ELECTRONIC PROCUREMENT IN GOVERNMENT: MORE COMPLICATED THAN JUST GOOD BUSINESS

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ABSTRACT

Electronic procurement has been widely embraced by governments seeking the administrative efficiencies and cost reductions experienced in the private sector. The enthusiastic response has rarely been tempered by critical evaluation of current models for implementation of e-procurement programs. This paper examines the case of Australian government e-procurement where there has been significant progress toward its adoption. It discusses factors in the Australian approach to public management which may affect its success. Other factors besides the technical efficacy of an e-procurement system should be taken into account in designing, implementing and managing these programs. These factors could affect the quality and effectiveness of an integrated e-procurement system and its acceptance by various stakeholder groups.

1.   INTRODUCTION

Electronic procurement has become one of the most successful of electronic commerce applications. It has been widely adopted by companies seeking better business processes and an improved bottom line. These advantages have not been lost on governments which also engage in extensive buying activities and are major customers for a wide range of goods and services. So powerful is the logic of e-procurement adoption for governments that there has been almost no critical evaluation of the organisational issues or implications of implementing these programs. While some authors have noted the practical difficulties in getting the systems operational (Geraint, 2000), there is virtually no discussion of implementation and management models of e-procurement in the government sector or of the consequences of these models for the government, suppliers, the public or for those whose responsibility it is to implement and manage an e-procurement system. In fact, there appears to be little consideration of the management or organisational issues associated with e-procurement. Is it really so straight forward or does e-procurement, as in so many areas of technology introduction, raise issues we have not yet thought about?

In this paper we outline the trend toward government adoption of e-procurement and examine the development of e-procurement programs by the Australian government. We argue that while there are strong reasons for governments to adopt such systems, they cannot be seen simply as extensions of commercial e-procurement applications because governments pursue a wide variety of goals.

We identify two approaches to e-procurement which are distinguished by their relative emphasis on devolution and centralisation. The wider effects of each approach have not previously been examined; they go far beyond the efficiency and streamlining benefits for which the systems were designed. The implications will be felt at the managerial level but they will also influence the effectiveness of the e-procurement system itself, including the design, implementation and potential uses of the system. In order to optimise the use of e-procurement, governments and those who conduct the implementation on their behalf need to be aware of the ramifications of this not-so-neutral technology and take them into account in the implementation process.

2.   BENEFITS OF E-PROCUREMENT FOR GOVERNMENT

In this paper we confine our analysis of government e-procurement to include only government purchasing and payment for goods and services sourced from suppliers. This activity lies within the broader range of government initiatives in doing business electronically which may include electronic service delivery and electronic transactions for citizens, web-based communication techniques within government and between governments and the use of the Internet to enhance the democratic process.

Developing from more rudimentary forms of electronic supply chain management, e-procurement facilitates a flexible, open and efficient way of doing business easily and rationally with a large pool of suppliers and conducting all the subsequent transactions electronically. Electronic catalogues, automatic procurement and 'smart' applications have extended the power of electronic purchasing (Baron, Shaw and Bailey, 2000). The savings in time and paperwork and the greater responsiveness of the system (United States, 1993; Gunyou and Leonard, 1998) are evident. It is small wonder that e-procurement has had such favourable support. Governments have recognised these benefits and have sought to take advantage of them. It is important to note, however, that government agendas are typically more extensive and complex than those of private enterprise where efficiency, cost reduction and time saving are sufficient justification for e-procurement adoption. We have identified three common aims of government initiatives in this area. These aims are, of course interrelated but are conceptually distinct:

Increased efficiency in Government business. In this respect, governments can be seen simply as large businesses with a large volume of transactions and e-procurement is a way of streamlining existing business processes. In the United States it was reported that e-procurement reduced the cost of transactions from US$120 to around $20 and reduced delay from around 40 days to less than 5 days (Church, 1998). The Australian Government estimates that the ratio of processing costs for cheque versus electronic payments ranges between 10:1 and 5:1 (DCITA, 2000; 8). Reductions of transaction costs can either mean the reallocation of resources to other Government programs or through a reduction of Government budgets, smaller business. These benefits are relatively uncontroversial, although the associated reductions in employment may draw some criticism. Nevertheless, there is a consensus that if government business is conducted more efficiently, all stakeholders will benefit: customers, suppliers, taxpayers and public administration (*The Economist*, 2000).

Government as eCommerce initiator. The adoption of e-procurement has also been viewed as a way that Government can lead by example. As a major purchaser, a Government can encourage the adoption of eCommerce with its suppliers. The implications for some SMEs may be negative, but in principle e-procurement has been associated with greater access to tendering opportunities with governments through the development of electronic markets. The trade-off is between greater responsiveness and streamlined processes and a greater openness to a wide range of potential tenderers. This aim goes beyond mere efficiency, however, and is linked with broader agendas to encourage businesses to adopt eCommerce (e.g., NSW, 1998).

Governments worldwide are urging more rapid and more effective adoption of eCommerce by business and in the community as a technique of securing competitive advantage. The uptake has been often less enthusiastic and effective than hoped. Governments may offer support and inducements for eCommerce adoption, but they have few tools as powerful as e-procurement for ensuring that more businesses prepare to operate online at least to a minimal extent.

Modernisation of public service. The third identified goal of e-procurement is to assist in the re-engineering of Government business itself. Not only can existing transaction costs be reduced and streamlined but strategic purchasing across government agencies can be better organised, the purchasing power of the Government can be better co-ordinated and purchasing patterns better monitored and more accountable (Avery, 2000). The greater emphasis on efficiency in purchasing and resource management may increase overall management emphasis on efficient program inputs and measurable outcomes across other programs. This will modernise the administration of Government.

e-procurement can be a powerful tool for shaping and controlling government activity although this was not acknowledged as a major driver of its development. This is an aim that generates significant consequences because it goes beyond the processes involved in purchasing to the nature of public administration and the role of government. Taking full advantage of e-procurement by embedding its processes in the strategic management of government is compellingly logical at one level, but it must relate to the multiple agendas that all governments manage.

3.   ISSUES IN GOVERNMENT E-PROCUREMENT IMPLEMENTATION

In pursuing the three goals outlined above, governments must resolve a number of issues in the implementation of e-procurement systems. Depending on how a government develops an e-procurement system, there will be implications for how it operates *in organisational and political context*, regardless of how it operates technically.

Devolution vs Centralisation

A key issue for governments in the design and implementation of e-procurement concerns the extent to which purchasing decisions are devolved rather than centralised and the level at which they are devolved. There has been considerable debate about how the process of computerisation affects the degree of centralisation in an organisation (George and King, 1991). However, our concern here is not whether e-procurement necessarily leads to centralisation (or decentralisation), but how governments design, implement and manage an e-procurement system to balance its competing goals and a complex mixture of centralised and devolved processes. Governments have multiple and competing policy agendas with different stakeholders and contexts. Pressures for centralisation will coexist with pressures for devolution.

e-procurement facilitates the devolution of purchasing decisions to agencies and individual officers through the use of purchasing cards. This is one of the major benefits of the system which allows flexibility but with greater accountability for financial management (*The Economist*, 2000). Under this approach, procurement decisions can be devolved to line managers or purchasing officers who can determine the appropriate supply through recourse to an established electronic market place, or catalogue of suppliers. Efficiency savings are achieved through more efficient transactions and through easier selection of supplier. Each organisation must develop systems to ensure efficiency, and accountability and to prevent fraud.

An alternative approach is to centralise procurement in a purchasing unit at agency or central government level. Centralisation of procurement allows a procurement unit to determine whole of government or whole of agency purchasing patterns and to 'bundle' or aggregate these purchases and increase the purchasing power of the Government. The UK Government has adopted this approach and established a central agency, the Office of Government Commerce following the recommendations of the Gershon (1999) report. Gershon (1999) in his review of UK civil procurement found:

- Decentralist and delegated authorities had no common framework and coherence, lacked consistency, provided insufficient aggregation to take full advantage of the market.

- There was a clear need for a central body to provide appropriate aggregation and co-ordination. Current arrangements according to Gershon 'lacked the "clout" to lead Government procurement in the 21st Century' (1999: 5) and

- There were no common measurement systems across government of procurement. Gershon (1999: 9) reported that 'the complete absence of any such systems is the finding that gave me the greatest concern during the course of the review'.

Trade off of Objectives

Governments not only deal with organisational and financial management issues, their agencies are also required to operate in ways that advance various other policy objectives, such as supporting SMEs. Therefore, in addition to deciding whether to adopt a more or less devolved or centralised procurement system, Governments must also consider the relative importance of managerial and policy objectives for e-procurement. Just as it is difficult to achieve whole-of-government savings through aggregation utilising a devolved e-procurement approach, it is also difficult for government simultaneously to maximise the objectives of efficiency, increased access to government contracts by SMEs and government modernisation.

For example, e-procurement systems focus on increasing the efficiency of existing transactions, that is on existing ways of doing government business. Other strategies may use e-procurement to maximise the access of SMEs and the promotion of eCommerce. In yet another approach, a government may use e-procurement systems to maximise efficiency savings through a whole-of-Government approach.

Such approaches are not necessarily mutually exclusive. Government may be expected to mix and match these three and other approaches. However, trade-offs between these three aims can be expected that may lead to sub-optimal e-procurement solutions for one or more of these approaches.

4.   GOVERNMENT E-PROCUREMENT IN THE AUSTRALIAN CASE

The Australian Commonwealth government was an early and enthusiastic adopter of the electronic provision of electronic services. It has, however, encountered some difficulty in adopting e-procurement. Its first attempt, Transigo, commenced in 1995. Its key objectives were to help the private sector identify business opportunities in the government market place, to access tender documents, and to generate trading documents electronically. All government agencies were required to utilise Transigo for electronic procurement. The system was plagued by very low take up rates by suppliers with less than one per cent of the approximately 30,000 regular government suppliers subscribing to Transigo (Charles, 1999; 98-99). In January 1999, the Minster responsible announced that the Government would move towards a new electronic commerce system. Unfortunately, there has been little, or no detailed analysis of the failure of the Transigo e-procurement system.

National Approach

In April 2000, the Australian Government announced that it was committed to being a leading-edge user of technology. It aims to bring all appropriate Government services online in 2001. Part of this commitment will be to pay all suppliers to Government electronically and all simple procurement suppliers who wish to deal with the Government electronically will be able to do so by the end of 2001. The Government's intention is to conduct 90% of its simple procurement transactions by electronically by the end of 2001 (DCITA, 2000).

This strategy forms part of a broader strategic direction for the Information Economy in Australia. Australia's approach is to eCommerce is to facilitate industry and consumer take-up, developing a legal and regulatory framework and for the Government to 'lead by example'.

E-procurement is seen as a way that government can:

- Improve the way it does business by reducing transaction costs, making 'smarter' decisions and getting better value.

- Assist small businesses through the reduction of red tape and providing access to small businesses to Government electronic market places

- Influence the uptake of eCommerce (DCITA, 2000: 5-6).

The strategy does not specify the procurement management approaches of Government departments but suggests that the following approaches, or mix of approaches may be utilised:

- Agency purchasing is devolved to line officers supported by standard electronic procurement systems

- Agency purchasing is organised through an Internal Procurement Unit of the Agency

- Several agencies collaborate for purchasing to form a Shared Service Centre

- The agency outsources its purchasing functions.

The procurement process will differ from agency to agency. The strategy identifies three basic approaches: Agencies may choose to transact directly with existing suppliers, to utilise a shared service centre developed by a collection of agencies or to use existing electronic market places as a supplement to current purchasing approaches. The government will not directly develop electronic market places but will stimulate 'new and emerging electronic marketplaces' (DCITA, 2000:16).

The possible trading scenarios for agencies and suppliers is modeled in the implementation strategy in Figure 1.
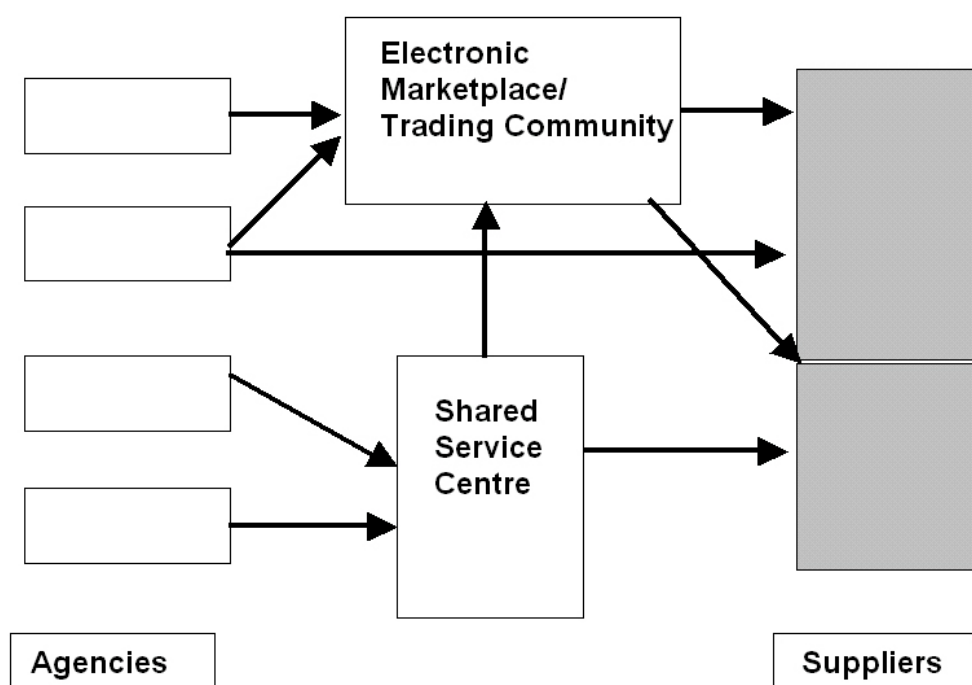

Figure 1: *E-Procurement Trading Scenarios*

Source: DCITA, 2000: 13

The Commonwealth Government's implementation strategy comprises:

- a set of 'enabling projects' to develop a single supplier registration process across the Commonwealth and State governments, the development of a standard electronic remittance advice and the investigation of the impact of e-procurement on IT infrastructure

- a series of pilot and demonstration projects involving volunteer agencies to

    – implement electronic purchasing capabilities with existing financial management information systems

    – develop a supplier community and market place

    – pilot the establishment of a shared service centre for purchasing

    – develop a request and contract documentation database

    – develop an electronic invoicing facility.

Characteristics of the Australian Approach

The following are the key features of the Australian national approach:

(1) Decentralised approach

The current Australian approach is strongly decentralised. The strategy sets a framework, identifying the required targets and providing a generic approach. Individual agencies have the responsibility for deciding the most appropriate way of managing the e-procurement process and determining the most appropriate e-procurement system for that agency according to their needs and context. This decentralised approach is also found in the Department of Finance and Administration (DFA) Commonwealth Procurement Guidelines (DFA, 1998) an in the DFA e-solutions project (DFA, 2000).

It is possible that this decentralised approach is a response to the failure of the Transigo project which determined the electronic procurement system to be used by agencies and suppliers. It is also likely to be informed by the Government's general philosophy of public sector administration.

(2) Focus on Government Business and individual transactions

The DCITA (2000) implementation strategy focuses almost exclusively on the improvement of government business. It is an approach that emphasises the reduction of the costs of individual transactions rather than the aggregation of transactions across the whole of government. However, agencies are encouraged to consider ways of aggregation across agencies but there is no central agency to coordinate or direct such efforts.

(3) No emphasis on BPR and modernisation.

The focus on increasing the efficiency of individual transactions is further emphasised by a lack of consideration of BPR and the potential of e-procurement to modernise or facilitate strategic administrative change within the public service.

(4) Lack of emphasis on monitoring of transactions

The strategy requires all government contacts over A\$2,000 to be reported and published on the government advertising website. However, in line with its decentralist approach, there is no systematic approach to monitoring transactions to develop whole-of-government savings, strategic purchasing, program outcome monitoring or strategic analysis.

(5) Lack of emphasis on SME access maximisation

The DCITA report is silent on the issue of how the implementation strategy can maximise the improvement of access and how red tape will decrease, how the strategy may increase or maximise the uptake of eCommerce by business and consumers are not discussed.

(6) A reliance on existing and emerging electronic market places.

Following the apparent failure of the Transigo electronic market place, government agencies are requested to utilise existing or emerging private sector developed electronic market places.

5.   THE INFLUENCE OF GOVERNMENT PHILOSOPHY ON E-PROCUREMENT

Having described the overall characteristics of the Australian national approach, in this section we examine the policy tensions that influence government e-procurement systems. These tensions affect governments, in contrast with the private sector, because of the multiple agendas that characterise government activities at all levels. In other words, the adoption of e-procurement is not just about achieving efficiencies but also about the role and machinery of government in relation to society. Since the late 1970s there has been a trend toward a now-dominant view of government, sometimes termed New Public Management (Hood, 1991; Considine and Painter, 1997; Lynne, 1998). Australia is widely recognised as a subscriber to this approach (Hood, 1991; Considine and Painter, 1997). We can see this philosophy as one of the key drivers of the development of e-procurement in Australia.

Hood (1991) summarises the principles of this philosophy of government as:

- 'hands on professional management'

- explicit standards and measure of performance

- greater emphasis on output controls

- shift to disaggregation of units

- shift to greater competition

- stress on private sector styles of management

- stress on greater discipline and parsimony in resource use.

Embedded in these principles is a tension between devolution, often summed up by the slogan 'letting the managers manage' as opposed to a tendency towards the centralisation of decision making as a result of the focus on efficient resource use and reporting requirements and the development of the view that the government agency is a technical instrument of government policy (Considine, 1997). Managers are expected to be responsible for the administration of their areas including the administration of resources which involves a drive toward devolution. But because managers are increasingly seen as administrators of resources rather than the administrators of policy, their activities are tightly controlled and their performance measured against efficiency and outcome criteria. This constitutes a centralising force. Whereas the rhetoric focuses on devolution and managerial flexibility, centralisation is often the unintended consequence as Ministers, senior executives and central agencies such as Treasury and Finance monitor the efficiency and outcome measures of line managers and agencies.

It would appear that there is no simple solution to this tension and governments may swing between the devolutionary and centralising tendencies in the attempt to maximise the advantages and minimise the disadvantages of each tendency. The management of an e-procurement system must confront these tensions.

Decentralised E-Procurement: Pros and Cons

A significant feature of the Australian approach is the devolution of procurement to agencies and potentially to line officers. The focus on efficiency, of which e-procurement strategies now form a significant part,

often occur at the expense of public service flexibility and adaptability (Trosa, 1997). Public servants are required to make a series of compromises across a wide variety of conflicting policy and client demands. Procurement decisions could be expected to be a series of compromises between efficiency and cost-effectiveness and other government policies and good business practices. A procuring agency, for example, may need to compromise on choice of supplier in favour of Government policies (explicit or implicit) to purchase locally, to support local industry or to avoid particular companies on policy grounds. Local procurement officers may also have sound business reasons for selecting a particular supplier, ranging from excellent but unquantifiable business relations with existing suppliers to time delays in procurement from other sources.

The current decentralised Australian approach in principle provides for these contextual factors in procurement decision making. However, from the perspective of identifying savings across the whole of government, the focus on improvement of individual transactions by the Australian Government can be viewed as a missed opportunity. The Australian e-procurement approach fails to address directly the issues of improvement of SME access and the major efficiencies that may be produced through BPR and more radical approaches to identifying and producing procurement efficiencies across the whole of government.

The Australian e-procurement strategy targets financial accountability through the mandatory reporting of all contracts over A\$2,000. Consistent with decentralisation, little consideration is provided for the design of databases on financial transactions and data mining. In comparison to a modernising, whole-of-government approach, this decentralist approach does not provide a strategic direction for implementation. Participation in e-procurement is to a certain extent voluntary, with no clear central agency driving the initiative. The success of implementation may well depend on the ability to identify relatively short term benefits to agencies of e-procurement that will encourage their participation.

A decentralised approach can be seen to favour certain policy goals such as the facilitation of SME access because purchasing officers can work closely with suppliers. In addition, this decentralised purchasing rather than a central purchasing unit may also facilitate supply by SMEs whereas a central unit would aggregate procurement across the whole of government and therefore favour large suppliers . However, the lack of strategic direction is also shown in the insufficient attention to the stated objective of increased SME access or eCommerce adoption. In the absence of clear policy direction and the dominating emphasis on efficiency, individual purchasing agents may be inclined to meet efficiency objectives rather than consider means of facilitating SME access. This lack of strategic direction suggests that it will be left to the implementation teams to develop, or ignore, the broader objectives such as facilitating SME access.

The risk of the decentralist approach is that implementation may be patchy and dependent upon agency goodwill and may fail to realise other government objectives of the e-procurement strategy. Secondly, as we have argued, the decentralist approach can only effectively maximise efficiencies of individual transactions and greater efficiencies through a whole-of-government approach are foregone.

Is Centralised E-Procurement the Solution?

We will expect a strong tendency in Australia towards a centralist approach in government policy (Considine, 1997) due to problems inherent in the decentralist approach, trends in Australian government philosophy and centralised models of e-procurement elsewhere such as in the UK (Geshon, 1999). What are the implications for e-procurement?

It is likely that e-procurement implementers in Australia will increasingly be required to implement centralist programs. The advantages of the centralist approach are that it includes a clear policy direction and is driven from central agencies. It yields large databases containing a wealth of information on every transaction of Government. This is a powerful tool for government control. For the implementers of e-procurement, it is a relatively straightforward management information system task. However, the tensions identified here may adversely effect the implementation of the centralist e-procurement approach.

Gershon (1999) has argued that monitoring and the development of databases is critical to the UK e-procurement project. These databases not only contribute to greater efficiencies but also provide an opportunity for more transparency and accountability of government agencies. Databases on financial transactions yield much that can be mined to undertake comparisons and analyses of government activity quite apart from financial transactions.

In principal, procurement information can be collected against sub-units of government agencies and against the business programs of those agencies. Central agencies, auditors and Parliament can in principle determine the purchasing patterns of departments at the micro-level. For example, such bodies could examine the particular purchasing patterns of offices to identify unusual spending patterns or to relate those purchasing patterns against other Government policies, such as policies to buy locally or to avoid particular suppliers.

The potential development and mining such databases poses an important issue that may influence the quality and nature of data recorded and the attitude of government agencies to the implementation of e-procurement. Government agencies must not only be financially accountable but also politically accountable. Financial databases such as e-procurement can provide may be used to scrutinise government activity. Procurement data may be used to identify:

- Consultant activity on projects

- Costings of sensitive outsourced projects

- Size and location of suppliers.

Agencies and purchasing officers faced with a variety of policy goals (price, supplier, etc.) as well as the demands of managing the everyday affairs of government business may be reluctant to provide information on these activities, This may not be the result of reluctance to be accountable but a recognition that purchasing decisions are themselves often a compromise between competing objectives and circumstances that cannot be adequately be recorded in the database.

Data mining, whether it be by a central agency, auditor or Parliament will be undertaken according to the objectives set by the analysing agency. Thus data analysis could identify failures of the agency to meet conflicting objectives. For example, an agency could be criticised for failing to meet certain levels of efficiencies in one report but be praised in another for supporting local industry, and be criticised in yet another report for not strictly adhering to some tender procedure criteria in another. For an agency, increased transparency may result in criticisms even where high levels of probity and policy effectiveness are maintained.

The potential of increased transparency through the development of e-procurement information systems may also be seen as a tightening of control of agencies by central agencies such as Finance and Treasury. For agencies, line managers and purchasing officers, the prospect of e-procurement databases and resultant monitoring may be viewed as opening their activities to undue and unfair criticism and increasing the power of central agencies and therefore as a diminution of their ability to manage.

This opening of agency business to criticism and the possible erosion of their responsibility suggest that e-procurement databases will be resisted by government agencies and line managers. Such resistance may range from obfuscation and unhelpfulness to the reduction of the size and quality of the e-procurement data collected. Agency and line management resistance to e-procurement must be considered in the development and implementation of the e-procurement strategy.

6. CONCLUSION: IMPLICATIONS FOR THE DESIGN AND IMPLEMENTATION OF E-PROCUREMENT

The central issue of e-procurement facing policy makers, system designers, implementers and managers centres upon resolving the issues of devolution and centralisation and seeking to optimise the advantages of

both approaches while minimising the disadvantages. In our view, this delicate balance has not been adequately recognised by either by policy makers or system designers.

On the one hand, a devolved, decentralist approach such as Australia's may maintain agency and line manager flexibility and authority but fails to:

- Provide adequate direction on how objectives will be achieved

- Fails to maximise the advantages of a whole of government approach.

The implementation task will involve encouraging agencies to participate in e-procurement, coping with the lack of clear strategic directions and managing the pressure to adapt the e-procurement system towards a centralist model.

On the other hand, a centralist model provides a whole-of-government approach with the promise of greater efficiencies and clearer objectives. The main issue from the point of view of the policy maker is whether or not centralisation is desirable. However, for the implementer, a key issue will be the potential resistance to centralisation by agencies which may result in lack of cooperation and poor data quality of e-procurement databases.

E-procurement implementation may well work best where there is a judicious balance between these two approaches. This may include:

- Limiting the use of e-procurement data to reduce the resistance of agencies

- Avoiding the the mining of e-procurement data in order to gauge political and administrative as opposed to financial performance. This might be achieved by designing parallel lines of reporting on purchasing that involves other government goals.

- Developing clear policy objectives for the e-procurement implementation strategy.

The success of e-procurement strategies will depend partly on the balance between the decentralisation and centralisation. Further comparative research into government e-procurement strategies, their implementation and outcomes will help clarify how these factors impinge on the e-procurement system.

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