Cost-Benefit Analysis of E-Government: Australia

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목 차

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Abstract

When people contact the government they can use a variety of channels. That is, they go in person to an office, use a telephone service, access information via the Internet, send a letter, or use a third party.

Since the Australian Government first recognised the potential of online technology to improve service delivery in its 1997 Investing for Growth statement, it has articulated its policies and strategies for e-government in a number of papers. E-government involves government agencies delivering better programs and services online through the use of new information and communication technologies.

The policy papers included Government Online-The Commonwealth's Strategy, launched in April 2000, and a new framework for e-government, Better Services, Better Government, launched in November 2002. Most recently, the Government released Australia's Strategic Framework for the Information Economy in July 2004. These papers outlined the broad directions and priorities for the future of e-government in Australia, and sought to maintain the momentum of agencies' actions under Government Online. One of its key objectives was for agencies to achieve greater efficiency in providing services and a return on their investments in ICT (Information and Communication Technology)-based service delivery. They also stated that investing in e-government should deliver tangible returns, whether they take the form of cost reductions, increased efficiency and productivity, or improved services to business and the broader community.

Implementation of the Government policy has led to considerable agency investment in ICT-based service delivery. However, government policy also requires managers to ensure that program and service delivery is efficient and effective. Efficient and effective use of ICT has the potential to improve service delivery and to make financial savings.

This paper outlines how people are using the channels to contact the government in Australia. It also examines the level of satisfaction they have with those services and their preferences and expectations. In addition, this paper aims at identifying the methods used by Australian Government to measure the efficiency and effectiveness of their delivery of services, and at assessing the adequacy of these methods.

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Ⅰ. Introduction

Governments around the world are grappling with the challenges presented by the planning and implementation of e-government. What was conceived as a seemingly simple process of replicating key government activities on new channels has developed into a step change in the way that people access government services. The benefits for governments that have been able to get e-government right are considerable. They include reducing the cost of government service delivery and providing businesses and consumers with easier, cheaper and more effective ways to access governments.

The Better Services, Better Government strategy (NOIE 2002) outlined the broad directions and priorities for the future of e-government in Australia, and sought to maintain the momentum of agencies' actions under Government Online (NOIE 2001). One of its key objectives was for agencies to achieve greater efficiency in providing services and a return on their investments in Internet-based service delivery. It also stated that investing in e-government should deliver tangible returns, whether they take the form of cost reductions, increased efficiency and productivity, or improved services to business and the broader community.

Implementation of the Government policy has led to considerable agency investment in Internet-based service delivery. However, government policy also requires managers to ensure that program and service delivery is efficient and effective. Efficient and effective use of the Internet has the potential to improve service delivery and to make financial savings.

This paper outlines how people are using the channels to contact the government in Australia. It also examines the level of satisfaction they have with those services and their preferences and expectations. In addition, this paper aims at identifying the methods used by Australian Government to measure the efficiency and effectiveness of their delivery of services, and at assessing the adequacy of these methods.

Ⅱ. Australian E-Government Policies and Strategies

1. Overview

E-government is defined as the process of transforming government so that the use of the Internet and electronic processes are central to the way government operates (AGIMO 2003). E-government is about managing the issues around access to services by individual citizens and businesses.

The Australian Government recognised the potential of online technology to improve service delivery in its 1997 Investing for Growth statement, which announced an Information Industries Action Agenda to foster development of information technology industries. This included a plan to establish the Commonwealth as a leading-edge user of technology by committing to deliver all appropriate services online by the end of 2001.

Government Online? The Commonwealth Government' s Strategy was launched in April 2000 (DCITA), in pursuit of this commitment. The strategy highlighted some of the benefits to be gained by greater use of the Internet, such as enabling improved service delivery options to rural and regional communities. Under this strategy, all agencies were required to prepare an Online Action Plan by September 2000 (NOIE), stating what would be delivered online, and to set a timetable for delivery.

Government Online made clear that government online services were to provide information about agencies and their programs, and to permit transactions between Government agencies and members of the public or businesses. Internet services were to complement? not replace? existing written, telephone, fax and over-the-counter services, as well as to improve the quality, availability, responsiveness and consistency of those services.

At the same time, the Government assigned the key role of promoting and supporting government, business and community use of the online environment to National Office of Information Economy (NOIE). By December 2000, over 90 per cent of Australian Government departments had established an Internet presence. In his opening address to the World Congress on Information Technology in February 2002, the Prime Minister confirmed that the 2001 target had been met. The Government' s initiatives resulted in the recognition in 2002 that Australia was one of the four leading nations in the western world in its use of e-business to provide Government services (World Market Research Centre 2001).

In its 2002 report on Australian Government use of information and technology, the Management Advisory Committee found that there was a growing demand for government to provide more integrated and interactive information and services. In October 2002, in response to the Management Advisory Committee' s recommendations, the Government established the Information Management Strategy Committee to provide shared leadership of cross-agency technology issues. The Government launched a new framework for e-government, Better Services, Better Government, in November 2002.

The Better Services, Better Government

strategy (NOIE 2002) outlined the broad directions and priorities for the future of e-government in Australia, and sought to maintain the momentum of the achievements under Government Online. One of its key objectives was to achieve greater efficiency and a return on investment. It also stated that investing in e-government should deliver tangible returns, whether they take the form of cost reductions, of increased efficiency and productivity, or of improved services to business and the broader community.

These objectives signalled an emphasis on the benefits of government Internet services for the public and users, rather than earlier concerns with the provision of the technologies and services. They also flagged a more strategic approach to the business cases for developing services. With this shift came a greater responsibility for agencies and for program managers to clarify the purposes of programs and to think more strategically about the use of online services as part of program delivery.

In this regard, Better Services, Better Government stated that it was important for agencies to establish business cases for investments in changes to their operational and business processes enabled by the online environment, and to assess how they are progressing in terms of meeting the broad e-government agenda. This required regular reviews of progress against key performance indicators.

The Australian Public Service Commissioner stated in 2003 that improvements in public sector service delivery over the past decade have been driven by a better informed, better educated and more demanding public, and improvements in technology, which increased the capacity of Commonwealth agencies to provide more immediate and responsive services. He stated further that the current environment is characterised by continued pressure for greater efficiency and effectiveness, rising community expectations for more convenient and sophisticated services, and issues that increasingly transcend agency boundaries (AGIMO 2003).

Most recently, in July 2004, the Government released Australia' s Strategic Framework for the Information Economy. This new strategic framework is designed to build e-government, ensuring the electronic delivery of public sector services and information across all tiers of government (AGIMO 2004).

In the next phase of e-government' s maturation, performance of systems, channels and strategies will increasingly focus on indicators external to government. In essence, the one that will really matter is what the user thinks.

As a first step in this process, governments need to develop a more granular understanding of who is using e-government

services and why, to what extent the services are delivering on the promise of `simplified' interaction with government, what users feel about the services offered, what they are looking for in future and what they see as the `appropriate' role of government.

Australia' s move towards providing effective, integrated services has placed it as a leading e-government nation. Increasingly, governments around the world are moving away from a supply-side focus for government electronic service delivery towards greater attention to user-centred (citizen-centric) design. The Australian government - like other governments in the industrialised world - is increasingly using electronic channels to deliver services.

The Government Online Strategy has proved its effectiveness and delivered on its intent - Australia has a strong international e-government position. A World Market Research Centre analysis (2001) of government web site content positioned Australia third behind the United States and Taiwan. In November 2002, Booz Allen Hamilton, benchmarking the United Kingdom against leading nations, assessed Australia as a leading e-government nation. Australia typically rated second or third across a range of measures of e-government maturity, readiness, take-up and impact (Meller 2002).

2. Demand for E-government

Australians can engage with government through a number of distribution channels such as one-stop shops, call centres and online services. Over time, provision of government services is being transformed from traditional over-the-counter services to fully interactive online services where customers can engage with government via the Internet, at any time, from any place. This transformation is being driven by a need to improve business processes, to engage citizens, and to provide services to yield better outcomes for government and citizens. Complimentary business processes and information technology systems generally support the evolution of these service delivery channels.

Increasingly Australians are demanding easier access to government - people and businesses are demanding better time-saving services. The Internet provides the channel to meet these needs. In the four years from 1997-98 to 2001-02, agency client service strategies and supply-push initiatives, as a result of the Government Online Strategy, appear to have provided the major stimulus for agencies to offer online services to citizens, businesses and intermediaries (NOIE 2002).

According to the survey results (AGIMO 2003), the most popular and well-used sites across the Commonwealth government were:

Jobsearch, Centrelink, australia.gov.au, and e-tax (for people); and Australian Taxation Office, Australian Securities and Investment Commission, Australian Bureau of Statistics, and Business Entry Point (for businesses). The survey had also shown there was a clear citizen expectation that information from government would be provided in an integrated way and structured for consumption rather than according to convenience of service supply within agency boundaries. For example, 75 per cent of survey respondents indicated they wanted more information; 67 per cent wanted more downloadable forms; 43 per cent, greater integration of services between agencies; and 21 per cent, more complex transactions. Satisfying these needs has fundamental implications for agencies.

3. Benefits of E-government

Clearly agencies have responded to the government online initiative and have responded in a way that has received community endorsement. Every program surveyed included an expectation of improved service delivery to users and 87 per cent of programs expected to generate some financial benefit to people. Twenty-four of the 38 government online programs surveyed are achieving cost reductions through a combination of direct savings, lower cost of delivery, and improved internal or business processes. Participating agencies were expecting reductions in costs of about $100 million from 24 e-government programs (AGIMO 2003).

With the creation and use of an e-government capability, agencies have:

lower cost channels of communication with citizens and businesses - e-business channels have offered an additional way of communicating with people which often costs far less, per inquiry, than other forms of service delivery; and

increased resource efficiency - one of the earliest benefits for agencies has been their ability to share information with other agencies via electronic means. Electronic mail and the ability to send attachments has been a great boon for agencies, cutting back the cost of sending paper-based information by courier and reducing the time to transfer information.

Commonwealth government use of multi-agency channels is still relatively uncommon but there is strong evidence that, where programs are delivered this way, there are significant benefits for citizens and for government. Examples of multi-organisation service delivery already exist in the health and business sectors where multiple channels and a combination of agencies are cooperating to deliver services and benefits to customers.

The study(AGIMO 2004) found that:

at least 45 per cent of respondents estimated some level of actual cost savings per interaction using e-government compared to traditional channels, with an average value per transaction across all users of $14.62;

businesses and intermediaries estimated slightly more positive savings benefits than citizens - 23 per cent of business respondents and 10 per cent of citizens claimed more than $25 saving per interaction;

52 per cent saw some (36%) or significant (16%) improvement in business or work opportunities because of e-government programs generated by such agencies as Austrade and the Department of Employment and Workplace Relations (Jobsearch); and

over 65 per cent saw some (49%) or significant (17%) improvement in the way they run their businesses.

Social benefits

Social benefits included more professional development opportunities obtained through using online forums and sharing information and bulletin boards within professional and trade groups. They also included awareness of Commonwealth social programs and benefits. Specific areas of benefit citizens valued included increased community skills and knowledge and new business and work opportunities.

Australians often lead busy lives and are often ' time poor' . Private sector organisations, such as banks, insurance companies, retailers and utilities, have recognised this and are using online services to save customers time and effort in getting information and effecting transactions.

People are now able to receive similar levels of convenience and access when interacting with government. Governments have recognised the Internet as an effective service delivery channel because it provides access to government information and services anywhere, anytime, for anyone with access to a computer and a telephone line.

As a result of using government online services Australians now enjoy:

Faster turnaround of service delivery

24-hour service

More self-service

Improved ability to find information

Wider reach of information to the community

Better communication with rural and remote communities

While social benefit is less tangible and non-financial in nature than the other benefits and therefore potentially more difficult to measure (particularly in financial terms), more than 85 per cent of surveyed citizens (AGIMO 2004), businesses and

intermediaries said the overall benefit to them, of using e-government, was either significant (36%) or moderate (50%).

Social benefit was measured in terms of service improvements, community skills and knowledge, and new business or work opportunities. Over 90 per cent of citizen respondents indicated an improvement in overall service delivery as a result of using e-government; almost 75 per cent indicated significant (30%) or some (46%) improvement in service quality; and over 80 per cent of business and professional respondents reported significant (36%) or some (47%) improvement in services. Rural and regional respondents provided similar feedback to their city counterparts (AGIMO 2004).

The survey and focus groups (AGIMO 2004) highlighted the important role intermediaries play in dissemination information and helping people access government services. Examples from the focus groups included:

> family support - providing research for students and non-computer-literate people;
> matching clients to funding opportunities and grants;
> performing research for a small business owner; and
> working as a volunteer in a community support area.

Focus group participants indicated a strong desire for more information, greater interaction with government agencies and active participation in development of future community-focused e-government initiatives.

Contribution to broader government objectives

Individuals, businesses and intermediaries' views on reduced complexity when dealing with government and ease of finding information online do not appear to be consistent with those of the agencies surveyed (AGIMO 2003):

> 42 per cent of users found it either easy (31%) or very easy (11%) to find information;
> 43 per cent found it acceptable; and
> 14 per cent found it either difficult (11%) or very difficult (3%).

Regional town and/or city users were slightly more positive (48 per cent indicated it was easy or very easy) but, among the business and professional people, only 36 per cent found it so. Whereas, of the 38 agencies participating in the survey:

> 69 per cent claimed they made a significant contribution to making information easy to find; and

25 per cent claimed a moderate contribution.

While close to 70 per cent of people saw either significant (18%) or some (50%) improvement in the access to information and government transparency, the agency view was that only 32 per cent of government online programs had made a significant contribution to more transparent government and a further 26 per cent had made a moderate contribution. The agencies surveyed seemed to underestimate the value of publishing public records and information online, particularly for regional and rural people.

In 2002 the Allen Consulting Group identified wider economic benefit as the result of increased involvement of Australian business in the information economy. The study found that, of the 14 per cent of programs claiming moderate (11%) or significant (3%) contributions to wider economic benefits, the nature of the contribution was in the areas of:

increased labour market efficiencies;
more efficient supply chain management;
reduced cost of overall program delivery; and
increased efficiencies in taking products to market.

On average, people surveyed valued each interaction at just under $15 per session. The agency survey included an estimation of program outputs for services across all 169 programs for four individual years between 1998 and 2004. Using the agency-supplied outputs and the government online user-provided valuation per interaction, an estimate of the perceived user economic benefit from the group of 169 programs can be derived as being around $1.1 billion for 2002 (AGIMO 2003).

4. E-government maturity

Both government and users acknowledge the desirability of a seamless, responsive and citizen-centric government that delivers efficient services' (Rimmer 12 June 2002). Achieving this level of maturity will require a steady progression of collective learning and experience. Evolution of e-government capability can be represented in four distinct but complementary stages, known as an e-government maturity model (see Figure 1). The basis for the maturity model are key concepts relating to:

transaction processing;
extending the degree of fulfilment that can take place online;
integration and collaborative processing;
citizen-centricity; and
whole-of-government delivery

architecture developed with the user in mind and driving integration, as seen by citizens rather than from the traditional view of the agency.

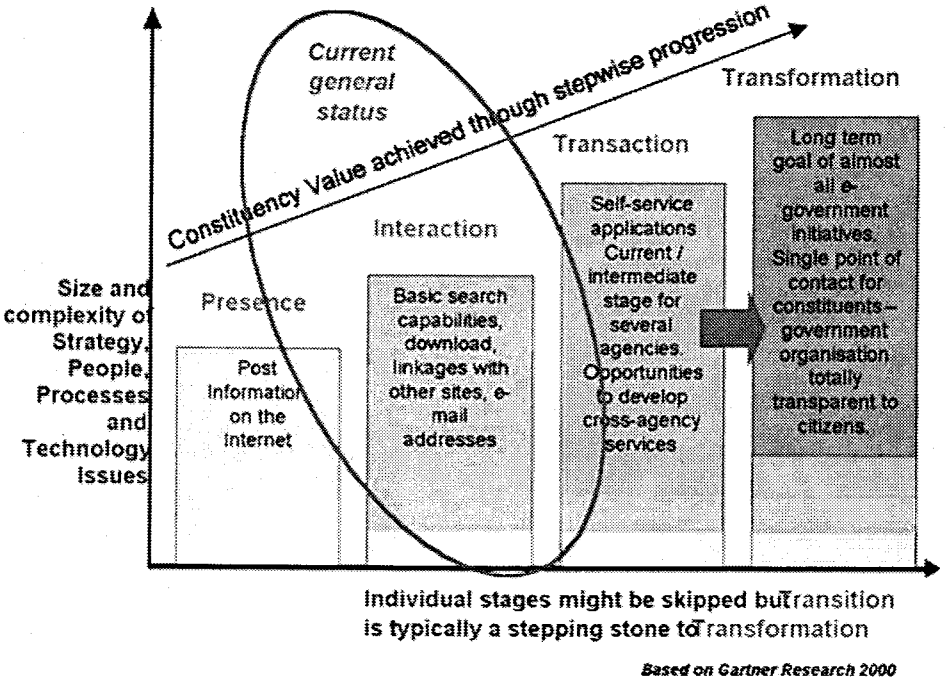


Figure 1: E-government maturity model (AGIMO 2003)

The stages of e-government maturity reflect the increasing capability of e-government solutions. Progression through the stages will deliver more value to users but also comes with increased complexity and development costs. As well, at each stage of the e-government maturity model, user reaction, comfort and inhibitors will differ, resulting in different adoption rates and demand curves.

Progression through the stages represents increasing maturity in a number of dimensions:

static content to dynamic content;
publishing to interaction;
generic dialogue to individualised dialogue;
simple transactions to complex transactions;
inclusion of authenticated transactions;
partly automated processes to fully automated online processes;

agency-aligned delivery to citizen-centric delivery; and
agency-aligned services to cross-agency services.

5. Citizen-centricity

Governments worldwide are recognising that delivery of citizen-centric services is the key to the successful evolution of e-government. Instead of requiring citizens to understand and interact with complex relationships between government agencies, a citizen-centric model is emerging. A citizen-centric model puts citizens at the centre and provides a single interface for citizens to access all government services (see Figure 2).

To better manage transaction frequencies and volumes, some agencies are choosing to do business with citizens through intermediaries and community organisations. To minimise costs and perceptions about authentication, some agencies are attempting to make maximum use of existing investments in virtual infrastructure, such as natural business systems and networks in use by citizens and in the business community.

The Business Entry Point, for example, is a business-centric program delivered across agencies, portfolios and jurisdictions. This program focuses on all stages of the business life cycle and is a portal for business.

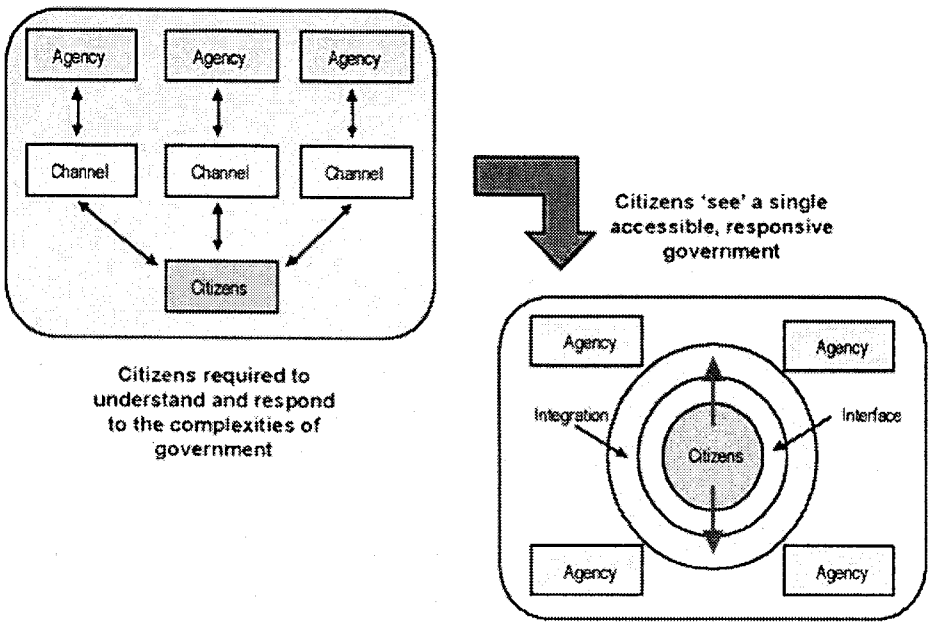


Figure 2: Transition to a citizen-centric model (DITR 2004)

A citizen-centric view requires an indepth understanding of the context within which the citizen is operating as they approach the e-government experience. The structuring of services around agency boundaries is no longer seen as valuable or helpful but it is not yet clear what perspective will add most value.

E-government services will need to be presented within a cohesive structure that is oriented towards the citizen and fits into the life events of the community. Citizen-centricity should be expected to tie together the services citizens need to respond to business or life events. Such integrated services can be expected to answer such questions as:

How do I incorporate a business entity?

How do I deal with a death in the family?

Can I relocate to improve my prospects of employment?

What support payments do I qualify for?

The transition from agency-oriented to citizen-centric e-government may be difficult and time consuming and will require leadership and coordination as agencies work towards a common and agreed architecture. Determining the value and justification of such a shift may be problematic, and individual agencies may need to adjust their normal program priorities and e-government spending to move towards this increasing integration.

The Commonwealth Department of Health and Ageing' s proposed e-government program, HealthConnect, for example, is an initiative with wide population reach and significant economic and social benefit. HealthConnect(2004) would allow health information to be collected in a standard format at the point of care, safely stored and exchanged with those health care providers authorised to access it. It would require high levels of cooperation between Commonwealth and state and territory agencies.

Extending the concept to cover life events that have many interactions with many parties introduces yet more complexity. For example, the concept of developing electronic health records, such as is proposed by HealthConnect recognises the value of sharing patient information at each point of clinical care. The citizen-centric view would thus extend to include a range of service providers who are trusted with, or have a need to know, information that may be private and secure from others. Such concepts, around a variety of community need areas, would allow a more complete understanding of community needs.

The mechanisms of delivering value for people at the front end have to be such that the expected efficiencies of e-government are realised. Thus development must be pragmatic and careful. Citizen-centricity will be an evolving and maturing design

discipline over many years.

6. Organisational readiness for e-government

An extension of the e-government maturity model (see Figure 3) illustrates the stages in organisational learning that an agency needs to go through to develop the organisational maturity needed to consistently deliver quality e-business services.

The anxiety gap represents agencies' fears about conducting their business more openly and about developing the capability to deal with the security and skill issues inherent in an Internet-based online presence. Most agencies have crossed the anxiety gap and are using their web pages to reliably provide information and some transactions.

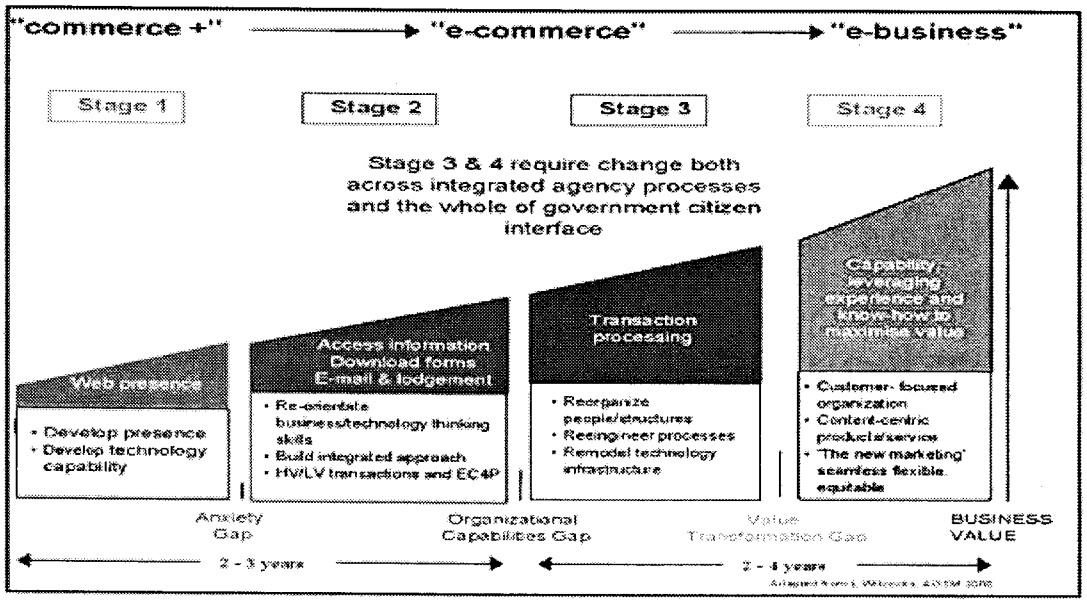


Figure 3: Extending the e-government maturity model (AGIMO 2003)

Early-adopter agencies have already become well advanced in crossing the organisational capabilities gap. They are re-orienting their business and technology skills to introduce business processes that reach back to the workers who provide and maintain the information that is provided online. This organisational learning is enabling early-adopter agency staff to work together to introduce some electronic transactions.

7. An e-government lifecycle

An e-government lifecycle (see Figure 4) has the following unique elements:

when a program is being scoped, it is a time of innovation when increased research into:

o demand and impact and the mechanisms that will deliver against these objectives is needed; and

o the justification and understanding of benefit/cost ratio will be needed so social value can be understood;

as a program is being designed and built there will be a need for exploration and experimentation to discover the best ways to:

o direct design and deployment of the program;

o ensure the service engages target users;

o integrate the program, especially cross-agency; and

o deliver citizen-centric solutions.

after a program is rolled-out it will need to be supported through a transformation agenda of:

o ongoing monitoring of usage and acceptance levels;

o feedback to understand the changed perceptions that will emerge as to the positioning and suitability of the program content and delivery mechanisms; and

o iterative learning and experience by agencies, government and users - a cycle of refinement and renewal.

These elements combine to provide a way to move up the maturity curve while progressively delivering value to the community and to the government.

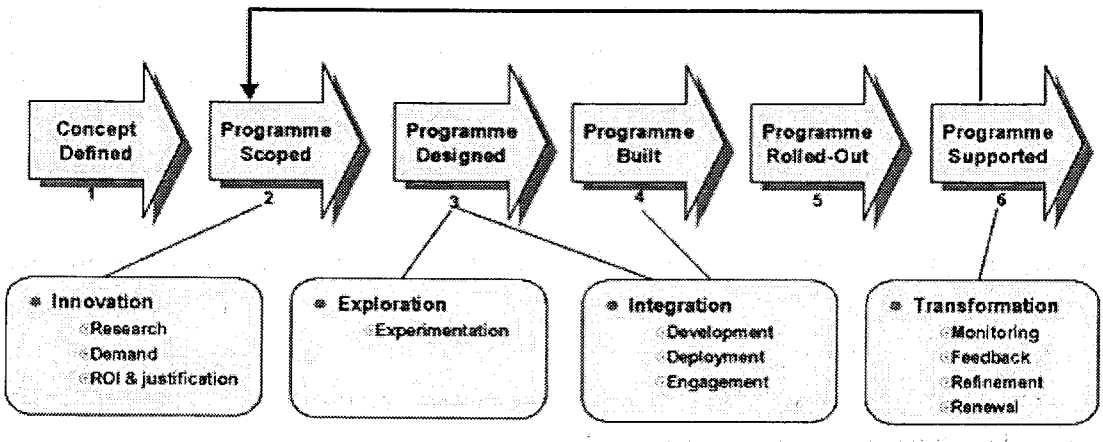


Figure 4: The e-government life-cycle (AGIMO 2003)

8. Reach and impact

The concepts of 'reach' and 'impact' provide a mechanism for assessing the relative value of e-government programs. A reach and impact framework considers the reach of e-government programs in terms of:

the number of consumers who have access to, and use, the services (vertical axis);

the scale of the financial, economic and social impact of programs (horizontal axis),

the breadth of programs, be they single agency, portfolio or cross agency/cross jurisdiction (three shaded areas).

Figure 5 shows a reach and impact framework with e-government programs positioned to show their potential reach into the community and impact on citizens (positioning is illustrative only).

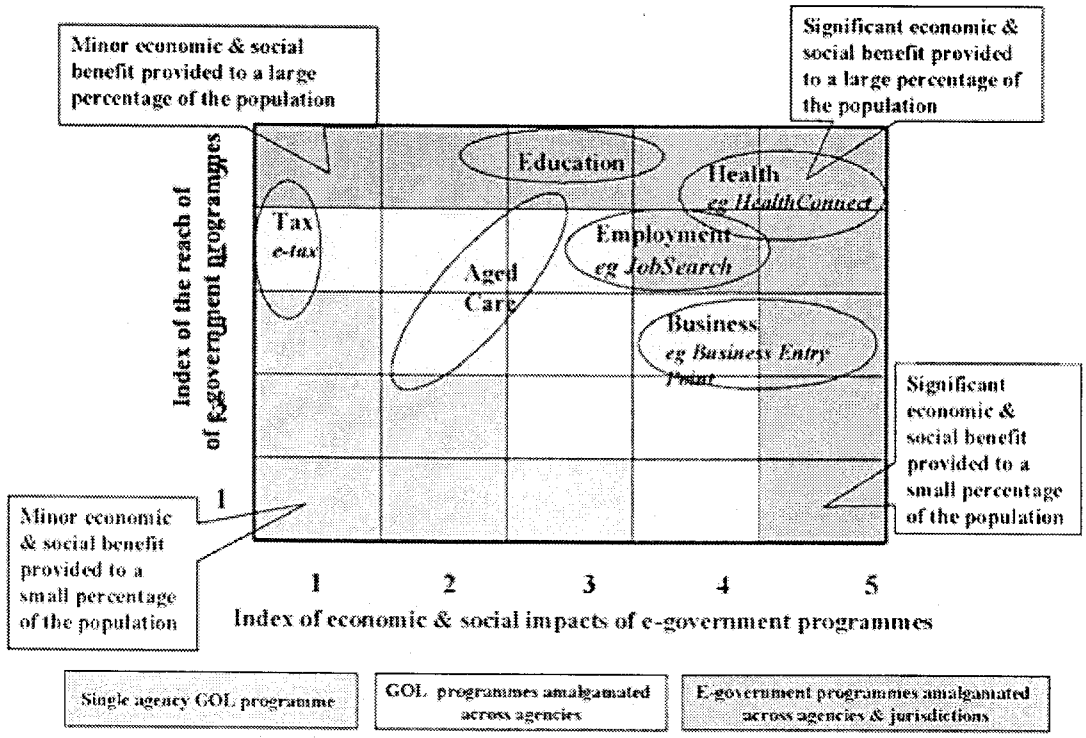


Figure 5: Reach and impact for specific e-government programs (AGIMO 2003)

Application of these concepts, through the demand and value assessment methodologies, provides a way to promote the evolution of management practice and aid effective allocation of funding.

Reach and impact directly relate to the outcomes of e-government programs and thereby become mechanisms for assessing value, approving programs and allocating funding. Developing the concepts of reach and impact, and the tools to support measurement, provide a way to standardise measurements across the ultimate contributions of e-government to society, notably:

increased openness and accountability of government;
increased social value;
increased economic value;
increased social justice and social equity; and
net positive economic benefit from the information economy.

There are strong relationships and cross-connections between: reach and demand; take-up and impact;? maturity; and citizen-centricity.

Ⅲ. Measuring efficiency and effectiveness of e-government

1. Internet use

1) Levels of general Internet use

More than 7 in 10 Australian adults used the Internet in 2003 (AGIMO 2004) and 42% of those people used it daily. The random survey (AGIMO 2004) specifically found that:

71% of respondents had used the Internet at home, work, school, library, or other locations;
27% had never used the Internet; and
2% were not sure whether or not they had used the Internet.

In terms of frequency of use, 42% of people who had used the Internet in 2002 used it daily, 22% used it weekly, 5% used it monthly and only 2% used it less than once a month. People who participated in focus groups indicated that their Internet use had increased over time. Not only were they using the Internet more often, people also said that they were spending more time on it when they did access it. Participants in the groups said the types of tasks they were using the Internet for had changed, and they were now more likely to use it for functional purposes such as banking and paying bills rather than entertainment.

2) Levels of Internet use to access government services

Results for the general population

Figure 4 shows that 39% of adult Australians had accessed a government service via the Internet in the past 12 months (AGIMO 2005). This figure is based on the fact that 39% of all respondents to the random survey said that 'all', 'most', 'some', 'a few' or 'just one' of their contacts with government agencies and services took place over the Internet.

Significantly, 14% of people who reported contacting government via the Internet reported using the Internet in the majority(all or most) of their contacts with government services.

Of the remaining 61% who had not accessed a government service in the past 12 months via the Internet, almost half of these did not use the Internet at all, for any purpose.

Perhaps a more revealing measure is to exclude people that do not use the Internet at all. This reveals that more than half of all Australian adult Internet users (55%) used the Internet to access a government service in the past 12 months.

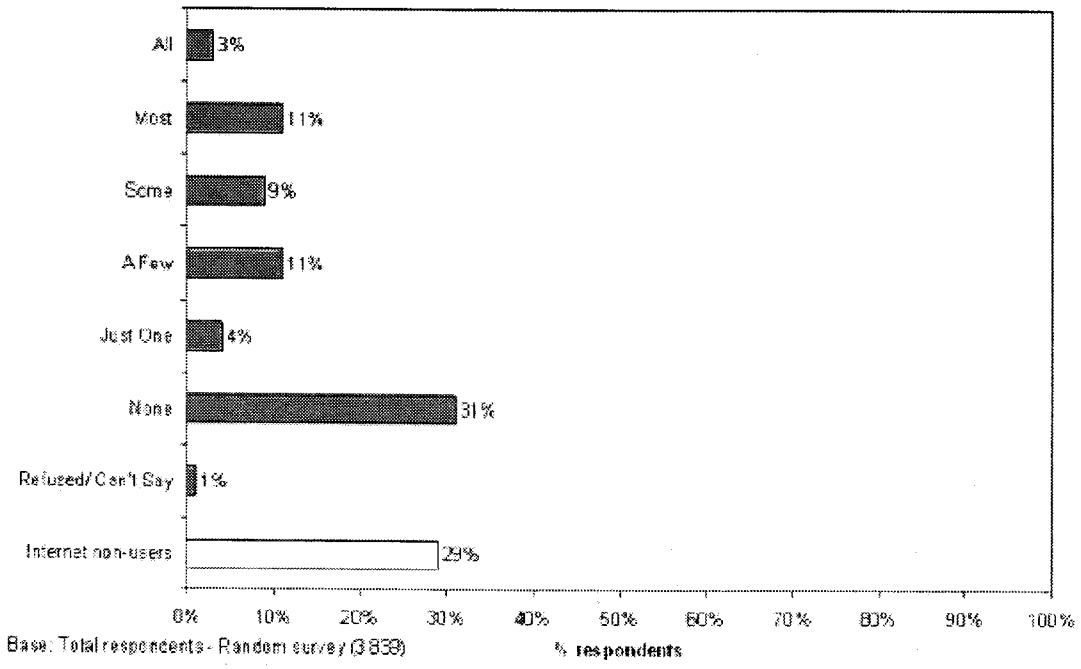


Figure 4 Proportion of contact with government services that respondents thought they did by internet in the past 12 months (AGIMO 2005)

E-government use (currently 39% of Australians) has grown. The most recent data based on a sample size was by the ABS (2004). Data collected in 2002 indicated that one in five (21%) adults accessed government services via the Internet for private purposes. The significant increase in use of the Internet to access government services confirms the steady increase in use that the ABS had found.

2. Types of services being accessed

1) Most popular services and service categories

As shown in Figure 5, the category with the highest proportion of contacts was community and social services (20%), followed by transport (18%), and land, property, planning, and construction (15%).

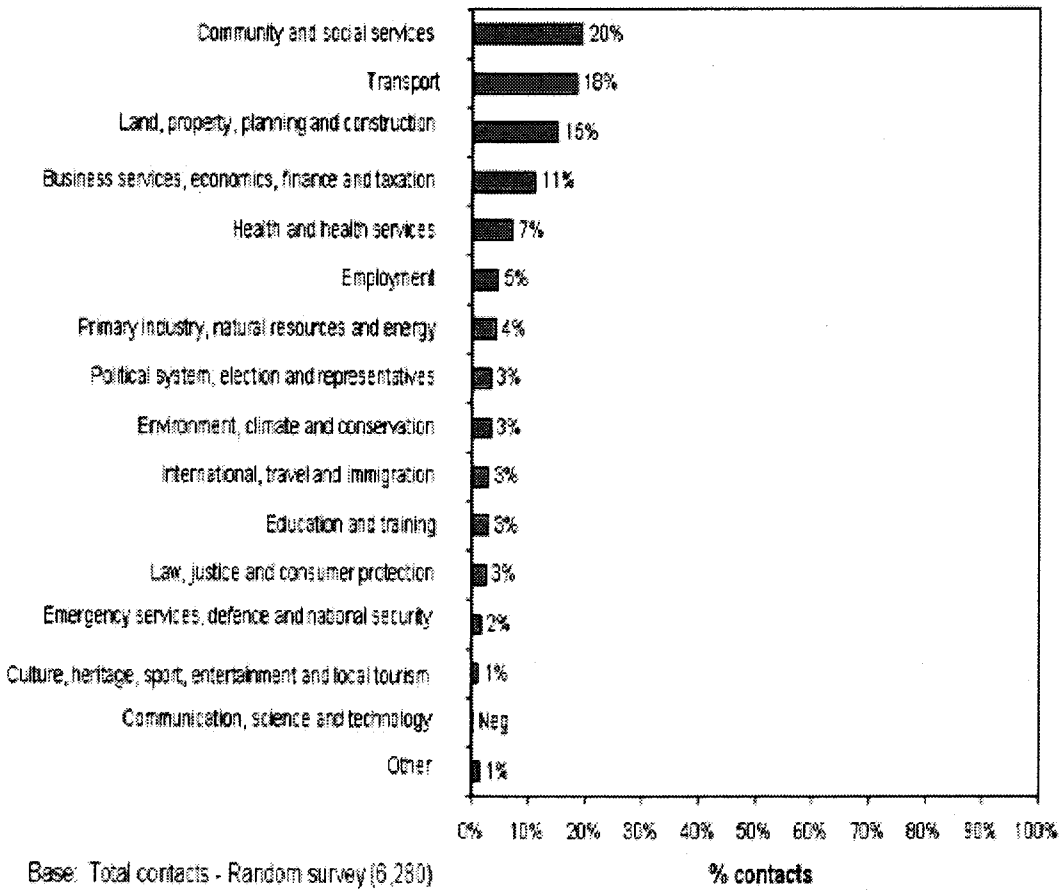


Figure 5 Government service categories used in the past 12 months (AGIMO 2005)

To provide further detail about people' s interaction with government through all channels, respondents were also asked about the specific services they had accessed. Examples of these types of services include various registrations, payments and benefits.

Figure 6 shows the specific services used (through any channel, not only e-government), where the most frequently reported were:

car, boat, vehicle registration and licences (13% of all services reported);

land tax or rates (10%);

income or personal tax (8%); and

family benefit, child allowance, or childcare benefits (7%).

Other commonly reported contacts with government services included building permits or planning applications, health benefits, and non-health related services for the aged (4% of contacts were reported for each service).

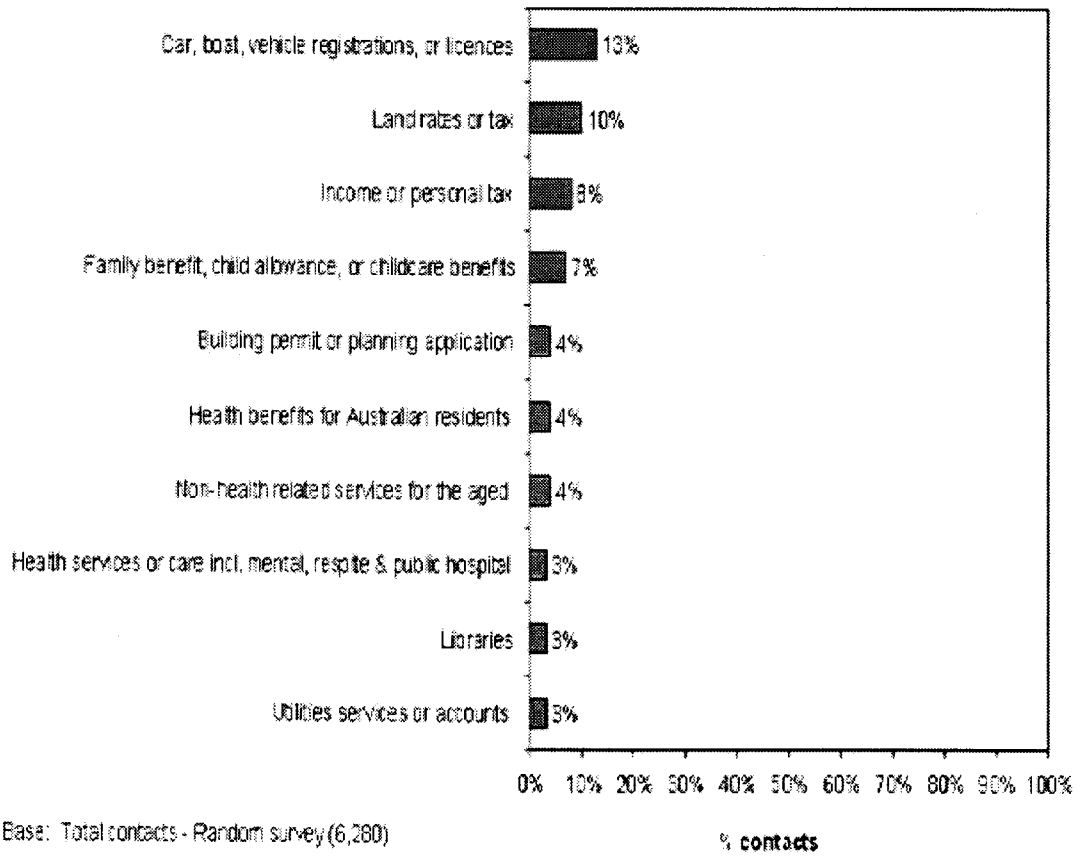


Figure 6 Top 10 services used in the past 12 months (AGIMO 2005)

There were significant variations in the types of services accessed by people via the Internet. Specifically, income or personal tax services displaced vehicle registrations and land rates as the most often accessed service. Of all contacts with government that were made via the Internet (AGIMO 2005), the services most frequently accessed were:

income or personal tax (16%);
land rates or tax (10%);
car, boat, vehicle registration and licences (8%);
family benefit, child allowance or childcare benefits (3%); and
parking permits or fines (3%).

2) Level of government contacted

Respondents were asked to specify the level of government for each service they accessed (Australian Government, state/territory governments, or local government). For those who knew the name of the government agency accessed rather than the level of government, the agency name was recorded and later assigned to the appropriate level of government.

As shown in Figure 7, contact with the three levels of government was fairly evenly distributed ? 35% of contacts were with the Australian Government, 31% with state/territory governments and 33% with local governments.

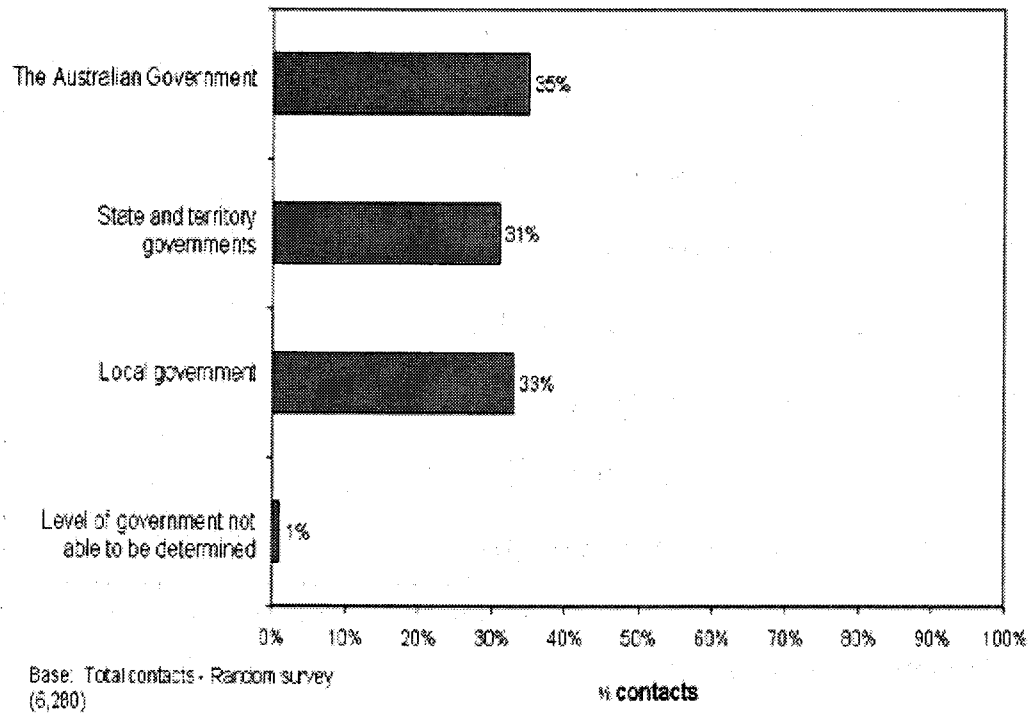


Figure 7 Level of government contacted for services (AGIMO 2005)

Of the contacts made with the Australian Government, contacts with community and social services were the most common (28%), followed by business services, economics, finance and taxation (25%), and health and health services (11%). Contacts relating to transport are most common (49%) for state/territory governments, followed by community and social services (9%), and health and health services (7%). Contacts relating to land, property planning and construction are most common (42%) for local government, followed by community and social services business services (20%), and transport (8%).

3) Type of information exchange

The study (AGIMO 2005) examined what types of services, in terms of sophistication, were being accessed via specific channels. To capture this information, people interviewed for the random survey were asked to specify exactly what was involved in a specific contact. The responses fell into one of the three types; contacts were:

where the person sought information (least sophisticated) only;

where the person provided information about themselves (with no exchange of information); or

where information was exchanged (most sophisticated) between the person and the government.

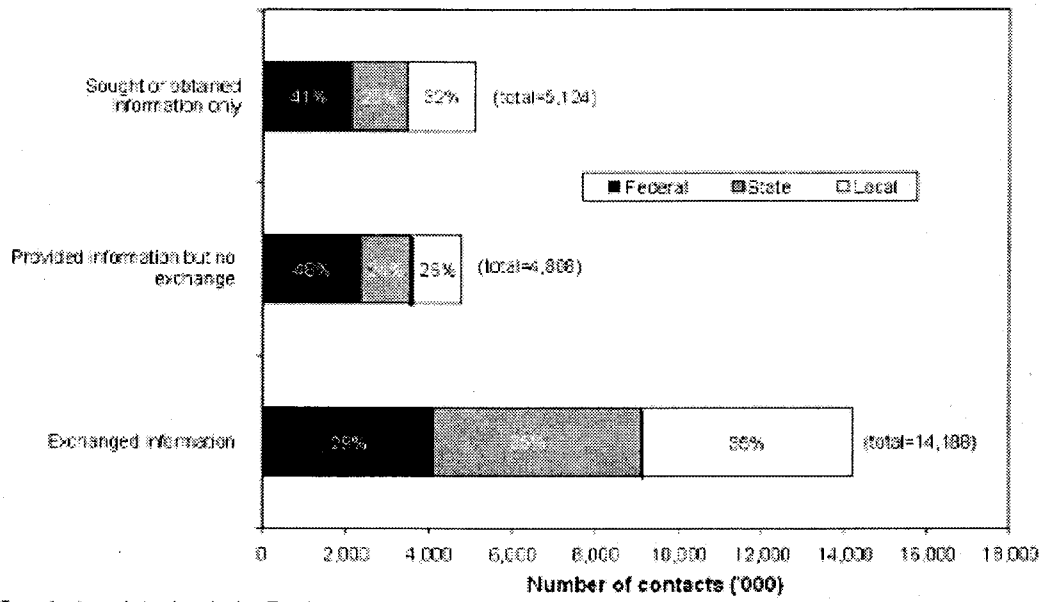
Overall, over half (58%) of the total contacts with government services involved information exchange, the most 'sophisticated' type of contact. The next highest response (21%) was for seeking information, followed by providing information (20%).

As shown in Figure 8, contacts with local or state/territory governments tended to involve more sophisticated interactions (35% each involved an exchange of information), than contacts with the Australian Government (29% of which involved an exchange of information). Contact involving simple seeking or obtaining of information was significantly more likely to occur when dealing with the Australian Government (48% provided information to government, 41% sought information from government).

Other significant differences in the sophistication level of contacts by tier of government were:

Only 24% of contacts involving provision of information occurred with state/territory governments, and 26% with local governments (compared with 48% for Australian Government contacts).

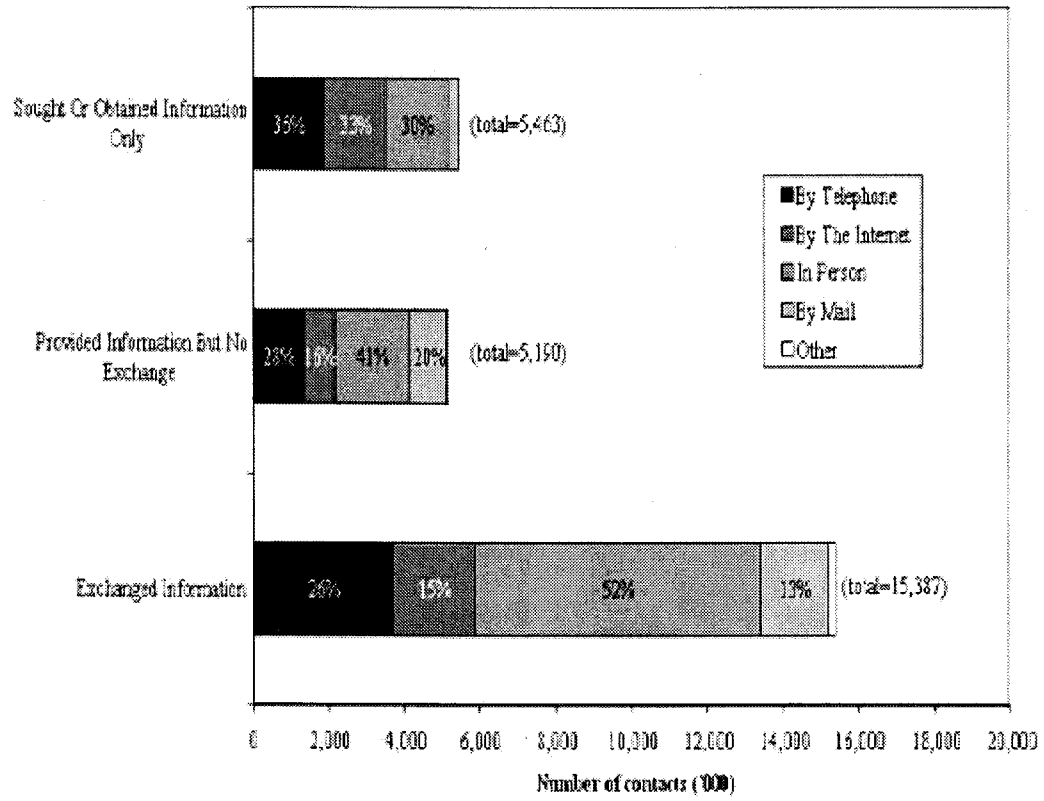
Only 25% of contacts involving only seeking information occurred with state/territory governments and 32% with local governments (compared with 41% for Australian Government contacts).



Base for figure is total contacts - Random survey (6,280), but data is weighted to total estimated number of contacts in thousands.

Figure 8 Level of sophistication analyses by level of government (AGIMO 2005)

Figure 9 shows there are significant variations in the channels that are preferred by people for contacts involving different levels of sophistication. Perhaps the most significant finding is that the people favoured face-to-face (in person) dealings for the most sophisticated contacts. Conversely, when conducting a transaction that only involved seeking or obtaining information, people favoured the telephone or the Internet over face-to-face contact.



Base: Total contacts - Random survey (6,280)

Figure 9 Level of sophistication analysed by channel of delivery (AGIMO 2005)

Other significant findings from analysis of sophistication level of the contact by channels are summarised below:

the channel used for basic contacts (that is, seeking or obtaining information) were roughly evenly distributed, with telephone most popular (36%), followed by the Internet (33%) and in person (30%);

the channel used for contacts involving providing information (with no exchange) were more likely to be made in person (41%) than by telephone (28%), mail (20%), and the Internet (16%); and

over half of all contacts involving an exchange of information were made in person (52%), followed by telephone (26%), and the Internet (15%).

3. Who is - and is not - using e-government services

One of the key benefits of e-government

service delivery is the ability to overcome geographic barriers. Figure 10 identifies the use of government services via the Internet by location.? Key findings (ABS 2005) were:

Internet users living in metropolitan areas are more likely to use the Internet to contact government (57%) than those living outside capital cities; and

Internet users living in rural/remote areas are more likely (50%) than people living in regional centres to use the Internet to access government (48%).

These figures are likely to reflect the fact that time taken to access a government office in person are higher in metropolitan and rural/remote areas than in regional centres ?

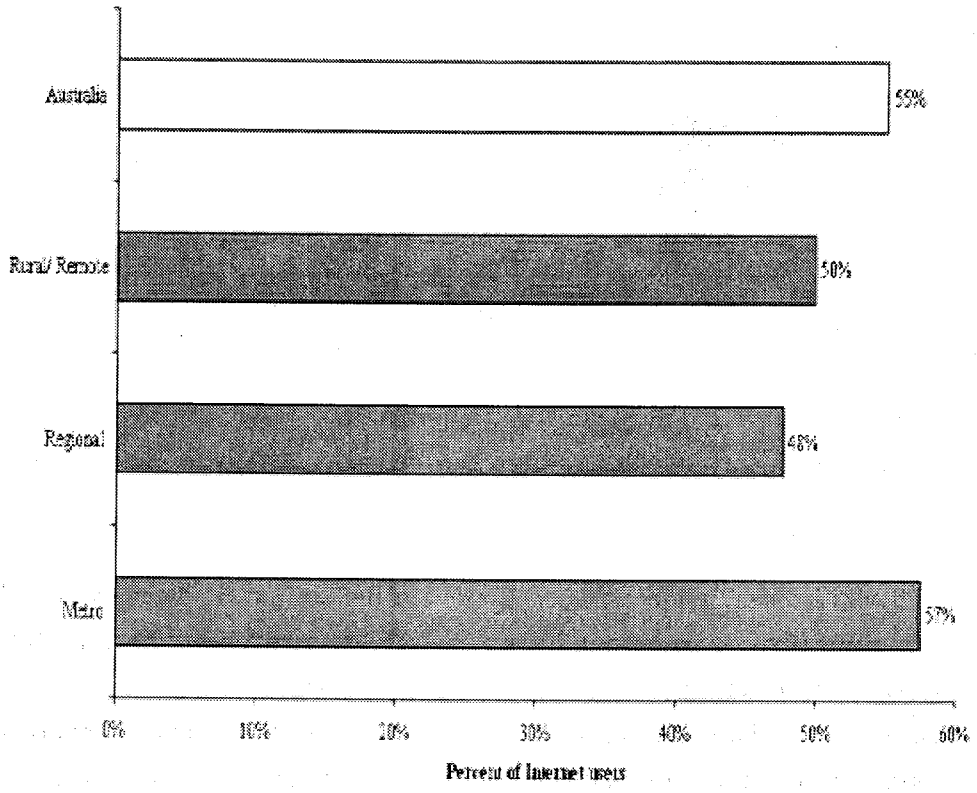


Figure 10 Proportion of internet users who have had any internet contact with government services in the past 12 months, by region (AGIMO 2005)

a finding confirmed in focus groups.

A number of demographic details (ABS 2005) were captured as part of the surveys. This provided a basis for analysing the demographic characteristics of people that use specific channels. People who used the Internet to contact government were more likely than the average person to be:

male (57%);

aged 25-34 (25% compared with 19% average) or 35-49 (41% compared with 31% average);

living in households with dependent children at home (51% compared with 43% average);

educated to university level or higher (65% compared with 45% average);

working full-time (63% compared with 46% average);

professional workers (19% compared with 10% average);

reporting a personal income of more than $50,000 per annum (38% compared with 23% average), and a household income of more than $50,000 per annum (67% compared with 48% average); and

living in metropolitan areas (72% compared with 63% average).

The demographic profile of telephone users tended to more closely resemble the profile of the average respondent. While the differences in profile were not as stark as they were for Internet users, telephone users were more likely to be:

female (57%);

aged 35-49 (36% compared with 31% average); and

living in households with dependent children at home (49% compared with 43% average).

A key area of interest in this study was the need to better understand any significant demographic differences in people that used channels other than the Internet and telephone to contact government. The following section describes significant variations in the profile of people accessing services in person, via mail and via other channels (including through intermediaries such as tax agents).

Given that people accessing government in person represented nearly half of all contacts, it is expected that their demographic profile will align closely with the average for all respondents. Despite this, people contacting government in person were more likely to be:

aged 50+ (41% compared to 38% average);

educated to secondary school level (56% compared to 53% average); and

living in regional or rural areas.

People favouring in person contact with government tend to be less likely than the average for all respondents to be:

aged 35-49 (28% compared with 31% average);

working full-time (42% compared with 46% average);

educated to university level or higher (42% compared with 45% average); and

living in a metropolitan area (60% compared with 63% average).

People who contacted government by mail were close to the average, with no significant demographic differences. In contrast, significant differences were found for people who contacted government via other channels (including direct debit, through accountant/tax agent and facsimile). People in this group were more likely than the average to be:

aged 50+ (52% compared with 38% average);

living as a couple with no dependent children at home (54% compared with 29% average); and

working in the manufacturing industry (14% compared with 4% average).

People accessing government through channels other than the Internet, telephone, mail and in person were less likely than the average to be aged 18-24 (6% compared with 12% average) and educated to university level or higher (34% compared with 45% average).

4. Why people use e-government services

People who used the Internet to contact government generally did so because they believed it was the most convenient method. That is, the most significant motivator was the Internet allowed them to make contact at a time that suited them. Figure 11 shows the key motivators for Internet use. Of those who made contact with government by the Internet:

42% did so because they could do it at a time that suited them and was not limited to business hours;

37% said it was faster;

21% said the process was easy and uncomplicated; and

14% said they were able to control information they wanted and that they did not need to rely on the service person.

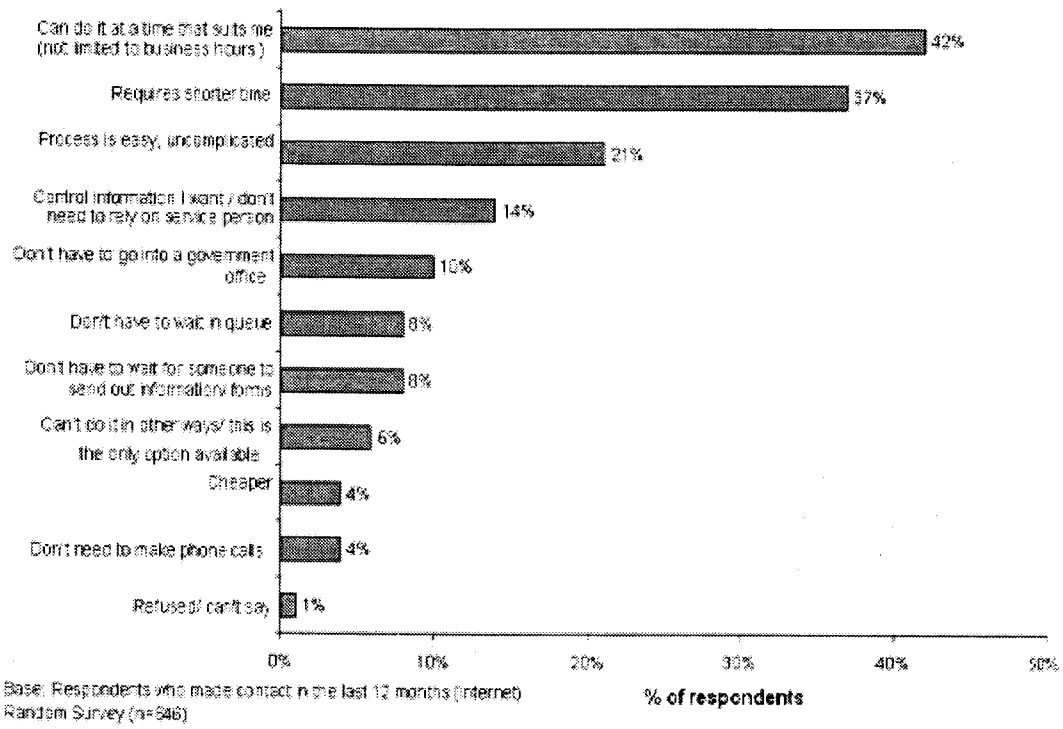


Figure 11. Reasons for using the Internet to contact government (AGIMO)

Participants in focus groups clarified their motivation to use the Internet. While most acknowledged that time savings and convenience were the most significant factors in encouraging them to use the Internet to contact government, other factors also ranked highly.

The first group of motivating factors were agency related. Participants suggested that they were more motivated to use the Internet over another channel if the agency they were dealing with was trusted, and well known to them. The Australian Tax Office was offered as an example of trusted, respected and well-known organisation.

The second group of motivating factors were task related. Participants said they were more motivated to use the Internet if the contact with government is routine or standard, extensive dialogue is not required and there is little potential for error. Payment of vehicle registration was offered as an example of a task in this category.

The third group of motivating factors centred around the requirements on the individual undertaking the task. People were more motivated to use the Internet if there is no need for credit card details to be provided, and if follow-up was not likely to be required.

Familiarity with a task is a clear determinant of Internet use. Tasks such as vehicle registration or personal tax, were considered by participants to be examples of `highly familiar' tasks.

5. Why people did not use e-government services

The greatest motivating factor for people to contact government in person is that the contact could only be made in person (35%). This is a significant finding for governments planning e-government strategies, as it suggests that people may consider alternative channels as they become available. It is also likely that a proportion of those people nominating this reason may simply be unaware of the fact that some services can be performed over the Internet or by telephone (ABS 2005).

As was the case for people who used the Internet and telephone to contact government, the ability to make contact at a time that was convenient ranked highly (22%). Approximately 18% of people contacting in person said their preference for speaking to a 'real person' was a reason to contact government in person. Approximately half as many (in percentage terms) indicated the same reason for using the telephone.

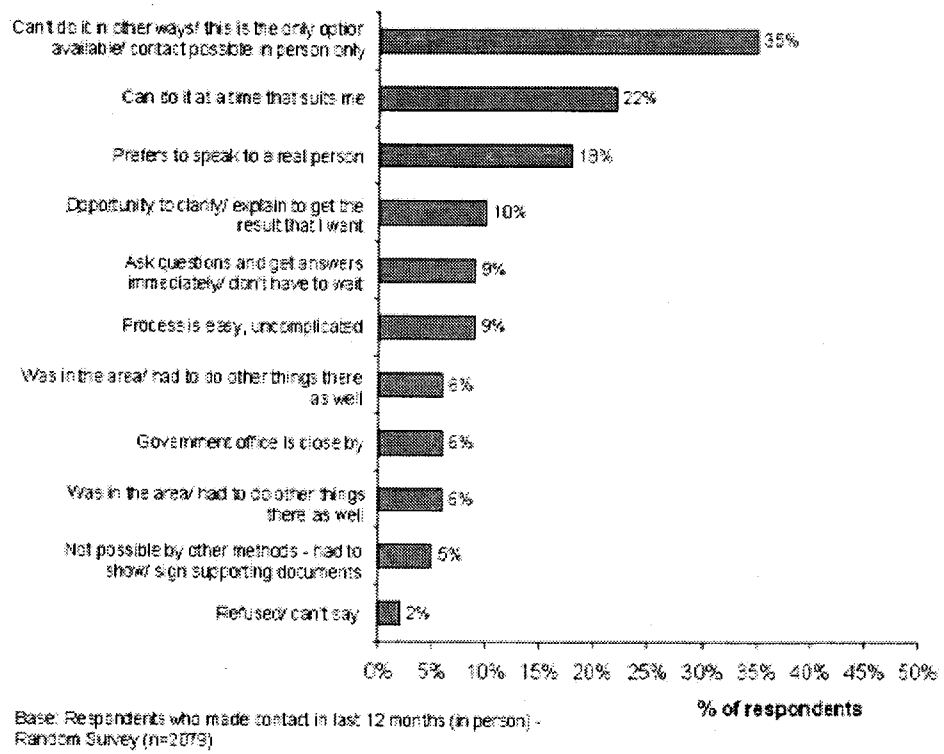


Figure 12 shows the reasons for contacting government in person. (AGIMO 2005)

Another significant finding was that 10% of people contacting in person said they were motivated to do so by the opportunity to clarify or explain an issue to get the result they wanted. Focus group participants also indicated they were more likely to contact government in person in cases where they:

- desire high levels of accountability;
- require written confirmation or formal lodgement of a request; and
- seek clarification of ambiguous issues.

Highly personal contacts, including examples such as seeking information about a gambling or addiction problem, were more suited to in person contact than Internet or telephone. A high number of focus group participants, particularly those in regional areas, said in person contacts made sense to them in situations where it was possible to tie the visit in with other events (including banking). This was supported by the random survey results, which found that people accessing government in person that cited convenience as a major motivator were more likely to be:

- living in regional areas (48% compared with 44% of the general adult population); and
- aged 50 and over (51% compared with 44% of the overall population).

A significant motivator for people to contact government via mail was the ability to do it at a time that suits them (18%). Approximately 11% of people contacting government by mail did so because they had a paper form, or a prepaid envelope had been provided. A further 11% of people said they selected mail because the process was easy and uncomplicated.

While the reasons for not using e-government identified so far have related to active preferences for other channels, the study also asked people specifically why they did not choose the Internet or telephone to make contact. Analysis in this section focuses on two groups:

- why Internet users did not use the Internet to make contact. This excludes people who did not use the Internet because they have not used the Internet at all in the past 12 months; and
- why non-Internet users did not use the telephone to make contact (that is, why they chose a method other than telephone).

The study (AGIMO 2005) sought to investigate why those who had used the Internet in the past 12 months had not used it to contact government. As shown in Figure13 the most significant deterrent was the fact that people thought (rightly or wrongly) that the contact could not be done online. This reason was cited by almost a quarter (23%) of all people in this category. Other reasons provided by this group include that they:

- preferred to speak to or meet a 'real person' (11%);

had concerns about security of information including credit card information (8%); and
did not feel sufficiently familiar with using computers or the Internet in general (6%).

Only 3% of people in this group indicated concerns about personal privacy as a deterrent to using the Internet for a particular contact.

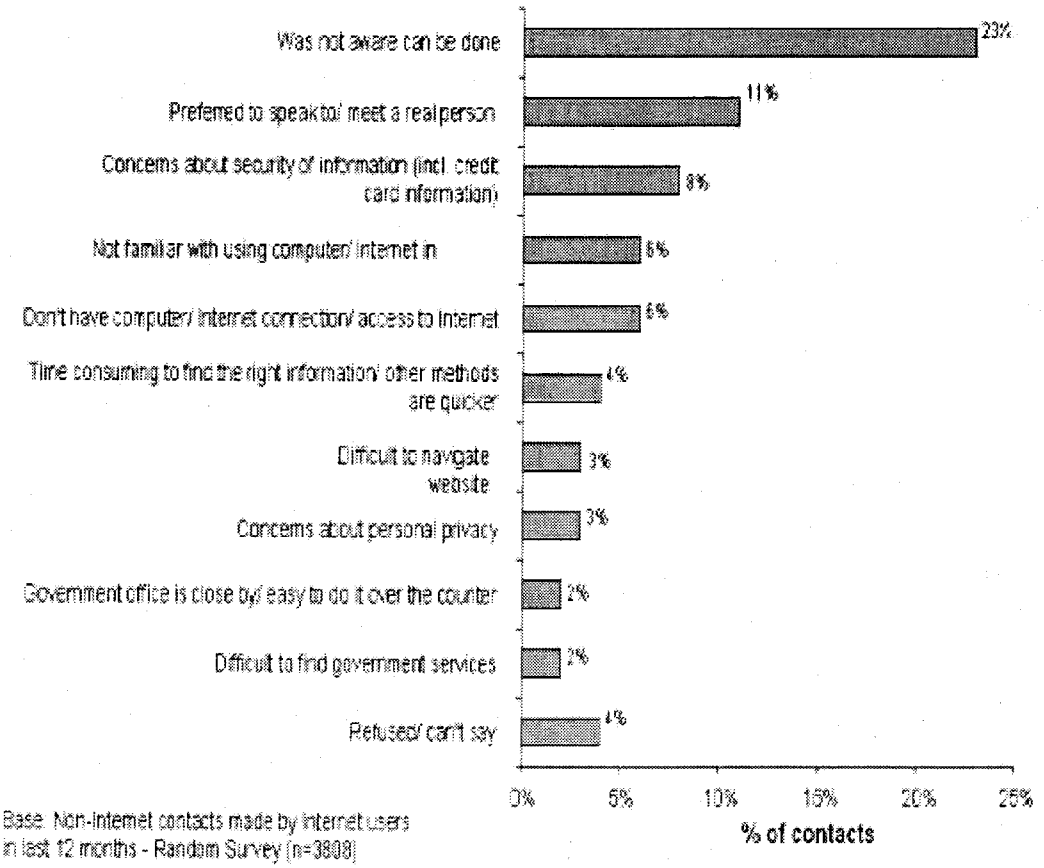


Figure13 Reasons provided by Internet users as to why they did not contact government via the internet for a particular contact (AGIMO 2005)

The reasons for above problems can be summarised as follow:

Lack of awareness

Perceived lack of accountability

Difficulties navigating Internet-based services.

Concerns about the risk of financial loss when providing credit card or banking details

6. Levels of satisfaction with e-government services

Overall, the satisfaction levels for both Internet and telephone access to government services were high. Satisfaction was slightly higher for Internet than telephone using all common indicators. Figure 14 shows the proportion of contacts that were rated as satisfactory on all three indicators.

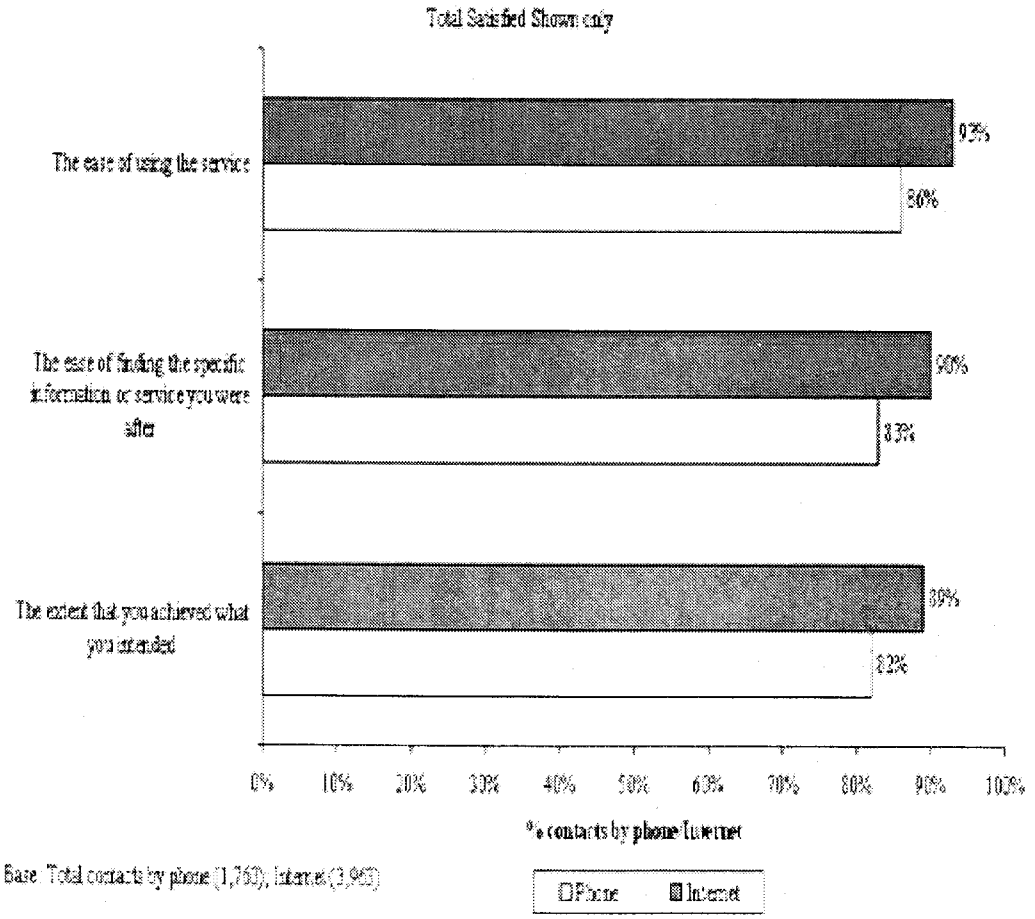


Figure 14 Satisfaction by channel of delivery (AGIMO 2005)

Internet users

Overall, 90% of all Internet contacts achieved what they had set out to do.

Services where satisfaction was significantly higher included weather or climate services (100%), land rates or tax services (97%), libraries (97%) and government jobs services (95%). Satisfaction with car, boat, vehicle registrations, or licence services (95%) was also significantly higher than the average for this indicator.

Satisfaction was lower than the average for Internet contacts involving a job seeker' s allowance, unemployment benefit, and working for the dole services (77%, compared with 90% for Internet contacts overall) and family benefit, child allowance, or childcare benefit services (84% compared with 90% average).

Approximately 90% of Internet contacts rated this indicator satisfactory. Satisfaction levels for Internet contacts was higher than the average for weather or climate services (100%), utilities services or accounts (98%), tourism, holidays or travel within Australia services (98%), libraries (98%), land rates or tax services (97%), car boat, vehicle registrations, or licence services (95%) and income or personal tax services (94%).

Approximately 93% of Internet contacts rated this indicator satisfactory. Higher levels of satisfaction were reported for weather or climate services (100%), land rates or tax services (98%), libraries (98%) and routes or timetables for travelling by train, bus or tram (97%). People accessing family benefit, child allowance, or childcare benefit services were less likely than average to be satisfied on this indicator (85% compared with 93% average of all respondents to random survey, ABS 2005).

Causes of dissatisfaction

A large number of reasons were given for dissatisfaction. They have been classified into the following broad categories (ABS 2005):

usability issues (including difficulties navigating Internet services);
content issues (including Internet services containing incomplete or out-of-date information);
access issues (including government services difficult to find, don' t have the software to do it);
infrastructure issues (including Internet service is slow or network unreliable);
customer service issues (including no or late reply to query);
security issues (concerns about security of information); and
privacy issues (concerns about personal privacy).

Part of the study' s objectives was identifying the specific reasons why the Internet caused dissatisfaction for people

who used it to contact government. The reasons were classified into categories, including usability (which related to the service' s navigation), content (including the type of information available), access issues (such as difficulties finding services and not having the password or software required to access a service) and infrastructure issues (such as websites crashing or being slow).

Figure 15 indicates that the main reasons for Internet dissatisfaction relate to usability and content issues. Approximately 14% of contacts by Internet were reported as being unsatisfactory. Problems with usability and content were each mentioned in relation to 7% of Internet contacts. The percentages expressed below represent the proportion of all re-contact survey respondents that indicated dissatisfaction on any of these fronts.

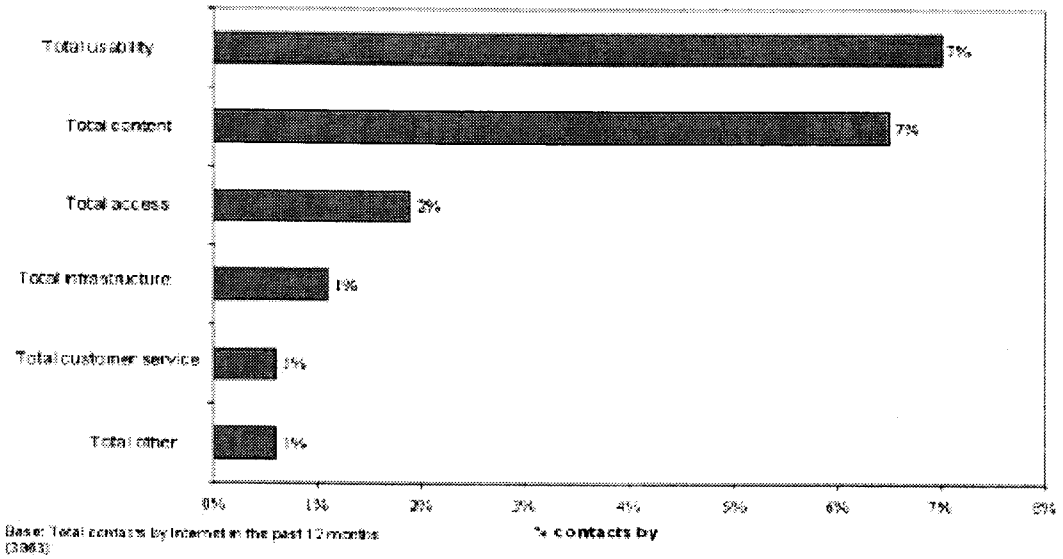


Figure 15 Top grouped reasons for dissatisfaction with Internet contacts (AGIMO)

The specific reasons for Internet dissatisfaction underpinning these general causes of dissatisfaction in contacting government via the Internet are shown in Figure 16. Only looking at those people who expressed dissatisfaction with the Internet, difficulties navigating websites was the primary reason (43%), followed by the websites containing incomplete information (28%).

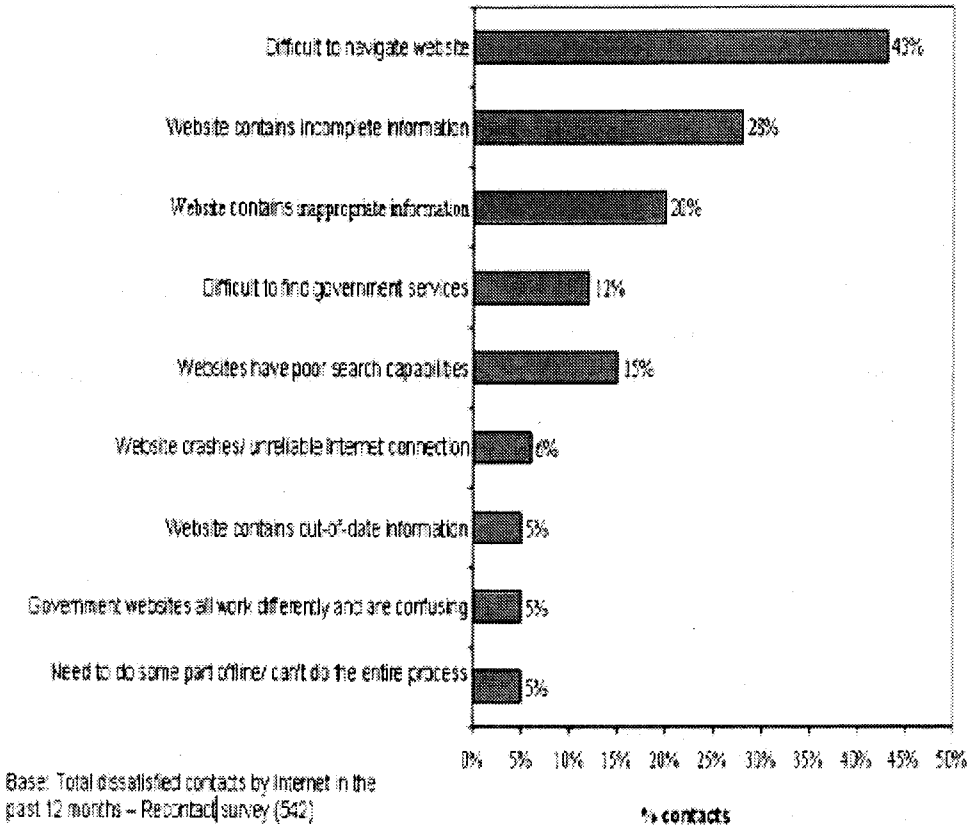


Figure 16 Specific reasons for dissatisfaction with Internet contacts (AGIMO 2005)

7. Encouraging use of the Internet to contact government

Governments globally are keen to understand what they can do to improve e-government service delivery. It is important to also understand how people not using the Internet to contact government could be encouraged to do so.

All random survey respondents were asked 'what, if anything, would encourage you to use the Internet more often for accessing or communicating with government services?'

As shown in Figure 17, the most important factors that would encourage Internet use are improved usability of online services (15%), followed by improved access to the Internet generally (13%) and improved content (7%). Other areas that were reported as significant potential motivators include improved skills to access Internet services and greater awareness of what is available via the Internet.

Approximately 37% of all respondents felt

there was nothing that could be done to motivate them to have more contact using the Internet. This figure is inflated by the high number of people who do not currently use the Internet that expressed this view. Approximately 58% of this group are retired, while 75% are aged over 50 (AGIMO 2005).

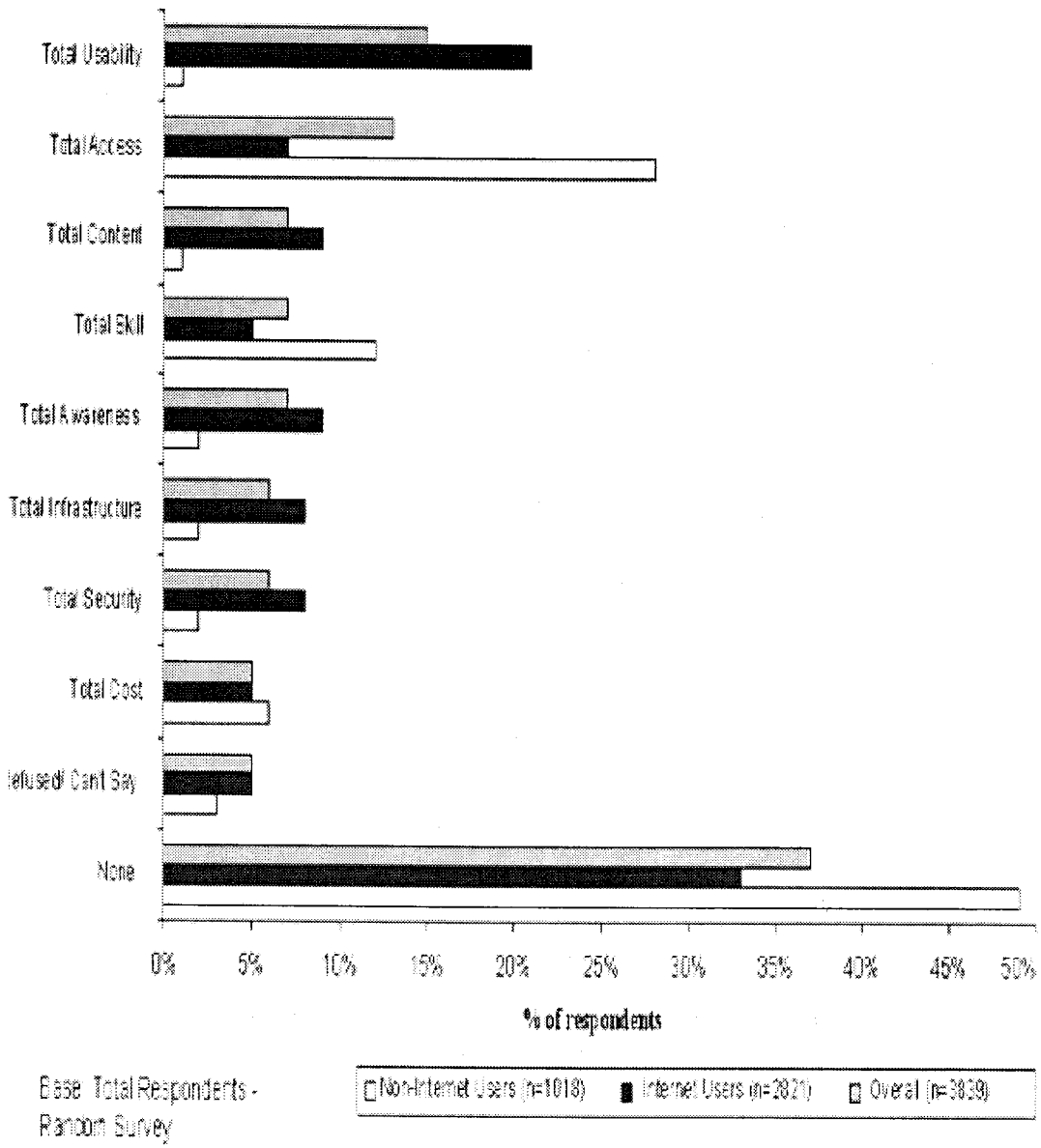


Figure 17 Summary motivators to encourage more contacts via the Internet (AGIMO 2005)

Internet users were asked what factor would encourage them to make more contact with government via the Internet. Figure 18 identifies the key factors.

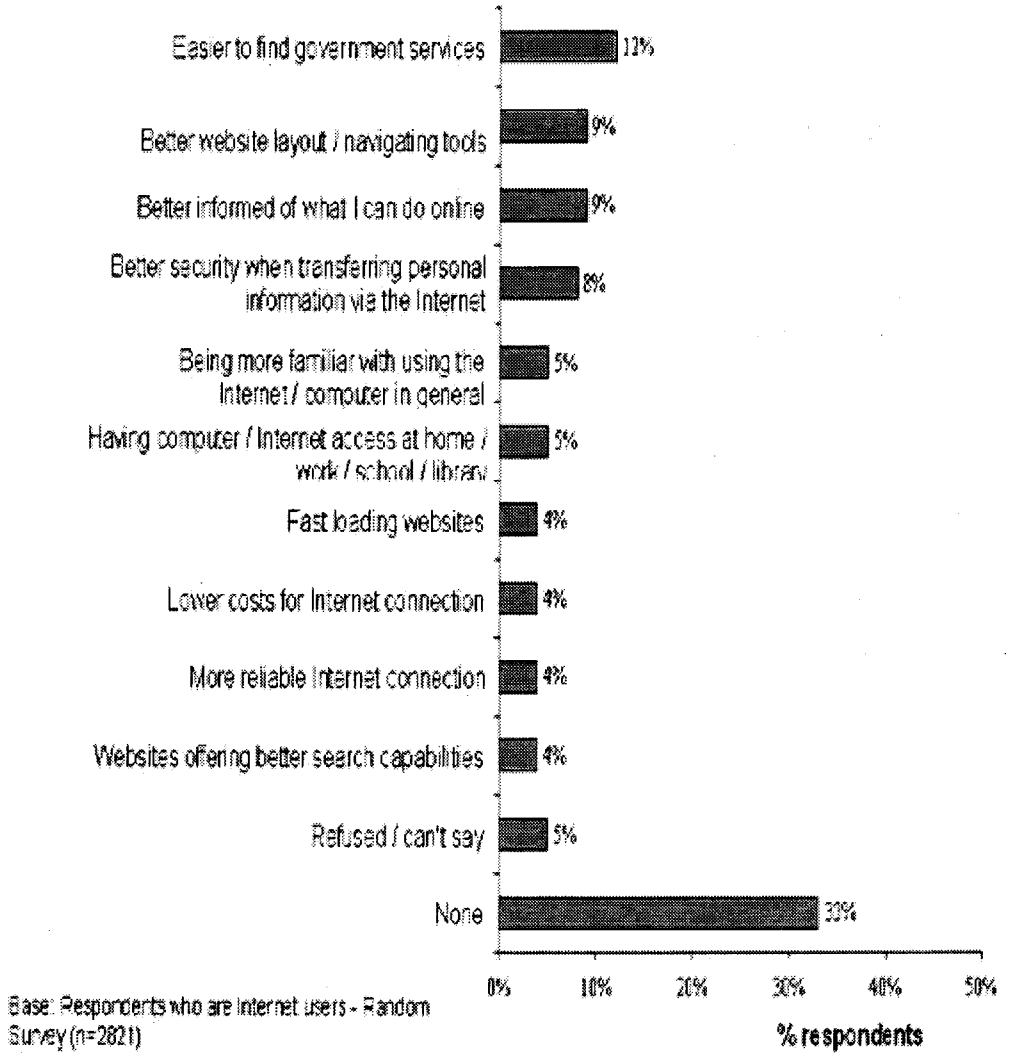


Figure 18 Factors that would encourage more Internet contacts by Internet users (AGIMO 2005)

Among those who use the Internet at home, school, library or at work, making it easier to find government services encourage more contacts via the Internet (12%). Better website layout or navigating tools (9%), better informed of what I can do online (9%) and better security when transferring personal information via the Internet (8%) are also strong motivators.

Non-Internet users were asked what would motivate them to contact government via the Internet. Figure 19 shows responses to this question. Access to the Internet played a key role, with 27% of non-Internet users stating that they may be motivated if they had a computer or Internet access at home, work, school or a library. This is followed by 'being more familiar with using the Internet/computer in general' (12%), 'lower costs for Internet connection' (6%) among others.

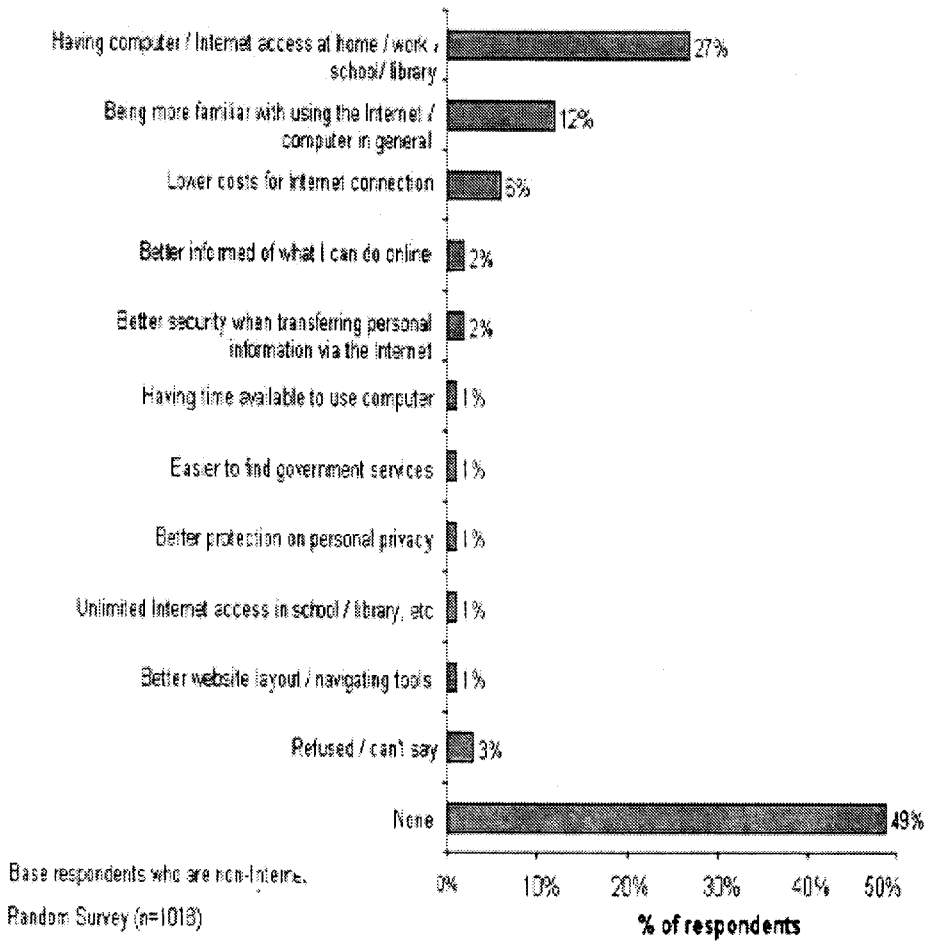


Figure 19 Motivators to encourage more Internet contacts by people who are non-internet users (AGIMO 2005)

Ⅳ. Conclusion: Cost-Benefit Analysis

Benefit

Agencies saw the potential benefits of their websites as reduced costs, particularly in having a lower cost means of communication, and the more efficient and cost-effective delivery of timely and relevant information and services to clients and stakeholders. Benefits to agencies' staff included many of the same benefits as external users, particularly the wider availability of government information. One agency indicated that having a website enabled agency managers to take advantage of the latest and best communications technology and electronic facilities, which enabled them to improve services.

The expected benefits of online services also included savings in administrative time and costs. These included: reductions in raising invoices and remedying inefficiencies that caused incorrect payments; time spent on the phone to change customer details; time taken to assess claims likely to be ineligible or rejected (which led to cost savings in application preparation time, checking or appraising); and error rates in applications. They also included anticipated lower costs of transactions and reduced demand on call centres.

Generally, agencies defined the potential value to government of online service delivery as being able to assist more clients within the current budget; provide improved services to a wider audience; and reduce the cost of service provision.

The main benefits to the clients who used agencies' websites were that it gave them increased, easier and more efficient access to large volumes of government information, including information about the agency and its services. The website was available to clients 24 hours a day, 7 days a week and it could provide reductions in the time and costs involved in communicating with agencies.

Websites and online services also enabled access to information and services that would not previously have been available, or would not have been cost effective or efficient to provide through any means other than the Internet. One example was the WW2 Nominal Roll. The major benefit of this service was that it made information about each individual who served in WW2 accessible to all family members and to the population as a whole, for a range of different needs.

Some agencies also stated that there would be intangible benefits of providing online services. Such benefits included increased client satisfaction with the agency, and decreased indirect costs to clients who used the online service. However, they also stated

users' cost savings were difficult to determine.

A number of agencies researched and surveyed their clients and stakeholders, to ascertain how they would benefit from the website and online services. Clients generally saw the main benefits to themselves as having more choice, and greater control over, how and when they communicated with the agency, and access to a much greater range of information than was previously readily available.

Costs

The agencies estimated the cost of their most recent website redevelopment or redesign, mainly to obtain their executive' s approval and funding for the project. Most also tracked and reported the costs throughout the term of the project.

These costs varied greatly across agencies. The variations were due to the projects being at different times over the past four years, the quite different magnitudes of the design changes involved, and the inclusion of a range of different items by agencies. These meant that the costs were not comparable, and data were insufficient to assess whether cost differences were related to website maturity and/or agency size.

For example, one small agency' s redesign and rebuilding of its website, which included a new front page and templates, cost $16 000 in 2000. In comparison, a much larger agency' s website redevelopment had a project budget of $1.1 million in 2000?01. However, this project provided a new format for delivering content and navigating the website, and supporting structures and processes to meet Government Online requirements and to enable secure identification and authentication of users.

In another large agency, the more recent redesign of the website proceeded in two stages. The first stage was completed by June 2004 at a cost of $35 000. This involved a redesign of the website' s appearance, including common branding. The second stage, which commenced in July 2004, entailed a review of the content and structure, and was estimated to cost $186 000.

The agencies estimated development costs in business cases or Budget proposals for online service projects. Some recognised the difficulty of obtaining accurate cost estimates, and whether additional funds would be available if required. Some also indicated that they incurred unforeseen costs, which were identified during implementation of the projects.

The amounts and types of development costs included by agencies in their business cases varied, as expected, according to the types and sizes of projects. Most original budgets included estimated costs for:

data collection and research to inform

the development;
purchase of infrastructure (hardware and software);
design and development of the online service;
IT consultants used in the design and development, and
salaries of the agency development team staff (drawn from the website team, business area and IT area) and administration.

Cost-benefit analysis

Cost-benefit analysis is used to measure the relative costs and benefits of many programs and applications, including those delivered through the Internet. The methodology involves estimating the costs for each individual application, then estimating who benefits from the application and how much that benefit is worth. While this methodology will only measure one aspect?the relative comparison of cost to benefits, or cost effectiveness?it is useful and should be a priority for agencies developing proposals to deliver services online.

In the early years of online service development, there were both methodological and practical difficulties for agencies in estimating and achieving positive returns on investments in the Internet. Initially, agencies had high capital, software and application development costs. One difficulty was that many agencies did not keep records on the costs of each service but, instead, had these costs aggregated across services.

The use of cost-benefit analysis raises the issue of the discount rate and the time necessary for a return on investments. For cost-benefit analysis, agencies need information on the total costs, not only the transaction costs. In addition, the cost per transaction for an online service is dependent on the adoption rate, which is the number of individuals within a target population who use the service. In the early years of online services, adoption rates were typically low but they have increased since then. This leads to the expectation that costs will outweigh benefits in the beginning but, as the numbers of Internet users increase, benefits will begin to outweigh costs.

A broad estimate of the expected costs and benefits was generally sufficient to gain program approval for the services selected. The more costly the service, as in the case of both the WW2 Nominal Roll and HealthInsite, the greater the rigour that agencies applied to estimating costs. However, in these cases, a cost-benefit analysis was not completed.

This raises the question of the timing of a cost-benefit analysis. Such analyses for websites are difficult as many of the benefits of providing a website are intangible and hard to measure. In addition, such websites

are often developed as a result of government decisions to provide particular services to citizens on the basis of being a public good rather than as cost savings measures.

For example, Health and Ageing indicated that the main benefit of HealthInsite was providing the public with a single Internet entry point to reliable and accurate health information. This reduced the likelihood of people using the Internet and finding information of questionable quality that may cause them harm. Such benefits are difficult to assess.

A cost-benefit analysis is more important when the website is one of a number of methods of delivery of the particular service, and where the service is designed to provide quantifiable benefits, such as reductions in administrative costs to the agency, and/or reduced costs to clients.

The Internet is now a mainstream channel of choice for contacting government. Investments in Internet service delivery are justified to ensure citizens' expectations, about what should be available to them via the Internet, are met.

The criteria applied to channel selection vary widely from person to person. The Internet has inherent advantages of time and cost savings. However, citizens find contacts with a high degree of complexity and/or ambiguity difficult to complete over the Internet. This also includes contacts requiring escalation, involving credit cards and requiring anonymity. Citizens indicated that no single avenue to search for information or services would satisfy the broad community.

A potential source of new e-government demand can be tapped by getting existing users to do more, and more sophisticated, transactions with government over the Internet. Only 3% of all people surveyed said all their dealings with government had been via the Internet, and a further 11% perceived that most of their dealings had been with government. In contrast, 24% said that either `some', `a few' or `just one contact' with government had been via the Internet. This group of users is likely to represent a significant source of additional Internet service volume.

Given that the barriers facing non-Internet users are significant, including issues of infrastructure and skill, there is a significant opportunity to encourage existing e-government users to use the Internet more often, and for more sophisticated contacts. Targeting repeat and related transactions may prove more convenient to users by pointing them to faster, easier channels for subsequent contacts, and enables governments to cost-effectively reach people that will fuel future demand for e-government services.

Attempts to migrate all users to the Internet for all government services are too simplistic, and have the potential to reduce

uptake over the longer term. Sustainable use recognises that people will use the Internet only when it makes sense to them. Successful long-term efforts will need to focus on providing online services that offer the biggest potential for return on investment to citizens.

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