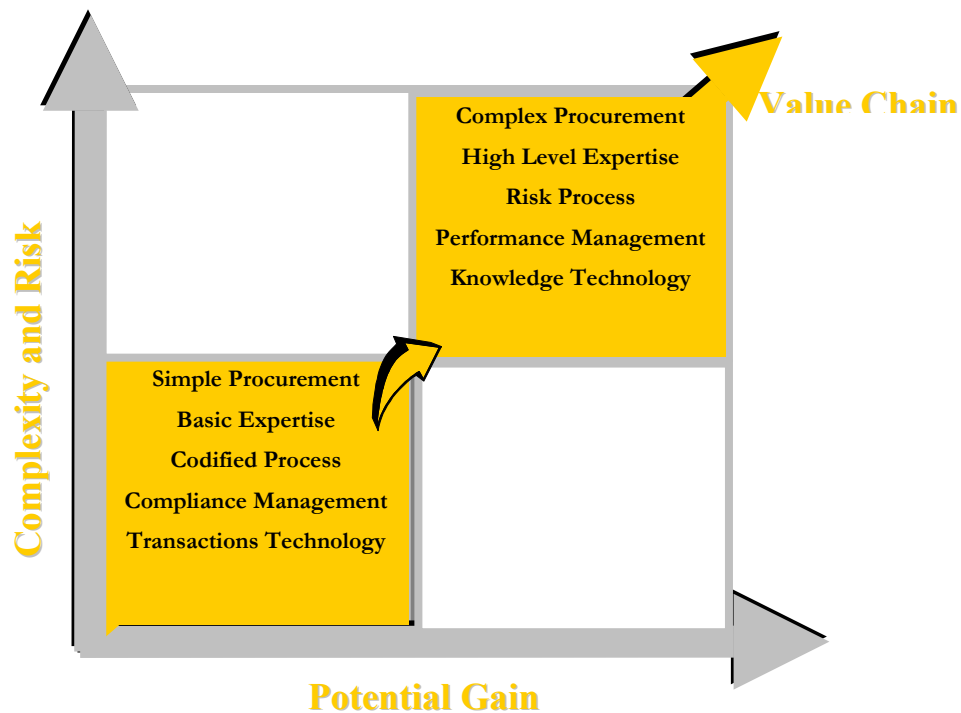
Improved procurement information enables management to challenge its traditional supply requirements and to look more intelligently at shared service options, leasing versus purchase and various alliance possibilities and also to review procurement methods themselves such as reverse auctions, business profiling and panel contracts. E-GP lays the groundwork for management to become more strategic about its supply side as shown in Figure 4. For some of these developments new regulations and legislation are likely requirements.

Private Sector Activation

All markets, including those relevant to e-GP, are comprised of a 'buyer' side and a 'seller' side. An e-GP strategy that attends only to issues within government bureaucracy may find itself with a limited 'sell' side of little value to buyers. The participation of the private sector cannot be taken for granted. .Experience suggests that the most effective way to promote business activation is through the immediate value proposition. Businesses will be sceptical of investing in a 'good idea' but receptive to a credible business case that offers lower costs or greater tangible opportunity.

A business activation strategy will address existed contracted suppliers, non-contracted suppliers and may also work with the service industry that supports business applications. A 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

A business awareness, consultation and orientation programme is vital. Also relevant is the structure of the e-GP implementation programme itself where business is initially uncertain about the benefits. 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 business 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.

Infrastructure and Web Services

The potential of online technologies arises from the twin attributes of interoperability which is determined by standards, and connectivity which is a function of infrastructure and web service availability. For developing countries and remote communities connectivity and related variables of bandwidth and reliability can be the principal hurdle to e-GP. A government strategy for e-GP can address these issues at various levels some of which may require co-ordination rather than additional resources including:
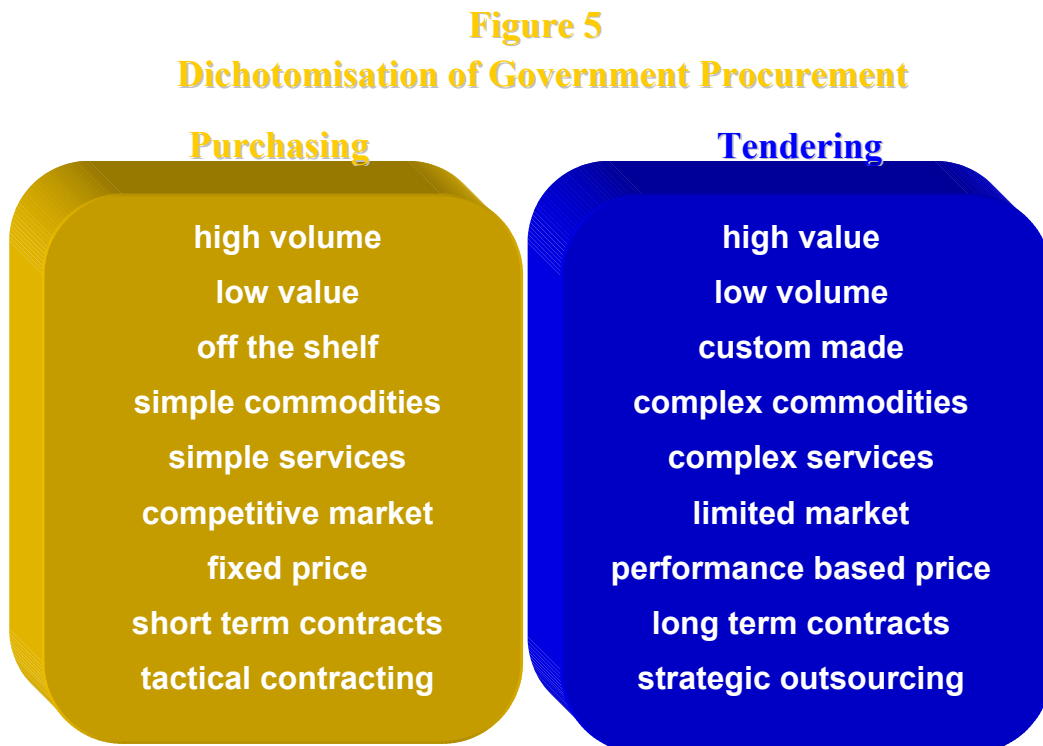
- Kiosk services, retail connectivity (eg internet cafés)
- Service industry development
  - ✓ Catalogue development
  - ✓ Business systems integration
  - ✓ Electronic Trading Associations
- Peering facilitation

- Hardware interoperability (between internet, fax, post, etc)
- Bandwidth design & compression
- Wireless

Included here are elements that would, in developed countries, be regarded as strictly private sector responsibilities such as electronic trading associations (ETAs) and peering. However for developing countries these are frequently at such an immature level that some government facilitation can be desirable.

Functionality

The functionality of e-GP comes in two parts and is guided by the structure of government business dealings – especially by the division between simple and complex procurement. It is usual to differentiate simple from complex procurement and the rules, policies and systems associated with these. While e-commerce in government opens the way for substantial re-engineering of the process, it is unlikely that it will overturn the separation that exists in most jurisdictions between transactions that are simple and low value, and those that are large and often complex as listed in Figure 5.

Figure 5
Dichotomisation of Government Procurement

| Purchasing	Tendering
high volume	high value
low value	low volume
off the shelf	custom made
simple commodities	complex commodities
simple services	complex services
competitive market	limited market
fixed price	performance based price
short term contracts	long term contracts
tactical contracting	strategic outsourcing

In reality the discipline of procurement captures a wide array of individual exercises from the most mundane and trivial to the most complex and high risk. It would seem unlikely that all of these could be addressed through the same technological functionality, and

indeed they cannot. Most transactions in every jurisdiction will be of low value and high volume, including most office supplies for example. Case studies suggest that ninety percent of procurement transactions are for less than $US 3000 and account for perhaps 15% of total procurement. These purchases will usually be undertaken though a simplified quoting system or even straight off a pre-existing contract or through the spot market. The expertise required by government to manage this level of procurement is relatively elementary. This simplified purchasing will be carried across to e-procurement functionality with online purchase orders, RFQs, transactions, etcetera.

For higher valued procurement (typically above $US 25000 – 50000) a public tendering process is the usual methodology. These larger complex and often strategic exercises require high levels of expertise relating to not only the specification and risk management, but also to the ongoing relationship and performance managements required for success. The application of technology to these exercises bears no resemblance to the applications for simple procurement, and will generally be a much easier functionality, with a focus on security and management rather than transactions micro-processing. The application of technology to the workflow and transactions associated with simple, low value procurement can be seen, *inter alia*, as freeing up management resources to address the complex and strategic opportunities that represent greater risk but also greater productivity gains for public finances.

Figure 6
E-Procurement Functionality
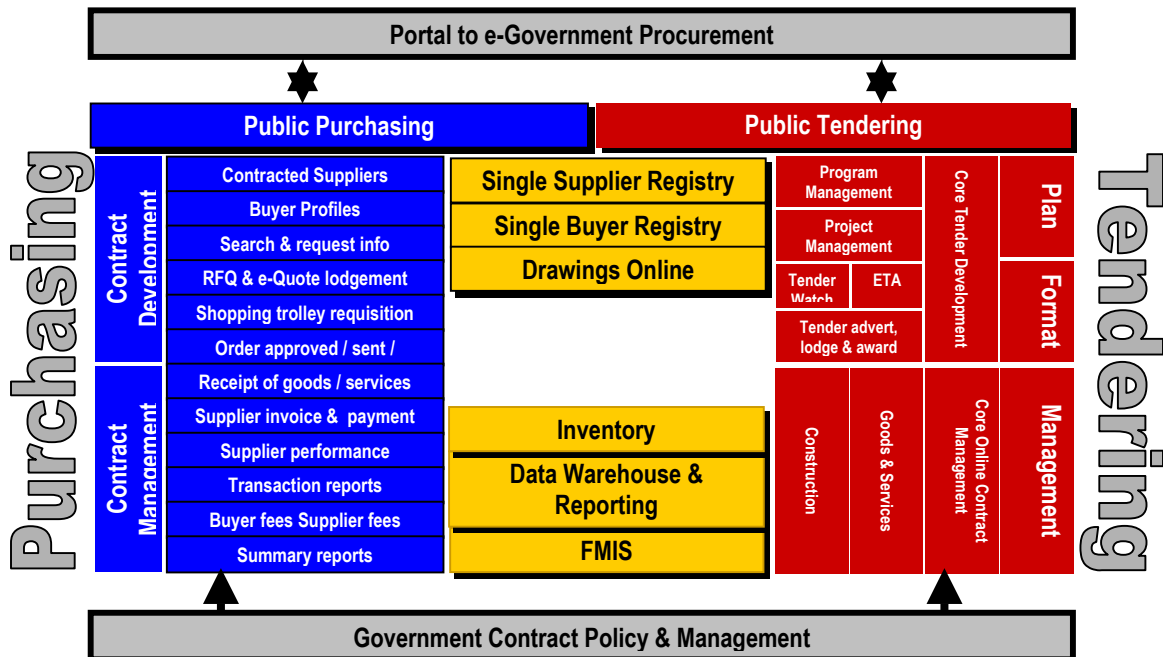
The requirements for greater productivity and improved outcomes from government procurement include low value, low risk procurement which is most susceptible to regulated process and certain sorts of technological functionality. It also sweeps up more

complex undertakings of higher risk requiring higher calibre expertise and problems least susceptible to codification or regulation and requiring quite different technological complements. Any reform programme should preferably address all of these issues as a comprehensive framework since all are interrelated at the operational level as shown in Figure 6.

Standards

Technical standards represent one of the most important issues in relation to these developments, and design decisions involving the explicit or implicit selection of a standard should involve appropriate technical expertise but equally inputs representing business process engineering and commerce. The prospects of locking into proprietary solutions, or into dead end standards are of great commercial, economic, and social significance. These issues will increase over time as the technologies evolve and become even more powerful. The management of the standards issue is made more difficult because the development of standards is in a constant state of tension between the proponents of open standards and the proprietary solutions from which developers can extract economic rents.

The issues around the idea of standards for e-GP are complex and involve interoperability of software, legislation, policy, business systems and other determinants of commerce. These are discussed more fully in a companion report to this ***Introduction***.

Other Issues

These are just some of the issues that are relevant to the concept stage of e-GP. Other topics to be addressed include:

- Ownership & management
- Banking integration – suppliers
- Banking integration – buyers
- Document management
- Purchase card integration
- Data warehouse mapping
- Supplier-supplier connectivity

This e-GP ***Introduction*** is intended to encourage jurisdictions to develop their awareness and understanding of these and other issues at an early design stage of public sector technological enablement in order to capture the full potential of the direct and indirect benefits that new technologies make available.

Conclusion

Developing countries have become increasingly aware of the strategic importance of new technologies and are continuing to prepare programmes to promote their roll-out and take-up. The possibilities for leap-frogging development, strengthening governance and delivering previously unaffordable services are the key drivers for these developments and substantial funds are being assigned to implementation. This enthusiasm is well placed: technologies offer new prospects limited only by the speed of change and imagination. Additionally, technology comes at a cost which is often attractive relative to traditional infrastructure.

However the complexities and risks involved in these activities are frequently misunderstood and the seeds of failure often sown with the presumption that technology *per se* rather than management and culture is the key. Installing new technology can be simple, but experience has shown that extracting maximum benefit involves governance, management, organisational and behavioural changes which are almost always complex.

Also, while much attention has understandably been on government service delivery the significance of the government supply side is often overlooked. In all countries government is a substantial part of the national economy, and shifting its business activities of procurement and construction online (e-GP) has the potential to provide major impetus to the roll-out of new technologies throughout the economy. The operational benefits of technology for the governance and efficiency of these business activities is beyond question.

Overlooked also is that the cost of e-GP implementation is small compared to the activation of online community programmes, yet can have a catalytic effect much greater than competing programmes.

In seeking these benefits the need should not be underestimated for a comprehensive strategy addressing issues of management and leadership, design, standards and functionality, business activation as well as regulation. This *Introduction* is intended to highlight some of the key issues based on the experience of others in both the public and private sectors.

This, and other resources for an e-GP strategy, is provided by *The Asian Development Bank, The Inter-American Development Bank* and *The World Bank* to assist developing countries in this especially strategic part of public sector management improvement and reform.

Support and Assistance

The Asian Development Bank, The Inter-American Development Bank and ***The World Bank*** have combined to provide an implementation strategy and toolkit designed to assist with the understanding and implementation of electronic procurement within the public sector. It is recognised that each jurisdiction may be at different stages in appreciating and exploiting new technologies and that the process is often iterative.

The framework recognises this and is designed to:

- Assess and help define and develop policy objectives;
- Assess a jurisdiction's potential for partial or full exploitation of online technologies for government procurement;
- Explore the challenges facing public sector service managers and executives;
- Identify resourcing, risks and multi-discipline team requirements;
- Define ownership issues, providers and resource requirements;
- Guide measures of progress.

Designed to be thought provoking, promote discussion and suggestions that can be actioned, the framework is also intended to:

- Examine the circumstances of jurisdictions to establish a baseline of understanding and needs;
- Elicit stakeholder feedback mechanisms to clarify issues and expectations;
- Prompt ongoing issues management and development.

This framework includes:

- This ***Introduction for Executives*** to the issues,
- an ***E-GP Assessment*** designed to assist jurisdictions identify their current preparedness and key issues,
- an ***E-GP Implementation Roadmap***,
- a discussion of the important issue of ***Standards***,
- an ***e-GP Guide To Implementation Planning*** to assist jurisdictions to develop their own strategic implementation plans, and
- a ***Web Site*** that enables cross-country comparisons of e-GP development.

It is anticipated that these resources will be complemented with additional links, reports and discussion papers as these become available to build a comprehensive forum for e-GP. Jurisdictions are invited to use these resources to assist their development of this strategically important component of e-government.

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