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The User Perspective on Government Electronic Service Delivery (ESD)

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The Centre for International Research on Communication and Information Technologies is a research centre at the Royal Melbourne Institute of Technology.

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The research focuses on the use of information and communication services by residential users, small businesses, corporations and government. It covers the broad area of communication in activities such as payments and finance, work, health, education, entertainment and government services.

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Preface

There is much talk abroad about the radical changes that new ways of communicating and doing business with each other are likely to bring. Indeed, it would be foolhardy to ignore the likely transformative effects of the new information and communication technologies. However, these changes need to be placed in some context.

Australian Bureau of Statistics' surveys[1] show that an estimated 9.1 million adults accessed the Internet at some time over the 12 months to November 2000, that is 66 per cent of Australia's total adult population, however:

- while 9 per cent of all Australian adults used the Internet to access government services in the 12 months to November 2000,

- fewer Australians (7 per cent of adults) purchased goods or services for their own private use via the Internet in the same time frame, and

- despite significant pressure from financial institutions, still only 9 per cent paid bills or transferred funds via the Internet in the preceding three months compared with 50 per cent making telephone payments or 66 per cent using EFTPOS.

These levels of use of online services are hard to characterise: while we may describe them (as the ABS itself does) as low levels of penetration, they may represent significant usage at this "computer dependent" stage of the development of online service delivery.

Governments are well advised to prepare for further growth in the newer means of service delivery, and especially for any further broadening of use that comes from the development of platforms such as digital television, and Internet ready mobile phones. At the same time, equity demands attention to the needs of the vast majority of Australians who choose to deal with government in other ways, and increasingly by telephone. The popularity of email as a means of communication is not being fully embraced by government.

The integration of the various forms of access is one obvious way forward. This paper reports the findings of the project *Understanding the User Perspective in Government Electronic Service Delivery* that was jointly funded by the Department of Communications, Information Technology and the Arts, Nortel Australia, and Multimedia Victoria.

CIRCIT has developed a research stream over the last five years on *Understanding the demand for interactive services*, through which consideration has been given to the use of information and communication services by residential consumers and small business. This research focused on the activities in which people are involved, and the relevance of different technologies or modes of service delivery to these activities. The users' perspective has also meant examining people's activities within their social and cultural context.

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[1] Australian Bureau of Statistics (2000) *Household Use of Information Technology, November 2000* Catalogue no. 8146.0. Canberra: Australian Government Publishing Service.

Outcomes of the research have included:

- recognition of the ways users "mix and match" available technologies or services to the characteristics of different activities (for example the use of e-mail in some cases, face-to-face in others; or cash in some activities, direct debit in others);

- beginning the identification of characteristics of different channels or modes of service delivery as they affect their use in particular activities – in particular social and cultural contexts;

- identification of the key issue of consumer trust and how it can be engendered in the online environment, and

- beginning the exploration of culture, communication and meaning in the delivery and use of online services.

The methodology so developed is also applicable to understanding the user perspective on accessing government services via online delivery techniques. While a range of groups of users of government services exists, here the primary focus is on users as individual citizens.

In related work CIRCIT has also examined the conditions for "effective use" of online services, where effective use is understood to entail value for all the key elements of the delivery chain – content service providers, users, and communications providers. The provision of government services has been an area of focus, in which the application of Government electronic service delivery (ESD) has been particularly considered. Nationwide, there is considerable development around Government ESD, with significant resource investments. Much of this activity is driven primarily from the perspective of the government agencies involved. The requirement to understand the needs of users emerges in this service area, as with many others, as a prime success factor.

An outcome of this activity has been the preliminary identification of indicators of effective use and associated measures. This particular research project tests and gives greater depth to that initial analysis.

Terry Laidler
Director

1 Overview and Summary

Commonwealth and state governments and agencies in Australia are increasingly delivering government services online. Inadequate research on citizens' use of these services can mean that the business objectives and potential benefits of these services are not fully realised. At worst, the utilisation of online approaches may reduce the benefits to citizens, as compared to existing approaches.

The study sought to answer the questions:

(i)   How do people carry out the activities to which Government ESD approaches are directed? What are the channels used and what influences the choice of particular channels?

(ii)   What are the implications of this use for the provision of online services in a way that benefits users?

(iii)   How are current approaches to Government ESD taking into account these issues?

(iv)   How can the development of Government ESD better take into account the user perspective?

1.1 Scope of the study

The terms 'electronic services' and 'online services' are used interchangeably in most of the literature and are so used in this study. Online (electronic) services include the Internet (Web and e-mail), electronic kiosks such as 'maxi' in Victoria and 'Austouch' in the ACT, and interactive voice telephone services.

The study has involved two major components of initial research and analysis and subsequent application of these conclusions to a practical case study proposing new strategies for Victorian Government electronic services.

In the research component, conducted between July 1999 and February 2000, we have drawn on quantitative and qualitative data. The quantitative data were drawn from reports in the public domain plus information specifically made available to us. The data were collected primarily to influence the design of government electronic service delivery and the prediction of future demand. Whilst these information sources of current approaches to government electronic service delivery and relevant user-centred surveys undertaken by governments are extensive, it is likely that other key documents remain proprietary.

The qualitative basis for this study involved open-ended interviews with 25 middle-income, Anglo-Celtic men and women. The open-ended interviews aimed at giving us a richer understanding of the issues involved in the effective delivery of government services, rather than serving as a basis for predicting future demand or generalising across the Australian population.

In Section 2, we summarise the current approaches to electronic service delivery by governments. Whilst the main focus is on Australian state and Commonwealth agencies, reference is also made to studies from the United Kingdom, the United States of America and Canada.

In Section 3, we move to the quantitative and qualitative data. The focus is on how consumers and citizens use government services. In section 4, we identify the implications of our study for designers, policy makers and those charged with implementing electronic service delivery.

In Section 5, we report the application of these conclusions to the design of Victorian government electronic services.

The research supporting the conclusions in Sections 2, 3 and 4 has been published in a companion document: *The Users' Perspective on Government Electronic Service Delivery: Supporting Material*.

1.2   Key conclusions from research

The review of current approaches to government ESD shows that the general intention to provide "single window/whole of government" interfaces, 24 hours a day seven days a week, for a wide range of government services, has rarely been approximated. Governments have failed to recognise the massive impact on business processes between departments and agencies, and the corresponding resources to be expended. Estimated cost savings appear unachievable. Delays in the availability of services and in presentation of services in an integrated manner have led to confusion for customers and a much slower acceptance of online service delivery than originally foreshadowed.

Governments are now setting targets that are more achievable and exploring a range of different models for service delivery, including:

- Facilitating access to services through partnerships with telecommunications carriers;

- Contracting with parties outside government to share risk;

- Utilising shopfronts as the primary point of contact;

- Providing single free call numbers for access to specific services;

- Implementing a focus on the Internet rather than kiosks; and

- Recognising the need to understand user requirements and design services accordingly.

The examination of available quantitative data, and the qualitative research for this project, shows that:

- Most citizens have very little contact with government, each occasion being a new or hazily remembered process;

- Nine per cent of adult Australians used the Internet to access government services in the 12 months to November 2000;

- Timeliness of response, with a limited number of contacts, is a major element of customer satisfaction;

- A face-to-face service is preferred when people have a problem and are not sure how to look for information that would help them;

- The telephone, which is a familiar and comforting channel of personal communication, often fails to be interactive when used as a tool for searching for information;

- The Web and e-mail become attractive options for getting information and for communicating with a department when
    - there is a simple query and the user knows where to look,
    - face-to-face interaction is not convenient,
    - telephone waiting times are long, or
    - it is difficult to get the right person to deal with your problem;

- The Web is also the channel of choice, when there is a need to research documentary data;

- The possibilities of the Web are recognised for providing information to the government, providing that the forms are well designed and the electronic record of having submitted the information is accepted as evidence;

- The Internet is very much an emerging payments medium, in a context of an increasing shift from physical modes of payment to online (particularly telephone); and

- The greatest concern in making payments for goods and services for the first time through the Internet is the security of the payment.

These conclusions about citizens' use of online government services lead to implications for the design of services. Drawing on our examination from the users' perspective we observe that key criteria for effective use are:

- **Services need to be focused on activities;**

- **Services need to be easy to use;**

- **Services need to be secure and trusted;**

- **Services need to be responsive; and**

- **Users expect a choice of channels.**

1.3   Use and the design of Government services

These understandings of the factors likely to 'drive' uptake of government services online were further developed and applied, in a detailed consultative phase with Multimedia Victoria and other agencies. Particular attention was paid to a number of Victorian government service delivery platforms. Key directions for strategic intervention were identified.

This study has shown that an examination of the users' perspective in electronic services can lead to valuable insights into the factors influencing effective use of these services. These factors can be applied to the processes of design and policy making to provide different strategies for service development.

2 Government Approaches to ESD

While electronic service delivery (ESD), or the delivery of services online, is being adopted by both the private and government sectors, the latter is often expected to be a pacesetter. Furthermore, the complexity of the government's range of services coupled with its broad social responsibility, pose special issues.

ESD by government must be seen against the backdrop of general service delivery to customers of government: individual citizens and small business in the main. In reality, many such users have little contact with government – typically, many would interact with each of the levels of federal, state and local government once a year. However, some users (predominantly unemployed or otherwise needy citizens) make far more frequent calls upon government. For them access to government services can become a significant component of their lives.

Within some Australian state and territory governments, activity to introduce ESD commenced as early as 1993. All governments are now embracing electronic service delivery, although to a lesser extent at the local level. Major studies have been undertaken by each state and territory administration, policy announcements made and in most instances significant resources have been applied to make ESD work. Wholesale re-engineering of departmental and agency business processes are now seen as critical to the success of ESD.

Given the differences between Australian state and territory governments, it is not surprising that each is at a different stage of deployment of ESD. State-specific factors, such as the sheer size and complexity of organisational arrangements, legacy systems and political environments, impact upon the framing of policies and the timing of their implementation. However, it does not necessarily follow that any latecomer to introducing ESD is at a disadvantage.

2.1 Service categories

There are a number of ways to categorise online and conventional service delivery. A basic distinction could be between 'access', which implies a passive relationship between the customer and service provider, and a 'transaction', which suggests a degree of interaction between the two parties.

In reality, the different service categories are more complex than that and exhibit characteristics that confuse such a distinction. A more expansive categorisation of services could be:

- Information access or receipt;
- Information submission or provision;
- Financial transaction.

These then need to be further modified to reflect any requirement for security, such as information authentication, customer authentication and/or privacy.

2.1.1 Information access or receipt

Information access:

Common examples	Characteristics
• *Public transport timetable* • *Conditions for a permit*	The user anonymously seeks information that is freely available in the public domain.

Information receipt:

Common examples	Characteristics
• *Notification of a change in policy* • *Provision of an invoice*	The service provider sends information to an identified user or to groups of users. It further becomes a transaction if there is a need to verify receipt of the information or if the information is in response to a prior request.

Variations to the above arise when a degree of security becomes necessary. For example, a tender document or birth certificate may need to be certified as being authentic upon receipt by the customer. Furthermore, a birth certificate may require payment before delivery in which case it must be preceded by a financial transaction.

2.1.2 Information submission or provision

Information submission:

Common examples	Characteristics
• *Lodgement of a complaint or opinion*	The user, usually identified, sends information to the service provider. Such information would typically be unsolicited, however a reply or other form of interaction may eventuate.

Information provision:

Common examples	Characteristics
• *Making a request, such as for a new rubbish bin, notification of change of address, making an appointment*	The user, who is usually identified, requests a provider to take some action – for example, to provide a service or send some information. Such a request may also need some form of receipt to facilitate any audit trail. A reply, or other form of interaction, would typically be expected.
• *Submission of a proforma, such as submission of a tax return, application for a permit*	The user accesses a proforma, fills it in and then returns it to a service provider either by postal mail, facsimile or even electronically. Such an action may also call for some form of receipt to facilitate any audit trail. The identity of the customer would typically need to be assured through some form of authentication. There may also be a need for a payment to accompany the form.

2.1.3 Financial transaction

Common examples	Characteristics
• *Payment of a bill, fine or licence* • *Payment for a service*	The customer, usually identified, is required to execute financial authentication, followed by obtaining a receipt to facilitate any audit trail. A paid service may also constitute information sent to the customer, or acceptance of a completed proforma.

2.2 Philosophy of service delivery

When electronic means are introduced along with conventional service delivery, the pervasive philosophy is one of presenting the services with a 'whole-of-government' perspective. Users of government services often do not understand that a transaction is a 'government service' or the structure of government – the distinctions between government departments or agencies, or between the different levels of government (viz. federal, state, local). However, no significant examples have been found where such an integrated approach has been fully implemented.

An interesting variation is between a 'whole-of-(state) government' versus a 'whole-of-state' approach to access to information. *Access Washington* provides users with easy access to non-government Web links and *BC Online* also provides access to non-government information products. The UK government has developed plans for government services to be delivered through third parties who will be allowed, subject to certain controls, to package those services with non-government ones. *South Australia Central* also serves as a gateway to both government and non-government Internet sites. The imputed advantage of these approaches is the increased ease for customers to undertake their business, but brings along with it the potential disadvantage of mis-branding, misrepresentation or unfair exploitation of government services.

Synonymous with a 'whole-of-government' philosophy is the desire for users of government services to experience services that:

- Present a 'single face' of government, a 'seamless interface' between various departments or agencies;
- Offer a 'one-stop shop' experience, implying that the one interface or channel will provide access to the services of multiple departments or agencies;
- Are available, as much as possible, 24 hours a day and 7 days a week.

Commonly, the intention to provide such services has been unmatched by reality. Implementation targets have been boldly declared in public statements without fully realising the massive re-engineering of business processes that is required. Unrealistic assessments were initially made of short-term savings that now appear to be unachievable.

In many instances this mismatch between rhetoric and reality has led to a restatement of targets that are more achievable. It has led to delays in the availability of online services and delays in presentation of services in an integrated manner across various delivery channels. The inevitable result has been confusion in the eyes of customers and much slower acceptance of online service delivery than was originally

foreshadowed. Many governments are now establishing benchmarks or indicators of progress towards the end targets, and detailed strategies for inter-agency cooperation through common plans and processes.

British Columbia (Canada) provides a good example of where the government has worked closely with the dominant telecommunications carrier to ensure that the required infrastructure would be widely available at an affordable cost to facilitate online access. Other governments have also recognised the need for policies requiring universality of telecommunications services, affordability and bandwidth availability – although they may not be in a position to bring about these outcomes.

A significant differentiator has been the willingness or otherwise of governments to shoulder the financial risk of introducing electronic service delivery. A number of variations have been observed:

- The developmental and/or operational risk may be fully or partly shifted to a non-government party under contract. In these instances, the cost of service delivery will need to be recovered earlier than otherwise and more so in a 'user-pays' manner, either directly from the customer or from the agency as service provider. Texas has outsourced its AccessTexas Information Center and the British Columbia BC Online operation has been privatised. A possible disadvantage of these arrangements, depending upon the particulars of the contract, can be a slower uptake of online services and/or a preference for service provision involving financial transactions;

- One or more third parties can be contracted to co-channel government services along with their own. Such parties can be supermarkets, banks or local governments. The UK government plans to adopt this approach as an adjunct to their own channels, but with appropriate controls to protect the government 'brand' and intellectual property;

- In-house development of electronic services implies the acceptance of the financial risk within government, in return for greater control of outcomes and hopefully increased uptake of online services. Governments can also move to favour their own agencies in the interest of enhancing local employment prospects and/or ensuring an outcome that market forces would not otherwise address. Two examples come to mind: Washington USA, has announced that its agency responsible for ESD planning would also become a digital Certificate Authority. In Australia, Queensland has left open the possibility for their state-owned CITEC to become a whole-of-government service provider.

2.3   Delivery channels and technology

It is usual for governments to espouse the principle of using all possible delivery channels. These commonly include over-the-counter, mail, telephony, kiosks and the Internet (both web and email). In practice, adoption of all such channels has been mixed. A major task has been to manage the complexity of integrating services in a seamless fashion from all agencies across as many of these channels as is practicable.

- New Brunswick (Canada) and Tasmania are good examples of where the 'shop front' or over-the-counter channel has been deliberately designed as the pre-eminent means of delivery. Queensland's Government Agents and New South

Wales' Government Access Centres present a 'one-stop shop' of agency services to rural customers.

- The provision of call centres has posed the greatest difficulty due to the cost and complexity of operation, as well as the need for databases that are integrated across all agencies and other channels. It is, however, rare for governments to adopt a single number for telephone access. Of particular interest is the US example, developing in Texas and other states, of a national telephone number for anyone in that country to access information and assistance on a specific category, such as health and human services. QDIAL in Queensland provides a single free call number for rural customers to access services from agencies headquartered in Brisbane. This is in addition to a separate scheme for providing advice from travelling field officers.

- Kiosks are widely spoken about but not commonly implemented. First developed in the US pre-Internet days, they have suffered from excessively high expectations and inadequate design. However, Australian pioneers such as the ACT government and the Brisbane City Council have successfully deployed kiosks and recently updated them to Internet operation so that they are more integrated with the other delivery channels. Kiosks, in that they operate in the same manner as ATMs, have the particular advantage of being able to handle financial transactions.

- The Internet has been universally exploited, albeit with early home pages of governments suffering from inadequate design. The widespread inability to handle financial transactions, or at least to do so in a user-friendly manner, continues to restrict the Internet to predominantly information access services. However, information submission and information provision are now being deployed, but are subject to policy and technology limitations related to the need for authentication.

2.4   User focus of services

With some governments, early adoption of ESD would appear to have been driven by the desire to make policy announcements to achieve certain political ends. Subsequent reality has generally led to customer-focused surveys to determine delivery channels, design and other arrangements more suited to the needs of the service users. The following attempts to embrace a user focus on government service delivery, and particularly ESD, are notable:

- New Brunswick undertook a detailed analysis of user needs and monitored satisfaction both before and after implementation of ESD;

- The United Kingdom has gone public with its 'View from the Queue' market research, which is now driving the implementation of its future policies and plans. The public availability of such research results is rare amongst governments.

Customers are demonstrating the desire to access government services outside normal working hours by means of the Internet and kiosks. The Internet has proved useful in making available proforma for downloading onto personal computers and printing out in the home or work place. Due to the lack of user authentication, electronic lodgement of such proforma has been a rare occurrence and observed to date only in limited circumstances in Texas USA. Online bill payment, commonly via kiosks but

to date rarely via the Internet, presents itself as another service that will satisfy pent-up user needs, particularly outside normal working hours.

The packaging of services into easy to access groups, variously called 'clusters', 'life events' or 'channels', has proved a particularly successful innovation, although there is no standard pattern. The New South Wales government is involving customers in detailed focus group studies, the results of which are producing superior designs of their state Internet site. A focus on providing information and enabling transactions about land-related matters was an early characteristic of the development of ESD in Tasmania and the Canadian states of British Columbia and New Brunswick.

British Columbia and Tasmania also provide two examples of a service transacted online being cheaper than over-the-counter delivery. These instances are believed to be framed to encourage online service take-up rather than necessarily reflecting a general reality that online delivery is currently cheaper than the physical alternative.

3   Citizens' Use of Government ESD

In this section we focus on the use of government ESD from the perspective of citizens. Users of government services operate within the framework of the rights and obligations of citizenship.

The research looks at citizens and their activities rather than the most efficient and competitive way of delivering services and the most appropriate technologies for delivery. The focus on citizens and their activities alters the framework and direction of questioning. The questions shift from issues of supply and the extent of use to those of understanding the way a person uses the technologies in his or her various activities. Instead of asking about the use of the telephone and the Internet to access government services, questions revolve around how a person interacts with government for different activities. The questions probe the use of a mix of communication channels and why a person chooses a particular communication channel over another for a specified activity. The issue then is to discover the changed nature of interaction with government as a result of the use of the new media.

 Our method draws on user-initiated response forms, generic system data and surveys of users of government electronic services. We also use open-ended interviews conducted by the project team with 25 users across several Australian states, who have Internet access.

This report uses these two sources of data to detail how consumers interact with government for information and financial transaction activities, keeping in mind the social context of consumer interaction with government. We also place the use of the Internet within the mix of other communication channels such as face-to-face interaction, the telephone, interactive voice response, mail and fax.

The qualitative data is used to present the complexity of these patterns through the stories of users. We are also able to point to ways the use of the electronic channels changes the nature of communication. The analysis and stories then enable us to identify the factors that influence users' choice of channel for government services.

The sample was accessed via our professional and personal networks, advertising on e-mail lists and kiosks, and contact with two state governments. The Australian Bureau of Statistics categorisation of two areas in Australia – capital city and the rest of Australia – is reflected in our categories of city and country respectively. The 25 respondents comprise 16 city residents and nine country residents. Seven of the country residents live in Tasmania. Other states are represented as follows: Victoria 10; ACT six; South Australia one; and NSW one.

All the respondents are Internet users, with all but two having an Internet connection at home. Fifteen of the 25 have set up their own Web page or a Web site for a small organisation. We sought users with Internet access because we wanted to include in the study people's use of the Internet to access government services. We are aware that users with access to the Internet at home are still a minority group of citizens. ABS data show that 33 per cent of households in Australia have Internet access,[2] though the rate of growth is dramatic (16 per cent in 1998 & 22 per cent in 1999).

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[2]   Australian Bureau of Statistics (2000) *Household Use of Information Technology, November 2000* Catalogue no. 8146.0. Canberra: AGPS.

Ten respondents provide two levels of users' perceptions to the study: first from their own experience of online and offline services, and secondly from their understanding of the perspective of a particular group of users, such as people from the country, farmers, school students or the elderly.

The sample over-represents users with university education and under-represents the under-25 year age group.

We are particularly aware of the need to draw attention to the homogenous sample. All the users interviewed were of Anglo-Celtic background. A Commonwealth Information Centre survey[3] found that Aboriginal groups, and those with a non-English speaking background, have extra difficulties with English in addition to the expectation that they would deal with 'official' matters in person. These groups also lack knowledge of the operation and responsibilities of Australian government.

3.1 Citizens' interaction with government for information and transactions

In this section we examine the frequency of people's interaction with government, their search for information and their use of different communication channels for government services.

3.1.1 Frequency of interaction and search for information

Consumers/citizens interact infrequently with government for a limited range of activities. This interaction, though infrequent, can often be crucial. The contact is often triggered by the need for some paper work or the payment of a bill or fine. However once a person, or someone they are caring for, becomes frail, old, sick and/or unemployed, the interaction with government becomes more complicated and intense. Then interaction with government ranges widely across the areas of work, health, transport, education and financial well being.

The Commonwealth Information Centre May 1998 survey of 1210 consumers and 804 small business operators showed that:[4]

- More than a fifth (21 per cent) had had no contact with a government agency in the past year;

- 40 per cent had one to three contacts;

- 8 per cent had had more than 10 contacts.

A Canadian representative random survey of 2,900 Canadians in 1998 also substantiated this pattern of infrequent dealings with government.[5] It concluded that over the past two years most citizens have not needed to contact more than one government office about a single service. However, where multiple-contact

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[3] Chant Link & Associates Pty Ltd (1998, May) *Research on the Commonwealth Information centre (CIC)* Project Number 1364. Prepared for National Manager Innovations Team, Centrelink, Canberra.

[4] ibid

[5] Rein Research Inc. (1998, October) *Citizens First*. Prepared for the Citizen-Centred Service Network and the Canadian Centre for Management Development, Canada.

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experiences did arise, the leading trigger was the need for a certificate, licence or other type of personal paperwork.

As most people infrequently initiate contact with government, the typical citizen seeking information is faced with a new or hazily remembered process on each occasion. Citizens may not know which department or level of government provides the information they need and so do not know where to start looking. With the reorganisation of governments being an ongoing process, the names and locations of services, agencies and departments change, making it difficult to guess which department is responsible for a particular program.

The 1998 Canadian survey found that 25 per cent did not know where to get information about the service. Not surprisingly, citizens who knew where to go had fewer subsequent problems with the service.

The 1998 Commonwealth Information Centre Survey found that when consumers did not know the government agency responsible, they searched for information by using the phone book (47 per cent), asking someone else (24 per cent), asking another government agency (18 per cent) or directory assistance (17 per cent). Only two per cent of previous searches were made using the Internet. Phone queries showed a slightly higher chance of success.

3.1.2 Present patterns of interaction with government

At present, the traditional ways of interacting with the government – face-to-face, mail, telephone, fax – are still dominant. Issues of access, use and trust limit the present use of the Internet for seeking or providing information and for financial transactions. The Internet, however, is fast becoming a valuable tool in the mix of communication channels. Strong indications exist of a willingness to use the Internet for government services in the future. It is within this wider context of access and use of the different communication channels that we place our consideration of present patterns of government interaction.

Australian Bureau of Statistics data on the use of the Internet at home draw the boundaries around present use. Year 2000[6] data show that:

- An estimated 6.4 million adults accessed the Internet at some time over the 12 months to November 2000, that is 47 per cent of Australia's total adult population;

- More than half these adults accessed the Internet at home (32 per cent of men, 25 per cent of women);

The ABS data also indicate the possible use of the Internet for financial transactions.

- Nearly seven per cent of Australian adults (967,000) used the Internet to purchase or order goods or services for their own private use in the 12 months to November 2000;

- In the three months to November 2000, half (50 per cent) of all Australian adults used the telephone to pay bills or transfer funds, 9 per cent used the Internet.

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[6] Australian Bureau of Statistics (2000) *Household Use of Information Technology, November 2000* Catalogue no. 8146.0. Canberra: Australian Government Publishing Service.

In 1998, 2.8 million women (40.4 per cent of adult females) and 3.2 million men (48 per cent of adult men) were willing to access government information or lodge a form from home.[7]   However, very few Australians (9 per cent of all adults) used the Internet to access government services in the 12 months to November 2000.

Other surveys explore the channels used for government services.   The Commonwealth Information Centre survey (May 1998) gave some indication of how consumers and small businesses would use the CIC information referral service.

Table 1: Use of communication channels for information search and referral

Preferred Communication Channel	Consumers % (n=1092)	Small Businesses % (n=660)
Telephone	89	93
Internet	4	6
Fax	2	27
Postal mail	2	5
E-mail	2	7

Note: This data applies to use of the 'basic' CIC service without reference to any particular activity. Refer to Chant Link & Associates Pty Ltd (1998, May) *Research on the Commonwealth Information centre (CIC)* Project Number 1364.   Prepared for National Manager Innovations Team, Centrelink, Canberra. Note that multiple responses are included in the column for Small Businesses.

A CIRCIT at RMIT postal survey[8] of 675 small businesses across Australia in 1998 found that mail is the predominant channel used by small businesses, when they deal with government for business registration, vehicle registration, WorkCover, income tax, sales tax and obtaining information about regulations and available services. The phone, fax, face-to-face interaction and the Internet are also important for gaining government information (See Table 2).

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[7]   Australian Bureau of Statistics (1999). Unpublished data.

[8]   Slegers, C., Singh, S. and Hall, J. *Small Business and Electronic Commerce: An Australian Survey* Research Report No. 22 Melbourne: CIRCIT at RMIT.

Table 2: Communication channels used with government (small business)

Business registration	Post (70%)	Face to face (18%)	Phone (12.4%)	Fax (11%)	E-mail/WWW/ electronic(2.7%)
Vehicle registration	Post (58%)	Face to face (38%)	Phone (5%)	Fax (2.4%)	E-mail/WWW/ electronic (0.7%)
WorkCover	Post (78%)	Phone (10.7%)	Fax (7%)	Face to face (6%)	E-mail/WWW/ electronic (0.9%)
Income tax	Post (58%)	E-mail/WWW/ electronic (25%)	Face to face (17%)	Phone (8%)	Fax (7%)
Sales tax	Post (44%)	Face to face (7.3%)	Phone (6.4%)	Fax (5.5%)	E-mail/WWW/ electronic (2.1%)
Obtaining information	Post (58%)	Phone (41%)	Fax (23%)	E-mail/WWW/ electronic(12.7%)	Face to face (10%)

Source: Slegers, C., Singh, S. and Hall, J. *Small Business and Electronic Commerce: An Australian Survey* Research Report No. 22 Melbourne: CIRCIT at RMIT.

The importance of the Internet as a communication channel with government is reflected in future use patterns. Between 42 and 87 per cent of small businesses were interested in using online channels such as the Internet and electronic lodgement in the future for government services (see Figure 1).

Figure 1: Future use of online services with government activities
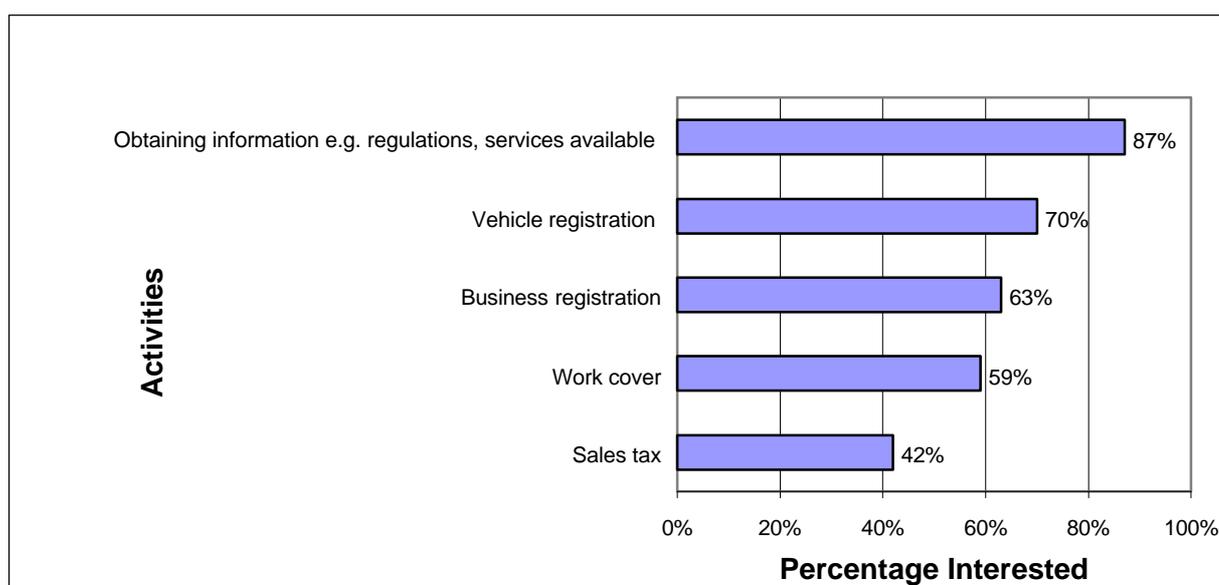
N = 421

Source: Slegers, C., Singh, S. and Hall, J. *Small Business and Electronic Commerce: An Australian Survey* Research Report No. 22 Melbourne: CIRCIT at RMIT

3.1.3 Changes in citizens' expectations of government services

The greater use of the telephone and the Internet to deliver government services is leading citizens to expect a higher standard of responsiveness. Users also expect government to be trusted and effective providers of electronic services.

The Canadian Survey 'Citizens First', October 1998 found that 'timely service' was the single strongest determinant of service quality across all services and levels of government.[9] This was the conclusion from an analysis of more than 30 aspects of service delivery assessed (see Figure 2).

Figure 2:   Drivers of Service Quality

Drivers of Service Quality	
Driver	**Survey measure**
Timeliness	"How satisfied were you with the time it took to get service?"
Knowledge, competence	"Staff were knowledgeable and competent"
Courtesy, comfort	"Staff were courteous and made me feel comfortable"
Fair treatment	"I was treated fairly"
Outcome	"In the end, did you get what you needed?"

Source: Rein Research Inc. (1998, October) *Citizens First*. Prepared for the Citizen-Centred Service Network and the Canadian Centre for Management Development, Canada.

Further analysis of the findings found that the telephone and e-mail had vastly increased consumer expectations of what was seen as 'timely' service. Instead of the two weeks that consumers found acceptable for mail responses, four hours was now the standard for the telephone and e-mail (see Figure 3).

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9   Rein Research Inc. (1998, October) *Citizens First*. Prepared for the Citizen-Centred Service Network and the Canadian Centre for Management Development, Canada.

Figure 3: Service Standards for Routine Transactions

SERVICE STANDARDS FOR ROUTINE TRANSACTIONS

1. Telephone

97 per cent of people find a 30-second wait for a government representative to be acceptable.

85 per cent find it acceptable to deal with no more than two people.

If you leave a telephone message at 10.00 am, 75 per cent find a four-hour wait for a return call as being acceptable.

2. Counter Service

68 per cent find it acceptable to wait in any line for five minutes.

82 per cent find it acceptable to deal with no more than two people.

3. Postal Mail

87 per cent find it acceptable to wait for two weeks for a mailed reply.

4. E-mail

If you e-mail a government office by 10.00 am, 90 per cent find a four-hour wait for a reply as being acceptable.

Source: Rein Research Inc. (1998, October) *Citizens First*. Prepared for the Citizen-Centred Service Network and the Canadian Centre for Management Development, Canada.

The potential of the Web and the electronic kiosk to deliver services focused on the activity rather than the department and level of government has also increased citizen expectations in this regard. There is little acceptance of having to deal with more than two people for a specific query or problem, whether it is by telephone or over-the-counter. When translated to the Web, it means a greater emphasis on effective design that is focused on the needs of the consumer. As government is seen as a trusted provider, any shortcomings in this regard are harshly received.

> Odette[10], a part time farmer in New South Wales in our sample, says, "I'm just not interested in bells and whistles, not if I'm just after information." She does not want propaganda, just the facts. On some of the government sites, she says, "You start to sort of wonder, you know. Are they fair dinkum or are they just publicising?"

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[10] All names of respondents in CIRCIT's qualitative sample are pseudonyms to preserve confidentiality.

3.2 A focus on activities

In Section 2.1 we have identified three main activities for which people and businesses use government services. In the following sections we draw on the qualitative data to show how citizens interact with government:

- To seek information (such as transport time tables, eligibility for social security, legislation and similar documentary information);

- To provide information (such as a change of address and other required notification); and

- To conduct financial transactions (such as paying bills, fees and fines).

Each of these information and financial transaction activities brings into play a different set of requirements from the users' perspective. These requirements then translate into the use of different communication channels according to the social and cultural context.

3.2.1 Seeking information

The methods used to seek information depend on:
- The degree of complexity of the information;
- The problems that need to be solved;
- The responsiveness of the government department to the use of a particular channel;
- Location of the relevant government office;
- Users' access and expertise with the Internet; and
- The social context of use.

The use of channels for interaction differ according to the context of the search for information. If it is a simple query like a time table or information about events in the city, then the Web is often the channel of choice for an expert user who knows where to look. But the situation changes when the information required is for a complex problem and/or the user does not know where to search for the information.

Our interviews show that a face-to-face service is preferred when people have a problem and are not sure how to look for information that would help them.

This is particularly true when face-to-face interaction is valued more highly in the social context and the government office is located conveniently.

Gerard, 25-39, the coordinator of an Online Access Centre says, "In Tassie, people like people. People like personal service. They like to have personal contact just so they can talk." He says this is a characteristic of country living throughout Australia, adding, "I'm from New South Wales and it's certainly the same there. We just like to talk about life."

Nancy, aged 40 to 54, who works for an organisation that provides services to farmers, highlights the same point. She says that country people would rather queue up at the Centrelink office next time they are in town, than use the Centrelink Web site. They want to be able to talk to someone to find out what they need to know.

"The person could say 'Look, I've got this book and it says here …' and the official can say, 'Oh yeah that's right. What it means is that'." This interaction is comforting "even if it's a young whippersnapper".

The Web in comparison is an unfamiliar place. Nancy says,

> "It's not something you would tend to use every day… It's something you go to when you've got a problem, so you don't have any familiarity with the site."

She says that part of the problem with some government sites – as with many others – is that you have to have expert knowledge of the government department and its offerings to make sense of the site. When Nancy was trying to find out about pensions and the youth allowance, she found she "had to jump from one bit to another to find out the policy and then find out how much was the entitlement". She says,

> "As well as the problems of the design, I think a proper service is when I can go in to you behind the desk and tell you all about that problem, the things that are impacting on it, state of the weather, the fact the bank's knocked me back, the fact the kids are sick or one of the girls has got to go to boarding school or whatever. Your job is to listen to that and to factor that in when you put your response together."

This dialogue is missing when one uses the computer.

The telephone, which is a familiar and comforting channel of personal communication, often fails to be interactive when used as a tool for searching for information.

Nancy says, that the telephone works well…

> "…if you can get on. But quite often … we go to another STD call area. In this office we may ring you back but that's not the usual arrangement… If you quickly then push 1, push 2 and get it wrong, that will get you the wrong message and you'll have to work out how to get it to take you back. You'll be very cross by that time. The only reason you're ringing these people is that you've got a problem. So you're not really coping with it at the start of it."

When face-to-face interaction is not convenient, telephone waiting times are long, or it is difficult to get the right person to deal with your problem, the Web and e-mail become attractive options for getting information and for communicating with a department.

Bertram, 25-39, a teacher in Victoria says,

> "I really hate being on hold with government departments. I know organisations are really hard pressed to answer phones, but gee, I hate being put on hold. Why government departments? They're always doing that electronically to me where they're not providing me with information. They're making me fluff around."

Gerard from Tasmania describes similar experiences. He says, "You know they say something like, 'This call is really important to us'. Therefore they make you wait 30

minutes." Interactive voice response is not necessarily better. At times you have "to listen to the whole menu before you could press a button".

Centrelink and the Australian Taxation Office telephones come in for particular criticism. Julia, 25-39, also a coordinator of an Online Access Centre in Tasmania, says of Centrelink,

> "Well, the last time I tried was about a year ago and I've never phoned them since. And it was, you would be on the phone, like take your lunch with you when you get on the phone, oh, half an hour or more. Those people must get so abused because (people) get crabby waiting. I don't know what it's like now. It might be better, but the way it used to be, you've got to have a coffee before you start."

Hortense, 40-54, in Tasmania also speaks of her frustration with telephoning the Australian Taxation Office. In the past, she has rung them to order publications and they never arrived. She says, "There are times I've waited for two or three months for things." Now she uses the ATO's Web site. She says,

> I find that easy to get around. I download publications … for my husband's business, provisional tax, prescribed payments, business tax details and stuff like that … print (the publication) out on my printer and it's there. And I've got it straight away."

The Web is also the channel of choice, when there is a need to research documentary data.

Titania's story illustrates how she accessed information from disparate sources to win compensation for her mother.

Titania's mother served in the Australian army between 1942 and 1945. She now has mesothelioma, which is linked to asbestos exposure. After a long process and one failed attempt, Titania, in her early 50s, won compensation for her mother. It involved presenting claims to the Department of Veterans' Affairs and the Military Compensation Board. It also meant liaising with the Department of Defence asbestos litigation section.

Titania gained much of the evidence by researching war records on the Internet. Armed with her Internet research, she went to the War Memorial for further material. She has also been in regular telephone contact with a woman in the Department of Defence asbestos litigation section. Titania has no doubt that without the Internet she would not have been able to get compensation for her mother. She says,

> "All the initial research was done from my study on the Internet … Then I was able to go to the War Memorial and just put in my requests and just put in my numbers and they'd bring things out of the archives."

The key evidence was found in war diaries.

> They were written up on a daily basis by the commanding officer… One day I just came across a simple instruction that was passed on and that was … that all people in the gun sections had to wear their gas mask for half an hour a day no matter what they were doing… I started to find out what the gas mask was comprised of."

She followed this trail through the Internet from one linked site to another till she got to the precursor of the CSIRO. That information led her to the evidence she needed.

3.2.2 Providing information

The quantitative data cited in Section 3.2.2 show that at present postal mail is an important channel for providing information to the government across a range of small business activities. But the possibilities of the Web are recognised, providing that the forms are well designed and the electronic record of having submitted the information is accepted as evidence.

Albert, aged 55 plus, is a retired financial counsellor who does occasional casual work. In the last ABS census he was a census collector. He thinks a greater use of the Internet for submitting census forms would make the life of the Census Collector easier. Moreover it would make for greater consumer comfort with the privacy of the data.

> "I think (the Australian Bureau of Statistics)… would get a lot more truthful answers. Even though you're at pains to tell the general public that you don't look at the forms – and you don't look at them – except to make sure that page one, page two and page three…have been filled out. That's all. You know, reading the rest of the form is the last thing you're interested in. You've got the next house to go to."

He thinks people would consider the Internet a more private means of submitting their census form. He says,

> "I come to your front door, and I hand you a census form. You take it inside and you think, 'Well, will he see the information?' You're supposed to tell the truth. OK, a week later I come back, the same guy, and you hand me that form. Now you might look at me and think, 'Now I don't really like the look of you' ... Now if the front pages haven't been filled out I have to give it back to them and they're going to write a load of garbage. I'm quite sure that happens. But if the whole thing was anonymous, I think the ABS would get a much truer picture than they get at the moment."

Albert himself prefers submitting a form on the Internet than sitting down and doing it on paper. He says,

> "It's infinitely quicker and then you press the Send button. I don't keep a copy, unless I choose to save something, which I usually don't. It's cheaper, it's quicker, it's more efficient, and that's the name of the game. If the form is well designed, you can work through it very quickly. It's usually just a question of clicking the mouse. It's more efficient in the sense that once you've finished it, it goes straight to the person who's looking for it. From my point of view that's far more satisfactory because I know that the person who's looking for it has got it. It hasn't gone through a series of clerks."

Albert's enthusiasm for online forms is reserved for those that are well designed. Many online forms still need to be printed, filled in and posted. Printing often causes problems when a form does not fit an A4 page neatly. Moreover, sometimes special software is required.

Dorian, 55 plus, a consultant in Victoria came across some of these disadvantages. He said,

> "To fill in the form that was required I had to download some software… When I then went back to the form it didn't recognise that I'd downloaded the software, so I had to repeat it."

3.2.3 Financial transactions

It is important to reiterate that the latest ABS data (May 2001) show that 50 per cent paid their bills or transferred funds via the telephone (compared to 39 per cent in May 1999), and nine per cent used the Internet (compared to two per cent in May 1999). So the Internet is very much an emerging payments medium, in a context where there is an increasing shift from physical to online modes of payment.

The greatest concern in making payments for goods and services for the first time through the Internet is the security of the payment.

Among the 25 people we interviewed, only six had used the Internet to pay accounts – for utilities, car registration and, in one instance, university fees. Sylvia, was typical of the majority who had not yet made any payments over the Internet. She felt uneasy, saying, "You just worry about finding that you've got this huge bill on your credit card when it comes in and not be able to get out of it." Like most of our respondents, Sylvia, 40-54, a bureaucrat in Canberra, was concerned about the secure transmission of data and how it is processed and used.

The concern about security diminishes once there is a history of successful Internet payments. There is then a greater sense of comfort with Internet payments. The increase in the legislative underpinnings to electronic payments will also increase the level of comfort. But as yet, Internet payments are not totally trusted.

Felicity, 40-54, who lives in Tasmania, says,

> "Once you've done it a few times, (you think) hey, what was I ever worried about, you know, I can do this. Like using the ATM machine… I remember the first time I went, I had my piece of paper that says, 'Don't ever carry this with you', with your PIN number. But I've got it there on a Sunday when there's nobody going to be behind me, thinking okay, what do I do next, sort of thing. And I think it's probably the same with anything like that, you know. After a while you think, 'Oh, a piece of cake. I can do this'."

There is likely to be greater trust when dealing with a government site, for it is seen as a trusted site. Hortense, 40-54, living in Tasmania, says, "I think if you were dealing with a government department they would set up a secure connection for credit cards."

4 Components of Effective Use

The quantitative and qualitative research described in the previous sections enable us to propose components of effective use of government electronic services from the users' perspective. These components provide value for the users and are hence drivers of potential use. They have direct implications for the design and delivery of government electronic services. These components include:

- **Services need to be focused on activities,**
- **Services need to be easy to use,**
- **Services need to be secure and trusted,**
- **Services need to be responsive, and**
- **Users expect a choice of channels.**

4.1 Services need to be focused on activities

All services need to be activity focused when they are designed to respond to users' needs. This activity focus is particularly important when services are delivered electronically, as there is no personal interaction on the phone or over-the-counter to help the users. In this section we detail the importance of this activity focus and the steps required to implement it.

Good design should recognise that many citizens will not know about the government departments they need to access. Information should be organised according to activities rather than departmental responsibilities. Services should be classified to fit with the users' view of their activities.

The failure to adhere to this basic principle leads to a negative view of government service delivery. Titania, 40-54, from Canberra says,

> "I think government services are too focused onto themselves rather than on the people who are looking for information. The sites tend to be based on departmental structure and their premises."

The practice of the Home page opening with a choice of departments, rather than focusing on activities, comes in for adverse comment. Bertram, 25-39, a teacher in Victoria says that government entry points assume the user knows which department he or she wants. He says there is also the additional "inherent assumption that I know what your department's boundaries are". Peter, 40-54, a bureaucrat in Canberra confirms this view, saying,

> "I think government sites often fall for the trap of thinking, 'Well, starting with our opening page, what departments do we have? Let…those departments … deal with it.' Now that's a cop out if there ever was one … They should be asking themselves 'What business are we in? Transport, health?'"

Consumer/citizen satisfaction with government services improves with a focus on activities. Austouch, an electronic kiosk initiative developed in the Australian Capital Territory in 1994, is one such example. It grew out of extensive community

consultation commenced in 1992. Information is presented under broad activity headings, such as:

- What to see and do;
- Public transport;
- Sport and leisure;
- What's new;
- Major attractions;
- Community events;
- Parks and environment;
- Regional business directory.

Austouch serves an average of 570 people every day across 18 kiosk locations in Canberra. Usage is highest at weekends and during the lunch period. The most common use is to pay an ACT Government bill – a feature more likely to be used by women.

The level of usage is affected by the fact that the electronic kiosk is an intermediate technology. Although the information provided is now connected to the Web, the electronic kiosk does not offer the same extent and degree of interactivity. It fills an online niche for people who have no access to the Internet and who need to make simple information queries and financial transactions with the government from a public point of access. As an example of a change in usage because of the availability of other electronic options, tourists are emerging as a significant user group of Austouch.

4.2 Services need to be easy to use

A focus on the activity means the user is led in easy steps to the completion of the activity without having to tussle with the technology. In order to achieve this, the emphasis has to be on reducing complexity, enabling connection between activities and making the technology invisible. As Rogers has pointed out in his study of the diffusion of innovations, the reduction of complexity is one of the main ways of persuading people to adopt something new, overcoming the innate conservatism of the consumer. [11]

Effective navigation is part of this effort to reduce complexity. To achieve effective navigation, the people we interviewed say they want two things – plain English and a presentation that concentrates on the activities they want to complete, rather than depending on knowledge of the departments and their programs.

The constant refrain is the lack of plain English on the Internet. It is assumed that the user knows the technological terms associated with the Internet. Felicity, 40-54, the Coordinator of an Online Access Centre in Tasmania, says,

> "I have noticed in a couple [of Web sites] that I was looking at recently, [they] did allow you to download an html file or a pdf file,

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[11] Rogers, Everett M. (1995). *Diffusion of Innovations.* 4th edition. New York: The Free Press.

which I think would have meant absolutely nothing to a majority of the population – they wouldn't have the faintest idea which one they wanted or how they might need to use it."

These points were most dramatically illustrated with reference to government sites[12] where plain English and useable design were considered lacking. Edith, 55 plus, a Webmaster, observes of the Victorian 'maxi' kiosk and Web site:

"I found it quite cumbersome. They may have improved it, but I wasn't all that impressed, because as a Webmaster, all they had for the title of the page was 'maxi', that's all it was. If you go to a search engine all that comes up is 'maxi'. Well, I mean 'maxi' what? Well, it could be a sex service for all you know. On the 'maxi' also, it seemed to me to be going out of my way to do something I could do more conveniently in other ways, so that's probably why I haven't persevered with 'maxi'…"

Nancy, who works with a farming organisation, had a look at 'maxi' some time ago. She says,

"It didn't strike me as being amazingly user friendly. I think it was probably done by the same authors as those manuals that we're all supposed to look at to solve our problems. Too much technicality and not much professional, plain English…

I find it almost impossible to use any of the Windows manuals. On the other hand … I use a digital camera which I've got on the PC using the Kodak software and that's terrific. It's obviously been designed for major idiots. It's easy to use and it's friendly to do."

Nancy adds that it is important to go outside your own organisation to test whether you have it right. She says, "You need to test with people who are outside your environment so that you understand if it communicates or not."

There are a variety of mechanisms that can help the user discover what he or she wants to know and where best to access this information. Interviews with users highlighted the following effective mechanisms:

- An alphabetical subject index and a site map help to focus information according to activities;

- A list of Frequently Asked Questions (FAQs) serves as a kind of users manual;

- An internal search engine helps users to navigate large sites;

- The ability to go back to the home page from any screen to try different points of access to the information should be a standard feature;

- Interactivity is effective when the user can submit an e-mail request for information that can't be found on the Web site and then receive an individual response;

- Uniformity of presentation between the different government sites facilitates use.

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[12] This section substantially draws on a linked report, Singh, S. and Ryan, A. (1999) *Gender, Design and Electronic Commerce.* Research Report No. 25. Melbourne: CIRCIT at RMIT.

Felicity thinks uniformity of presentation should be possible with government Web sites.

> "Something that would be really good with the government pages, if there was some sort of consistency, so that people in one state looking at one type of page would feel comfortable when they saw another one and that would be a Federal Government page and State Government pages. And if you've got forms for this and forms for that, if they're consistent with the way that they're laid out and what you need to do with them, people are going to feel more comfortable with it. I think that's very important."

4.3   Services need to be secure and trusted

Users we interviewed reiterated a general concern about the security of transactions. Yet security features were often explained in varying degrees of technological jargon, leaving the impression that security features are inadequate. Edith, who is a Web designer, says what is required is:

> "Good security warnings and perhaps an explanation in simple terms of which security they are using…where it comes from, who else uses it. Like if they say that NASA uses it and you find out that last week NASA's system was breached, well you might not have too much sympathy with it…

> I think it's important that they have some simple explanation, what it is and how it works, but simple. There's no point in going into the cryptography of it and … you've got 72 pairs of binary series or something, I mean, you've lost people. But I think it would be of use, telling people just what they're tapping into. Actually when I signed up for (the ISP), they explained. As I got deeper and deeper into security to sign up, they were telling me exactly what was happening and what level of security I was at, and we even got to one stage where they said, 'We are using the services of blah, because they have a fully secured server'…

> And that was really good, because they were explaining to me as I went deeper into it how I was gradually being moved to a more and more secure place all the time, so frankly by the time I got there I didn't have too many qualms about the transaction."

The capabilities of electronic service delivery lead to user appreciation of interactivity. Rosemary, 25-39, a bureaucrat in Canberra, talks of the comfort of the e-mail link and response. She says, she got a message back saying,

> "'We've received your question. It's being processed'. Then within the week I'll often get an answer or 'Thank you for your query, personal message, and we're following it up'. Then later on a more comprehensive approach. It's more than just a Web page or just a number."

Governments' initial embracing of new delivery media can lead to citizens/consumers' loss of trust. 'maxi' the Victorian electronic kiosk comes in for

particular critical comment. Dorothy, 25-39, a researcher in Victoria says, "I tried the security once – 'Press this for security' – and the whole thing jammed."

Cynthia, 40-54, a consultant in Victoria, entered her change of address in a 'maxi' kiosk for Vic Roads to change it on her car registration and her driver's licence. She received a receipt saying the transaction had been processed, but a month later she found that the change of address had not been implemented.

Dorian's experience was equally dismal. He is 55 plus, a consultant in Victoria. He says, "I filled in the form but 'maxi' refused to accept it."

4.4 Services need to be responsive

The quantitative research reported in Section 3.2.3 shows that people expect greater responsiveness from the government because the electronic delivery of services theoretically makes this possible. However, they will not persist with a medium that does not provide the expected results efficiently and effectively. This higher expectation of government service translates to:

- A speedy response from government;
- Up-to-date content on government Web sites with a clear policy for archiving past information;
- The availability of expected information;
- The provision of information rather than promotional and public relations material;
- Comprehensive information;
- Up-to-date links from the government site to related sites;
- Potential for interactivity;
- Assured security of transactions.

Edith, 55 plus, a Webmaster in Victoria tried to order a tow-bar number plate from the Vic Roads site. She was not able to do it and says, "I finally found … that you have to go to … one of their offices to order it. I think eventually I found out you can do it over the phone."

Bertram, 25-39, a secondary school teacher, was delighted with the convenience and ease of use of 'maxi', but he was surprised that he could not use it to pay his rates, as his own local Council was not included.

Another of the expectations of users is that if a government service offers bill payments for utilities and local government then users should be able to pay all such bills in the same session. A lack of comprehensiveness of service dilutes the convenience that is the main attraction of the use of electronic service delivery.

4.5 Users expect a choice of channels

Consumers/citizens use a mix of channels to access government services. Different channels are preferred by users according to their expertise and the social meaning of channels of communication in various contexts. The same user may also prefer to use different channels for various stages of interaction with government. Hence the

electronic delivery of government services has to be designed so that the different delivery systems can be used in parallel or together. This is particularly important so that consumers/citizens can access government services in the way that seems most effective to them.

Titania's story showed how she used face-to-face interaction and the telephone to supplement her Internet searches to come to a successful outcome. In other cases, a consumer/citizen pointedly chooses particular channels to enhance the convenience and the possibility of a successful outcome.

Some of the greatest successes have been government sites that encourage initial contact by e-mail so that users can alert them to their problems. This approach is problem/activity oriented, rather than provider focused and it avoids the call centre wait that users find so frustrating. On receiving the e-mail a staff member can deal with the problem and get the local context right before contacting the consumer by phone. This final stage has the advantages of personal and interactive communication that is immediately authenticated.

Odette, 25-39, a farmer in New South Wales speaks approvingly about this aspect of Centrelink's service. She says, "I'd much rather send them an e-mail and they can muck around for a couple of hours and then ring me back." This way she gets the best of both worlds and does not have to wait. Ingrid, 25-39, in Tasmania also went to the Centrelink Web site because of the difficulty of getting through on the phone. "There's a little thing there where you can say what your request is about and give your number. They say they'll call you back in two days or something. Wonderful."

Personal interaction is particularly valuable when the user is stuck, and cannot find the information on the Web. Odette says that many Web sites give a general e-mail contact. This is not sufficient. She says,

> "I do like to have the personal details of someone that you can get in touch with if you need more detail of information or you need to query it. And you want, you actually need that person's phone number I think or e-mail address, a personal contact."

The framing of electronic services within a mix of channels translates to design features, which assume that the mix rather than the sole use of an electronic channel is of paramount importance. Thus there is a basic need for all government information pages on the Web or in print to include information that enables the user to contact staff who have specific responsibilities.

We note that the choice of communication channel or a particular mix of communication channels is influenced by the fit between:

- characteristics of activities;
- characteristics of channels;
- social and cultural context of interaction; and
- expectations of greater responsiveness and effective service.

In Figure 4, we summarise the possible fit between the characteristics of activities and the channels of government service delivery. We keep in mind consumer/citizen desire for increased responsiveness and effectiveness, as it becomes possible for services to be electronically delivered by the government. The meaning of the fit,

however, changes according to the social and cultural context of the interaction. Where a government office is conveniently located and there is a social preference for face-to-face contact, then over-the-counter transactions are the preferred way of transacting with government.

The change in the use of communication channels according to the social context and the expertise of the user make it essential to have parallel systems of delivery. This is in tandem with the Canadian findings[13] that citizens think that the following options would be helpful when multiple contact services are needed:

- A 'one-stop' centre that offers all the services needed;

- The ability to do all or most transactions by postal mail, phone or Internet without visiting government offices;

- One person to guide the user through the system and assist with any problem.

The three options need to co-exist, though they will not necessarily be used by all consumers/citizens.

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[13] Rein Research Inc. (1998, October) *Citizens First*. Prepared for the Citizen-Centred Service Network and the Canadian Centre for Management Development, Canada.

Figure 4: Consumers' Choice of Channel

USER ACTIVITIES	CHARACTERISTICS OF ACTIVITIES	CHOICE OF CHANNEL MOST APPROPRIATE ………......................…..LEAST APPROPRIATE	CHARACTERISTICS OF PREFERRED CHANNEL
Seeking information	Documentary information that is publicly available – such as a public transport timetable, legislation, conditions for a permit.	Web Telephone Face-to-face Kiosk (for response by postal by mail)	Immediacy of delivery compared to telephoning and then waiting for postal mail.
	Information needed: – To solve a complex problem – When department is known but face-to-face and telephone contact are difficult – When not sure whom to contact – When a response is required.	Face-to-face Telephone Web Postal mail E-mail Face-to-face Telephone (for response by phone) Face-to-face Telephone Web Postal mail Telephone/mail E-mail Face-to-face	Information needs can be identified and satisfied. No waiting, and a record is generated. Sources of information identified and contacted. Personal and trusted response.
Information provided by the user	An identified user sends information to the service provider, such as lodgement of a complaint or opinion, or making a request for instance for a new rubbish bin.	Telephone Web Postal mail Face-to-face	Convenience and assurance that it has reached the right person.
	Submitting information such as filling in a form, application or tax return.	Web Postal mail Face-to-face	Speed and convenience
Financial transactions	An identified user pays: – a fine or licence fee – for a service	Telephone Postal mail Face-to-face Web Postal mail Face-to-face Telephone Direct Debit Web Kiosk	Convenience and record of payment Record and convenience

5 Designing for Effective Use of Government Electronic Services

This research and identification of components of effective use provided the background and framework to a study for one of the funders of this work, Multimedia Victoria, of strategic approaches to maximising the uptake of the Victorian Government electronic services.

5.1 The Victorian policy background

The objectives established by *Victoria 21* led to the rollout of infrastructure, industry, social and personal development programs, and the provision of government services online, such that Victoria could be "*recognised as a centre of excellence in the global information economy by 2001*". The pace of change needed to meet these objectives, through programs such as *Skills.Net*, *Vicnet*, *VicOne*, *maxi* and the like, necessitated a clear "supply side" focus in program delivery.

It was seen as important to put the hardware and software, the systems and processes in place that would allow efficient and secure online government service delivery. Many of the systems that were put in place found predictable, easy acceptance among people in the community who are "early adopters" of new technologies.

Promising an ongoing commitment to its –

> "*internationally recognised Government Online program so Victorian citizens can access Government, seven days a week, 365 days a year, 24 hours a day regardless of where they are located, by phone, Internet or public kiosk – and in the future through television*",

Connecting Victoria supplemented these approaches with a commitment to –

> "*making ICT ubiquitous ... creating the skills that will enhance people lives ... putting technology in the hands of the whole community ...*"

To grow **usage** of government online services beyond the initial levels that have been seen with the rapid expansion of their **availability** now required attention to "demand side" understandings of what is perceived as valuable by potential users to promote the uptake of online services.

5.2 Using components of effective use as a framework

The components of effective use identified in Section 4 were extended as a framework for understanding the 'drivers' that influence the likelihood that people will use services online:

1. **The service provided is a 'transaction' relevant to their daily activities**, such as paying a bill, lodging a claim, exchanging information, seeking a licence or permit or booking an appointment;

2. **Access points are located where people want to undertake transactions.** For many people their interactions with government will be at a computer at

home or at work. For those who cannot use this form of access, collocation of online access at other points of service provision becomes critical;

3. **The 'interfaces' used in online service delivery are overwhelmingly user friendly.**

4. Especially in relation to financial transactions, **people use online services that they trust**. Government enjoys a fair degree of comparative trust in this regard already, but must maintain attention to privacy and security issues to ensure the trust remains;

5. People choose different 'channels' to communicate in different contexts and to suit their capacities and needs. **Allowing choice of channels promotes effective use of new technologies for government, communities and individuals**;

6. Quicker service, 24 hour availability, cheaper processing or convenience of home or work access are examples of how **intrinsic or additional incentives can be highlighted to promote the use of online services.**

How the Government provides services

Government faces important challenges as it re-engineers its service delivery systems to provide for access through new and emerging communications technology:

1. Traditional service and program delivery mechanisms (the **'public service'**) need to continue providing high quality services through traditional means to ensure equitable and effective access. These services need to adopt components of the new technologies in an incremental way to ensure 'smarter' service provision while not downgrading other forms of delivery.

2. New technologies need to be introduced which transform the very nature of the way citizens and communities interact with government. **'Intelligent agents'** such as kiosk and desktop online services, e-commerce sites, "channels" which reach across traditional public service structures to reflect people's patterns of interaction with government or smart search agents which open up the structure of government

3. Government itself is transformed by the new technologies, and new **'quality control and gatekeeper'** roles emerge in the transition.

4. Principles of equitable access and user choice lead to the consideration of options for **'integrated services'** that allow trialing and assessment by users of the value of the various forms of service delivery in a helpful and familiar context.

Key stakeholders, such as co-ordinating departments and agencies, and channel and website managers, and were asked to apply understandings of these factors likely to 'drive' uptake of government services online to these older and newer aspects of government service provision. This generated a range of possible activities within and among the service delivery platforms as illustrated below:

Figure 5: Examples of proposed activities likely to encourage uptake suggested in stakeholder consultations

EFFECTIVE USE PRINCIPLE (in priority order)	PEOPLE AND AGENCIES PROVIDING 'CONVERGENT' GOVERNMENT SERVICES			
	'PUBLIC SERVANTS'	'AGENTS'	'GATEKEEPERS'	'INTEGRATED SERVICES'
1. RELEVANCE TO DAILY ACTIVITIES	Provide a variety of modes of transaction **Provide directories of cross gvt services online, enable searching for services by area/ locality** Integrate local and state government services (eg rates, licences & utilities) by committing a wide range of agencies	Make specific transactions discoverable, then give users options Create consumer advisory groups for useability testing/ user-centric design 24 hour access Investigate co-channelling with other governments, communities online, utilities & business, subject to effect on branded space flood transaction types, audience segments, life events	**Prioritise and promote valuable transactions – government service is not just information viewing.** Use service modeller data to measure value of transactions to both users and government Create consumer advisory groups to advise gatekeepers of concerns Also use dynamic feedback from search data to inform government of most accessed/relevant services Provide as a transaction, opportunities for citizens to become involved in online democracy (see the Canadian experience, talkingpoint.sa.gov.au)	Provide a 24 hour capability for all financial services Co-channelling with other governments, communities online, utilities & business Provide one-stop capability to suit a wide range of transactions and information types
2. LOCATION OF ACCESS POINTS	Provide information about online services in appropriate physical locations Provision of skilled, multi-lingual assistance in targeted locations	Ensure that the government online portals are easy to locate (cf. URL promotion) **Consistency of addresses across all government channels to allow intuitive navigation** Recognise that access to online services is still dependent upon access in general population (see ABS statistics, Telstra survey)	Continue marketing public access points Choose access points according to population, demographics Capitalise on growing PC ownership as providing alternative points of access –acknowledge the potential future audience for interactive television and WAP.	Place services in central locations or in relevant existing locations (eg post office, health centre, local council) Ensure proximity to transport & other govt. services (see AUSTOUCH experience in ACT) Explore alternatives to kiosks, or refocus kiosk services towards the most used transactions

EFFECTIVE USE PRINCIPLE (in priority order)	'PUBLIC SERVANTS'	'AGENTS'	'GATEKEEPERS'	'INTEGRATED SERVICES'
3. **EASE OF USE**	Clearly identify e-mail contact address on front pages of govt. websites **Introduce integrated e-mail/fax service for businesses accessing govt. info via fax** Ensure public service staff possess the necessary 'mass listening' skills & competencies to effectively deliver services across different channels	**Develop more effective search engines to facilitate greater ease of use** Support people with disabilities via speech recognition & other software Provide option of text-only sites as standard feature Provide help features both online (eg, e-mail query) and offline via a phone help-desk or call centre	**Monitor and evaluate adherence to W3C guidelines on web page useability, functionality & accessibility.** Ensure web pages feature simple layout & language, intuitive navigation Group transactions according to those most commonly used **Use data from dynamic feedback to redesign portals to demonstrate govt. commitment to these standards** review portals & develop easy-to-follow hierarchy structures	Make use of existing human resources while providing option of self-service Provide a choice of channels through one operator/ interaction **Provide integrated desktop systems for operators** Target different consumer groups – ie, non-users, repeated users, discontinued users – and different market segments
4. **TRUST**	Maintain confidence in existing services while also promoting migration Capitalise on existing public trust in government services	Guarantee secure servers for financial transactions with government Introduce a reasonable standard of encryption for all business/financial transactions **Enable consumers to utilise personal cookies to customise access** Inform users of privacy considerations, emphasis on opt-in information provision services	Promote branded space by way of URL displayed in all govt. promotional materials Commit to a single entry point/portal site Assign responsibility for site maintenance Develop and continuously evaluate reporting structure for reliability Provide opportunities for feedback via online surveys of satisfaction Develop standards for authentication & receipt across departments, agencies, local councils	Develop privacy policies for receipt/ transmission of personal info. via e-mail and/or web Provide receipt for all transactions **Consider appointing an ombudsman to oversee and respond to consumer concerns about service**

EFFECTIVE USE PRINCIPLE (in priority order)	'PUBLIC SERVANTS'	'AGENTS'	'GATEKEEPERS'	'INTEGRATED SERVICES'
5. **CHOICE OF CHANNEL**	Guarantee that consumers who communicate via offline channels (f2f, phone, post, fax) receive the same service as online customers	Provide consistent service across all online channels by allowing users to conduct similar transactions via different channels **Encourage greater uptake amongst different user groups by exploring the future possibility of access through other devices (eg, WAP, interactive TV, Palm Pilot)**	**Ensure that relevant and high volume info. available offline is also available online, in an accurate and updated format**	Provide operators with access to all channels **Use current f2f interactions to encourage migration to online services (see Singapore 1 experience)** Target services on the basis of convenience – for example, providing a fast DIY service for bill payments during lunch hours
6. **INCENTIVES**	Institute govt. wide guarantee of reply to e-mail within x days Institute penalties for late replies Maintain general principles of best-practice customer service	Encourage view that short term costs will be outweighed by long term benefits (not all of which are necessarily quantifiable) Emphasis on meeting peoples' changing expectations	Emphasise customized (ie, consumer-controlled) web pages rather than personalized (ie, government-controlled) content (cf. www.reach.ie) Provide other info. upon request to add value to govt. info. (eg, Tattslotto, weather, sport results)	Explore costings of differential pricing strategies Offer some form of discount as a means of increasing uptake (see New Brunswick, Service Tasmania)

5.3   Identifying strategic directions

From this matrix of activities, key directions for strategic intervention could be identified. These are detailed in the final report which was delivered to Multimedia Victoria for consideration in November 2000.

The main strategies which emerged can be summarized in four broad categories:

1. Integrating service provision
    – common platforms for physical outlets, call centre and online presence;
    – adoption and implementation of common metadata standards to facilitate inter-government searching;
    – provision of a Government Online directories online;
    – redesign of portals with transactional focuses;
    – consistency of addressing across government departments and agencies;
    – 'flooding' the availability of key transactions, such as bill payment, form provision; and
    – pre-planning for government services on new delivery platforms, such as WAP and digital TV.

2. Ensuring excellence in service delivery
    – adopting email as a third standard way of communicating with government alongside post and telephony;
    – structuring user input into website design so that understandings of usage and principles of accessibility shape the structure and format of sites;
    – user customisation of government Websites;
    – a human edited, open conversation, smart search agent.

3. Targeting the specific needs of known user groups
    – online interactivity for policy development;
    – development of 'channels' which 'mine' across government departments and agencies to group information and transactions by interest and activity;
    – strong cross promotion of Government Online services.

4. Strong cross-meshing, promotion and marketing
    – using existing communication channels to raise general community awareness of scope of government services and their availability online;
    – reinforcement of the existing perceptions of security and trust within which people are likely to trial government services;
    – promoting the re-use of government services by previous users through customisation options.

The specific strategies for achieving these ends are under departmental consideration at the time of publication.