

# Market Segmentation for e-Government Services

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## Abstract

*E-government services are already available and their adoption rivals that of commercial sector services (Al-Kibsi et al., 2001; Mellor, Parr & Hood, 2001; Smolenski, 2000). There is still a long way to go though, and as the 'low-hanging fruit' has already been picked (Swedberg & Douglas, 2001), progress on e-government service development and delivery is likely to slow. The harder the implementation issues become, the more that implementation teams can benefit from guidance on how to make progress in spite of apparently intractable problems. This paper develops a refinement of the 'classical' segmentation of e-government service recipients: citizens, businesses, other governments and employees. The usefulness of this segmentation is then illustrated by using it as a lens through which to view several of the key issues facing e-government implementation today. The paper concludes that the segmentation is useful in decision-making when attempting to implement e-government services and identifies further research areas that are being pursued.*

## Keywords

Governments; IS Design; User Types

## 1 INTRODUCTION

It is received wisdom that e-government services are targeted at one of four broad constituencies: businesses, citizens, other governments and employees (Central IT Unit, 2000; Deloitte Research, 2000b; Government of Canada, 2002; Jackson & Curthoys, 2001; Jupp & Shine, 2001; McClure, 2000; Tapscott, 1996). Each of these broad customer groups, or market segments, will adopt and use e-government services differently, and for different reasons (Clarke, 2000; Mellor, Parr & Hood, 2001). But is this segmentation really sufficient? Market segmentation assists in focusing efforts at profitable customers, or alternatively aiming products at subtly different demand characteristics (Carrick, 2001; Central IT Unit, 2000; McColl-Kennedy et al., 1994). Some pundits claim that e-commerce technologies allow us to consider 'markets of one' (Carrick, 2001; Watson & Mundy, 2001); ie, services customised to the exact needs of each individual that uses them. Market segmentation to that level, however, reduces the likelihood of identifying benefits from addressing common needs across broad groups of the market (Clarke, 2000; McColl-Kennedy et al., 1994).

Key issues impeding the development of e-government at present include: how to address security and privacy concerns, determining which services to integrate, and deciding whether to outsource the service delivery either entirely or through public-private partnerships (Central IT Unit, 2000; Chamberlain & Castleman, 2001; Deakins, Caves & Dillon, 2001; Di Maio, 2001b; Office of the e-Envoy, 2001; Rimmer, 2001). Market segmentation can provide alternative lenses through which to view these issues (Clarke, 2000; McColl-Kennedy et al., 1994). Not all constituents of government have or need the same view on these important matters (Clarke, 2000; Deloitte Research, 2001; Mellor, Parr & Hood, 2001; Scholl, 2001) and nor is it practical to make decisions about, say, service delivery partnerships on a one-by-one basis.

This paper proposes a middle ground in market segmentation between the 'one size fits all' approach typical of traditional government service delivery (Burn & Robins, 2001) and the 'mass customisation' approach (Carrick, 2001; Watson & Mundy, 2001). The paper develops this position in the following manner. Firstly, a definition of e-government and e-government services is provided. Secondly, one of the broad constituent groups, 'the citizen' is refined into narrower market segments (Mintzberg, 1996). This segmentation is then tested for usefulness by reviewing how it might influence some key e-government service implementation decisions, particularly:

- identifying the need for the authentication of identity within an e-government service
- the level of security and privacy required for e-government services, and
- when private-sector players might reasonably be involved in e-government service delivery.

Finally, further research opportunities for extending and refining this segmentation are proposed.

## **2 SOME DEFINITIONS**

### **2.1 What is e-Government?**

E-government, or electronic government, is a conceptual extension of the common terms e-commerce and e-business. E-commerce has been defined as “the enablement of a business vision supported by advanced information technology to improve efficiency and effectiveness within the trading process” (December, 1999). The emphasis here is on the trading process; the buying and selling of goods and services between trading partners (e-Commerce Guide, 2002; Kalakota & Whinston, 1996; King & Clift, 2000; Lawrence et al., 1998).

E-business is the electronic enabling of business processes internal to the organisation, which usually includes the purchasing and selling processes (King & Clift, 2000). E-business extends the impact of the introduction of e-commerce internally to improve performance and management across a larger-than-organisation value chain.

E-government is, by extension, the electronic enhancement of interactions between governments and their constituents (Jackson & Curthoys, 2001; Mellor, Parr & Hood, 2001). “Simply stated, [e-government] is the use of technology to enhance the access to and delivery of government services to benefit citizens, business partners, and employees” (Deloitte Research, 2000a: 1). This definition is appealing as it does not stipulate a specific need for the Internet and focuses on who is involved. Other definitions tend to focus too heavily on the need for the Internet in delivering e-government services (for example, Legislative Assembly Office, 2001). Although the early focus has been predominantly electronic service delivery (Bellamy & Taylor, 1998; Jupp & Shine, 2001; Tapscott, 1996), e-government includes e-business and e-commerce activities as appropriate (Jackson & Curthoys, 2001). Some authors (Caldow, 1999; Government of Canada, 2002; Lapre & van Venrooij, 2001; Watson & Mundy, 2001) describe e-government as involving two main areas: service provision and policy formulation. This paper focuses on service provision.

### **2.2 What are e-Government Services?**

The Australian National Audit Office (ANAO) developed a categorisation of electronic government services in a review of the impact of the Internet on electronic service delivery (Australian National Audit Office, 1999). The ANAO’s model suggests services move from passive information dissemination, through active information provision, interactive transactions and finally to integrated interactive services. Typical examples of e-government services are: exchanges of information and payment to obtain some permission, to register for a service, to claim a benefit (Parliamentary Office of Science and Technology, 1988), giving and receiving of money or information, and regulation and procurement (Central IT Unit, 2000). Other concepts of e-government, such as the necessary element that the service must be wholly requested online, and wholly provided online (Legislative Assembly Office, 2001) appear too prescriptive and do not allow sufficient latitude for already successful approaches involving government services being provided through electronic communications with agents (for example, Australia’s electronic taxation lodgement scheme and customs import document lodgement scheme (Rimmer, 2001)).

However, it is important to bear in mind that “not all [government] services are amenable to the electronic mode of delivery, because of issues such as bulky submissions, interview requirements, and submission of physical samples and so forth” (Alan Siu, Deputy Secretary of Information Technology & Broadcasting Bureau, Government of Hong Kong, quoted in Deloitte Research, 2001: 17).

## **3 SEGMENTING GOVERNMENT CONSTITUENTS**

We now turn to who government serves to understand how moving to e-government might affect that service and its recipients (Deloitte Research, 2001; McClure, 2000; 2001). As already introduced, government serves four broad constituencies: citizens, businesses, other governments and employees (Central IT Unit, 2000; Deloitte Research, 2000b; Government of Canada, 2002; Jackson & Curthoys, 2001; Jupp & Shine, 2001; McClure, 2000). We will attempt to refine this market segmentation in the ‘citizen’ constituency to illustrate the usefulness of such further segmentation on strategies for implementing e-government (Clarke, 2000). The citizen constituency is regularly referred to by a variety of names: citizens, customers, clients, the public, etc. Sometimes, these titles are used interchangeably, for example: “The emancipated citizen is a highly demanding client, who wishes to be treated in a customer-friendly way” (Lapre & van Venrooij, 2001); but they should not be (Mintzberg, 1996; Scholl, 2001). This paper defines and uses these terms with more precision.

Mintzberg (1996) proposes that constituents of government can be classified into four groups: customers, clients, citizens, and subjects.

### 3.1 Customers

Customers are those constituents of government that purchase commodities from government agencies; for example, utilities, lottery tickets, etc (Mintzberg, 1996). The interactions are usually brief, and the relationship between the customer and government is a commercial one (Deloitte Research, 2001; Mintzberg, 1996). Similar interactions are often conducted by customers with non-government agencies. Mintzberg (1996) questions why government still maintains roles that involve such transactions or service such constituents. The government rarely adds any value in these transactions simply because it is the government.

The focus of attention when considering the interactions of government with *customers* is that of driving cost out of the transaction (Bellamy & Taylor, 1998; Deloitte Research, 2000a). The government must respond to commercial pressures or lose its customers to competitors; either private sector delivery, or other governments (Deloitte Research, 2000b). This objective is typical of the drive towards using electronic commerce to deliver transactions to customers in the private sector to protect and increase market share (Kalakota & Whinston, 1996; Lawrence et al., 1998; Tapscott, 1996).

### 3.2 Clients

Clients are constituents that purchase or receive professional services from government over a period of time, possibly over their whole lifetime; for example, health services, education, job location services, etc (Mintzberg, 1996). These interactions are similar in character to professional services offerings (Deloitte Research, 2001; Mintzberg, 1996) where the longer the relationship goes on, the more complex and tailored the service is for the individual client. The relationship between the client and government is a professional one. Government is frequently, but not always, the sole source of such services.

In interactions between governments and *clients*, the focus of attention is on delivering a commercially appropriate, quality outcome for the individual (Bellamy & Taylor, 1998). Government frequently delivers such services as a lower-cost alternative to commercial offerings to cover 'market failures'; for example, legal aid, and education (Davis et al., 1993). These services are offered to guarantee access for all government constituents, regardless of their inability to pay (Davis et al., 1993). Governments attempt to ensure that clients receive the correct, appropriate and complete service that they require at the minimum government cost. Again, interactions of this type are enhanced by e-commerce technologies, although there are clear potential benefits from e-business techniques.

### 3.3 Subjects

Subjects are constituents that receive mandatory service from government, without the opportunity to influence the parameters of service provision; for example, prison inmates, tax payers, and national service conscripts (Mintzberg, 1996). These interactions tend to be personal, to the extent that the service is applied tailored to individual circumstances, however the relationship is subjugatory; the government compels the subject to accept the service as the government deems that it should be received. The delivery of these services is generally seen as a government obligation, although there are examples of these services being delivered by outsourced providers under the guidance and monitoring of government.

The focus of attention for interactions between governments and *subjects* is to seek a fair, consistently applied, service delivery. These services are a direct expenditure of government funds and consequently must be expended with utmost regard to efficiency and probity. The nature of these services demands that attention also be paid to the correctness or appropriateness of the delivery (Bellamy & Taylor, 1998). Mechanisms that support this focus lie within the realm of e-business, as defined here. Electronically-enabled internal processes provide greater efficiency in delivering these services, and provide the necessary management information to ensure that the services are efficiently and appropriately delivered to the relevant constituents.

### 3.4 Citizens

Citizens are constituents that receive services from the government at a broad level; for example the provision of infrastructure such as sewerage, roads, air traffic control, etc (Mintzberg, 1996). These interactions tend to be more impersonal, and are generally provided in a one-size-fits-all manner. The relationship between government and its citizens is essentially one of benefactor and beneficiary, although this is not a strict definition. The government is generally accepted as the appropriate deliverer of these services. However, recent trends in infrastructure outsourcing are pointing back to times when government did not have a large hand in such activities (Officer, 1999). Importantly, government maintains the role of policy setter and regulator where these services are delivered by non-government bodies.

Citizens also have another important relationship with government, that of 'owner' (Swedberg & Douglas, 2001). Governments act to address the needs of citizens as expressed by them through actions such as voting, lobbying, and direct feedback through agencies and to elected representatives (Caldow, 1999; Davis et al., 1993; Government of Canada, 2002; Watson & Mundy, 2001). Citizens interact amongst themselves to form and promote the needs governments seek to address (Caldow, 1999). These activities can also be enhanced by electronic interaction (Bellamy & Taylor, 1998; Caldow, 1999; Government of Canada, 2002). Tapscott's (1996) vision of Internetworked Governments specifically includes the idea of government "foster[ing] the launching of 'virtual interest groups,' which can contribute to societal well-being."

The focus of interactions of governments with *citizens* is to ensure a consistent, equitable, and appropriate outcome from the whole sequence of interactions involved in delivering the service. These interactions encompass the idea of a two-way interaction between citizens and government to determine the nature, delivery means, and outcome of the service that government provides (Caldow, 1999; Clarke, 2000; Government of Canada, 2002; Lapre & van Venrooij, 2001). The level of sophistication that such interactions might ideally achieve requires significant complexity in any under-pinning information technologies.

## **4 TESTING THE SEGMENTATION**

As indicated in the introduction, there are a series of implementation issues that governments world-wide are considering at present (Central IT Unit, 2000; Chamberlain & Castleman, 2001; Deakins, Caves & Dillon, 2001; Di Maio, 2001b; Office of the e-Envoy, 2001; Rimmer, 2001). There is little guidance to assist implementers of e-Government services to address these issues (Office of the e-Envoy, 2001; Singh & Foley, 2001). Singh and Foley (2001: 404) acknowledge that a key element of decisions about e-government service implementation rely on specialist knowledge of "users/customers". We will now review how the proposed market segmentation can throw light on the decision-making processes in these issues for individual constituent services.

### **4.1 Individual Identification**

A key issue for e-Government services is whether and how to identify individuals using the electronic service (Carrick, 2001; Chamberlain & Castleman, 2001; Cohen & Eimicke, 2001; Office of the e-Envoy, 2001). The characteristics of the market segmentation proposed provide insight into this issue. By considering the nature of the services delivered to each segment, and the use to which those services would be put, guidance on the need for identification can be developed.

*Customer* interactions as defined are usually simple purchase-like transactions or the collection of information provided by the relevant source, usually for free. Such interactions are usually or could be conducted anonymously, even where payments are involved.

*Client* interactions are heavily dependant upon the identity of the recipient, usually because the individual's circumstances dictate the nature and extent of the service. In keeping with this high-individuality in service delivery, *clients* are probably already identified by some reference number provided by the agency(s) providing the service. This identifier could be used for identification in online service delivery, possibly with the addition of a password or PIN for authentication.

Similarly, *subject* interactions are heavily dependant upon the identity of the recipient, again because the individual's circumstances dictate the extent of the service. Here too, *subjects* are almost certainly already identified by some form of reference number within the relevant service delivery agencies. Furthermore, the nature of the government-*subject* relationship allows the government to insist upon authentication as well as identity, either through passwords or PIN numbers, or through more sophisticated technologies, if required.

*Citizen* interaction need not inherently be anonymous, but the nature of *citizen* interaction as defined here suggests that anonymity might promote greater uptake of services; for example, anonymity might increase the use of electronic discussion boards with topics related to current government policy areas.

It is clear from this brief review that the market segmentation can assist in decisions regarding whether or not to identify constituents during interactions.

### **4.2 Security and Privacy**

The issue probably more concerning for Australians is the obvious implication of significant insight by government on everything about everyone as e-government services proliferate (Bellamy & Taylor, 1998; Chamberlain & Castleman, 2001; Deloitte Research, 2000b; Government of Canada, 2002; Mellor, Parr & Hood, 2001; Performance and Innovation Unit, 2000; Privacy Commissioner, 1999). A balance must be drawn between the efficiency of government and the privacy of its constituents (Bellamy & Taylor, 1998; Chamberlain

& Castleman, 2001; Cohen & Eimicke, 2001; Deakins, Caves & Dillon, 2001; Privacy Commissioner, 1999). Inevitably, the question must be put to the constituents: 'are you willing to pay, through your taxes or otherwise, for the inefficiencies left in the system to protect your privacy?' There will also be difficult policy and technical issues around how long information must be maintained, and how long it is validly used in decision making.

This is a non-trivial policy area that cannot be solved by this paper. However, the market segmentation proposed does offer a means of determining where progress can continue to be made while robust policy solutions are developed.

As the government rarely competes for its *customers*, and we have already discussed that *customer* interactions would normally be anonymous, unrelated over time (by definition), and we are deliberately not seeking 'mass customisation' segmentation, there is probably little benefit in remembering the *customer* from one interaction to the next. Consequently, the potential to compromise the constituent's privacy is minimal. Security during the interaction, particularly for payment transactions, is likely to be valued, however, the common levels of security provided by commercial sites (eg, SSL server-based transactions) is probably sufficient.

Interactions with *clients* involve personal information and it may be mandatory to collect the *client's* history over time as a basis for further service determination. These are exactly the elements that lead to demand for highly secure and confidential electronic channels (Carrick, 2001). The development of acceptable security approaches and believable guarantees of privacy are required for these services to be adopted.

Just as *clients* demand security and privacy, *subjects* will have similar demands for exactly the same reasons. Indeed, because of the subjugatory nature of their role in the interactions, the expectation for security and privacy protections may be higher than for *clients*. As mentioned above, the opportunity to enforce high levels of authentication of identity in *subject* relationships may actually promote the resolution of the security and privacy issues here ahead of the *client* relationships.

Just as *citizen* interactions are similar to *customers* in the identity matter, the need for security and privacy may be similar too. There is probably little benefit in remembering the individual *citizen* from one interaction to the next, although demographic trends are potentially important. This means that their privacy is likely to be assured. Security during the transaction may be necessary, particularly to convince constituents of their anonymity, but this is unlikely to require more sophisticated technology than is already available through SSL-based server security and anonymising technologies such as crowds, onion routing or LPWA (Gabber et al., 1999; Goldschlag, Reed & Syverson, 1999; Reiter & Rubin, 1999).

Again, the segmentation allows decisions to be made about where progress can be made to develop and deliver e-government services while the thorniest issues inhibiting implementation are resolved.

### 4.3 Service Integration

Another key focus of current e-government activity in Australia and overseas is integrating e-government services (Alston, 2002; Deloitte Research, 2000b; 2001; Di Maio, 2001b; Jupp & Shine, 2001; Lapre & van Venrooij, 2001; Office of the e-Envoy, 2001). This is a difficult area with significant technological hurdles to overcome, as well as possibly intractable political issues (Carrick, 2001; Deloitte Research, 2000b; 2001; Jupp & Shine, 2001; Lapre & van Venrooij, 2001). How might our market segmentation assist in this area?

The relative simplicity of *customer* interactions suggests that they are unlikely to benefit from integration substantially. It is certainly possible that bundling transaction services together in a portal and facilitating a single payment for a variety of services would be beneficial, but these are not substantial integration issues (Deloitte Research, 2000b; Jupp & Shine, 2001; Lapre & van Venrooij, 2001).

There may be opportunities for integrating services to *clients* as the nature of the services is more complex and frequently benefit from incorporation in a more holistic view of the constituent (Deloitte Research, 2000b; 2001; Lapre & van Venrooij, 2001). However, Australian government agencies that deliver *client*-type services are already bundles of similar services to at least some extent as a result of several years of 'customer-centric focus' in government (Deloitte Research, 2000a).

The opportunities for integrating services to *subjects* stem from the potential efficiencies in administering the service that integration delivers, rather than from adding value to the service itself (for example, the concept of a completely integrated justice system) (Deloitte Research, 2000b). Integration at this level is exactly where the major difficulties lie and so this segment is likely to be a low priority target for integration activity until the issues can be addressed.

The opportunities for integration in services to *citizens* are likely to be limited, given the nature of the services and the absence of existing infrastructure to integrate.

Assessing integration priorities using the market segmentation developed indicates that there are areas where progress can be made while difficult technical and political inhibitors are removed. The Australian and overseas governments are already delivering *customer* services through portals with some success (Deloitte Research, 2000b; Jackson & Curthoys, 2001; Jupp & Shine, 2001; Office of the e-Envoy, 2001; Smolenski, 2000). Portals that aggregate *client* services will tend to focus on cross-government grouping of services and can still add value for the constituents (Deloitte Research, 2000b). The other market segments will remain a lower priority.

#### 4.4 Third-party Providers

Finally, we will apply the segmented-market perspective to the issue of whether third-parties can or should be involved in e-government service delivery, either through integration of e-government services with third-party services, or by the formation of public-private partnerships where third-parties act on behalf of the government in service delivery (Chamberlain & Castleman, 2001; Deakins, Caves & Dillon, 2001; Office of the e-Envoy, 2001; Performance and Innovation Unit, 2000).

*Customer* interactions are potentially the most amendable to third-party delivery, either through integration with third-party services or by third-party delivery on behalf of the government. A key qualifier of this might be the need for *customers* to be assured that the information they are receiving originated from the government, and not from the third-party (Al-Kibsi et al., 2001; Deloitte Research, 2001). This could be overcome through appropriate branding of government information, even when presented within broader third-party services (Al-Kibsi et al., 2001; Deloitte Research, 2000b; 2001).

Even though *client* interactions are often very personal and long-term, the need for the government to explicitly deliver the service is low. Provided that the third-party deliverer is seen to be professional and to meet appropriate standards in service delivery, *client* services can be delivered on behalf of the government by third-parties (for example, education, health services, etc). Similarly, the ability to bundle *client* services with related services offered in the private sector is seen as valuable (Deloitte Research, 2000b; Lapre & van Venrooij, 2001).

There is a very real need for the government to be seen to be delivering the service to *subjects*, even if third-party service providers are involved (for example, tax assessments and the role of tax agents). Although private prisons operate in some states of Australia, few prisoners would be of the view that they were not prisoners of the state or the Commonwealth.

Again, it is important for the government to be seen to be delivering the service for *citizens*, although there may be occasions where the government must be seen to absent while the service is actually consumed (for example, an un-moderated political debate on a government-provided electronic forums to facilitate and promote free speech and civic engagement). Lapre and Venrooij (2001) report on research that indicates that moderated debates can still promote substantial engagement though. If the *citizens* feel that they are only being served by lobby groups or other non-government peak bodies (eg, industry associations) they may feel that their voice is being filtered before the government hears it (Lapre & van Venrooij, 2001).

Table 1 summarises the guidance indicated by the market segmentation as described above:

Table 1: Summary of Market Segmentation Guidance

<i>Issue</i>	<i>Customer</i>	<i>Client</i>	<i>Subject</i>	<i>Citizen</i>
<b><i>Individual Identity</i></b>	Not required	Use existing reference number Offer some authentication	Use existing reference number Use sophisticated authentication	Not required Allow voluntary identification
<b><i>Security and Privacy</i></b>	SSL-based transactions No privacy issues	High-level security Significant privacy issues	High-level security Significant privacy issues	SSL-based transactions No privacy issues (if anonymous)
<b><i>Integrated Services</i></b>	Portal to bundle related services	Portal to bundle related services	'Back-office' system integration	(Probably) Not relevant

<i>Issue</i>	<i>Customer</i>	<i>Client</i>	<i>Subject</i>	<i>Citizen</i>
<b>Third-party Delivery</b>	Visible third-parties OK  May benefit from Government branding	Visible third-parties OK  May benefit from Government accreditation	Invisible third-parties OK  Must be strongly Government branded	Third-parties NOT OK  Government provided, but not necessarily government controlled

#### 4.5 Areas that Segmentation Cannot Address

There are some areas where the market segmentation does not provide any particular assistance. We will briefly review two such areas: provision of support for certain services, and over-arching infrastructure issues.

The e-government Australia is currently implementing is more of a ‘consumer democracy’ (Bellamy & Taylor, 1998), or a ‘thin democracy’ (Astrom, 2001) than a ‘strong democracy’ (Astrom, 2001; Bellamy & Taylor, 1998). There is not yet any explicit support for electronic citizenship; the interaction of citizens among themselves to determine appropriate responses to changing events (Astrom, 2001; Bellamy & Taylor, 1998; Caldow, 1999; Lapre & van Venrooij, 2001) and which Tapscott (1996) sees as so crucial to an ‘Internetworked Government.’ Similarly, the role of elected representatives is somewhat unclear. If governments were driven by the data inevitably collected in interacting with constituents, and policy-making public servants are empowered by that data to adjust policy and legislation to respond most appropriately to changing requirements (Bellamy & Taylor, 1998; Chamberlain & Castleman, 2001; Deloitte Research, 2000b; Di Maio, 2001a), what do the politicians do? Although the market segmentation identified here clarifies what scope of services are under-supported (*citizen services*), it does not assist in identifying how to further promote their support at a policy level.

The other key element that the market segmentation cannot assist in is the infrastructure on which to operate the e-government. By nature, government services generally apply to all constituents; at least *citizen* and *subject* services (Bellamy & Taylor, 1998; Central IT Unit, 2000; Deakins, Caves & Dillon, 2001; Jackson & Curthoys, 2001; Performance and Innovation Unit, 2000; Smolenski, 2000). Consequently, all constituents must have access to the service. If the infrastructure for the delivery of these services is not available, constituents will be unable to access the services (Bellamy & Taylor, 1998; Central IT Unit, 2000; Deakins, Caves & Dillon, 2001; Jackson & Curthoys, 2001; Kalakota & Whinston, 1996; Performance and Innovation Unit, 2000). Currently the responsibility for the delivery of this infrastructure in Australia rests in the commercial sector, although regulated by government, including a ‘universal service obligation’ aimed at achieving consistent, equitable access for all Australians (Department of Communication Information Technology and the Arts, 1999). There may yet prove to be a compelling case for the ownership and responsibility for the provision of the electronic infrastructure to lie with government so that it can fulfil its fundamental role (Deakins, Caves & Dillon, 2001; Kalakota & Whinston, 1996; Weill & Broadbent, 1999). As suggested in the discussion of security and privacy, it may come to a question for constituents.

## 5 CONCLUSIONS AND FURTHER RESEARCH

This paper has presented an initial market segmentation of the individual constituents of e-government services. Although relatively simple, it is more refined than the current approach adopted in e-government service development in Australia. As the paper has shown, such a segmentation can assist in making decisions on priorities and approaches to addressing some of the main problems facing e-government service developers today. Consequently, the segmentation is a useful tool for these decision makers that might allow Australia to maintain its momentum as a world-leader in e-government service delivery.

Further research is currently being conducted to consider and address the following related or corollary areas:

- Is this segmentation the most useful one for individual constituents?
- Can the guidance that this (or some better) segmentation offers for particular e-government issues be made more explicit?
- Are there equivalent market segments available for the other three broad service recipient groups: businesses, other governments, and employees?

- If so, what are they and how will they assist in decision-making in e-government service development and delivery?

This additional research and the practical guidance for e-Government service development that it is expected to deliver form the core of a PhD thesis investigation currently underway.

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