

A GOOD PRACTICE GUIDE FOR GOVERNMENT ELECTRONIC SERVICE DELIVERY

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ABSTRACT

In this paper, I present a good practice guide that draws insights from user studies to implement and evaluate user-centred design (UCD) in Government electronic service delivery (ESD). This guide could become a practical aid to implementation because it connects user studies and design. At least as important are ways that help designers understand the perspectives of citizens. And lastly, I explore ways of evaluating UCD so that it is seen as valuable in the context of government.

In the first part of the paper, I focus on user-centred design in Government ESD in Australia within an international perspective. I examine audit reports and best practice guides of Government ESD in Australia. Though UCD is now a stated aim and given priority, little attention is paid to helping government officials dealing with ESD to make the shift to the users' perspective. This shift goes beyond the principles of site usability. It means starting from the user and his or her activities within their social and cultural context – rather than policy and what the department can offer. In the second part of the paper, I focus on a qualitative study of users of Government ESD in Australia. The study shows that users want services that are focused on activities. They want services that are easy to use. They want services that are secure and trusted and services that are responsive. Users also expect a choice of channels so that ESD can fit in with existing ways of accessing information and services.

In the third part of the paper, I move from the sociological understandings of users of Government ESD to suggest actions that can be taken by designers of Government ESD, to make the services more user-focused. I outline the importance of personas and scenarios to tell a story about users. These stories which draw on user studies become important design tools for government ESD for they help place the insights of user studies, succinctly before the designers. The second aid to changing perspective is to work out ways for designers to become reflective about their own use.

The concluding part of the paper converts knowledge about users' needs to evaluation criteria for user-centred design of government ESD. These performance criteria will help make user-centred design a central part of Government ESD.

Introduction

This paper bridges the gap between Government electronic service delivery (ESD) policy intentions and use. Governments aim to deliver their services online. The impetus comes from two different sources. The first is the desire to be part of the Information Economy, enabling the government to increase access to its services and at the same time increase efficiency and reduce costs. The second driving force behind the increased provision of ESD is to move towards electronic governance. An important component is to cut red tape and make government more transparent.

In Western countries such as the United States, the United Kingdom and Australia, government documents detailing ESD strategy emphasise the first stream. There is an assumption however that ESD is linked to greater electronic governance. In developing countries like India, the primary purpose of ESD is to lead to more accessible and transparent government. The services highlighted online are the annual audit of accounts in some districts, grievance procedures, access to land records, certificates relating to birth, death and caste; permits and licences (Jamabanthi conducted online 2000; Twins redefining serviced 2001).

Governments in the developed economies have moved towards a more user or citizen centred policy. Australia ranks third, after the United States and Taiwan in terms of information provided, the clarity of the site, and policy relating to privacy and security (National Office for the Information Economy 2002). Yet only a minority of people with Internet access at home use Government ESD. The percentage gets lower when one considers the number of adult citizens using ESD.

In April 2001 the highest access to Government services in Norway was less than one-third (32%) of persons who had Internet access at home. Australia ranked third in peak penetration of online Government services with 25 per cent (July 2001), following Germany with 30 per cent (July 2001) (National Office for the Information Economy 2002). In Australia only nine per cent of adults used Government ESD in the 12 months to the end of 2000 (Australian Bureau of Statistics 2001).

Other recent studies cite more optimistic figures for ESD and e-government. A study by Taylor Nelson Sofres (cited by Greenspan 2002) shows that the percentage of population using e-government are:

- Norway 53 per cent
- Denmark 47 per cent
- Finland 46 per cent
- Canada 46 per cent
- United States 34 per cent
- France 18 per cent
- Germany 17 per cent

The numbers of citizens who use Government ESD are increasing. It is clear however that in most countries the electronic channel is not as yet a major channel for delivering service.

I argue this low usage is partially because Government ESD does not satisfy users' needs. I draw on a qualitative study of Government ESD in Australia. Based on these social understandings and the methodology for implementing user-centred design (UCD), I present a good practice guide for moving from the policy perspective to the citizens' perspective. Inherent in this best practice guide is the need to develop evaluation criteria, so that UCD becomes embedded in the processes of designing Government ESD. In the second section I focus on Government ESD in Australia within an international perspective. In the third part, I outline the main steps involved in the processes of UCD, drawing on the qualitative study of the use of UCD. In the fourth section, I outline components of an evaluation framework to monitor the effectiveness of government service delivery.

Government ESD

There has been a move from the supply side and cost savings focus of Government ESD to a greater attention to user-centred design throughout the OECD and Asia Pacific countries. The Australian Government – like other Governments in the industrialised world – is increasingly using electronic channels to deliver services. The pervasive philosophy is to provide “single window/whole of government” interfaces, 24 hours a day seven days a week, for a wide range of government services. The portals aim to be customer rather than department focused, with the information and services organised according to user groups and their activities. Yet, usage is relatively low.

Take-up of Government ESD

Take up of Government ESD varies as shown in table 1. It has no correlation with E-government rankings that are based on national government web sites rated according to the scope of information, clarity, privacy and security policy.

Table 1: Use of Government ESD in selected countries

Countries	Percentage of adults accessing the Government ESD at home	E-government ranking 2001
Norway	32 (April 2001)	36.5%
Germany	30 (July 2001)	40.6%
Australia	25 (July 2001)	50.7%
Hong Kong	25 (April 2001)	Not available
Singapore	23 (March 2001)	43.4%
France	21 (March 2001)	40.1%
United States	21 (January 2001)	57.2%
Italy	19 (January 2001)	37.8%

Source: National Office for the Information Economy, 2002

The low usage of Government ESD is related to the fact that just less than half the households in most developed countries do not as yet have access to the Internet as seen in table 2.

Table 2: Personal and household Internet access, September 2001

Country	Percentage of households online	Percentage of persons 16 years and over with Internet access from any location
Sweden	58	82
Hong Kong	58	69
South Korea	56	71
Singapore	55	65
United States	54	76
New Zealand	54	75
Norway	52	77
Australia	52	72
Taiwan	51	64

Source: National Office for the Information Economy (2002) citing Nielsen/NetRatings 2001.

Low usage can also be explained by infrequent use of government services. The Commonwealth Information Centre May 1998 survey of 1210 consumers and 804 small business operators showed that more than a fifth (21 per cent) had had no contact with a government agency in the past year (Chant Link & Associates 1998).

Traditional Communication Channels Remain Dominant

Traditional ways of interacting with the government – face-to-face, mail, telephone, fax – are still dominant (table 3). The Commonwealth Information Centre survey (Chant Link & Associates 1998) gave some indication as to how consumers and small businesses use communication channels for information search and retrieval.

Table 3: Use of communication channels for information search and referral

Preferred Channel	Communication	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.

Citizens Expect Greater Responsiveness with ESD

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. This was the conclusion from an analysis of more than 30 aspects of service delivery assessed (see figure 1).

Figure 1: Drivers of Service Quality

Driver	Drivers of Service Quality 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.

Figure 2: Service Standards for Routine Transactions

SERVICE STANDARDS FOR ROUTINE TRANSACTIONS
<p>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.</p> <p>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.</p> <p>3. Postal Mail 87 per cent find it acceptable to wait for two weeks for a mailed reply.</p> <p>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.</p>

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 2).

Use of Government ESD

The Australian Bureau of Statistics (2001) gave details of the kinds of government services used (table 4). The largest number of users are male, 25 to 34 years old, earning more than \$A80,000 a year, living in metropolitan areas, managers or professionals, with post secondary qualifications.

Table 4: Use of Government Services via the Internet

Government Services	Percentage of all adults accessing government services via the Internet
Pay bills	32
Submit tax returns	15
Taxation information or services	32
Employment information or services	28
Pension or benefit information or services	7

Source: Australian Bureau of Statistics (2001) Household Use of Information Technology, November 2000. Catalogue no. 8146.0. Canberra: Australian Government Publishing Service.

A Good Practice Guide for Government ESD

There is an increasing recognition that government ESD needs to be user-centred. User-centred design places users and their activities at the center, at all stages of the design process. Users' activities are examined within their social and cultural context to see how new technologies can fit with accepted ways of doing things. In the process new technologies also change the way the activity is conducted (Singh 2001b).

The main challenge is to begin to see government services through the eyes of the user. It is difficult for the story changes with the perspective. The challenge is to deliver the services so that they fit with ways citizens choose to conduct their activities. Government ESD also needs to retain appropriate social meanings, while changing the relationship between government and its citizens. Hence together with the emphasis on the provision and efficiency of ESD, government electronic services have to become part of the mix of channels used to communicate and transact with government. The focus also has to shift from measuring ESD to measuring the efficacy of the overall physical and online delivery of services.

“Seeing Differently”

At the centre of user-centred design is a process of “seeing differently” (Brown 1997). This change in perspective is best accomplished through a multi-disciplinary team, so that over continual interaction, new ways of designing services become apparent.

Governments understand that the traditional way of delivering information and services according to departmental responsibilities needs to be supplanted by information and services organised according to users and their activities. However, without multi-disciplinary and multi-perspective teams, it is easy to revert to traditional ways of delivering services.

The team needs to have content specialists who know the services being delivered; sociologists and anthropologists who can place the range of users and their activities in their social and cultural contexts; psychologists with a knowledge of individual needs; interaction designers who have expertise in the ways users interact with the Web; graphic designers; writers; and people who track the evaluation indicators.

This multi-disciplinary team may be integrated, that is the government project team works together with the UCD team. Or the UCD team can be separate, coming together with the project team periodically. Each way of organising the team has its own merits (Mao et al 2001; Vredenburg 2002). Whichever way is chosen, communication is difficult not only between the UCD and the project team, but even within the UCD team. This is because members of the UCD team, though agreeing on the centrality of the user, interpret this centrality in different ways according to their disciplines. The criteria for rigorous research differ. Hence the interaction takes time, and needs reflection.

This phase of “seeing differently” is a continuous aspect of UCD.

User Studies

Sociological user studies and market research are necessary inputs into UCD. They are important for an understanding of users’ activities and the way they fit with users’ social and cultural contexts. This understanding is important for delivering services that fit users’ present needs. Examples of user studies are Silverstone and Haddon’s studies of the use of information and communication technologies (ICTs) in homes in the United Kingdom (Silverstone and Haddon 1996) and Australian studies of the use of ICTs in the home, small business, governments and corporate environments (Singh 1999, 2001a; Singh and Ryan 2000; Singh and Slegers 1998).

User studies are a valuable starting point for planning services that will answer citizen’s needs in the next five to ten years. However user studies and market research by themselves are not sufficient to change the way ESD services are designed. This is partly because user studies offer understandings about use but do not necessarily connect these understandings with actions that designers need to take. I myself have been part of such studies, where as a sociologist, I felt it was valuable to understand how people used ESD and how these services fitted into citizens’ social and cultural contexts (Singh et al 2001). I assumed that policy makers and designers of government web sites would link these understandings with policy and design. In this paper I take the qualitative understandings further, drawing out their implications for design.

The qualitative study of the use of government ESD 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. We analysed the qualitative data against what was quantitatively known about the use of ESD in Australia and other developed countries. We found that:

- Citizens want government ESD focused on their activities rather than centring around department policy. Many people do not know the government department or departments they need to access in order to gain information or transact with the government.
- Services need to be easy to use. This was a persistent theme, for citizens did not have reason to frequently go to government web sites or portals. Citizens want to be led in easy steps to the completion of the activity without having to tussle with the technology. 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. 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. They also raised other issues that are known to usability experts - an alphabetical subject index; a list of Frequently Asked Questions (FAQs); search facilities; and uniformity of presentation between the different government sites.
- Services need to be secure and trusted. Users we interviewed reiterated a general concern about the security of transactions. Governments' initial embracing of new delivery media without sufficient testing with citizens can lead to a loss of trust.
- Services need to be responsive. Governments were initially attracted to ESD because of the lower cost of transactions. However as we have seen in Section 2.3, the Internet increases citizens' expectations of responsiveness. Our interviewees said they want a speedy response from government, even if it is to say their request has been received and it is being processed. They also expect that information on government Web sites will be comprehensive, factual and continually updated. This up-to-date information and responsiveness increases trust in government ESD.
- Citizens/users expect a choice of channels. Citizens use a mix of channels according to the appropriateness of the channel, their expertise and the social meaning of channels of communication and activities in various cultural contexts. The same user may also prefer to use different channels for various stages of interaction with government. The Internet is a channel suited for simple queries and accessing documents. When the area is unfamiliar or the issue is complex and nebulous, users appreciated the Web most as a way of making the face-to-face or telephone interaction more effective. Hence the electronic delivery of government services has to be designed so that the different delivery systems can be used in parallel or together.

These are important guiding principles for ensuring that users are satisfied with ESD. Yet the users' study elicited little attention or comment from government designers, though it was funded by a government department. This was partly because detailed

user studies do not often reach the people who may find them most interesting. The academic format is also not appealing. So the existence of user studies and market information on the use of ESD does not necessarily lead to a user-centred perspective. Once the designers are seeking user information, then these studies are invaluable. In the next section I show how the same study was used as a starting point to tell a story about a woman searching for a nursing home for her mother-in-law. This story elicited comments from the government and private sectors. User studies and market research can thus be an important starting point for telling relevant stories featuring a range of personas and scenarios.

Stories, Personas and Scenarios

A shift from the policy to the users' perspective is difficult to achieve. This is particularly true at the beginning of a project when the issues are complex and ambiguous. Stories are able to express this complexity and are good communication tools. They give an occasion for reflection at the beginning and intermediate phases of design. They keep the design focused on the user, his or her goals, activities and social setting. The stories keep the design fluid and flexible and yet present something concrete. And most importantly, stories use language users can understand (Carroll 2000).

The power of a story became visible when I wrote a piece in *The Age* (Singh 2002). The ideas were drawn from the qualitative study discussed above (Singh et al 2001). The central character or persona of the story was Glenis in her late 50s. She lives in a north-eastern suburb of Melbourne. Glenis is at present doing part-time paid work and is heavily involved in church related activities. Her husband is in paid work. Only the youngest of three daughters is still at home and unmarried. Glenis is comfortable with the PC as she used to be a teacher. They have had Internet access at home for the last few years.

Glenis and her family have never accessed government services on the Internet. But now there is a family crisis. Glenis' mother-in-law, 81, has begun having two minute strokes. The family fears she will not be able to live alone at home. So Glenis searches Google to look for some preliminary information on nursing homes in her area. She has not heard of the government portal www.australia.gov.au - the Commonwealth government's initiative to give customer focused information on a whole-of-government basis. Like 91 per cent of Australians, she has never used online government services before.

Through Google she reaches the Australian Department of Health and Ageing (www.health.gov.au), clicks on "residential aged care" and gets a page that gives a "Sanctions Update." Seventh in a long menu is "Certified Aged Care facilities by state" but the list doesn't tell her which facility in north-east Melbourne will have the services that will suit her mother-in-law and the family. There are no links to the individual facilities for more information. The department has also not used the information it most likely has on the aged care facilities to group them according to the levels of care that are offered. So Glenis leaves the Internet behind and says she will ask a woman at church who has recently had to look for aged care accommodation for her aunt.

Glenis, an ideal type of one kind of user, would want to know: Is this place close enough so we can visit often? What level of care is provided? If my mother-in-law needs more care in the future, can she continue to stay there? How many residents are there? How many nurses? Will she have a room of her own? Will she have a room with a view? How do we evaluate the different options? Is there a checklist of things we should be looking at to ensure the best care? How much will it cost? Who are the people to contact for more information?

The questions seem simple from the customer's perspective. But it implies organising the web site so that the categories reflect the main questions that the main user groups are likely to ask. Better still, it means addressing the questions the citizen has not asked. In Glenis' case, she went to the government site to get specific information about residential aged care facilities. However, the underlying worry is about finding ways of continuing to care for a loved mother, mother-in-law, grandmother who has to leave her home. It is also an alarming preview of what may lie ahead for the carers.

When you put a citizen like Glenis at the centre of the website design, you need to deal with a story of family ties, of aging, and how we can use available facilities to ease the transition. The story is not about the criteria used for certifying aged care facilities, their number and distribution. Glenis' story gives the human face of government ESD. It raises important design questions like: Who are the users? What kind of information do they want for a particular activity? How would they want the information presented? Most likely there will be different groups of users with different needs for various activities. The users are represented by personas, that is ideal types of users. These stories with personas and scenarios are most often based on existing user studies and are best developed in meetings of the UCD team, drawing on experience from different perspectives.

Cooper (1999) suggests a project have three to 12 personas – some being central to the design, and others being marginal. Each persona is given a name, a photograph, an environment, a description of expertise and personal and practical goals. Personal goals are particularly important for design. These goals do not change as fast as tasks. Personas are specific rather than elastic. The thumbnail sketches of personas need to be placed before the product and design team so that the design can constantly refer back to personas and their goals.

The personas help keep the users at the centre of the design. In the absence of overt attention to users, the implicit user can often be in the image of the designer or policy maker. This self-construct of the user is recognised as a common feature in technological design (Vredenburg et al 2002).

Telling Glenis' story does a number of things. First the focus is on one kind of user. When this process is repeated with different kinds of users and activities, then the team has before them a range of user needs. Second, the story itself becomes a medium through which users' needs are communicated to the whole design team. Different users then become reference points to check whether the design is user-centred.

Visioneering

Visioneering is a way of thinking about the future and future users, in a way that is not constrained by our present [1]. This exercise ensures that we are thinking of, rather than predicting, the future. Such an exercise is important because electronic communication not only provides another channel for communication, but it changes the nature of communication. Similarly Government ESD has the potential to change the way a citizen relates to the government.

To think forward ten years, the thinking needs to focus on changes in cultural and social institutions. In the medium term, say three years, most often we move from an identification of trends from different perspectives. These trends could be technological such as a speedier Internet, more personalisation, using voice to direct the computer. The trends could also be in particular domains such as aging, government electronic service delivery, customer service or media.

Visioneering is a team effort involving members of the product and UCD teams. The group should ideally be between 10 and 15 people. Ideally the workshop needs to go over two days, starting from the long term future, and moving to the one year horizon. The workshop needs to be based on prior thinking. This then leads to identifying social and cultural changes and technological trends over the next three years.

At the workshop, each person presents to the group for ten minutes using transparencies. The next stage is to vote to rank the different trends. Smaller groups of three to five people then work on the voted three best trends and applications, drawing on user data. The group have to be able to present a picture of the new application.

The next day is taken with integrating elements of the three designs for a one-year horizon. The group makes a prototype. The emphasis here is to have something concrete to which people can react, rather than a prototype that is high tech.

After the two-day workshop, the prototype is tested with users and the project is planned.

User Testing and Redesign

The efficacy of Government ESD depends on responding to users' needs through good Web design. The principles of good Web design include placing users and their activities at the centre. There is a growing literature and detailed guidelines for Web design which keep the customer at the site. A clear, easy to use web site is essential for once the customer clicks out of the site, ESD will fail. Specific guidelines that have been tested across several projects and a range of activities, need to be applied (Nielsen 2000).

User testing has to take place at different stages of Web design, to test whether the site is speaking to the users in their language and relating to their interests with up-to-date information. The testing also has to be about navigation of the site, search facilities, seeking user feedback. In the early stages, the testing can be informal with rough prototypes so that the redesign can be done quickly and cheaply. It is important

however to get feedback from the whole range of users, rather than implicitly have one group at the centre of design. In later stages of design and development, users in labs provide invaluable feedback to the designers. Seeing one user after another fail to succeed in the task is a humbling exercise which helps make the design approach more user-centred.

The testing of users has to keep in mind the goals and the evaluation of Government ESD. It is this evaluation framework that I consider in the next section.

Evaluating User-Centred ESD

Using UCD in Government involves agreeing on an evaluation framework early in the design process. The costs and benefits of UCD have not been consistently measured in organisations, so that UCD is at times seen as a matter of faith, rather than an essential element of good policy and business. A survey of 103 leading professionals of UCD in the United States and Europe showed that external measurements of the costs and benefits of UCD in the project were relatively infrequent. This is despite the fact that on an average UCD accounted for over 19 per cent of a project's budget and 27 per cent of the number of people in the total project team (Mao et al 2001).

There are few ready made evaluation frameworks and performance criteria for measuring UCD in governments. We can draw on work measuring UCD in corporations (Vredenburg et al 2002), but we have to keep in mind that the language of citizenship is that of rights and responsibilities. We can also take from some of the rankings of e-government (Accenture 2002; Gant et al 2002), though much of it is based mainly on a content analysis of government sites.

What are we measuring? This is an important question, for current approaches to evaluation and measurement place Internet delivery at the centre. The Australian National Audit Office, for instance, gives specific guidelines on the costs and benefits of Internet delivery of government services (Commonwealth of Australia 2001). Yet, the Internet is only one channel of delivery and part of a mix of channels used by the Government and users. The thrust of cost-benefit analysis has to move to the most effective and efficient delivery of services. The evaluation needs to focus on:

- The role of the Internet in the changing mix of government service delivery;
- The effectiveness of the Internet in delivering satisfactory government services;
- The costs and benefits of the Internet as a delivery mechanism for the government and the range of user groups; and
- The costs and benefits of user-centred design.
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The Internet is Part of the Changing Mix of Channels

Governments increasingly are using the Internet as one of the channels of service delivery, using technology as a tool for greater citizen satisfaction (Pacific Council on International Policy 2002). Hence we want to focus on service delivery and effectiveness rather than the Internet. Moreover, as user studies have shown, with new communication channels, it is the use of the mix of channels which changes. Government policy needs to track this changing mix. So we need to discover how for

some user groups, the Internet is substituting for more traditional channels in activities such as accessing government documents. We also need to know how the virtual is enhancing the face-to-face and telephone interactions. For instance, citizens who have used the Internet for information about their health are more likely to ask their doctors questions they really want answered.

Hence the evaluation has to be broader than the Internet and has to track citizens' conduct of activities across various channels. This monitoring via studies of users and their activities needs to make clear:

- The use and non-use of the Internet by user groups for different activities;
- It will also identify the different levels of use – whether they want to read the information, whether they want to communicate with government, or whether they want a response [2].
- Aspects of the Internet that make the face-to-face or telephone transaction more satisfactory for the user - such as contact information, the ability to send an e-mail to the relevant officer so that he or she can telephone back a reply, or background information to enable more focused questions of the professional.

Governments can use this information to ensure that all citizens receive effective service.

Effectiveness of the Internet in ESD

In order to track the effectiveness of the Internet in Government ESD we need to use the criteria that citizens use. We need to ask:

- Is Government ESD focused on users and their activities?
- Are the services easy to use?
- Is Government responsive?
- Are the services secure and trusted?
- Are citizens given a choice of channels?

Most of the answers can be found through a content analysis of the site which measures the number of services offered for different groups of users; accessibility; the number of clicks to get to the required service; personalisation of the site; privacy and security policies; contact information and an easy transfer to other channels. This content analysis has to be done keeping different citizen and business groups in mind. The Australian National Audit Office has a valuable listing of users which includes: various socio-economic groupings, disadvantaged groups, indigenous Australians, families, rural or remote citizen, large and small businesses, and government agencies (Commonwealth of Australia 1999).

It is also important to monitor Government responsiveness, firstly by the time taken to respond, then the time taken for follow up action. User testing and Internet statistics will monitor the increase in usage and the error/success rate in performing designated activities. Usability and accessibility guidelines also need to be checked for implementation.

The Costs and Benefits of the Internet as a Delivery Mechanism

Much of the attention has been devoted to measuring the costs and benefits of Internet delivery for the government. The early impetus for ESD came from the view that the Internet reduces the costs of transactions hence increases government efficiency and productivity. More recently these conclusions have been questioned. The Pacific Council (2002) in its roadmap for e-government warns that “saving money should not be the broad vision that motivates e-government... with few exceptions, e-government applications do not lower costs in the short term for government itself, though they may reduce costs for citizens and business” (Section 2).

It is valuable for the sake of transparency to monitor the different kinds of costs and benefits involved in ESD, keeping in mind the mix of channels. This monitoring would raise the question whether the costs of setting up government portals and web-sites should be seen as capital costs (Gant et al 2002). It will also make transparent the continued need to deliver services face-to-face, via the phone and mail to the citizens who do not have access to the Internet.

The Costs and Benefits of UCD

One of the most potent arguments for UCD is that it delivers measurable benefits - time saved on re-design, fewer help desk calls, more customer satisfaction. UCD needs to be monitored in all its phases: user and market studies; the use of stories, personas and scenarios; visioning and user testing and redesign.

The benefits are particularly great at the early processes of design, where users are studied within their social and cultural environments. As Mayhew (2001) says, “Finding out prior to design what the unique requirements are, and designing to support them, is much more cost-effective in the long run than finding out after launch that your design does not meet requirements.” Some of the quantifiable benefits of UCD are:

- Experience of ten years of usability projects shows that a ten per cent investment in usability increases user benefits from 100 to 180 per cent (Nielsen 2002)
- Usability engineering has demonstrated reductions in the product-development cycle by over 33-50 per cent (Rhodes 2001)
- Design changes due to usability work at IBM resulted in an average reduction of 9.6 minutes per task, with projected internal savings at IBM of \$6.8 Million in 1991 alone (Karat 1990)
- It costs 100 times more to change products that are already in the market than change products and services before code is written (Nielsen 2002).

Conclusion

In this paper I have tried to connect sociological understandings of the use of Government ESD to design principles for user-centred design. It is important to

connect user studies and design, for user studies are seldom sufficient for a designer to change from a policy focus to placing the user at the centre.

I have also focused on ways of helping designers take the users' perspective into account. This communication across perspectives and teams is difficult. The communication is difficult within the policy project team and also within the UCD team. So at the centre of UCD is the ability to connect the perspectives of citizens, businesses and the government.

In this paper, I have also made a beginning in thinking of evaluation frameworks that measure the effectiveness of government services rather than the effectiveness of the Internet alone. The Internet is an important channel of delivery, but it is part of the mix. In the end the Government will be judged by the delivery of its services, rather than just its use of the Internet.

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Endnotes

[1] This section is based on a workshop by Jakob Nielsen and Bruce Tognazzini in Sydney on June 21, 2002.

[2] I have paraphrased the different levels of interaction drawing on Accenture, 2002.