National Governments doing business on-line:
An Australian look at current practice and future hazards

Jeff Chamberlain
Tanya Castleman

School of Management Information Systems
Deakin University
Melbourne, Australia

Email:
chamberl@deakin.edu.au
tanyac@deakin.edu.au

Abstract

Governments around the world are taking advantage of the numerous benefits offered by the World Wide Web in order to provide client services to citizens. Australia has been a leader in this trend. The literature in this area focuses primarily on the pragmatic issues such as governmental accountability and transparency, interactivity, policy making, security and privacy, quality and costs. Along with the positive accounts of eGovernment development, however, some concerns are emerging in the literature. This paper examines such issues with particular reference to national governments. Although Australia can be proud of its position as a leader in bringing government business to the Web, it must also be cognisant of the concerns about eGovernment that are being more widely identified.

Keywords

Electronic Government; electronic service delivery, electronic democracy

INTRODUCTION

The Internet provides a powerful tool for conducting business more effectively and at a lower cost. During the 1990s the spread of the World Wide Web spawned many commercial opportunities for industries of all types. New business models and business practices have emerged from this development. The promise of reduced operating costs, improved applications of scarce resources, enhanced client services, rapid processing of business transactions and wider global reach has appeal outside the commercial area. Governments world wide have noted the advantages that can be made by incorporating Web strategies into business processes such as citizen information dissemination and interaction and are actively developing these techniques. Governments operate both as buyers of goods and services and as providers of services and information. The Web offers enormous potential for all of these activities.

This paper provides an overview of the use of Internet Web sites by national governments around the globe and identifies key issues in eGovernment implementation by national governments. The knowledge domain is still relatively new as national governments and academics wrestle with several emerging issues. Information from around the world can help governments get the best from this technology.

First, we identify the rationales that underpin the development of eGovernment initiatives and summarise the main patterns of eGovernment implementation, including implementation in Australia. Then we discuss the concerns raised about eGovernment and the implications for policy makers before outlining fruitful areas for further research.

THE RATIONALE FOR E-GOVERNMENT

National governments across the world are spending billions of dollars on developing Web sites and related technologies. Two main types of benefits have been identified by the advocates of this trend: business process improvement and increased government openess.

The first and dominant approach to eGovernment sees it as a method to maximise government business efficiency and effectiveness particularly related to the delivery of services to the public, information dissemination (client services information and support) and the reduction in publishing costs by making electronic versions of documents available leading to a zero marginal cost for each additional information recipient. There are many examples in this regard. In September 2000, the US launched 'FirstGov', a Web portal that consolidates access to 27 million federal government Web pages from 20,000 government Web sites. It is designed to ease access to and use of government information, without a need to know particular government agencies (Hane 2000).

Further benefits come from a reduction in the level of customer enquiries by telephone, mail and front desk visits; public relations; on-line procurement which saves on costs, derived through competitive bidding, aggregated buying power and streamlined purchasing processes; on-line voting; on-line compensation claims and premium payments; on-line surveys conducted at lower cost than off line surveys; access to public records; obtaining permits and licences, for example, for fishing and hunting; a reduced need for public servants to key paper forms; enhanced data analysis and advertising opportunities (Public Management 2000; Carberry and Steins 2000; *The Economist* 2000a; Nabers 2000; Thibodeau 2000).

Several authors argue that public agencies disseminating information proactively may raise compliance levels, thus maximising limited resources and reducing typically expensive physical encounters (Caddy 1999). It is also argued that by enabling Web-based payments, national governments not only reduce the costs of governing but also facilitate public convenience. They can even benefit the environment by, for example, reducing the need for citizens to travel (Watson and Mundy 2001).

Some writers have used the term 'electronic democracy' somewhat loosely as a substitute for 'Web presence' or 'Web site'. Commentators generally assume electronic democracy to be a positive influence on the citizens that it reaches and its strongest argument is that it enhances government efficiency by increasing the convenience and timeliness of public interactions with government whilst reducing associated costs. In the US, potential savings of 'e-democracy' could be as much as $110 billion and in Europe, $144 billion a year (Watson & Mundy 2001). Such savings do come at a financial cost though these are miniscule when compared with those savings, for example, spending on government related Internet ventures in the US is expected to increase from $1.5 billion in 2000 to $6.2 billion by 2005 according to predictions by research company, the Gartner Group Incorporated (Thibodeau 2000).

Milner (1999) reporting a University of North London research team's review of various 'electronic government' initiatives and pilots conducted in Europe, Australia, North America and South East Asia, reveals use of a consistent model pertaining to the deployment of information and communications technologies for service delivery in the late 1990's. The model is essentially a focus on the use of technology to leverage bottom line performance, measured in cost savings, usually through the reduced need for staff. Milner argues that the paradox here is the assumption that technology on its own can present solutions to the complicated challenges of public service delivery (Hague and Loader 1999).

A second rationale for eGovernment concerns the openness that the Web can accomplish for governments. The Web can be adopted to facilitate a new form of transparency and accountability for governments via new consultative methods and even, for example, on-line voting (*The Economist* 2000). By providing Web-based information for example, governments can inform the public about the legislative process, thus increasing the transparency of political decision making. By making the law creation process accessible, a government can further help citizens monitor the political and legislative process and express their views to politicians. Commentators argue that this leads to greater public goodwill and helps to maintain a vigorous democracy (Watson & Mundy 2001). Hammond (2001) claims that developing countries are especially set to benefit largely by the transparency that Web-enabled government communication brings, for example, by exposing corrupt governments and officials. This is arguably less expensive, and is more flexible and effective than government regulations.

Some writers argue that the internet can help a government manage the democratic process more effectively through increased interaction between government and citizens, greater government responsiveness to public opinion and more participation in decision-making by citizens (Hague and Loader 1999; Milner 1999; Gronlund 2001; Nabers 2000; Watson and Mundy 2001). These issues have received a minor portion of the attention paid to eGovernment but provide a philosophical support for its introduction.

THE IMPLEMENTATION OF E-GOVERNMENT

There are signs that the general public is beginning to accept the Web medium for doing business with government. On-line, self service systems for paying fines and taxes and for renewing licences and permits are the most popular with members of the public (*The Economist* 2000c). The Chilean Internal Taxation Service was a pioneer in using the Internet for the collection of taxes; the system enables taxpayers to lodge returns, schedule payments, and examine their tax histories quickly and accurately (*The Economist* 2000a).

Singapore's 'Infomap' Web site features all of its government services that are on-line (about half of all the government services available in the country). It features 'E-Citizen', a 'one-stop' government Web service centre; a forms service; an on-line directory of all government services and a shop front through which site visitors can purchase permits and books. Men can even register for the compulsory national service through the site (Arun & Yap 2000).

The 'eEurope' initiative (an initiative of the European Union) sets 'government on-line' as one of its priorities and as such, holds that accessible public information will bring greater relevance of the Internet to daily lives thus increasing participation in the 'Information Society' (Anttiroiko 2001).

National governments have developed a range of policies to guide Web implementations. Policies range from rationale for the existence of national government Web sites to the limitations imposed on the various uses of those sites. In the United Kingdom, government departments have over one thousand Web sites and receive in excess of twenty million requests per week (McCartney and Wilson 2001). This exemplifies the need for firm policies that provide governments with guidelines and instructions about how public interaction is administered. With such prolific interaction, national governments need clear policies about how they intend to use any data collected from their Web sites (Bursky 2001).

National governments are rapidly implementing efficiency-based Web sites founded on policies of client services and openness. The United Kingdom's 'UK On-line' campaign aims to deliver all government services on-line by 2005 and thus establishing a world class Internet presence (McCartney and Wislon 2001). During June 2000, US President Clinton unveiled a project that would provide citizens with a single, customer oriented Web site offering every federal government on-line resource (Carberry and Steins 2000). The US National Information Infrastructure Initiative is viewed by the US government as directly linked to enhancing government services to the public (Eschenfelder and Beachboard 1997). In the US the National Partnership for Reinventing Government (NPR) in 1998 launched 'WebGov', a portal through which the public could conduct searches on all of the federal US Web sites (Harreld 1998).

Federal US Web sites follow guidelines determined by several federal policies and legislation such as the Federal Records Act, the Paperwork Reduction Act, the Office of Management and Budget (OMB) Circular A-130, "Management of Federal Information Resources", the Electronic Freedom of Information Improvement Act of 1996, and the (OMB) Draft "Guidelines for Agency Use of the World Wide Web for Electronic Information Collection, Access and Dissemination, and Management." Through these policies and statutes, agencies are being guided on various information related issues, for example, whether and how to charge the public for government information and the types of measures that should be invoked to safeguard information and ensure its accuracy (Eschenfelder and Beachboard 1997).

National governments have also developed policies for best practice in design, content, and direction of their Web sites. The literature suggests that following established Internet standards and protocols and using time tested applications is advisable (*The Economist* 2000b). In the US the World Wide Web Consortium has published guidelines (www.fedweb.org) for developing government agency Web sites and includes references to statutes and regulations as well as creating templates, Web accessibility related to disabled users, site navigation techniques, security and privacy issues and a range of other issues (Government Computer News 1998).

E-GOVERNMENT IMPLEMENTATION IN AUSTRALIA

Australia has been active in the development of eGovernment initiatives. The Commonwealth government has announced an Internet strategy called 'Government On-line' in which it recognises that its own transition to the on-line environment is critical to instilling public confidence in that environment. The Prime Minister has committed to placing all appropriate government services on-line during 2001. Prior to 2001, surveys conducted by the Australian National Audit Office (ANAO) and the Office for Government On-line (OGO) revealed that the commitment was likely to be met by 82 per cent of agencies surveyed. The foundation for on-line service delivery is considered to be a Web site.

In Australia, federal government agencies are required to observe the World Wide Web Consortium's (W3C's) 'Web Content Accessibility Guidelines' to ensure the widest possible audience for its Government On-line strategy. Its strategy includes the commitment to prevent any group being excluded from access to federal government Web site information and services (Government On-line 2000).

The Australian federal government has cultivated its management of government business on the Web to a high level. For example, the Australian 'Business Entry Point' Web site, http://www.business.gov.au, is an initiative bringing together the Commonwealth, State and Territory governments to a single virtual access point from which visitors can obtain business information and services including making registrations, conducting transactions and even submitting tenders for government contracts. Another Web site, sometimes referred to as the Commonwealth Government entry point, http://www.fed.gov.au, following a 'whole of government' strategy, provides transparent access to federal government information.

The Australian government, recognising that various transactions require establishment of the authenticity of other parties and an assurance of the security of transactions, has created a framework called the 'Gatekeeper Government Public Key Infrastructure' (GPKI) which enables the accreditation of certification authority service providers and their public key products which provide this assurance.

In Australia there is a general confidence about the privacy practices of particular agencies and whilst authentication technologies can provide transaction security, agencies are also required to comply with the Protective Security Manual (PSM), a product of the Protective Security Coordination Centre within the Attorney-General's department. This requires agencies to develop an information systems security policy with associated plans to protect systems. Agencies seek guidance for the protection of information from the Defence Signals Directorate (DSD) (Government On-line 2000).

Federal agencies in Australia are required to ensure that their Web sites comply with the Privacy Act 1988 and a set of guidelines has been produced to assist with this. It covers such issues as openness; the collection of personal information; security of personal information; and the publication of personal information.

A significant Australian quality initiative is the creation of a standard way of labeling and describing information and services for use as metadata. This is called the Australian Government Locator Service (AGLS) and is designed to assist Web site visitors to quickly navigate and access information across numerous agencies, via search facilities (Government On-line 2000). This initiative has been very successful.

A report of the Australian National Audit Office (ANAO) has revealed that a current agency lack of knowledge of examples of best practices for Web sites has impeded agencies' progress in placing information and services on-line, so the Office of Government On-line is addressing this by publicising such examples (Government On-line 2000).

The ANAO in its 1999-2000 performance audit report titled 'Electronic Service Delivery, including Internet use, by Commonwealth Government Agencies', cites the business case and cost-benefits as impediments to implementing Internet service delivery and highlights perplexities including, difficulties in identifying or quantifying costs and benefits; the priority of Internet initiatives relative to other projects of greater priority or higher cost benefit; the cost of the initial investment; operational or recurrent costs; and an inadequate volume of transactions or too few users to support a business case. It also highlights that a lack of an agreed standard payment infrastructure is another significant impediment.

A study conducted by a research team at the University of London (called ACCESS) illustrates that the Australian government has implemented information and communications technology policies since 1995 that aim to overcome public exclusion from access to services and whilst focus has been placed on public service performance efficiencies and the breaking down of departmental barriers, public satisfaction with the performance of services has increased (Hague and Loader 1999).

CONCERNS AND ISSUES RAISED ABOUT E-GOVERNMENT

The escalating use of Web sites by national governments raises many issues that require attention if such presences are to succeed. The literature, whilst generally lauding Internet technologies as facilitating a new means by which governments may invigorate citizen interaction, also notes concerns about these developments. Here we summarise these issues and concerns as raised in the literature.

Quality

Along with brand consciousness, national governments are wrestling with quality assurance issues pertaining to service delivery through the Web. For example, in the US the 'Draft Office of Management and Budget (OMB) Guidelines for Agency use of the World Wide Web' includes a provision that "agencies shall use appropriate management controls to provide reasonable assurance that information posted to their Website is accurate, relevant, timely and complete." It does not insist on absolute accuracy. It also directs that agencies use Web sites to augment rather than replace current information dissemination practices (Eschenfelder and Beachboard 1997). It is interesting to note that this document does not provide an explicit definition of 'accuracy'. Research by Jupiter Communications, New York, reveals that most government Web sites "simply unite disparate Internet initiatives from various branches of government rather than focusing on users' needs", (Walker 2000).

The costs of doing business on-line can be high because of the need to satisfy certain business requirements. For example, for a typical national revenue office, key requirements include ensuring compliance with the tax laws; taxpayer and transaction identification; access to records; assurance of the integrity and the accuracy of the data and a solid understanding of the business sector. On the one hand, web-based tax lodgement may streamline the laborious process. However, the problems here include the possibility that taxpayers can hide in the anonymity of the Internet; significant documents can be encrypted and held off shore thus denying access; information may only be in a digital form and may not have an audit trail; and significantly, information about businesses can rapidly date thus reducing knowledge about particular industry sectors (Faipo 1999).

Quality of Web site interface design has been raised as a significant issue for which policies must be considered. Ensuring a user focus is essential to the success of government Web sites. Sites need to be clean with an uncluttered opening page containing a simple message; they should contain a user perspective and include phrases such as 'my adviser'; they should include events and initiatives that are interesting to the user, for example, the use of a calendar; they should be written in plain language and avoid technical jargon and acronyms; and they should contain clear instructions about who and how to contact for further assistance (Lohrmann 2000).

Security

Security of Internet communications is a predominant concern of national governments. Using available technologies, it is relatively simple to protect basic Web sites which do not contain database query or file transfer facilities and where the only communication link is email. Complex, interactive sites however are difficult to protect from infiltration and can be exposed to destruction and vandalism of content, information and document theft, and message and information interception and can enable unwanted access to host servers and even mainframe data (Cutler 1999).

Various defences to security threats are being tested. Portals equipped with facilities for receiving documents with electronic signatures and digital certificates are emerging as a suitable paradigm for conducting government electronic commerce (Nabers 2000). The Chinese government has introduced Internet related legislation highlighting that security of state information sent across the Internet is of critical concern to the authorities whilst the rate of use of the Internet in China is one of the highest in the world (Wong 1998).

The US White House paper, 'A Framework for Global Electronic Commerce' recommends four requirements for a secure global information infrastructure: 1) Secure and reliable telecommunications networks; 2) Effective means for protecting the information systems attached to those networks; 3) Effective means for authenticating and ensuring confidentiality of electronic information to protect data from unauthorised use; and 4) Well trained global information infrastructure users who understand how to protect their systems and their data.

Privacy

The protection of citizen privacy is one of the most discussed and debated issues in the literature. Arguments range from its imperative to democracy to its progress blocking attributes. Privacy issues range from the analysis of session log files to determine visitor preferences and information seeking activities, to the way information is collected and used via Web forms and email (including the use of public identifiers and file numbers). It is suggested that successful electronic governments rely upon the careful protection of data, which if is eroded will break down public trust (*The Economist* 2000b).

Significantly, in a survey of businesses and citizens in the US conducted by the National Information Consortium (NIC) it was discovered that only one third of electronic commerce users "trust that the government will keep their records confidential" (Carberry and Steins 2000). The US National Consumers League released a study in 2000 revealing that 56% of Americans are "very concerned" about losing privacy and this is a higher number than are concerned about crime, taxes and health care (Cannon et al 2001). It is because of such perceptions that the electronic reengineering of procurement and commerce is likely to move faster than electronic client services because of privacy and security issues (Caterincchia 2000).

The literature suggests some practical solutions to this difficulty. To assist in the management of privacy on-line, agencies should limit collections of personally identifiable information. They should make transactions with the public anonymous wherever possible, just as is the case in many off line transactions, for example distributing information brochures. They should adopt a 'key ring' approach rather than a universal identifier approach. In physical world transactions some individuals have key rings with many keys for different purposes with which they can grant access and share with others. Agencies should also determine the kind of authentication that is necessary to facilitate transactions to meet business needs without collecting unnecessary information (Schwartz 2000). Schwartz (2000) also asserts that a Web-enabled privacy system should enable individuals with the ability to correct inaccurate information and also where feasible, to make decisions about the information referring to them that has been collected and stored.

In 1997, a US White House paper titled 'A Framework for Global Electronic Commerce', made a point of the significance of privacy to the country's population and linked it to that country's concept of personal freedom and 'well-being'. It warns that the global information infrastructure (GII), which enables the "collection, re-use and instantaneous transmission of information", threatens this notion of privacy if not managed carefully and that if people are to comfortably conduct business via Web sites, their personal privacy must be assured. Conversely it points out that the GII will only succeed where the privacy rights of individuals are balanced with "the benefits associated with the free flow of information." Such 'balance' however is not well defined.

Outsourcing

Many national governments outsource Web implementation work to private contractors. Care must be taken in doing this and governments need to develop clear outsourcing policies. The benefits of outsourcing such work include accessing the experience that private sector contractors have already had by way of learnings from previous public sector implementations; their ability to bring projects to fruition very quickly; the savings that can be gained by national governments in the areas of capital and operational expenditure by using effective pricing models; and as third party providers can maintain implementations with twenty four hour assistance backed by state-of-the-art Web technologies, public perceptions of governments may be enhanced (Hayes 2000).

Coupled with the exponential growth in Internet use by national governments and citizens, there is a constant rise in service delivery expectations. Forrester Research predicts that public expectations of on-line governments will rise rapidly between 2002 and 2005, as eCommerce becomes a ubiquitous component of daily life (Carberry and Steins 2000). A strong theme in the literature is that people's perceptions of their respective governments could fundamentally alter following implementation of fast and convenient, customer-focused, Web-enabled

services to the extent that their countries become more attractive locations in which to reside and work (Symonds 2000; *The Economist* 2000c; Public Management 2000).

Caution must be used when national governments outsource Web work to third parties. Issues include:
- The financial viability of third parties, many having existed for less than three years;
- The perceived loss of control among public administration staff;
- Adapting legacy infrastructure to new applications, necessitating back-end integration and business process re-engineering;
- Security and privacy concerns and the need to develop satisfactory contingencies because the technology is still fallible and in the case of error, the agency will be answerable, not the third party (Hayes 2000).

Transparency and Accountability

Whilst many commentators argue that the Web offers a channel for open government, Gualtieri (1998) reminds us of the reluctance of politicians to reveal precisely those involved in the decision making process and at what time, due to the perceived threat to the integrity of the process. Gualtieri also denotes the significance of the secretiveness of political and bureaucratic culture where "openness [is] closely tied to calculations of political advantage." Open government can also be inhibited by policy, for example, the European Union's commission's directives are so firm that they prohibit practical public political debate on-line (Gronlund 2001).

Because adopting the Web as a channel for business interaction costs governments billions of dollars, they must be able to demonstrate that this is an effective use of public funds. Gualtieri (1998) suggests that it is difficult to determine the degree of accountability of either an individual or an institution and that simple questions of accountability often receive convoluted and complex responses from those attempting to explain government actions. How then is accountability measured? Web capability enables governments to offer efficiency, transparency and therefore accountability in most government to business and business to government transactions, which in turn facilitates economic growth (Symonds 2000). Is economic growth of a nation, however, a suitable indicator against which accountability for Web site implementations can be measured?

Of significant concern to national agencies is the return on the investment of a Web site upon its implementation. Various business models for payment of government eCommerce require careful consideration; some of these include selling advertising space on Web sites (which according to Menzel (1998), raises new unresolved questions of ethics and even legalities behind the commercialisation of government); charging for on-line transactions, and justifying expenditure through savings made in eliminating paper based transactions (Tillet 2000).

All governments are accountable for the currency of the information that they publish on-line. Incorrect or out-of-date information can be worse than no information at all. Erroneous and dated information not only undermines the quality of client services offered through Web implementations but could also leave a government exposed to legal liability in cases where, for example, incorrect advice is acted upon. One can envisage a scenario whereby some governments could choose to forego Web site implementation purely on these grounds. The literature does not address this issue in depth which seems unusual as it has a close association with democratic processes including openness, transparency and freedom of access to information.

Management of change

Some writers caution that governments need to develop lucid strategies that address various emerging change inhibitors including union hostilities, the various fears of individuals, departmental rivalries and the large scope of such implementations (Symonds 2000). There is also strong opinion that the leadership required to impel change must have enough power and influence and understanding to do so (*The Economist* 2000b; Hague and Loader 1999). A major shift in thinking is also still required of many national agencies around the world. This particularly relates to the problems in fitting business to technology. It is argued that public administrators need to acknowledge that delivery of Web business is not so much about technology as it is about new ways of organising and thinking (Matthews 2000).

In the US there is little interconnectivity among agency Web sites, reflecting a lack of electronic linking between them which could otherwise streamline business processes (Matthews 2000). Clearly, further policy work is required in this regard particularly relating to the ways in which federal departments communicate on and off line. Interestingly, the US summarises its on-line strategy in a 1997 White House paper titled 'A Framework for

Global Electronic Commerce' emphasising the need for coherent and cautious government participation in its administration of electronic commerce, particularly with a view to avoiding confusion that arises due to uncoordinated agency efforts (White House 1997). Similarly, the British government, whilst endorsing the benefits to be had from merged government departments, has found that government structures have conspired against progress in this area, though governments such as those in Singapore and Australia have built portals to overcome this problem (Symonds 2000).

Coleman (1999) makes the most pertinent of all commentaries directed at national Web site implementation and its potential effect on democratic society and believes that the advocates of digital democracy "have paid insufficient attention to the dangers of electro-plebiscites being appropriated by populist or demagogic forces" (Hague and Loader 1999). This draws one's attention to the urgent need for national governments to examine the full effect of their Web site implementations as the benefits of effectiveness and efficiency gains could be threatened by democratic atrophy.

There is some concern that governments are failing to communicate what is already available to the public on-line. Some governments are becoming more "brand-conscious" to counter this effect (Thibodeau 2000). One senses that further research needs to be conducted around this issue to develop effective strategies for raising citizen awareness of government on-line information and facilities.

A critical but seemingly ignored inhibitor to change is the financial ability of a government's citizens to afford and embrace Internet access; this is an issue requiring further research and governmental consideration of the various incentives that could be implemented to provide relief in this regard (*The Economist* 2000b). Much of the literature assumes a future in which citizen access of the Internet will be one hundred per cent. Further, whilst writers claim the enormous benefits presented by the Web to governments of developing countries, the fact remains that such countries still largely lack access to the Internet and this represents 19 out of 20 people in the world (Hammond 2001).

The Information Age may also have broader costs. Milner (1999) argues that within any period of fundamental structural change, there will be winners and losers. She believes that issues of social exclusion could be exacerbated rather than alleviated should investments in electronic government be poorly focused and uncoordinated (Hague and Loader 1999).

Some barriers to change are perceived as so severe that they may threaten the existence of national Web sites. Some agency officials in the US have indicated that if draft Office of Management and Budget Guidelines are issued as official policy, their agencies might cease using Web sites because of the burdens imposed by strict interpretation of the Federal Records and Paperwork Reduction Acts. Burdens in this sense essentially relate to the increased workload associated with maintaining federal Web sites (Eschenfelder and Beachboard 1997).

In some instances federal US government agencies themselves have imposed barriers to progress on the Internet. For example the Internal Revenue Service could enable tax return lodgment via electronic forms but because it has partnered with companies offering tax preparation systems it would be undercutting those companies if it were to offer such forms. Similarly the Securities and Exchange Commission compromises its public dissemination of information because it first sells such information to paying subscribers (Petrillo 2000).

DIRECTIONS FOR FUTURE RESEARCH

We have shown that Web site implementation by national governments is developing rapidly, though still in its infancy but that there are a number of issues that warrant further research to identify suitable solutions and address the gaps in our understanding of these applications. Some of these may require the attention of the highest levels within national governments. Key questions include:

- What strategies are suitable for overcoming the various inhibitors of and resistance to on-line development within national agencies?

- Because of the costs involved in accessing the Internet, a country's least well off may not gain access. Should governments therefore slow down their progress in Internet development or should they speed it up, offering incentives to all to accept the Internet as the preferred channel for all transactions?

- The Internet will enable governments to gather, store and mine data about citizens even more efficiently. This may raise privacy and civil liberty concerns. Will constant caution be the price paid by citizens for such new age efficiency?

- There is an emerging debate about the effect that Web site information dissemination and interaction by national governments has on its citizens. Will this effect impinge on the foundation of democratic countries where there are real distinctions between the information 'haves' and 'have nots'?

- The relationship between citizens and their governments, including citizen expectations is likely to be altered by this 'new way of doing business', just as doing business in the commercial world will change. We are also likely to see a change in the relationships between governments and their employees.

CONCLUSION

National governments are embracing the Web for its efficiency and effectiveness in information dissemination, procurement, and client services delivery and communications. The Web also offers governments a new channel to promote openness, transparency and possibly even to enhance democracy itself. The Australian federal government has emerged as a world leader with its 'Government On-line' strategies and has pursued a sound management approach to security, privacy, meta-data creation, the use of best practices and information dissemination through portals.

However, governments must cognisant of the hazards that accompany such benefits. There is clearly potential for eGovernment to improve government business and create additional benefits for citizens and administrations. But the identification of the benefits does not mean that this move is without problems, both of conceptualisation and implementation. The emerging question then is, 'where does one turn when the technological solution fails to deliver on its promise?' The solution to this represents a large chasm in the currently available literature and clearly further research is needed to understand the interactions between the eGovernment applications and their political context.

These concerns require further research to seek out effective solutions. Future research should focus on issues including: effective strategies to manage change; citizen access to the Internet; privacy and civil liberty; technological client services delivery versus direct client services; and digital democracy and the distinction between the information 'haves' and 'have nots'. These explorations should acknowledge that a 'one-size-fits all' approach is problematic and that the political and cultural context, the changing expectations of citizens and government employees and the international interplay will be significant.

Without serious examination of these issues, democratic societies may be compromised by their own government administrations developing the very medium that promised their enrichment.

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