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E-GOVERNMENT FOR BETTER GOVERNMENT

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This draft text of the OECD synthesis report, "E-Government for Better Government" is the result of the 2003/04 programme of work on e-government. Members of the Public Governance Committee and of the OECD E-Government Network are asked to provide their comments by written procedure no later than 15 April 2005.

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INTRODUCTION

In their initial enthusiasm for e-government during the late 1990s, OECD countries tended to view e-government as an end in itself. Early e-government initiatives focused on the widespread application of information and communication technology (ICT) for the production and dissemination of information and emphasised putting as much information and as many services on line as possible. Today, however, with the experience gained in planning and implementing e-government, coupled with continuing pressures to improve government productivity, governments' approach to e-government has begun to change. They are now beginning to understand that building e-government is not in fact an end in itself but rather part of the effort that they have been making to ensure better government.

There is a growing realisation that, while e-government provides new tools, frameworks and opportunities, there is not unlimited support for administrative transformation through e-government and that, once that support is lost, it is difficult to regain. The experience of implementing e-government and seeing initial user reactions has helped OECD countries realise that better government is a matter of optimising the "e" in e-government to ensure that it is properly integrated into the mainstream of efforts to improve government. A widespread understanding of how e-government fits into the bigger picture is therefore necessary if it is to benefit all aspects of government operations, not just those explicitly related to the use of ICT.

The e-Government Imperative (OECD, 2003) outlined the case for e-government in terms of its potential support for efficiency, service quality, good governance and policy effectiveness, as well as its potential for helping advance economic policy and public reform objectives (Box 0.1). This second e-government report focuses on a specific domain of government activity: services to users and the front-office and back-office arrangements needed to maximise value for all users (citizens and businesses) and for fulfilling government's stewardship role in the responsible use of resources. The OECD has addressed other important domains of government responsibility – and the enabling role of ICT – in earlier targeted reports, including *Citizens as Partners: Information, Consultation and Public Participation in Policy Making* (OECD, 2001) and *Promise and Problems of e-Democracy*: *Challenges of Online Citizen Engagement* (OECD, 2003). Together, these reports inform the overall OECD approach to its country reviews of e-government (*OECD e-Government Studies: Finland* [2003]; *Norway* [2005]; *Mexico* [2005]). The transparency and accountability aspect of e-government is also being addressed through ongoing work of the OECD E-Government Project on e-procurement and the cost-benefit analysis of e-government.

The focus of this report is therefore on how government can realise its potential, taking into account the lessons that OECD countries have learned as they have pioneered e-government initiatives. In particular, it looks at how countries are coming to see ICT use in government as a ***tool for better government***. The realisation that e-government can support the functions and help meet the objectives of government refocuses attention on how e-government can improve the overall quality of government. At the level of individual activities, e-government can clearly increase efficiency and effectiveness. It also has implications for how government agencies work together, both inside government and with external partners.

Governments in all OECD countries today, as part of an increasingly dynamic, complex and collaborative environment, face the challenge of responding to public demand for more responsive, efficient and effective government. For most countries, this implies a need to transform government into what is often described as a network form of organisation: interconnected agencies that retain their autonomy and flexibility, but operate under a "single-enterprise" vision of government in which shared

resources and common standards allow seamless communication and the efficient and effective pursuit of common objectives.

E-government for better government

A new vision of e-government is emerging, one in which it is part of the mainstream of public management. From meetings and discussions with OECD countries in 2003 and 2004, it is clear that e-government must move from being a disruptive change driven by central or specialist groups to being intrinsic to the way government works. Based on these discussions, OECD countries identified five areas that governments currently need to address for e-government to help achieve better government:

- ***User-focused e-government:*** How can governments use ICT to bring services closer to citizens and ***businesses***?

- ***Multi-channel service delivery:*** How can governments make sure that ICT use, and any resulting innovations, benefit both online and off-line service delivery channels?

- ***Identifying common business processes:*** How can ICTs be used as a catalyst for more efficient sharing of responsibilities and improved collaboration among government organisations?

- ***The business case for e-government:*** How can governments measure and demonstrate the benefits of ICT investments?

- ***E-government co-ordination:*** What are the organisational implications of greater user focus? How can governments bring a whole-of-government perspective to e-government while taking into account the existing structures and cultures of their public administrations?

The transformation of government begins from the principle that government's relationships with citizens and businesses must be organised around the needs of users more than those of government. Only in this way can government increase value for users. This implies that e-government efforts must focus on attracting users to higher quality, and less expensive, online channels rather than on making government information and services available on line. While there seems to be consensus among OECD governments as to the importance of a focus on users, finding out what this means and how to achieve it are a major challenge. This report looks at what countries need to do to achieve ***user-focused e-government*** by better aligning services with user needs.

The challenge of user focus for public administrations is highlighted by the horizontal nature of e-government. As a tool able to cut across sectoral boundaries, e-government can help governments to deliver information and services and opportunities for participation in ways that meet users' needs and convenience – rather than follow stovepipe government structures – and lead to more transparent and effective government. In addition, by collapsing distances, e-government can also modify existing vertical relationships across levels of government and among different government jurisdictions in order to bring services closer to citizens and businesses. Finally, equity considerations have provided an additional argument for the co-ordination of e-government initiatives; it is important to ensure that the same level of service quality is available to all and to help lagging sectors better understand how to deliver value through electronic channels.

The need to provide better, user-focused services despite growing cost constraints across delivery channels is causing some OECD countries to take a more whole-of-government approach to using ICT to achieve better government. The report looks at how ***multi-channel service delivery*** can enable improved data flows and co-ordination for all types of services, regardless of how they are delivered. In a multi-channel delivery environment, a user might look up information on a government service on the Web,

phone a call centre with specific questions and go to a government office for a final transaction, thanks to seamless access to a common set of data.

Achieving better services with a fixed or limited amount of overall investment depends, in part, on moving large numbers of users from traditional channels to electronic channels. However, some traditional service channels will remain and should also benefit from e-government innovations. Much of the value of e-government for better service delivery can only be realised by reforming both front-office and back-office procedures. As these are not unique to e-government, ICT systems can improve data sharing over a wide variety of channels without the need to create a separate, parallel, system for electronic delivery. Such innovations will require new ICT systems, but also new management tools and techniques that take into account the needs of networked organisations and of workers across different channels.

The increased networking and interconnectivity within government that is made possible by e-government is likely to highlight much of the current redundancy or incompatibility of systems and processes across government. The report looks at how governments ***identify common business processes*** such as payroll, human resources management, common accounting and archiving systems to consider how shared processes can be improved. For example, an inventory of basic public-sector processes can help governments think about how administration might be better arranged (*i.e.* organised around an enterprise architecture). In this way, some common processes could be consolidated and provided by fewer organisations, thereby achieving economies of scale. Reference models for typical processes can also be used to facilitate the duplication and transfer of processes across government, thereby eliminating the need to "reinvent the wheel". The virtual integration of processes across organisations, based on common standards, can allow them to work together seamlessly. This type of approach can also be applied to services that are shared or that have common populations in order to provide more seamless service delivery.

Achieving better government will require a better understanding of what governments hope to achieve and indicators to see if they are on the right path. The report will look at the use of ***business cases for e-government*** to demonstrate the risks and expected returns on ICT investment, in terms both of savings to government and benefits to citizens and businesses. Analysis of e-government costs and benefits allows governments to support investment decisions and evaluate results. In the absence of a business case, governments risk developing technology-enabled services that may not correspond to the needs of citizens and businesses. To counter this, traditional business case methodologies from the private sector have sometimes been adopted. While these can be useful, they are business-centric and do not take into account many of the benefits to users that are part of the value proposition of government. This may be, in part, why rates of take-up of online services have been disappointing in many OECD countries.

In OECD countries, governments increasingly require each ICT project to develop a business case before proceeding. Only when that case has been persuasively made should major investments be made in ICT systems. The report looks at what governments have done to complete this difficult task. Are there clear indicators, quality data, risk management techniques and a clear understanding of both the intended and unintended benefits of ICT investment? How are organisations accounting for benefits that accrue to other agencies? Do governments want to make decisions based only on financial benefits to governments or to both users and governments?

Finally, governance structures are central to realising e-government benefits and achieving greater user focus through more integrated information and services. Adopting a user focus has consequences for the structures and processes of government. The report looks at how governments organise the ***co-ordination of e-government***. Governments' ability to co-ordinate their own internal structures is, in many ways, a test for how they will one day manage their relations with stakeholders in general. Until recently, e-government initiatives in many OECD countries were driven by individual agencies and ministries seeking ways to help meet their individual mandates. Decentralised development of e-government means widespread digitisation of information and services and the testing of many different types of solutions. It also raises new challenges, such as ensuring that *i)* individual computer systems can

communicate with each other (*i.e.* systems interoperability), that *ii)* common standards are in place as new services are developed, and that *iii)* in the context of ever-tighter budgets, services support and complement, rather than duplicate, each other.

More rational structures can support collaboration and internal efficiencies within public administrations, yet ICT also makes it possible to improve co-ordination across government without changing structures or accountability portfolios. The cross-cutting nature of e-government requires governments to strike a balance between decentralised initiatives that may be more innovative and flexible, and a coherent approach traditionally associated with more centralised arrangements. Some of the most successful e-government initiatives have been in decentralised systems and, in fact, the technology is too complex and fast-moving to be fully centralised. Yet centralising some, in particular technical, aspects of e-government can better enable decentralised service delivery.

How have countries balanced their history and existing administrative system, their current needs and their policy priorities when setting administrative and political responsibilities for e-government? Among countries' experiences with multi-channel service delivery and identifying common business processes, which ones can be generalised to other countries and to which countries? There is no single solution, but understanding the context in which decisions have been made in other countries can help countries determine which experiences they can best learn from, and which solutions are appropriate for their own situation.

E-government embodies a whole-of-government logic that transcends sectoral interests in favour of more fluid and seamless relations within government. While it can be implemented in stovepipe fashion, e-government can also act as a catalyst to transform administrations by replacing traditional ways of working with new more efficient and effective processes, structures and lines of communication. The new, networked administration may still seem a utopia, but discussions among OECD countries have demonstrated that elements of a new way of working are starting to appear.

In the pursuit of e-government, countries' understanding of what needs to be done – and how to do it – is constantly changing. There is no one clear path to better government, but global imperatives are leading to convergence in terms of the challenges to be faced. To do so, government organisations are increasingly looking at how to transform themselves into more adaptive organisations capable of responding to their environment and discovering new and better ways to fulfil their mission. E-government has become a critical part of this path to better government.

Box 0.1. Why is e-government important?

E-government improves efficiency

ICTs help improve efficiency in mass processing tasks and public administration operations. Internet-based applications can generate savings on data collection and transmission, provision of information and communication with customers. Significant future efficiencies are likely through greater sharing of data within and between governments.

E-government improves services

Adopting a customer focus is a core element of OECD countries' reform agendas. Successful services (both online and off-line) are built on an understanding of user requirements. A customer focus implies that a user should not have to understand complex government structures and relationships in order to interact with government. The Internet can help achieve this goal, by enabling governments to appear as a unified organisation and provide seamless online service. As with all services, e-government services must be developed in light of demand and user value, as part of an overall multi-channel service strategy.

E-government helps achieve specific policy outcomes…

The Internet can help stakeholders share information and ideas and thus contribute to specific policy outcomes. For example, online information can boost use of an educational or training programme, information sharing in the health sector can improve resource use and patient care and information sharing between central and sub-national governments can facilitate environmental policies. The sharing of information on individuals, however, will raise privacy protection issues, and the potential trade-offs need to be carefully assessed. Timeframes for initiatives need to be realistic, as there can be considerable lags before benefits accrue.

…and can contribute to economic policy objectives

E-government helps reduce corruption, increases openness and trust in government, and thus contributes to economic policy objectives. Specific impacts include the reduced government spending through more effective programmes, and efficiencies and improvements in business productivity through ICT-enabled administrative simplification and enhanced government information. Given the reach and influence of government, e-government initiatives promote information society and e-commerce objectives. Government consumption of ICT products and services can also support local ICT industries. However, impacts in these areas are difficult to quantify.

E-government can be a major contributor to reform

All OECD countries are facing the issue of public management modernisation and reform. Current developments – globalisation, new fiscal demands, changing societies and increasing customer expectations – mean that the reform process must be continuous. ICTs have underpinned reforms in many areas, for example by improving transparency, facilitating information-sharing and highlighting internal inconsistencies.

E-government can help build trust between governments and citizens

Building trust between governments and citizens is fundamental to good governance. ICT can help build trust by enabling citizen engagement in the policy process, promoting open and accountable government and helping to prevent corruption. Furthermore, if limits and challenges are properly overcome, e-government can help an individual's voice to be heard in a broad debate. This is done by harnessing ICT to encourage citizens to think constructively about public issues and assessing the impact of applying technology to open up the policy process. However, few expect e-government arrangements to replace completely traditional methods of information provision, consultation and public participation in the near future.

Source: OECD Policy Brief "The E-Government Imperative: Main Findings" (2003).

CHAPTER 1

USER-FOCUSED E-GOVERNMENT[1]

Introduction

E-government offers the opportunity to do more than simply make existing services available on line; it can also be a powerful catalyst and enabler for transforming both the nature and quality of public services, the approach to service delivery, and the structure and operation of government itself. Governments are increasingly seeing that, with the help of ICT, they can now provide services based much more around user needs and, at the same time, increase their efficiency. This chapter looks at developing understandings of user-focused e-government, and examines mechanisms for achieving it that are developing in OECD countries.

E-government continues to be based on the initial principle of enabling users to access government information and services when and how they want (*i.e.* 24 hours a day, seven days a week) through channels including the Internet. Today, however, this approach is being enhanced by the realisation that the benefits of online services depend not just on the availability of those services, but also on how they are organised and provided to users. The idea that this should be based on the needs of service users rather than providers is increasingly common in OECD countries.

User-focused e-government requires both an understanding of user needs and the ability to deliver services according to those needs. By transforming the nature and means of service delivery, user-focused e-government is expected not only to increase customer satisfaction, but also deliver additional gains in terms of improving the efficiency of government and the increased use of online channels.

Understanding Users

What is meant by 'user'?

While e-government is relevant to most aspects of public governance, this chapter concentrates on how government services can be made more user-focused through better use of ICT and information. Wider aspects of how e-government enables more user- or citizen-focused government, (e.g. through processes such as e-democracy or electronic public consultation) have been addressed in three recent OECD publications[2]. This publication's focus on user-focused electronic services provides a closer look at how the application of ICT is affecting this key area of the relationship between people (whether or not they are citizens) and businesses, on the one hand, and government as it seeks to better determine and respond to their needs.

Even so, it is useful for governments to keep in mind the variety of roles people can play when interacting with government (*i.e.* whether as customer, voter, taxpayer, subject, stakeholder, and/or employee), as this can have implications for what user-focus means in a particular context, and how it can best be achieved.

One useful categorisation of people's roles in relation to government, and the different implications these can have for user-focused e-government, is provided in Table 1.1.

Table 1.1 Implications of different roles for user-focused e-government[3]

Role	Key Element of role	Main implications for user-focused e-government
Customer	Transaction	Delivering services based on meeting customers' needs, not those of service providers.
Subject of the State	Law (Enforcement) and Order; State exercise of coercive power. Mandatory payment (taxpayer).	Allowing obligations to be met easily and efficiently. Providing fairness and transparency, and efficient use of taxpayers' resources.
Citoyen	Direct Participation (*e.g.* input to policy making)	Allowing fair access to government information, and ability to effectively express opinion.
Voter	Indirect Participation (*e.g.* participation through representative mechanisms)	Ensuring integrity, accountability and legitimacy of process.

The French word "*citoyen"* means the participant in the political life of the community – a definition which tends to be broader than the term "citizen" which often implies the voting and civil rights linked to nationality. This indirect relationship with the State is encompassed in Table 1.1 under the term "voter". In contrast, the "*citoyen"* is an individual who is a carrier of *political* rights and the enjoyer of "positive freedom" including the right to demand direct accountability from his/her government, regardless of nationality.

Delivery of user-focused e-government services, on the other hand, largely involves government dealing with people in their capacity as customers or subjects, either as individuals or as part of a business. In many respects, the distinction between individuals and businesses does not have a great bearing on the main implication that differing user roles have for providing user-focused services. Whether acting as customers or subjects of government, both individuals and businesses will have the same broad interest in receiving services that are designed and delivered to best meet their needs.

The relevant point for governments is that user needs are diverse, depending on the particular type of service in question. If users are acting as customers and are seeking, for instance, a licence for undertaking some sort of state-regulated activity, then they will be particularly interested in service attributes such as *accessibility, convenience* and *cost*, as well as other factors such as *procedural fairness*. In many cases, user-focused e-government can now enable users to apply for and receive licences in a form and at a time that it is convenient for them (*e.g.* through a Web site at 11 p.m.) and at a low cost. While the delivery of such services is affected by variables such as user volume, an ICT framework for service delivery can allow government to meet high levels of demand for little additional cost.

In contrast, when customers of government receive a service that requires the rationing of limited resources, such as healthcare, user-focused e-government will still involve attributes of *accessibility, convenience* and *cost* but, critically, requires service providers to strike a balance between *controlling costs* and *delivering high-quality services*. In this example, government is responsible both for the *appropriateness* and *accuracy* of services in relation to the individual's needs, its *timeliness* in meeting them, and its obligation to individuals as voters (and taxpayers) to *maximise the return on public funds*.

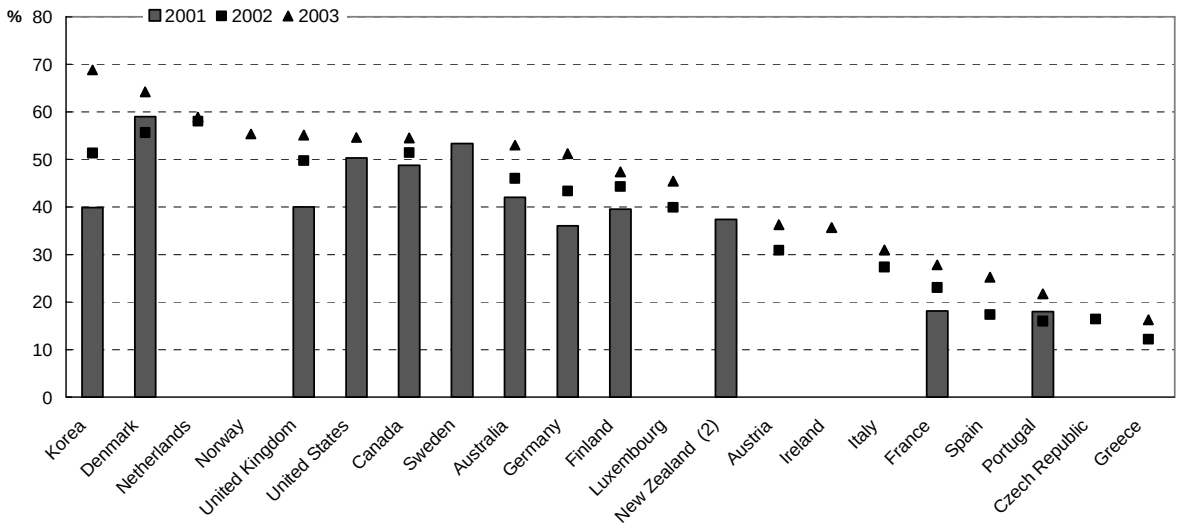
When acting as subjects in a process such as filing tax returns, users (both individuals and businesses) will have an interest in being provided with a service that enables them to meet their legal obligations as *quickly* and *easily* as possible, that is based on *accurate information*, and where any consequences (*e.g.* tax payments or refunds) can be handled *smoothly* and *promptly*. In this case, user-focused e-government can allow tax authorities to move the filing process on line to minimise demands for information and to make

payments electronically. Hence, the Dutch Tax Administration's slogan in the 1990s: "We can't make it nicer, but we can make it easier." In some cases, effective use of government-held information can enable governments to eliminate some obligations entirely (*e.g.* New Zealand's elimination of the requirement for most wage and salary earners to file annual tax returns).

Defining user priorities

Based on an understanding that different types of users have differing implications for achieving user-focused e-government, an essential first step in providing user-focused e-government services is to determine the population that one is trying to serve. Factors such as age, gender, education and income have an impact on the needs, inclinations and capacities of different populations to access and use electronic services, as well as their levels of online access and ICT skills. Clearly, a 'one-size fits all' approach will not lead to services that are of equal use to all of these diverse populations. In addition, in many instances the heaviest consumers of public services are among those least able to access and use the Internet or online services. Among OECD countries, a growing proportion of the population has access to the Internet (see figure 1.1). However, data is still very limited, and provides very little information on how specific groups are positioned in terms of their ability to use online services.

Figure 1.1. Household access to the Internet in selected OECD countries, 2001-03

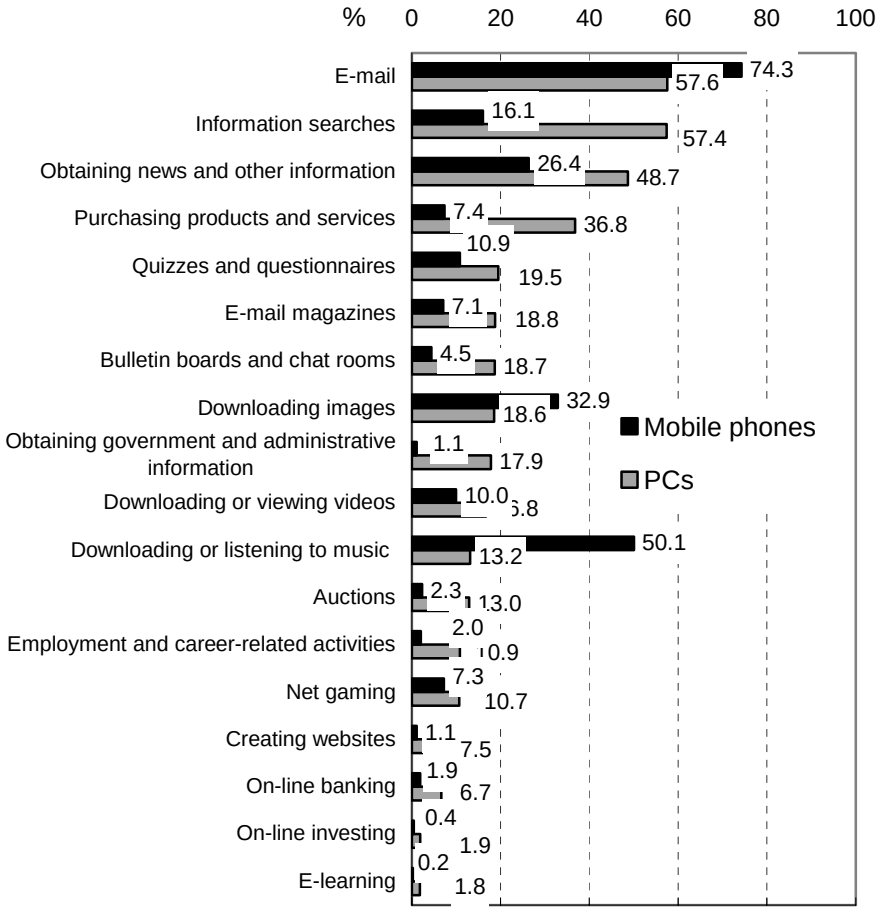


1. Internet access via any device (desktop computer, portable computer, TV, mobile phone etc.).
2. July 2000 to June 2001.

Source: OECD, ICT database and Eurostat, Community Survey on ICT usage in households and by individuals, 2001 to 2003, November 2004.

This challenge has often been addressed in terms of the "digital divide" (the gap between those with the skills and access to use ICTs and the Internet and those without) both among countries and among the diverse populations within individual countries. As this gap narrows in many OECD countries, governments wanting to provide user-focused electronic services equitably will need not only to examine questions of physical access to and affordability of hardware, software, connectivity and ICT skills, but also the extent to which the online services offered by government contribute to the overall incentives that individuals and businesses have to become connected and familiarise themselves with online procedures. While still a relatively small part of all online transactions (see Figure 1.2 for Japan), e-government information and services can benefit from greater familiarity with the innovations and solutions that come from e-commerce and the information society in general to build better services and to draw in more users.

Figure 1.2 Purpose[1] of Internet use[2] by individuals 15 years and older in Japan, 2003



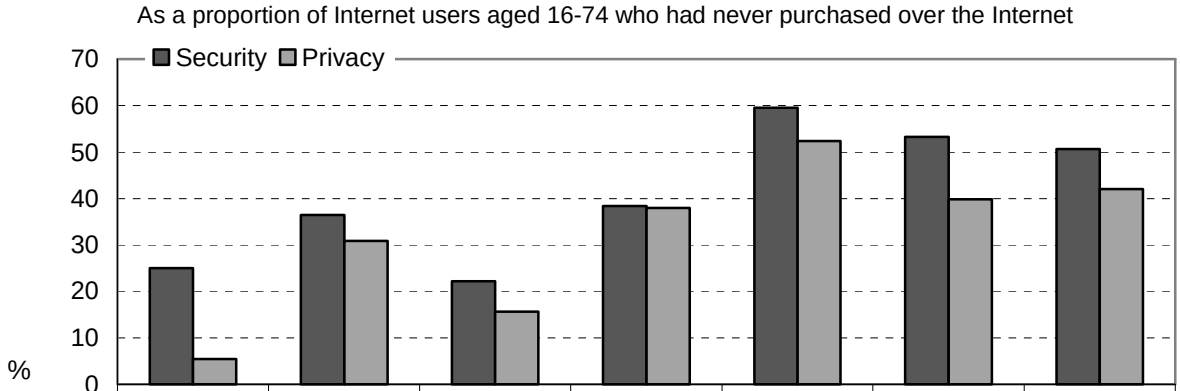
1. Purpose(s) of use by individuals 15 years old and over who have used the Internet in the past year.

2. Includes access by PC and mobile phone.

Source: Ministry of Public Management, Home Affairs, Posts and Telecommunications, Communications Usage Trend Survey, 2003.

The next step is to determine which services people will access electronically. When developing and offering more user-focused government through online channels, governments can see the importance of devoting resources to learning about service users in terms of what they want from services and what they can do online. A major difficulty here is that users may need to consider something of which they have no experience. Prejudices against new technology, or a desire to do things in traditional ways, first needs to be overcome in order for people to be able the judge the potential value of electronic service delivery. For example, users' concerns about privacy and the unexpected use of information that they provide when using e-commerce solutions may prevent them from trying e-government services even when such services offer improvements over traditional means of service delivery (see Figure 1.3).

Figure 1.3. Proportion of Internet users aged 16-74 reporting security and privacy[1] concerns as main reasons for not purchasing over the Internet, 2003



	Denmark	Germany	Greece	Luxembourg	Portugal	Spain	Sweden
Security	25.0	36.5	22.2	38.4	59.5	53.3	50.7
Privacy	5.4	30.9	15.6	38.0	52.4	39.8	42.1

1. Eurostat question wording is "Security concerns/worried about giving credit card details over the Internet" and "Privacy concerns/worried about giving personal details over the Internet".

Source: Eurostat, Community Survey on ICT usage in enterprises, 2002 and 2003, October 2004.

Awareness of and responsiveness to these issues has to be set against a need to maximise the efficiency gains realisable when high-volume, costly services are "e-enabled", *i.e.* improved through electronic service delivery. Governments deliver a very large number of services. For example, the United Kingdom has identified a total of more than 650 services delivered by the central government and a similar number delivered by local government. Italy has identified more than 500 services. Governments therefore need to have a more sophisticated understanding of users and their requirements than has traditionally been the case, with a focus on services that have the most impact or the most value for users and for government (see box 1.1).

Box 1.1 E-Government and High-Impact Services (HIS)

High impact services (HIS) is a term used in Mexico to refer to the most important and heavily used services that government provides. The government's aim is to provide personalised services to the majority of the Mexican population. The HIS are classified by themes according to users' needs and based on the 80/20 rule which establishes the criteria for identification – 20% of the most relevant information that is most frequently looked up by 80% of the users. The classification of high-impact services is done according to channels identified by user profiles (*i.e.* citizens, companies, public officials, etc.). Some examples of high-impact services are passport appointments, driver's licences, job applications, health insurance, labour rights and information on women's health.

The purpose of this approach is to increase the number and use of transactional services in a simple way according to user profiles, and to reinforce the customer resource management and multi-channel delivery strategy through technological convergence. This will enable federal government agencies to incorporate the current digitalised services into their own business environments and generate new services in electronic format.

In some organisations, high impact services have been identified as specific targets for developing Internet functionality. For example, the Ministry of Interior has 60 services in its process registry, and the 12 that were identified as high-impact services have had Internet functionality developed for them.

Source: *E-Government in Mexico* (OECD forthcoming)

Since around 2000, many OECD governments have tried organising online services around "life events" which focus on the services that different groups of citizens need at various points in their lives. (see Box 1.2). The Italian government, for example, uses a "life events" approach to help determine priorities for developing online services.

Box 1.2. Italy's "life event" approach to service delivery

The Italian government has used a "life event" approach to identify which services should be given priority for e-enablement. This was done in two phases. In the first phase, a quantitative evaluation model was used to classify and rank services in terms of priority for e-enablement. A preliminary set of 80 high-priority services was identified – 40 for citizens and 40 for business. The second phase involved qualitative analysis of the opportunity for making these services available online. The following criteria were used in the selection process:

- Frequency of use (including the population affected by the service and the number of interactions needed to provide the service).
- Added value for users.
- Tendency of the potential users of the service to use the Internet.
- Range of fees to be paid for the service.
- Opportunities for eliminating services of the service provider and not considered to be required by citizens (for example, certificates produced by a public administration).
- Possibility of providing the service more easily electronically to users (for example, payments for public utilities that can be easily executed automatically by the user's bank).

A potential drawback of the "life event" approach is that a given life event may be too specific to attract a large audience. For example, "Having a Baby" is a life event that will capture a limited audience for a specific period of time, whereas providing services for a defined target population such as "parents" can make a wider range of information and services available. Whichever approach is used it should be thoroughly tested by user research.

This example helps illustrate the importance of distinguishing between need and demand when developing user-focused e-government, as they provide two fundamentally different perspectives to base service delivery decisions on. Needs are subjective, dynamic and constantly evolving. Developing services that respond to needs therefore requires a subjective and fine-grained understanding of what those needs are. This understanding, which has to be based on a user-perspective obtained through a process of 'declaration': rather than assuming what users needs are, service providers have to actually put in place processes that allow them to be expressed.

Delivering user-focused services on the basis of needs requires an ability to build services that can both address the variety of existing needs and also anticipate and respond to emerging needs. This can be achieved either through flexibility in service design and delivery or by allowing users to make ongoing inputs through feedback processes such as user-surveys and focus groups.

In contrast to need, demand for services is something that is more concrete and measurable. Developing services that respond to demand can lead down a path based more on the perspective of service providers, with a focus on analysing patterns of consumption of an existing 'menu' of existing services, or options for future ones. Ideally, given that need and demand are in fact intertwined, user-focused e-government can address both aspects, but confusion over whether efforts are or should be based on meeting needs or demand can lead to undesired or unexpected outcomes.

To address this issue, governments can develop a framework for categorising and assessing user needs, backed up by robust means of assessing demand. Ideally, such a framework would allow for both bottom-up (*i.e.* user-oriented) and a top-down (*i.e.* provider-oriented) approach to defining where to develop user-focused services, in order to maximise the chances of arriving at a balanced accounting for issues such as effectiveness, efficiency and equity in relation to user-focused service design and delivery. The bottom-up perspective can point to where the greatest need for more user-focused services is being expressed, while the top-down approach can analyse actual patterns of current and expected demand for services. In cases where need and demand are not the same, decision-makers will be faced with making trade-offs between the various objectives that achieving through developing user-focused e-government. If such a framework is developed, it should be used uniformly across government in order to help

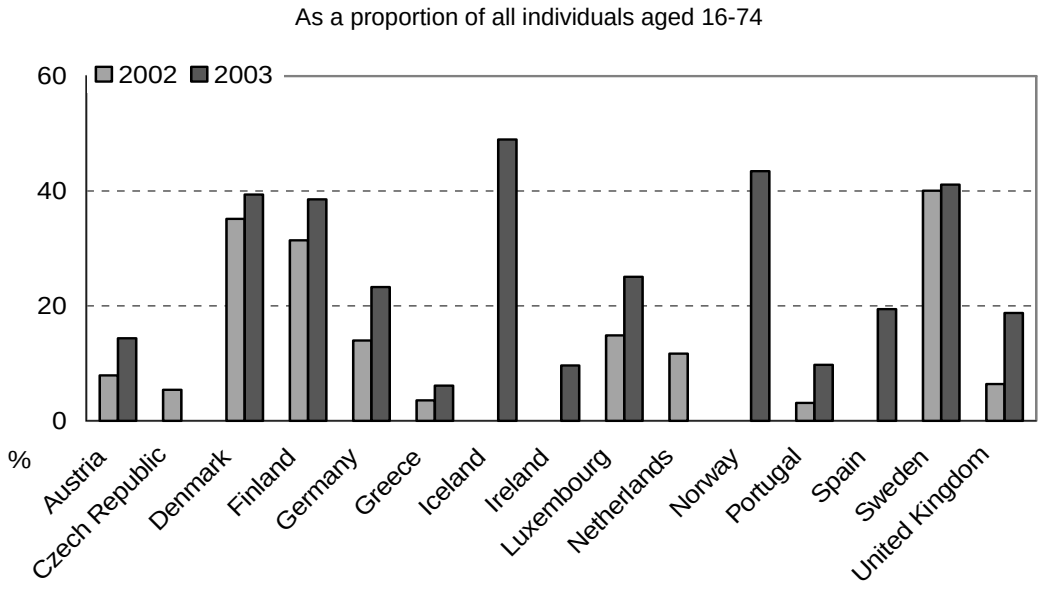
discriminate between good and bad opportunities for delivering user-focused services through e-government.

Focusing on high impact services recognises that there is an opportunity cost for putting services online, and that not all electronic services will have the same level of benefits for the government and for users. A user-focus approach therefore becomes a critical prioritisation tool for the management of limited resources.

Understanding user behaviour

Successful delivery of user-focused e-government can be measured, in part, by users' uptake of on line services (Figures 1.4-1.6). The uptake of e-government services is steadily increasing worldwide, and the picture for growth is encouraging. People see the Internet as an increasingly acceptable means of interacting with government. Countries such as Australia, Canada, Sweden and the United States have already developed a more user-friendly approach that may be helping users to embrace e-government. Canada, for instance, relaunched its government portal with a new user focus and improved design, and doubled its unique audience numbers over a period of two years. In the United States, a September 2002 report from the Pew Foundation found that 71 million Americans have used government web sites, up from 40 million in March 2000, and a survey released in April 2003 by the Council for Excellence in Government noted that 75% of e-government users think it has made it easier to get information, and 67% like doing transactions with government online.

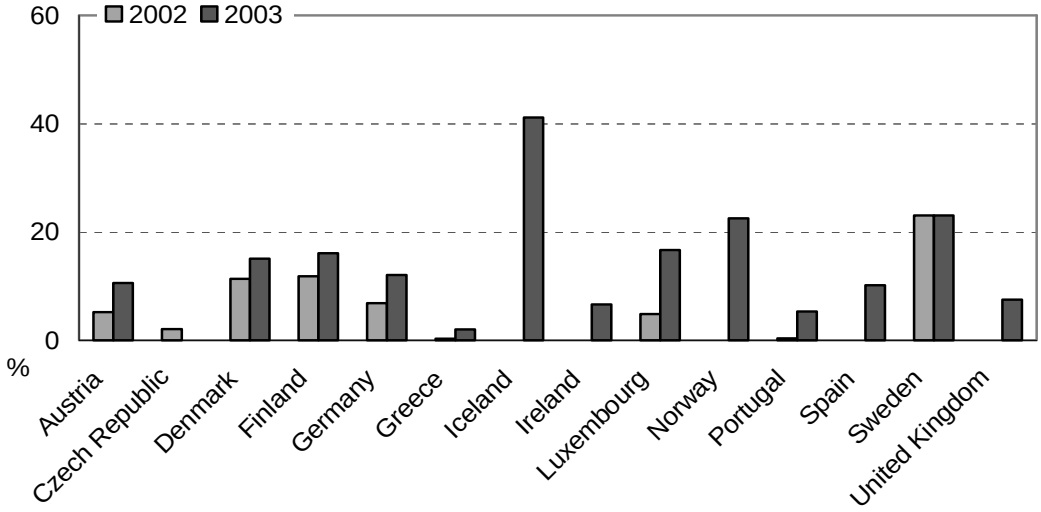
Figure 1.4. Proportion of individuals aged 16-74 using the Internet for interaction with public authorities to obtain information, 2002 and 2003



Source: Eurostat, Community Survey on ICT usage in households, 2002 and 2003, October 2004.

Figure 1.5. Proportion of individuals aged 16-74 using the Internet for interaction with public authorities to download forms, 2002 and 2003

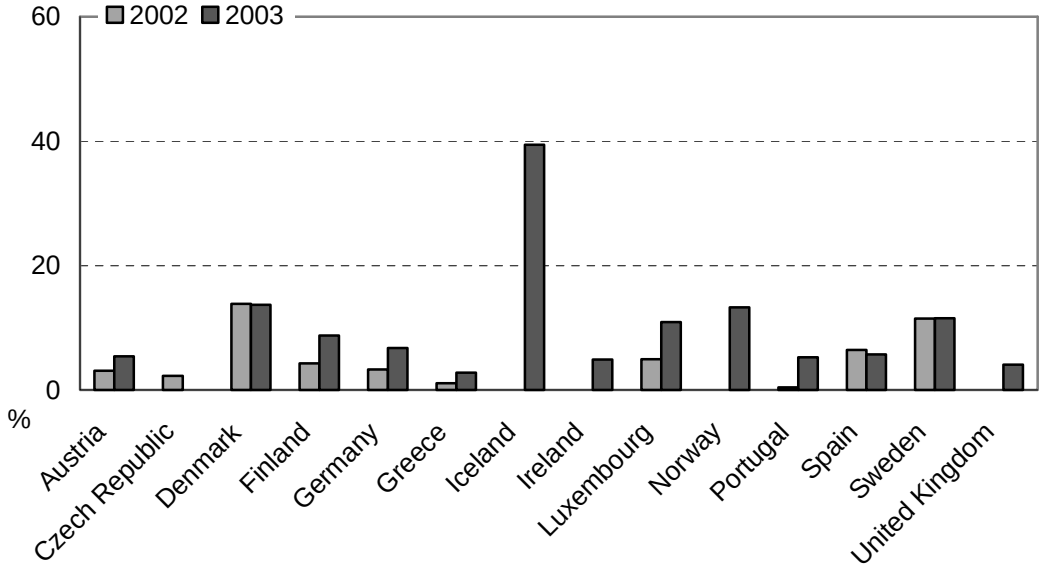
As a proportion of all individuals aged 16-74



Source: Eurostat, Community Survey on ICT usage in households, 2002 and 2003, October 2004.

Figure 1.6. Proportion of individuals aged 16-74 using the Internet for interaction with public authorities for returning completed forms, 2002 and 2003

As a proportion of all individuals aged 16-74



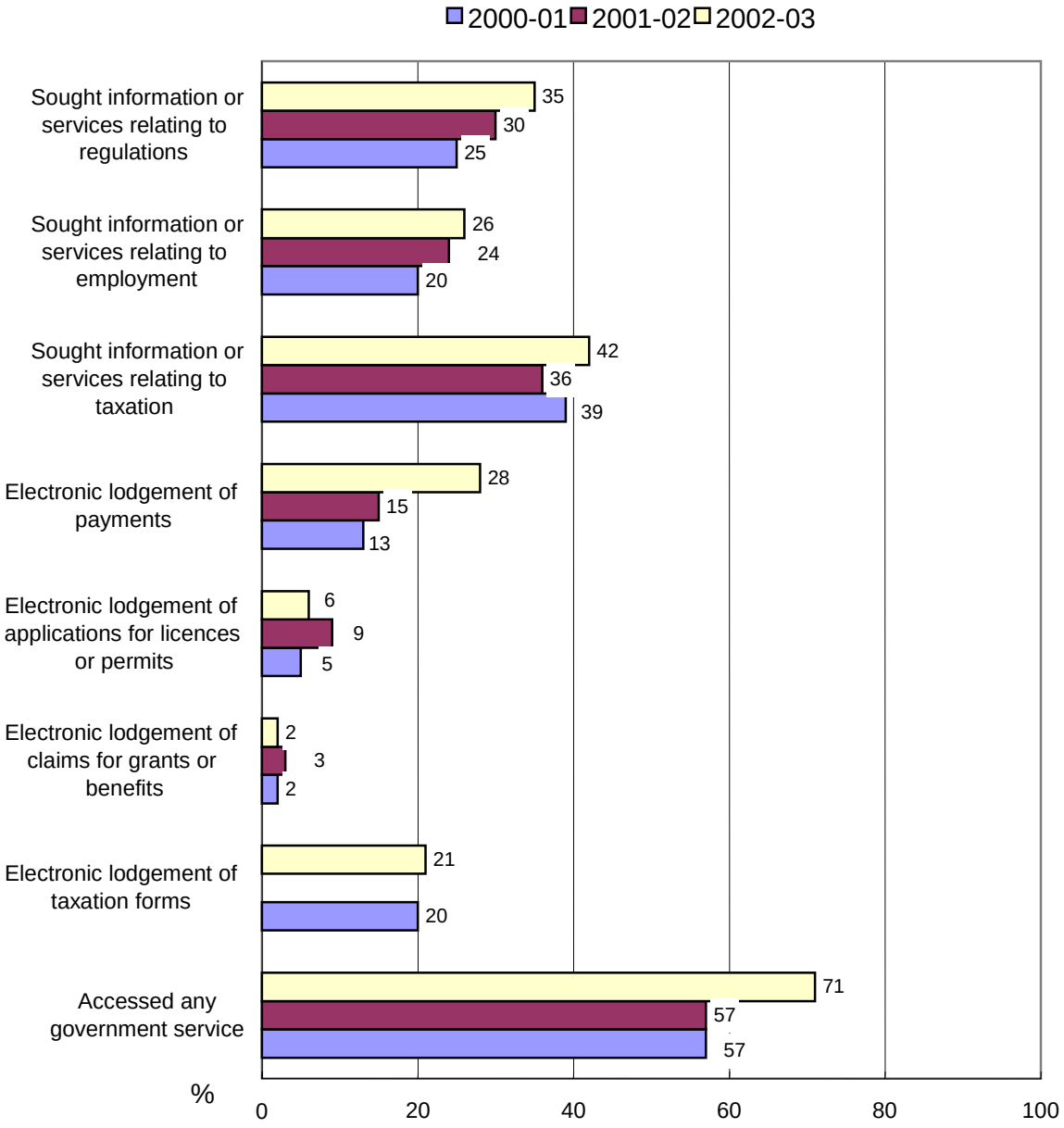
Source: Eurostat, Community Survey on ICT usage in households, 2002 and 2003, October 2004.

Success also relies, however, on a deep understanding of users' online behaviour. Traditional metrics such as counting Web site hits and page impressions are not enough. Monitoring and analysing patterns of use, traffic volumes, user likes and dislikes, user satisfaction and attitudes toward data use, seasonal variation, audience breakdown, e-mails and feedback, and use of search terms are all important elements of understanding how users consume electronic services. Such analysis should feed directly into service development and delivery so that services better match user expectations. For example, the UK Directgov

Web page allows users to select from the top ten services recently accessed by other users, thereby providing a quick and easy way for the page to present information that is inline with users' shifting needs.

Analysis of user needs can also inform the development of government agencies' overall business objectives, so that total service delivery activity is controlled and purposeful rather than simply enlarged through the introduction of new channels and/or services. Knowledge of which services are being used (Figure 1.7) and the value that users derive from going through online rather than using other types of channels can contribute to refining on- and off line service delivery strategies.

Figure 1.7. Australian businesses accessing government services, 2000-01 to 2002-03[1,2,3]



1. Proportions are of businesses using the Internet.
2. Data on electronic lodgement of taxation forms were collected but were not available for publication in 2001-02.
3. Due to changes in the ABS business frame for 2002-03, comparisons between the 2002-03 estimates and previous years should be made with caution.

Source: Australian Bureau of Statistics, *Business Use of Information Technology*, 2000-01 to 2002-03, Cat. No. 8129.0.

User research - knowing what people want

A crucial part of providing user-focused e-government is to ask users what they want, need and value as a basis for designing both services and online delivery channels such as Web sites and portals. This may not be as simple as it seems. As noted earlier, users are not always able to articulate their needs clearly, particularly if they are being asked to envisage having them met in ways that do not yet exist. This can compound a particular challenge for individual agencies, which is to develop services based on a holistic view of the user, rather than on a view that is specific to a particular agency or service. A holistic view will enable better integration of services from various agencies into service bundles tailored to individual circumstances and also allow agencies to move to a more proactive form of delivery.

User research should not stop once an initial offering is made available. Advances in technology and people's greater experience with using the Internet will inform their views on the quality and usefulness of e-government services. It is therefore essential to put in place an ongoing programme of research to test user satisfaction with existing services and proposed future developments (see Box 1.3).

Box 1.3 Improving e-government services through feedback in the United States

The United States Department of Treasury's Internal Revenue Service (IRS) has tracked customer satisfaction and taxpayer awareness through phone surveys for its *Free File* programme which is incorporated into all IRS publications. *Free File* is the first thing that the public sees on the IRS Web site, and IRS media campaigns in 2002 and 2003 seem to have resulted in a reported 3.5 million people using the Free File application in 2004. The IRS has also set up a Web site (www.aboutefile.com) to provide more information about the service.

In another example, analysis of the audiences using FirstGov.gov (the Federal Internet Portal) is undertaken to better understand who is using it and for what purpose. FirstGov.gov collects statistics on the number of visitors and page views, frequency by which pages are clicked (or not), and most common search terms. The site manages a customer satisfaction survey, using the American Customer Satisfaction Index, and uses the Nielsen Net Ratings to obtain details on customer demographics. Finally, FirstGov.gov conducts one-on-one usability testing and focus group testing to verify the effectiveness of the information and services it is providing access to.

People and businesses do not necessarily know where to go to access e-government services (for efforts to remedy this situation, see Boxes 1.3 and 1.4); they often perceive government as complex and unconnected, and their knowledge of e-government services can be quite limited. The result is the potential user base is often unaware of a large number of services. User research initiatives should take this into account, so as to avoid biasing results toward those users who are aware and making use of e-government services.

As well as accounting for user awareness, it is also important to understand the capacity of particular groups of users to make use of on line services. People's ability to use online services has a direct bearing on uptake rates. A clear understanding of differing levels of access and ability in the target population can help guide decisions about how and when to put services online, as well as whether a user-focused service is best achieved through on- or off line delivery, whether it should be fully self-service or partially supported through mechanisms such as call centres or helpdesks, or even whether an electronically enabled face-to-face service, delivered through some form of public or private intermediary (particularly useful for complex social services) is the best approach.

Box 1.4 Making e-government more easily available in the United Kingdom

To meet the challenge of user awareness and uptake of electronic services, the United Kingdom has developed a strategy centred on:

- A single, citizen-centric, "all of government site" that is clearly branded and heavily promoted directly, including through major commercial sites and intermediaries.
- Consistent navigation based on user segmentation by 'audience' and 'topic'.
- Provision of a number of high value services based upon research and analysis of user needs, with content specific to the audience and topic presented using straightforward language, and with clear added-value for the online user. Based upon research and analysis of user needs, these services are additional to search directories and other navigational tools, giving users the choice of how they prefer to find information and services.

- The one-stop *Business Link* Web site, which provides free and easy access to government information, advice, funding and training for small businesses, while also aiming to reduce the time that businesses spend dealing with rules and regulations. A cross-governmental collaboration between departments and agencies that interact with business, businesslink.gov.uk has been developed in response to user feedback and changes in the business environment to ensure that it remains of real value to users.

User-focused e-government: a catalyst for better government

At this stage of its development, unlocking the potential for achieving better government through e-government depends on high levels of uptake of electronic services, in particular through repeated visits to the principal electronic channels (*e.g.* all-of-government service portals) that many OECD countries are building. Uptake of electronic services is also a leading indicator of whether e-government is succeeding. Achieving high uptake requires cross-agency co-ordination and collaboration, without which e-government is likely to result in an unfocused and unco-ordinated "push" of a wide range of disconnected services to citizens and businesses – the opposite of what user-focused e-government should achieve.

The risk of an unsystematic approach is that it is wasteful, as many agencies will undertake similar development programmes and maintain overlapping and redundant architectures to support their electronic services, resulting in a situation that is now often described as "fragmentation". In the process, opportunities to dramatically improve services will not be identified and acted on. The United States has found, for example, that there is a need for agencies to base their future business process and ICT developments on a common 'enterprise architecture' if they are to develop more user-focused services. The Office of Management and Budget (OMB) is leading the development of the Federal Enterprise Architecture (FEA) with the support of the General Services Administration (GSA) and the Federal Chief Information Officer (CIO) Council. The FEA is a business-focused framework that provides OMB and federal agencies with a way to govern and guide federal investments in ICT within agencies, and support the identification of opportunities to consolidate and integrate current and planned initiatives. Also, the FEA will make possible horizontal (cross-federal) and vertical (federal, state, and local governments) collaboration and communication with respect to ICT investments (see chapters 2 and 3 for more discussion of enterprise architecture).

Responses to an OECD questionnaire used to prepare this chapter revealed a large and growing number of Web sites in many OECD countries, some of which were accessible through multiple portals. A fragmented online presence can lead to inefficient operations and sub-optimal service provision, making it harder to "cross-sell" government services from one delivery programme to another, and reducing the chance that users will develop a lasting awareness of better government being provided through one or (at most) a few points at which they can easily access and interact with government online. Government marketing expenditures will also be less effectively utilised through being spread more thinly.

Lessons currently being learnt about the advantages of reducing the number of government Web sites include:

- Efficiencies can be achieved by reducing the capital and operating costs (including staff) of developing and maintaining large numbers of websites.
- Having a single all-of-government site can produce higher standards of accessibility; it is both easier and cheaper to do this once rather than many times.
- If not focused on having a single all-of-government site, then it is essential to institute a policy that leads to similar outcomes for users, such as Canada's "no wrong door" approach to managing its national web portals in which a user is directed to the service that s/he is looking for no matter how the original contact with government is made.

At present, the majority of online government services only provide users with information and forms; they cannot offer them the capacity to undertake transactions on line (see Figures 1.5-1.7). This is

understandable given the relative ease with which the former can be provided. The scale and complexity of identifying the transactions that people actually want, and of making them available electronically, should not be underestimated. It is important that governments press on, however, in order not to miss the opportunity to realise gains from making transactional services available online where they are needed and where they can improve service delivery. A key point here is that, to succeed, such services must be easy to use and their design and deployment must be based on detailed user research. Such knowledge of user needs will also provide a basis for prioritising the type and level of complexity of services delivered online.

Providing for electronic service delivery alongside delivery through traditional channels can considerably increase the cost of delivering a service. To guard against this, it is important for electronic delivery to form the core of an overall channel strategy and business change process, preferably across the whole of government (Box 1.5).

Box 1.5 Germany's user councils for sharing information on infrastructure and services

In the area of services and infrastructure, the German government has set up user councils to support agencies of central and regional government. The councils offer a forum for members to voice their interests and consider the views of other agencies for providing "one-for-all services" (OfAs) and the basic infrastructure components, including an electronic payment platform, a central content management system (CMS) and electronic tendering via the Internet, that are necessary to deliver OfAs. User councils are involved in developing a business model to ensure healthy development of the infrastructure systems.

Adopting this approach is, of course, a major undertaking, requiring strong leadership and co-ordination, considerable resources, commitment to change from many government agencies, and timescales stretching over several years. Given the complex nature of providing services electronically, a pragmatic approach is to plan for a progressive e-enablement that involves incremental roll-out of new e-services rather than a "big bang" approach in which all services are planned to be available at the same time.

Delivery of user-focused e-government

To build user-focused e-government, governments need to redefine their service strategies in a way that starts from the perspective of citizens and business. This involves anticipating future needs and factors shaping both the demand and the supply side of online service delivery. At the same time, governments face the challenge of reconciling users' needs and associated short-term funding requirements with hard budget constraints that will restrict the range of options available to them. One example of how governments can approach this is provided by the UK government's Directgov service delivery portal (Box 1.6).

Box 1.6 DIRECTGOV (www.direct.gov.uk)

The United Kingdom's Directgov portal (www.direct.gov.uk) is an evidence-based and user-tested solution to driving greater uptake of electronic transactions. Launched in February 2003, it incorporates:

- A clear and compelling value proposition to users that can be effectively marketed, without which the UK government will fail to attract the wide user base which its departments need if they are to meet their targets.
- A capacity to manage service delivery on an integrated basis.

Currently each user of a government service is generally 'owned' by the department providing that service. Thus, the experience the user has with government can be disjointed, frustrating and confusing, in other words agency-focused instead of user-focused e-government.

By implementing the Directgov model, a user acquired by a department is also acquired for the whole of government, and opportunities to "cross-sell" services are maximised. Furthermore, a sustained dialogue between government and user is enabled, giving the opportunity to improve users' perceptions of service delivery as being significantly more user-focused.

Clusters of government services and transactions targeted at specific user groups have been incrementally built and developed using "department store" and "franchise" models, allowing structured user-focused packages of services manageable size. This provides Directgov with three levels of service provision:

- *Top or entry level*: a first entry point for all government Internet and digital TV (DiTV) services (incorporating and replacing the UK Online Web site, and earlier DiTV services), with a suite of common services and standards giving a consistent user experience.
- *Franchise level*: a layer of content and services developed to meet the needs of specific user segments (for example, parents, students, disabled people). Importantly, the franchises are 'owned' by departments that responsible for getting all relevant departments to deliver the required services.
- *Service level*: key services delivered as cross-departmental, user-segmented, service packages.

Once services suited to electronic delivery have been identified, they need to be provided in such a way that the public will want to use them. The following provides some basis for achieving that goal:

- ***Priority services***. Focus should be on the most common transactions for which there is the maximum potential for benefit to users and efficiency savings for government.
- ***User benefits***. Services must be based around the needs of the user. To achieve this, service design and delivery should be undertaken with the user's requirements at the centre from the beginning. This may require cutting across departmental boundaries.
- ***Benefits to government***. Realising the benefits to government from making services available electronically depends on strong take-up of electronic services, in order to realise savings on other channels.
- ***Building blocks***. The key building blocks (common data sets, identity verification, and ICT infrastructure) should be managed in a co-ordinated way, for example by building them centrally, by identifying a lead department to implement common solutions, or by developing them in a decentralised way according to a common architecture and set of standards.
- ***Trust.*** Ensuring the security and privacy of personal data that is collected and /or used in the process of electronic delivery is essential to building and maintaining users trust in online services.

The United States also has explicit plans to deliver user-focused e-government. For example, the newly created federal Business Gateway (www.business.gov) enables businesses to interact with a one-stop federal government portal that is similar in nature to the USA's FirstGov citizen portal (www.firstgov.gov) which has similar characteristics to Directgov..

The general approaches being taken by OECD governments that are leading the development of user-focused e-government share the following elements:

- A single "all-of-government" site serving as a one-stop shop for e-government services, or a portal and/or Web site management policy that achieves similar outcomes.
- A strong "brand" for e-government services, supported by effective marketing campaigns to promote usage.
- An initial focus on areas where there is strong need, high demand, and clear priority for users, so as to provide high value, user-focused services, coupled with efficient use of resources.
- Common navigation and search architectures across all online content and services.
- Robust privacy and security arrangements.

Accessing services

While governments continue to wish to provide services through a variety of channels, the Internet is clearly the main channel used for electronic delivery. This is not surprising, given that it is the online channel that most users have access to. It would be a mistake, however, to concentrate solely on the

combination of the Internet and the PC as the exclusive online delivery channel. For example, the growth of digital television has the potential of reaching a greater audience than the Internet in the long term and currently offers greater reach into some demographic segments. In the United Kingdom, for example, digital television reaches more people in lower socio-economic groups than the Internet.

In other countries the rapid and widespread adoption of mobile phones, WiFi and similar wireless technologies is causing governments to start looking at the role that these platforms might play in delivery of mobile e-government services (so called "m-government") or ubiquitous government ("u-government"). How such levels of access are viewed by the public is culturally circumscribed: for many, universal access may seem liberating, while others may worry about new opportunities for government control.

Box 1.7 Wireless access to government in Austria

The Austrian government ICT strategy has a goal of enabling free use and access of all ".gv.at" addresses through WiFi hot spots all over Austria. Coupled to this is its "CitizenCard" concept, which enables electronic identification and authentication through the use of electronic signatures. Currently implemented using smartcards (*e.g.* ATM cards, Student Service cards) or mobile phones, this makes electronic government services more independent of time and place, and thus more 'enjoyable' for users.

Personalised services

In many cases, services require personalisation before they can be offered on line, especially where some form of transaction is required. For example, to complete transactions such as online tax filing or benefit applications, service users may need to identify themselves through an online enrolment process. Replies to the OECD questionnaire used in preparing this chapter show that these requirements and processes tend to be specific to each service, so that users must re-enter their details for each new transaction or service. Oftentimes the result is the issuing of several different user identification IDs and passwords to a given individual. While some progress is being made to standardise the citizen enrolment process in various ways (for example ID or national services cards, other standardised all-of-government authentication systems, Web-based enrolment), access to "personalised" government services can still be complex and frustrating.

Integrating users' needs for personalised services into governments' visions for service delivery is a key step in promoting user-focused e-government. User-focused processes will have an impact not only on the way governments design online services, but also on how they redefine their internal structure and operations. The organisational impact of integrating users' preferences into existing service delivery schemes, and the changes required to fine-tune services to meet users' evolving needs, should not be underestimated.

Joining-up services

E-government offers a tremendous opportunity to focus on organising services, and the agencies that provide them, around users. As previously noted, many countries have approached this challenge by designing portals around "life events" or similar single-entry points that aggregate or cluster services together. Such moves are essential to providing user-focused e-government, given that a pivotal finding of much user research is that people want to access e-government services from a single point of entry. Most users have little interest in how government is organised and do not want to search through a myriad of Web sites to find the service they want. Yet the number of government Web sites seems to be growing in all countries. The likely result is fragmented service offerings that leave users confused and poorly served, and a failure to curb front- and back-office inefficiencies.

In Australia, government agencies operate in a largely devolved management environment. They are therefore responsible for their own ICT investment, strategy, development, implementation and support, albeit within the context of an overall e-government strategy and a range of national e-government

standards. Each agency is responsible for determining which services are e-enabled, based on their own policies, procedures and knowledge of their target audience. However, as part of its online strategy, the Australian government has created an environment where people can interact with the government without having to know its structure. A single point of entry (www.australia.gov.au) has been developed which brings together a complete collection of information and services. Austria uses a similar approach.

Box 1.8 Online access to multiple levels of government in Austria

Offering transactional services provided by different public authorities and administrative units is one of the main targets of Austria's central citizen and business portal www.help.gv.at. The portal uses a life events model to guide users to services meeting their needs.

As a basic structure a 'directory of services' contains services identified and provided through the portal. This directory covers all four levels of the Austrian public administration. The portal provides for service comparability (both on- and offline), based around common meta-data descriptions and even process models of the services, and also detailed, data concerning individual authorities.

The approach chosen is a central transaction portal although the different online transaction services are actually provided by national, county, local, or community level authorities. Only the presentation of the service in the portal is organised in a central way, so as to make it easier for user to obtain the information or service they need.

To achieve more consistent service delivery Austria has found it necessary to define ways and levels of collaboration across departmental boundaries – co-ordinated and organised by the national staff department for the Austrian ICT strategy (www.cio.gv.at). It has also chosen to rely on common standards and basic technologies (e.g. XML, SOAP etc) and provide free basic 'e-government modules (e.g. creating and verifying signatures, verification of identity) nationwide, always adhering to interoperability requirements.

Another example is provided by the United Kingdom's experience with Directgov (Box 1.6), which provides users with a single point of entry designed to be scalable in future to cover an integrated government service offering via contact centres and physical channels.

The United States has observed that a major e-government challenge involves migrating agencies from their unique solutions to using cross-agency solutions. Steps taken so far to do this include:

- Establishing single sources of information, accessible by citizens in no more than three mouse clicks (*e.g.* one stop portals such as Recreation.gov and Regulations.gov).
- Developing tools that provide a simple one-stop method to access government programs.
- Establishing common sets of standards for data collection and reporting (*e.g.*, for Geospatial One-Stop, E-Records).

The future requirement is to migrate (*i.e.* move or consolidate) the management of systems, data and business processes from multiple agencies to a joint solution, supported by one or two service providers.

Communication - marketing and branding

User-focused e-government services must be effectively marketed and communicated. To build awareness and drive service usage, a variety of media and channels should be considered. These might include leveraging existing government and third-party distribution channels to help meet targets at the lowest possible costs. However, there is a danger that what these channels are able to deliver, particularly in the early phases, will fall short of what is required to create a highly successful, intrusive, and enduring brand within a relatively short time.

One of the features of successful e-government ventures in Canada and Australia (which, in 2003, introduced a common brand for all departments) is the development of a single e-government 'brand' that features application of a consistent way for users to navigate among e-government services that have a common look and feel. Research carried out in the United Kingdom confirms the effectiveness of a single brand in achieving high e-government take-up. The United Kingdom has used such findings in creating Directgov as its single brand for web-and DiTV-based services.

In developing a user-focused government brand, it is important to obtain maximum return on the costs of its development. A UK project is addressing leveraging the Directgov brand fully, by using it as the electronic response route in all government advertising (for example www.direct.gov.uk/self-assessment, www.direct.gov.uk/road-safety). Doing this will:

- Create a user-focused URL structure for navigating e-government that is easily remembered and will help drive up use of e-services.
- Allow government to 'capture' a user for more than one purpose, giving immediate short-term benefits in terms of cross-selling opportunities, and longer-term scope to move towards improved management of users relationships with government as a whole.

A single government brand needs to have a very high level of recognition and trust. Excessive reliance on marketing through low-cost or existing channels may not ultimately prove cost-effective for a number of reasons, particularly because of the difficulty in conveying both the breadth and depth of what is being offered to users through channels that have existing and inconsistent brands that are not aligned with the single government brand. Use of such channels could ultimately prove counter-productive, to the extent that they reinforce user perceptions that government services are fragmented and provider-focused, instead of communicating the idea that a comprehensive offering of easily accessible and user-focused services is available to them at a single point.

Box 1.8 Marketing e-government in Germany and the United States

Marketing is an integral part of the German initiative "BundOnline". Initially the marketing focus was on enhancing awareness of the BundOnline and the services it offered among citizens, business and government agencies. As transactional services have become available, the focus is now concentrated on making the services better known to businesses. and improving usage..

In the USA, the Office of Management and Budget (OMB) is trying to boost citizens' awareness of federal e-government services, through a marketing and outreach strategy focused on about 10 of the 25 "Quicksilver" projects. Marketing will include targeted outreach to particular customer segments, innovative ideas on how to increase usage, and methods on providing greater synergy among e-government offerings. OMB will give each agency project office resources to reach out to citizens. The marketing plans likely will focus on how many customers are using the service and whether or not it meets their expectations. The approach will be focused on enhancing utilization and adoption.

Another important aspect of marketing is the role played by the front office as noted, for example, by Italy, which sees the front office side of service delivery playing a fundamental role in developing user-focused e-government (see Box 1.9). Front-office employees' relationship with users and their ability to directly gather customer information and feedback represents a significant asset if government uses their knowledge, skills, and experiences to better understand users' behaviours, in support of developing and presenting users with online services that they actually want and need.

Box 1.9 Promoting knowledge and awareness of services in Italy

To promote knowledge and awareness about services**,** Italian regional and local governments are putting in place a communication campaign in two parts:

- Identification at central level of tools and methodologies to be used in such a campaign.
- Development of specific communication projects to be delivered at local level that will use the tools and methodologies identified at central level.

It will cover all the public administrations with projects that are financed with central funds.

This understanding of the importance of the front-office side of service delivery leads to a note of caution – governments should make sure that, in developing electronic services, they do not lose the potential richness of their relationships with users by unduly reducing the 'ambient sensors' that people in the front office (*e.g.* call centre and other traditional channels) represent, and the knowledge that they possess.

User research

Development and communication of user-focused e-government services requires research to be regularly carried on the following:

- User recruitment:
  - Understanding the target audience in terms of needs and profile.
  - Understanding behaviour of the target audience in relation to public services information and online services.
  - Measuring and tracking perceptions of government Web sites.
- User retention:
  - Understanding user profiles and satisfaction.
  - Gathering frontline feedback.
- Product development:
  - Evaluating the effectiveness of government Web sites and e-services.
  - Measuring and tracking user expectations and satisfaction.
  - Reviewing data on observed visitor behaviour.
  - Exploring usability issues and barriers.
  - Informing future service development.
- Communications development:
  - Tracking awareness and perceptions of government Web site branding.
  - Developing and testing marketing propositions and campaigns.
  - Tracking the effectiveness of campaigns supporting government Web sites.

The Challenges

Adopting a user-focused approach to e-government is essential, both to achieve the immediate goals of delivering better services more efficiently and to achieve successful transformation in the longer term. Countries' experience with e-government shows that adapting the traditional producer-led processes typically found in government organisations will not allow the full potential of electronic service delivery and e-government to be realised. It is crucial to focus on what has to be done to migrate citizens from traditional service delivery channels to new channels, and on the business processes and governance mechanisms that underpin this transition.

Migrating users to e-channels

In order for the opportunity to improve government to be maximised, it is essential that users of government services migrate from consuming them through traditional delivery channels to the new electronic channels as they become available (and as appropriate for a given user and/or service). For the most part, governments have chosen not to force users to adopt new channels by denying them services through existing channels, or imposing fees or charges that are higher off- than online (except for certain services delivered specifically to business). This means that users must be given incentives to move voluntarily. As a result governments are, generally for the first time, in a competitive situation; their e-channels are competing with their traditional channels.

This type of competitive environment is the norm in the private sector, but it is alien to the prescriptive service delivery approach typically used by governments. It is little wonder, therefore, that governments have so far found it hard to develop the business processes and products that in themselves provide sufficient incentive to prompt a sizable migration to e-services. Yet achieving this migration is increasingly important for governments if they want to be able to control the overall cost of government. In the future, governments may decide to make provision of some services 'online only'. Reasons for doing this may include straight economic analysis of the cost of service delivery, the fact that a service may only be suited to online delivery (*e.g.* mobile services involving GPS), or declining demand for receiving the service through offline channels. There are currently very few examples of online only service delivery. One example seen recently is Austria's decision in October 2003 to close down the offline channel for the provision of legislative information by stopping the publication of the Federal Official Gazette in paper form as of 2004.

In the meanwhile, another option for governments in this area is to provide user education in support of channel switching. This can involve indirect initiatives such as marketing the benefits of online services, or incorporating education about how to access and use e-government into any ICT skills development initiatives the public sector may be involved in. Where users are accessing services in a face-to-face manner that are also available through online channels, direct efforts can be made to get them to switch channels simply through having staff show them how the online version of a service can be accessed and used.

Business processes

Governments are large and fragmented organisations. This confuses consumers of government services and makes it difficult for government to develop a holistic service offering. This is probably the biggest operational obstacle to effective user-focused service delivery.

Service use patterns are at the heart of the problem. Because most citizens interface with government infrequently, individuals have little opportunity to build either a relationship with their government as a service provider, or to develop an understanding of how they can benefit from electronic service delivery. On the government side of the equation, individual agencies working alone have neither the opportunity nor incentive to see the totality of a customer's relationship with, or needs from, government.

Presenting citizens with aggregated service delivery is crucial to delivering effective user-focused e-government. This requires not only developing and implementing new user-focused services supported by common service delivery policies, research and analysis, business processes, standards, brands and marketing and infrastructures, but also the innovative cross-service, cross-agency and (possibly) cross-jurisdictional governance arrangements that are required to change how government agencies operate.

As with many other aspects of e-government, in order to successfully deliver joined-up, user-focused e-government services, it is necessary to put strong governance structures in place to break down departmentalised service delivery and encourage and support collaboration as a new *modus operandi* in government.

Shifting sands

It is important to remember that users' expectations are not static. They are becoming more sophisticated and more demanding. Their skills in using technology are developing and their experience of interacting with the online commercial sector (which does not recognise national boundaries) is impacting on their expectations of, and demand for, user-focused e-government.

This means that governments will be chasing a moving user-satisfaction target for some time to come. It also means that user expectations are, in many cases, ahead of government service delivery.

Perceptions of government

The adoption of a user-focused approach can be expected to affect perceptions of public sector service delivery. There is an opportunity for governments to have a positive impact on these perceptions by providing the improved services that a user-focused approach affords. Conversely, there is also the risk that making no or slow progress towards a user-focused approach will at some point begin to have a negative impact on government. As discussed at the beginning of this chapter, governments are under pressure to use e-government to improve the quality of services they provide, and be more efficient. Failure to develop more user-focused services risks declining public satisfaction and confidence in government, both in relation to individual services and government as a services as a whole.. It also risks lower than necessary rates of take-up of electronic services and thus a lower than required return on investment in e-government.

Conclusion

This chapter has looked at some of the steps that OECD countries are taking as they develop user-focused e-government, and identified some of the most important lessons that are emerging in the process. The key challenge they face is to somehow 'turn the telescope around': to view the government from the user's perspective, rather than from that of government. This is hard – in many cases government will find itself sailing in uncharted waters. Becoming more user-focused will be counter-cultural, and it will often fit poorly with 'local' interests. But without this fundamental change, user-focused government will remain out of reach.

Importantly, while delivering user-focused government does not require the current structure of governments to be drastically changed, new skills and working practices are needed. In particular, a user-centric approach to service delivery requires the adoption of truly collaborative, marketing-based, business processes that build services, delivery strategies and communications programmes around the needs of users. There is also a need for considerable investment in research into user needs, preferences, priorities and capabilities. As the annex to this report shows, there is currently a paucity of robust data that countries have to base their efforts on. It is essential that, as countries move forward, they base their efforts on hard evidence of what is required and likely to work, not on anecdote and assumptions. Also, as indicated in the concluding chapter of this publication, there is a need for solid business cases to underpin e-government initiatives, and for achievement of positive returns on the investments made in those initiatives

NOTES

1 This chapter is based on a paper prepared for the OECD by the E-Government Unit of the UK Cabinet Office.

2 See *The e-Government Imperative* (OECD 2004), *Promise and Problems of e-Democracy*: *Challenges of Online Citizen Engagement* (OECD 2003), and *Citizens as Partner: Information, Consultation and Public Participation in Policy-Making* (OECD 2001)

3 Adapted from *Responsive E-government Services*: *Citizen Participation in Public Administration-The Impact of Citizen Oriented Public Services on Government and Citizen;* H van Duivenboden; (unpublished draft, OECD 2002)

CHAPTER 2

MULTI-CHANNEL SERVICE DELIVERY[4]

Introduction

Public expectations that government services can and should be more user-focused, efficient and effective are increasing in OECD countries. This is mainly the result of two developments: 1) the way the private sector is providing services, in particular through e-commerce, and 2) governments' own efforts to improve service delivery through e-government. In response, governments, like the private sector, are looking to improve both the quality of their services and productivity -- to offer improved services to citizens, at similar or lower administrative costs -- through the application of new technologies and business approaches to their traditional activities.

The previous chapter looked at some of the issues and challenges around affordable development of more user-focused e-government, and at some of the steps OECD governments are taking to achieve it. An emerging approach to meeting the often competing objectives of better quality and improved efficiency is through development of 'multi-channel' service delivery. Currently in an early stage of development, this approach aims at guiding and co-ordinating agencies' use of a mix of delivery channels in order to improve and facilitate a user's overall experience in accessing public services. The types of service channels involved can range from traditional channels such as the counter and telephone to electronically-enabled channels ("e-channels") such as the Internet, e-mail, SMS-messaging, interactive voice response systems and digital television. This aspect of e-government is very challenging, pushing government agencies to accommodate and manage increasingly complex interconnections among their information resources, business processes and on- and offline service delivery channels, both within and among organisations (public and private), as well as across jurisdictions.

While there is growing evidence of OECD countries building the foundations for multi-channel delivery, little experience has so far been gained through their full-scale implementation. While clearly seen as a key to the next phase of e-government's contribution to better government, no OECD country has yet articulated or implemented a clear, comprehensive and government-wide multi-channel service delivery strategy. This is not surprising -- this is a new area of e-government and a major undertaking, with implications for diverse aspects of government operations and public management ranging from technology standards through to cross-agency governance. Consequently, there is much to be learned about multi-channel service delivery, and no definitive formula for success that can be presented here.

What is clear at this point is the wide scope of the challenge being faced, and the need for some key building blocks on which to base multi-channel service delivery. This chapter presents some of the efforts of OECD countries making early moves in this area of e-government, in a bid to improve OECD countries' understanding of this subject.

E-government is a management agenda, not a technology agenda

During the 1980s and 1990s, many governments, influenced by "new public management" (NPM), split service design from service delivery (or policy from operations), with the goal of making government more effective and efficient. Early e-government agendas developed against this background often had a strong focus on enhancing the efficiency of service delivery through the adoption of new channels such as the Internet and telephone call centres.

As governments have made progress towards their early goals of placing appropriate services on line, their understanding of the role of e-government in improving government has deepened. Regardless of whether their system of public management is based on NPM concepts or not, governments are now seeing opportunities to use ICT to improve not only the way that services are delivered, but also the way that they are conceived and designed. E-government, and indeed public management more broadly, is now being informed by concepts of user-focused services, integration of business processes, services, information and ICTs across traditional agency and jurisdictional boundaries, and flexible delivery of services through multiple on and offline channels. This has the potential not only to deliver gains in the quality of government services and the efficiency of government organisations, but also to provide governments with an alternative to using structural change to achieve their policy and performance goals.

In other words, governments are now beginning to focus on the larger and more holistic task of 'service innovation'. Looking back, many early approaches to e-government appear to have been primarily technology agendas. The service innovation agenda is, however, a management agenda that also embraces what ICTs offer for making government better in terms of better services and efficient use of public resources. Service innovation is about optimising the role that "e" plays in "government" by integrating e-government with older design and delivery approaches, rather than by operating a separate e-government agenda in parallel with traditional ways of delivering government.

Service innovation poses great challenges

Service innovation poses great challenges for agencies that are developing e-government. It involves changing how services are designed and delivered based on the priorities of both external and internal stakeholders. This approach requires agencies and stakeholders to work together and agree on priorities for such things as service design, business process and service integration, joint development of existing and new delivery channels, and interoperability of supporting data and information systems.

Business units and supporting ICT divisions within and across agencies increasingly need to collaborate to identify and implement solutions that meet common priorities. While challenging, this type of collaboration allows what is desirable to be informed by what it is practical to achieve within a broadened political, managerial, technical, budgetary and stakeholder environment. In practice, this outcome is best realised by bringing together business administrators, service providers and users from programmes, agencies and sometimes jurisdictions to redesign services and programmes from first principles, and enable the cultural and organisational changes necessary to deliver results. It is also vital that the right incentives, performance measures, and rewards are put in place to encourage collaboration, and that the additional up-front costs that collaboration creates for organisations are recognised and accounted for.

In designing multi-channel delivery arrangements, as well as reconsidering how to best meet user requirements, agencies may also find themselves trying to also take into account the broader roles of individuals, not only as clients but also as citizens and/or subjects with both rights and obligations. While users want more choice and convenient, streamlined services, citizens and/or subjects demand better governance, transparency, accountability, discoverability and accessibility which, as taxpayers, they have to pay for.

Juggling an individual's demand as a user and as a citizen/subject, while mediating across competing or conflicting interest groups is a political, not an administrative, act. It is where one of the greatest challenges to successful multi-channel service delivery lies. Opportunities to change the way government works and deliver more user-focused efficient and effective government through innovative use of ICT, provide one of the key arguments used in support of e-government programmes. However, while it is possible to achieve these goals through initiatives such as multi-channel service delivery, it is important to see them as involving choices between competing ways to use public resources.

Even though the expected outcome of multi-channel service delivery is better service and better productivity, the benefits may take significant upfront investment and many years to materialise. Governments need to be clear about both the benefits and the costs of multi-channel service delivery, and about why and when they wish to use such an approach. Administrators need to understand that, while multi-channel service delivery presents them with managerial and technological challenges, governments are making political choices about committing resources to achieve the benefits it can deliver, as opposed to placing their resources into other areas. This places heightened importance on disciplined implementation of initiatives in this area -- it is important that the proposed economic, social, fiscal and organisational benefits are actually achieved for political as well as administrative reasons.

Agencies need new frameworks to assist in moving forward

One of the key observations about making progress with multi-channel service delivery is that, rather than leaving agencies to act unilaterally, it is vital to provide them with tools that they can use to plan and co-ordinate their efforts in moving forward.

Service delivery architectures are critical

Increasingly, governments require their agencies to integrate their services with those of other public and private agencies. In some countries, it is now recognised that, in order to do so, each agency needs to be able to access, understand, and adopt some kind of government-wide 'enterprise' or 'service delivery' architecture that can help them standardise and (where appropriate) integrate their data, business processes, service delivery applications and channels, and supporting information systems with those of other agencies. (see also Chapter 3: Identifying Common Business Processes) Multi-channel service delivery will be needlessly difficult and expensive without such architecture. Indeed, creating this type of architecture is widely seen as critical for the future performance of government. For example, in 2001, the Gartner Group stated that, over the next two years:

"70 percent of governments that do not develop an e-government architecture will duplicate efforts and infrastructure, and will fail to meet constituent expectations for service delivery, resulting in complaints and wasted public funds"[5].

Architecture needs the support of other tools

The effective development and use of service delivery architectures also calls for both the upgrading of other existing tools, and the development of new tools to assist agencies to plan, implement and review services. These tools may include:

- Common standards for interoperability (i.e. cross-service, system or organisation compatibility) of data and information systems.
- Business case development and evaluation frameworks.
- Public-private provider policies and frameworks.
- Frameworks for interagency and inter-jurisdictional agreements.
- Revised investment and funding models.
- Better models for consultation over service development.

Arrangements for governance of cross-agency/cross-service administration and for supporting models, architectures and tools must also be reviewed, to ensure they meet emerging requirements. This is an important dimension of successful multi-channel delivery. While they can lead to better, more seamless delivery of services, multi-channel approaches also carry a risk of making service delivery more opaque –

especially where more than one agency is involved in the process. This in turn can have a negative impact on the clarity of roles and responsibilities as services transit across different 'interfaces' (between channels and/or organisations), and thus potentially on accountability.

Challenges and tensions need to be balanced and managed

In translating the dual objectives of better productivity and better service outcomes into reality, agencies encounter management challenges and tensions associated with balancing and aligning:

- Different legislative and regulatory regimes.
- Legacy information systems.
- Budgetary constraints.
- Public-private provision.
- Cross–agency and cross-jurisdictional linkages.
- Delivery of services through existing and new access channels.
- Equity, effectiveness and efficiency.

This last point is particularly important. In developing multi-channel service delivery governments face a tension between the desire to open up new channels in order to improve efficiency and quality, and the need to maintain the traditional ones for reasons of equity and effectiveness. To date, governments have emphasised that implementation of e-government will not mean that the traditional ways of interacting with government will disappear. Adhering to this type of policy often means that e-government adds to the costs of government rather than reducing them. Looking forward, when governments start to seriously seek the efficiency gains that they have seen that e-government can enable, they will be faced by the need to make choices between these objectives. While these choices are inherently political, it is important to recognise the dynamic nature of this situation in order to best time decisions. For example, as time goes by, governments can reasonably assume that more users will be able and willing to access and use online services. In some instances, it will be possible to close down traditional channels simply through a gradual erosion of demand for them. In others, at some point it may become economic to invest in providing skill development or mediated access to online services for the small percentage of users left unable to use them online without assistance. What is most important as governments reach the point of making such choices is that they and their agencies base their decisions on a common policy framework.

The next part of this chapter looks in more detail at some of steps governments are now taking toward multi-channel service delivery. In particular, it outlines different approaches to service delivery and architecture and looks at channel management models of differing maturity. In doing so, it recognises that the models, strategies and architectures that countries choose will reflect their unique social, political, legislative and cultural environments and cannot be understood outside that context. In this complex and ever-changing environment, there is no one simple solution.

From multiple discrete channels to a networked multi-channel approach

The mainstream introduction of the Internet in the 1990s significantly changed the service environment for governments. It gave citizens and businesses direct access to government information, applications and services, enabling them to self-select and in some cases self-determine the suitability of government services and their eligibility to receive them. Initial e-government offerings were primarily information-based providing, for example, access to publications and forms. New online and digital services complemented existing services delivered through traditional offline channels, and were administered as a separate activity.

As both technology and agencies' capability to use it advanced, and understanding of the opportunities provided by ICTs grew, agencies better aligned technology and their service improvement or business transformation agendas. Service delivery platforms remained separate and parallel, but the driving e-government business case was common to many agencies, and some progress was made toward integration.

Today the e-government agenda is starting to emphasise the importance of service innovation, often to be achieved by moving to multi-channel service delivery. This agenda is reshaping service delivery models. Traditionally, service delivery, even for online services, has been based around individual agency functions, structures, information, systems and capabilities. New technologies and economic pressures are enabling (and sometimes forcing) private and government organisations to use the same infrastructures to deliver multiple services through multiple channels.

This is creating a drive towards more collaborative models of service delivery, often based on a strategic rhetoric of creating 'networked government'. Agency co-operation to ensure that ICT infrastructures, data, business processes and delivery channels are interoperable and can be integrated is becoming crucial. When business processes as well as delivery channels are developed and managed in this way flexible, efficient and effective multi-channel service delivery becomes possible.

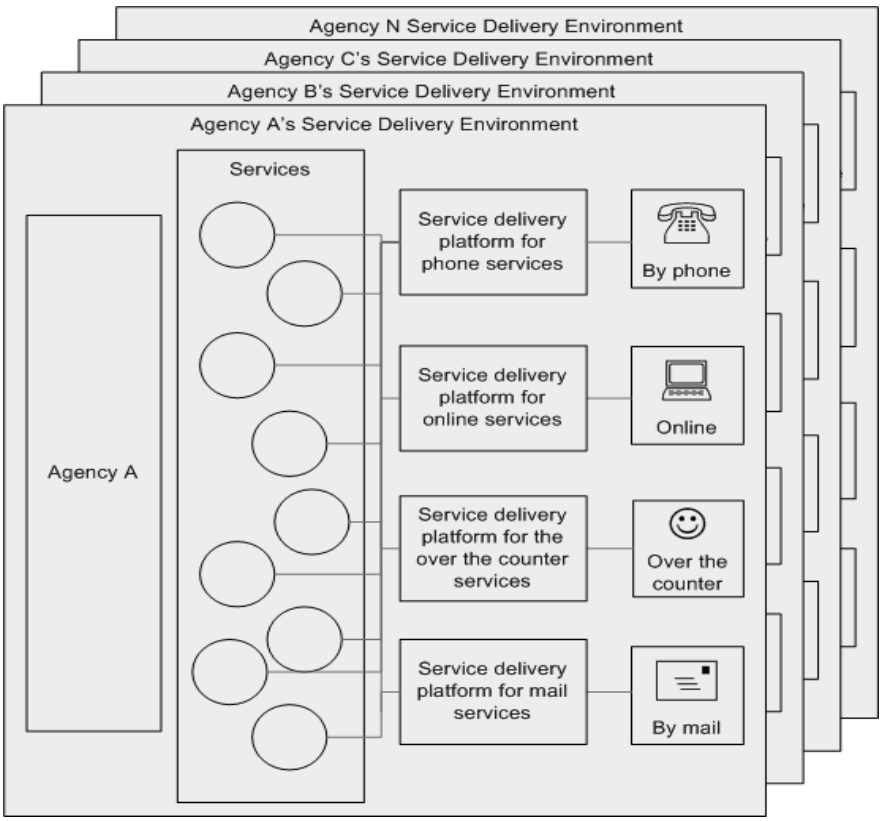
Currently, no government has realised the completely seamless and networked approach that is the ultimate vision of many national e-government visions and strategies. Rather, a range of models are being trialled, and agencies' use of multi-channel delivery will be at different levels of 'maturity'. Within each country there will be a continuum of maturity among agencies and services. Indeed, governments and agencies may have chosen, for any number of reasons, to aim for a less mature model. Three generic models of how government agencies use delivery channels are depicted in Figures 2.1- 2.3 below.

The first model shows the most common approach to service delivery, where agencies are maintaining discrete platforms for delivering services through different channels, and these are not integrated either within or between agencies. This is clearly the most common approach to service delivery across OECD countries. The second and third models show approaches to multi-channel service delivery that are increasingly 'mature'.

Model one – vertical integration ("electronic silos")

This is an early maturity model, reflecting application of ICTs to a silo form of service delivery. Each silo (normally based around an agency, but often found at the business unit level within agencies), has its own approach to using ICTs to deliver services and managing delivery channels. This model involves each agency or business unit in administering separate channels with separate layers of management. Choices about information, access, distribution and governance models are owned and controlled by individual agencies. The agency or business unit view of the world tends to dominate how the needs and expectations of customers are perceived and addressed. Opportunities for service improvement and transformation tend to arise on an unplanned basis, and be limited to individual processes, services, or agencies.

Figure 2.1. The "vertical integration ('silo')" model

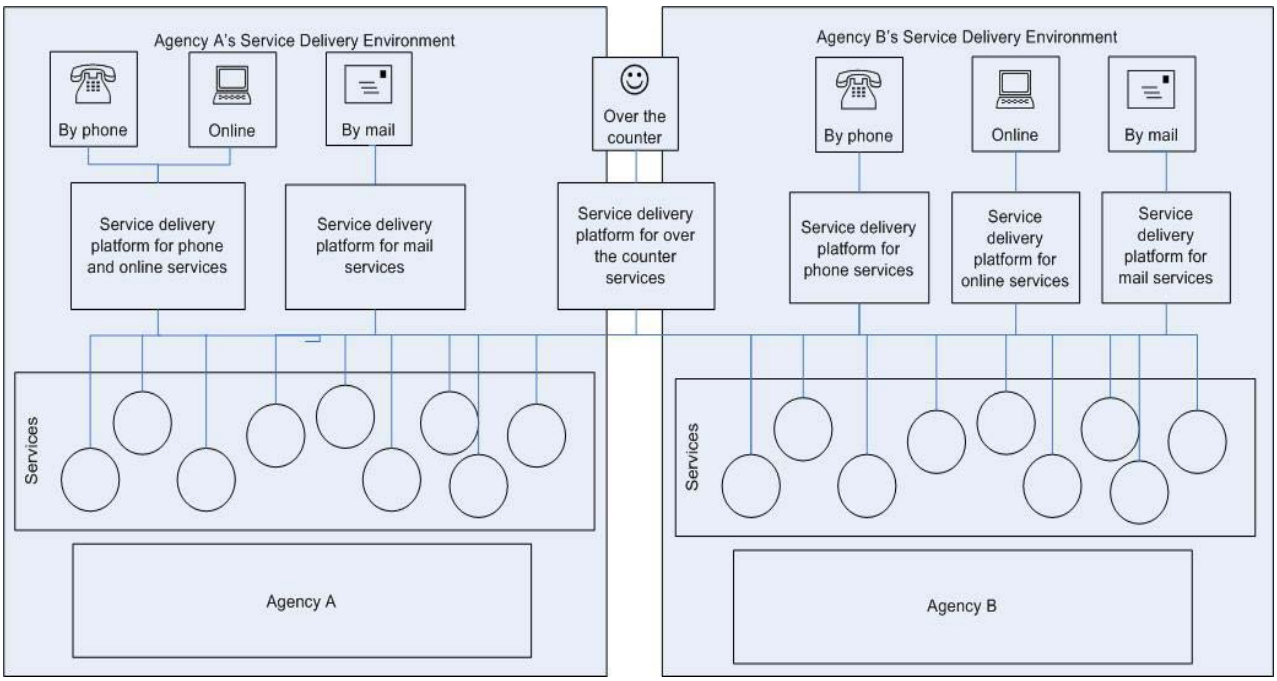


Source: Author.

Model two – vertical integration with interoperable delivery platforms

This is a more mature model of channel management. Agencies still administer largely separate channels, but recognise that better quality services and greater efficiency can be achieved by some cross-over of access and service content among different channels (*e.g.* agency A supporting its phone and online channels with the same platform). It is characterised by a more collaborative, although still *ad hoc*, approach to service delivery, with some sharing of infrastructure and data and a greater focus on standards, so as to develop interoperability between channels (*e.g.* agency A and B share a platform and channel for over-the-counter service delivery). Administration of services and channels generally resides with individual agencies, and information and capability is still agency-based, resulting in variable governance and funding arrangements, and inconsistent customer experiences.

Figure 2.2. The "vertical integration with interoperable delivery platform" model



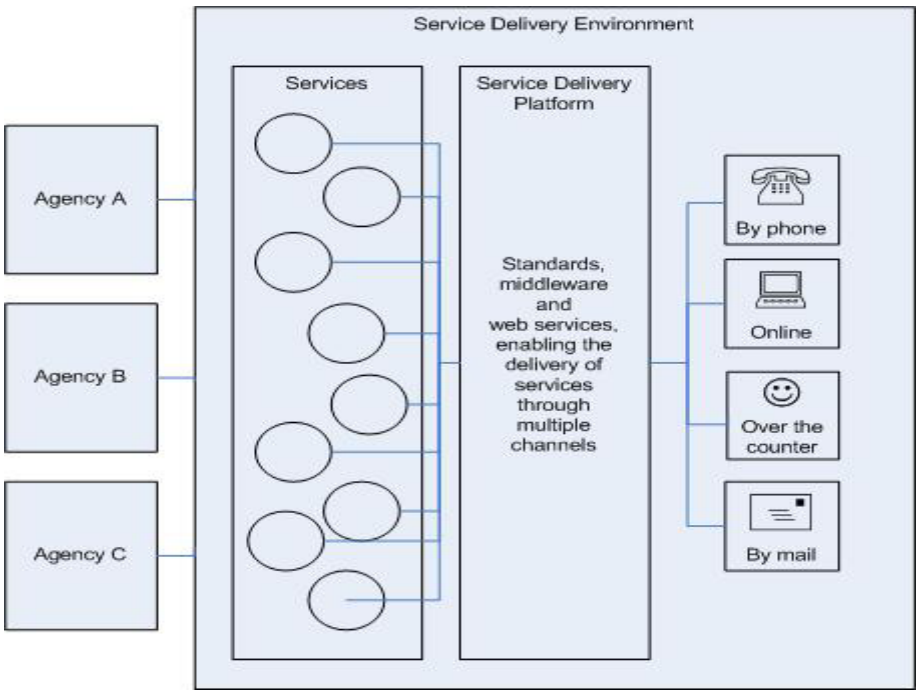
Source: Author.

Model three – vertical integration with integrated service delivery platforms

This multi-channel delivery model is characterised by fully interoperable and integrated channels that enable service users to transfer between channels and experience seamless service. It is a user-focused model that works both within and across agencies. A "create once, use many times" principle of information and ICT management is incorporated into the service delivery frameworks of all government agencies. The model builds on recognition, through adoption of a government service delivery architecture, of ICTs as being the backbone of all service delivery channels, regardless of whether actual delivery takes place on- or off line.

There is growing recognition that this type of approach is what is eventually required to enable seamless, multi-channel, multi-agency and user-focused service delivery. Achieving this, however, also requires significant cultural and administrative change across government, supported by innovative approaches to planning, and a collaborative approach to the development and stewardship of information, infrastructure and business processes.

Figure 2.3. The "vertical integration with integrated service delivery platforms" model



Source: Author.

Countries will find themselves developing their own unique approaches to multi-channel delivery. However, a set of increasingly universal tools or building blocks is central to the service innovation agenda, and essential for supporting a move from the silo model to the more mature models of multi-channel service delivery presented above. The next section of this chapter explores some of these building blocks.

A crucial enabler – interoperability

Interoperability -- the ability of government organisations to share and integrate information by using common standards -- is now widely understood as being crucial for e-government. Successful service innovation and multi-channel service delivery depends on strategies, policies and architectures that allow data, IT systems, business processes and delivery channels to interoperate, so that services can be properly integrated.

The more mature multi-channel models presented above allow users to gain access to services through different channels, while ensuring that information is consistent across those channels. If channels and back-office processes are integrated, different channels can complement each other, improving the quality of both services and delivery to government and citizens simultaneously. The ideal is to create an environment in which data, systems and processes are fully integrated and channels interoperate instead of merely co-existing.

Another important aspect of interoperability is the capacity it gives service delivery applications (*e.g.* electronic processing of licence applications) to be separated from the front-end delivery channel(s). This enables applications to be implemented independently of delivery channel, making it possible to introduce new channels (e.g. adding in a mobile phone channel for notifying people when licenses are granted) without developing entirely new applications, and vice versa.

Authoritative data

A completely integrated multi-channel channel environment implies that personal data and information concerning the status and progress of a service interaction is available to all channels involved in the delivery of a particular service in a secure manner. This relies on a single authoritative source of data (the "create once, use many times" principle). It may be facilitated either by having the information and data physically located together in a central store or through a logical network of distributed stores. What is important is that information and data are available to be shared by applications that feed all the channels, with appropriate regard to privacy and security requirements.

Service delivery architectures

Governments that develop service delivery architectures will make choices that reflect their political, cultural, governance, technological and budgetary environments. What is crucial is not which architecture is used, but the fact that an architecture is consciously used to support multi-channel service delivery and, more broadly, service innovation. Some approaches are outlined below.

National approaches

The United States government has established a whole-of-government or "enterprise" architecture (the Federal Enterprise Architecture) to support a citizen-focused approach to e-government, facilitate integration and leverage the value of IT investments across government. The architecture is a top-down approach consisting of reference models that:

- Describe at a high level the services the government provides, independent of the agencies that provide those services.
- Provide a standardised framework for measuring the performance of IT investments and their contribution to programme performance.
- Describe the data and information that support government programmes and business.
- Classify service components and identify how they support government business.
- Identify the standards, specifications and technologies that support the business of government (*http://feapmo.gov/default.asp*).

Together, these reference models provide a framework enabling better decisions about investments in ICTs and their application to US government services. In particular, the Technical Reference Model describes standards that support interoperability, data management and channel choice.

While this top-down enterprise architecture approach is suitable to the US environment, it may not be appropriate to other jurisdictions. The United States has a strong enterprise architecture background, and the cultural and political preconditions that make such an approach appropriate may not exist elsewhere.

Canadians have high expectations of government and the services it delivers. In an effort to respond to these expectations, Canada is pursuing a different enterprise architecture approach. The role architecture plays in Canada's service innovation agenda is based on taking a business approach to the design of services and information systems. Known as the Business Transformation Enablement Programme (BTEP), the Canadian architecture programme aims to facilitate sustainable whole-of-government client- or citizen-centred transformation, and to provide the design and alignment tools that will enable rapid change.

The BTEP methodology is tied into the Canadian government's project management framework, in which projects are broken down into iterations and phases. Deliverables are tied to iterations and phases, and funding is tied to deliverables (Weisman, 2004). This process provides for a very rigorous approach. However, like the US programme, it may not suit the cultures and political environments of other jurisdictions.

New Zealand is also moving down the architecture path, although it is more focused on the service delivery process. A service delivery architecture built around an interoperability framework is a cornerstone of its latest e-government strategy, released in September 2003. Reflecting its governance environment, the New Zealand strategy identifies a layered approach to service delivery infrastructure and applications, stating that: "…the architecture will be comprised of:

- *Shared components*: components developed and implemented only once, and used by many or all agencies (e.g. the Portal).

- *Generic components*: standardised components that support a generic activity, but are implemented locally (*e.g.* a technology solution for handling an online registration process that can be incorporated into different business processes in different agencies).

- *Unique components*: components that are specific to a particular agency, function of service…" (*www.e-government.govt.nz/e-services/index.asp*).

New Zealand is now working on developing ways for agencies to implement the service delivery architecture through shared use of modular ICT applications and infrastructures.

In Denmark an increased focus on enterprise architecture, and a significant cross-governmental coordination effort, is seen to be essential for realising Danish visions about e-government. Government is implementing an enterprise architecture based on a national white paper published by the Danish Ministry of Science, Technology and Innovation in June 2003.

As a common architectural principle, the whitepaper recommends government to adopt a service-oriented architecture model, in which IT-solutions are modularly designed services that have well-defined interfaces to each other and to legacy systems. The white paper points out 5 core architectural principles: interoperability, security, openness, flexibility and scalability.

The architecture embraces these principles in a double-loop development process. In the main architectural process (the first loop) agencies' visions for e-government are used first to define a business process architecture, then an information architecture, and then the supporting technical architecture. This process defines the concrete architectural principles which are used in the implementation processes (the second loop). This process consists of portfolio planning, gap analysis and then e-government implementation projects.

Service-oriented architectures

In implementing enterprise architecture approaches, many countries are turning to service-oriented architecture (SOA) approaches. SOAs identify and break down processes, services and applications into discrete parts and develop solutions for the discrete components which can then be used and shared across a variety of processes, services and applications.

Some commentators see service-oriented architectures as synonymous with the "Web services"[6] model, and focus on it only as a software development and deployment method. Many, however, see it as a much broader initiative focused on business or service processes. This confusion around SOAs reflects their infancy – developments in SOAs have been very recent. This is particularly true in the government sphere, where SOAs are so far much less common than in the private sector.

Adopting a SOA is a long-term and progressive journey that needs to and can, by virtue of its modularity, be embarked upon in stages. Not all applications or services in government must become SOA-compliant. Governments and agencies need to set their SOA goals strategically and pick targets that generate an appropriate e-government value proposition in terms of meeting public expectations and achieving better use of public resources. This approach is highly appropriate where a "big bang" type of project is seen as impractical, prohibitively costly, risky or impossible to justify on a business case basis.

To date, SOA success stories see its adoption occurring in stages and layers, for example through application to:

- The data and information that are retrieved and manipulated by software applications.
- Software services that undertake specific information transactions.
- Discrete business functions (*e.g.* retrieving a customer history, opening an account).
- Service delivery processes built from a sequence of discrete business functions.

Early movers in the use of SOAs in e-government are developing directories or repositories of the elements of their SOAs to assist in the development and dissemination of such approaches among service delivery agencies. In the United States, the Component Organization and Registration Environment (*www.core.gov*) provides a repository of discoverable processes, systems and code. In Australia a similar programme called "Govdex", that will provide access to XML (eXtensible Markup Language) schemas, is also under development. New Zealand is developing what it calls the "e-government component architecture" of modular, reusable software and a repository for government-wide XML schemas as part of its e-Government Interoperability Framework. Denmark has implemented its "Infostructurebase" a collaboration tool supporting exchange and reuse of data related to public service delivery, in support of cooperation, business reengineering and alignment of related services. Again, a key to this is the development of common XML schemas for use in relation to government services and activities.

For rapid deployment of services over a variety of channels, SOA approaches can be combined with sophisticated business work flow tools to enable quick reconfiguration of components to create new services, processes and applications within and across agencies. It is a "Lego™" block type of construct in which core blocks, built to uniform standards, can be configured to provide various services that are therefore technically interoperable across agencies and programmes.

Reuse of components or modules will reduce costs, because fewer components need to be developed, maintained and managed. This will ultimately lead to services that are cheaper, better or both. Co-operation in developing modules within and among administrations can also achieve economies of scale, which also leads to lower total costs. Other benefits of this approach include:

- Achieving faster "time to market" for new services and applications.
- Enabling closer alignment of business objectives and IT functions.
- Lowering costs of software development and service integration work.
- Providing agencies with the tools to be more agile, flexible and integration-ready.
- Bringing more discipline to the ICT environment and making it easier to manage ICT and data assets.

In adopting such an approach, experience so far suggests it is sensible to:

- Start with a focus on service delivery needs, and then match these to the technology view of service design and delivery.
- Engage all stakeholders including the IT staff.

- Start small, but think big, focusing on a few strategic issues at first.
- Think about data as well as software reusability, and tie an SOA approach into the government's overall information management approach.

More building blocks

Other building blocks that will assist development of mature multi-channel service delivery include:

- A common vision for multi-channel service delivery.
- A strategy for achieving that vision across government that includes:
  - Information management policies that enable realisation of the "create once, use many times" principle, based on the concept of a single authoritative source for information and data.
  - A technical interoperability framework that maps out the standards, policies and practices to support interoperability between ICT systems and applications.
  - Security policies and frameworks.
  - Authentication and identity management frameworks.
  - Privacy and data-matching policies, legislation and guidelines.
  - Access and distribution strategies, including a channel management strategy that takes into account the needs and priorities of customers, citizens, subjects and government.
  - Stakeholder engagement and market research policies, guidelines and tools to enhance governments' knowledge of their customers.
  - Monitoring and evaluation strategies and tools.
- Appropriate governance bodies and mechanisms (including investment and accountability mechanisms) that reflect the move towards a more holistic and integrated approach to service delivery and include models and guidance for partnering with private and non-government organisations.

Choosing the right channel, developing the right framework

Users' preferences should be central to the design of service delivery across different channels. They should not, however, be the only or overriding factor driving decisions about service innovation and choice of delivery channels. As noted above, it is also important for agencies to achieve cost-effective channel management by balancing the drive to best meet user' needs and preferences through the range and mix of channels they use to provide services against the economics of service delivery. Simply providing the maximum possible range of channels for all services would be prohibitively costly and most likely would not be supported by people in their roles as citizens and/or subjects.

Providing channel options

In making optimal choices about the range of channels through which a service will be available, agencies need to balance costs and benefits to service users and to government. It is important to recognise that, when people can choose freely among different channels, they will tend to choose those that they *perceive* as providing them with the greatest personal benefit. What counts for most service users is the quality of the service that they receive, not the technology or channel used to provide the service.

To benefit from the availability of a channel, the intended user group must be aware of and have access to it, know how to use it and be willing to do so. In order to know how different user groups may benefit from different channels, agencies need a good understanding of their needs, capabilities and preferences. Segmentation analysis of the behaviour and preferences of clients is an example of the type of research required.

However, it is no longer enough simply to segment clients, as was the case when many portal strategies were first developed in OECD countries. As e-government evolves, more user-focused approaches to service delivery are needed. Agencies now need to know what services users might use, over what channels they might use them, at what point they are most likely to cross over to another channel, and what that means for the agencies' business operations.

Some jurisdictions are adopting a customer relationship management strategy. This approach may improve knowledge of customers and their interaction with government (through a single view of the customer) and may provide customers with more consistent and personalised interaction with government. The major challenge of this approach is to identify individuals uniquely and consistently across government. This is acceptable in some jurisdictions, but in others it is problematic for social, historical and legislative reasons.

Choosing the right channels for the service

The suitability of channels depends on a range of factors, of which technology is only one. As noted above, it is vital to understand what is going to work best from the perspective of service users. In addition to understanding user requirements, factors to be considered when determining appropriate channel choices for services include:

- Which services are suitable for which channel.
- Costs associated with channels from the perspective of both agencies and service users.
- The possibility of activating latent demand when a product or service is made available through a new channel, and the impact this may have on agency capability and service delivery costs.
- The impact of the move of a customer from one channel to another during a transaction or interaction on costs, organisational capability and customer service perceptions and experience.

Strategies and frameworks for choosing channels

Agencies need to make channel choices based on a combination of often conflicting factors. Service delivery and channel management strategies are the frameworks within which agencies should make these choices and, as such, need to help agencies ensure that:

- Channels are matched to services in a cost-effective manner.
- Channel integration is supported, so that customer information and services flow seamlessly across multiple channels and agencies.
- Channel investments are aligned with customer expectations and needs as well as governments' financial imperatives.
- Assessment of opportunities to reuse, refocus or rationalise existing channels is part of the channel development process.
- Channels are evaluated for both technical and organisational appropriateness.
- Choices realise the best public value, based on (expected) costs and benefits, and proper consideration of any tradeoffs required between equity and efficiency.

In many ways the addition of digital services and online channels to government service delivery has 'raised the bar' for all service delivery. The rigour associated with many of the processes surrounding online service delivery is often greater than that associated with other channels. For example, authentication requirements and practices used when delivering services over the Internet are often more rigorous than those employed when delivering services via mail or telephone channels.

This is also true for other issues agencies face when looking at options for multi-channel service delivery, including privacy and security concerns, infrastructure and channel asset management, and user equity issues.

Approaches to handling privacy issues depend on a country's specific environment. What is possible in terms of multi-channel service delivery depends on what is politically and culturally acceptable. There is no one right way. However, when moving to a networked and multi-channel delivery strategy, the issue of privacy becomes paramount because information is more readily exchanged among channels, and potentially also services and agencies. Agencies must balance the need to ensure the privacy of individuals and the goal of meeting customer expectations of integrated and more seamless service delivery, on the one hand, and governments' need to operate more cost effectively on the other. To support agencies, and maintain the confidence levels of customers and citizens, it is very important that privacy issues and the interpretation of privacy laws and guidelines are treated consistently across agencies.

Security is also a key aspect of maintaining trust and confidence. Delivery channels need to be secure at every point in the process, from the physical security of buildings where infrastructure and data are kept, to the security of the actual service interaction, including application of appropriate identity management and authentication practices. For security as for privacy issues, a delicate balance is needed between understanding and mitigating risk and the constraints this imposes on both service users and the government in terms of lost efficiency, productivity and increased cost.

Equity issues relating to the digital divide also need to be considered and addressed when making choices about delivery channels. It is important, at a minimum, to consider potential service users':

- Access to various channels.
- Access to the infrastructure (communications, hardware, software) required to successfully interact with those channels.
- Skills in accessing and using the channel.

Other key issues to consider are:

- How to work with people who cannot access new technologies.
- How to work with people who refuse to use or prefer not to use new technologies.
- How to give people the experience, confidence and trust that will make them able or willing to migrate to new service offerings.
- How to market, encourage, and enable migration to the most cost effective and highest impact channels.

Human resource Issues

In developing multi-channel service delivery, governments need to consider the impact that this will have on the staff in government organisations. There are three main areas where impacts will be felt – development of entirely new skills, change to existing roles, and changing organisational cultures.

Multi-channel service delivery clearly creates new skill requirements in government, in areas such as enterprise architecture, standards-based interoperability, and coordination and collaboration across

traditional organisational boundaries. Governments and their agencies need to be aware of the need to either develop or obtain these types of skills, which are often in high-demand and limited supply.

Changing roles is also a potentially significant issue, as staff (particularly in the front-line) find that they need to become familiar with a wider range of services offered by a larger number of organisations, and/or adept at delivering services through a wider variety of channels. This is a dimension of the frequently discussed shift from being process to knowledge workers that many expect e-government to drive in the public sector. This shift will create a need for training of staff to enable them to perform effectively in these new roles.

Finally, multi-channel service delivery is critically dependant on collaboration, both within and between government organisations, and potentially with other parties outside of government. Collaboration has not been the usual approach to delivering government services, and is not generally an innate behaviour for either individuals or organisations. Achieving the level of collaboration that advanced multi-channel service delivery dictates presents a major challenge in terms of cultural change. Governments need to be aware of this challenge, and be prepared to develop strategies and initiatives to address it.

Conclusion

Public expectations of better government, and pressures for government to operate more efficiently, are increasing all the time. E-government has an important contribution to make in both these areas, especially through a coordinated government-wide move to multi-channel service delivery. Some OECD countries are starting to move in this direction, but none have yet achieved their goals – challenges abound, much progress remains to be made and many lessons need to be learned.

This chapter has sought to uncover some of the major issues that governments and their agencies now need to consider when developing multi-channel service delivery. While some challenges in this area concern all countries (e.g. the need for architecture and interoperability), many others are specific due to national social, economic, and cultural factors and will call for unique strategies and solutions. Despite this, and the fact that multi-channel delivery is only in its infancy, the basic requirements and building blocks for creating multi-channel service delivery, as part of overall service innovation, are known and available to governments. Important among these are:

- Having a sensible and nationally appropriate vision and strategy for creating multi-channel service delivery.
- Developing and implementing a service-oriented architecture to guide the use of data and ICTs to provide services through various channels.
- Ensuring interoperability among agencies' ICT infrastructures, data, services and component business processes.
- Providing for governance arrangements that support agencies working together to provide multi-channel service delivery.
- Engaging stakeholders in developing a user-focused understanding of services users' needs, priorities, preferences and capabilities that can be balanced against other considerations such as channel economics.

Private sector experience shows both the potential and pitfalls that governments face in moving in this direction. The vision of creating government services that are available on demand through a variety of channels, and integrated across traditional boundaries where appropriate, is a long-term goal that requires a lengthy transition period.

NOTES

4 This Chapter is based on a paper prepared for the OECD by the Australian Government Information Management Office (AGIMO).

5 Kreizman, G and E. Fraga, E-Government Architecture: Development and Governance (TG-14-6799) October 2001.

6 A vague term that refers to distributed or virtual applications or processes that use the Internet to link activities or software components.

CHAPTER 3

APPROACHES TO COMMON BUSINESS PROCESSES[7]

Introduction

In their pursuit of more user-focused government, OECD countries have employed a number of strategies to organise public functions and services around user needs rather than around government structures. One way to do this is to analyse governments' business processes, looking for duplications. Those business processes that are carried out by different organisations can be called Common Business Processes (CBPs)[8]. In many cases, organising CBPs in a different way can improve the seamlessness and quality of service delivery and free-up resources for additional service innovation. Many of these new arrangements are enabled by information and communication technology (ICT), but also require deeper cultural and management changes, whether or not they involve structural change in government portfolios.

Government interest in Common Business Processes has fluctuated over the past few decades. In the 1970s, many "shared service centres" were set up to execute tasks carried out by many organisations. Then, in the 1980s, the rise of New Public Management (NPM) shifted the focus of central execution of processes to decentralisation and privatisation. NPM emphasised that organisations should operate relatively autonomously and be held accountable for outputs produced, rather than for management of inputs or internal processes. Today, governments are recognising that, while beneficial in many ways, this approach can lead to inefficiencies when different organisations perform the same tasks. Moreover, governments' effectiveness and quality of service is widely seen to suffer from what is often called the "silo" or "stovepipe" model of organisation, where largely independent departments and organisations operate without proper co-ordination.

Most countries have only just started to respond to this renewed interest in identifying and organising Common Business Processes as a way to advance the e-government agenda within the last five years. Consequently, there has been little research into countries' approaches in this area. This chapter attempts to address that lack, examining the experience of seven OECD countries: Denmark, Germany, Korea, the Netherlands, New Zealand, Sweden and the United States. These countries provide a good range of approaches to CBPs, and their country reports, on which this chapter is based, provide useful information for a study of such processes at the central government level. The chapter attempts to inform the reader on different actions countries have taken on the subject of Common Business Processes and proposes a structure to analyse these actions.

Methodology

This chapter starts from the assumption that it is useful for countries to analyse some of their business processes to discover possible duplication (see box 3.1). But there are many ways to identify and organise CBPs. This chapter tries to identify countries' approaches and to assess the successfulness of these approaches in identifying and organising Common Business Processes. This is not to say that all of government's business processes should be organised collectively. Some fear that CBPs can limit competition, innovation and flexibility within government by imposing common solutions. Common Business Processes cannot meet all of the objectives of e-government, and developing CBPs can mean trade-offs against other, equally important, goals. For instance, delegation of power and strengthening of

agency autonomy may give organisations more discretion to customise their business processes to specific local situations. This may lead to outcomes such as better service delivery to citizens (perhaps traded off against greater efficiency or both). Preserving local autonomy may also allow for greater flexibility, giving organisations the possibility of integrating a given business process with other processes.

Box 3.1 The benefits of identifying Common Business Processes

Identifying and reorganising Common Business Processes within government seeks to respond to a number of challenges resulting from the ”stovepipe” or “silo” structures of the public administration in many OECD countries:

- **Reduce duplication** – CBPs can be consolidated or joined-up in order to reduce duplication both within and across agencies;
- **Reuse solutions** – without a joined-up approach, every process is “tailored” to a particular programme portfolio or organisation. CBPs can make it easier to “capture” and disseminate innovation across government, eliminating the need for agencies to “reinvent the wheel” and promoting the reuse of solutions and service innovations.
- **Improve interoperability** – by promoting common standards and standardised processes, CBPs are essential for multi-channel and/or seamless service delivery and can facilitate the exchange of information among agencies, reducing error due to data entry as well as reporting burden on users;
- **Consolidate capacity** – the fragmentation of project management capacity and ICT expertise, in particular in small agencies, can lead to an information imbalance vis-à-vis private sector contractors. CBPs can help achieve benefits of scale, strengthen negotiating positions and improve access to centres of expertise;
- **Focus on core activities** – CBPs can improve value for agencies by providing the option for “insourcing” of some services to other agencies, allowing them to focus on their core activities and service to their core constituencies.
- **Promote more consistent programme rules and administrative simplification** – by making some elements of service delivery common, CBPs can increase agency awareness of potential overlap and inconsistent programme rules, creating pressure for better aligned programme and eligibility rules and simpler procedures for services targeting a common population.

Even if countries decide not to organise CBPs, the process of identifying them can have benefits for government in terms of developing a better knowledge of what government does and how it does it, understanding how these processes relate (or do not relate), and building a general awareness that as part of one government, organisations support common objectives and missions.

The CBP concepts and the classification of institutional arrangements introduced below will be used to analyse the information provided in OECD country reports on the identification of Common Business Processes[9]. An analysis of the information provided by these countries allows for drawing some conclusions about CBPs and for constructing a tentative framework for analysis. Because of the biases of the research and the problems of the empirical data used, the conclusions and the framework should be viewed as a basis on which future research could be conducted.

Conceptualization of Common Business Processes

What are Common Business Processes?

There are many definitions of what a business process is, but they all mention a set of activities that are carried out in a structured way -- with a clear start and end -- to create outputs by adding value to inputs. This value can be delivered for example by aggregating various inputs, changing inputs or creating a service around inputs. A widely used definition of a business process is the following:

“A specific ordering of work activities across time and place, with a beginning, an end, and clearly identified inputs and outputs: a structure for action.” (Davenport, 1993).

From this definition, Common Business Processes can be defined as:

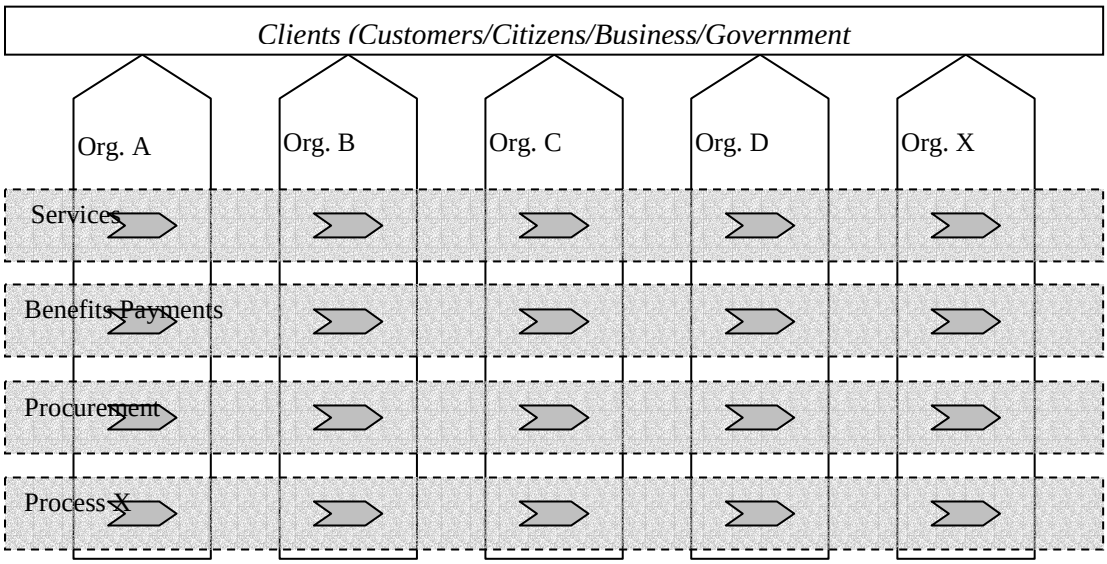
"Those business processes that exist in different organisations yet have, in essence, the same goals and outputs. thereby creating the possibility for the arrangements to conduct these business processes to be optimised and delivered in a more efficient and standardised manner."

This definition of Common Business Processes is by necessity a normative one: no two processes will ever be exactly the same unless they are consciously aligned. Most project managers will argue that their circumstances and constituencies merit special or exceptional procedures even though the underlying goals and processes are the same.

The two definitions give us some perspectives to study Common Business Processes in practice. The focus is on those business processes (i.e. structured set of activities) that are carried out by multiple government-organisations. Once aligned, Common Business Processes have fundamentally the same structure, and the same input and output. Take for example the business process of calculating and collecting local taxes in the Netherlands. The main input for this business process is the value of the real estate of a person. The output is a calculated amount of local taxes to be paid and the collection of that amount. The input and output and the fundamental structure of this business process are the same for each local government organisation that executes this business process. Of course, the actual content is different every time the business process is executed, as is the actual person that performs the business process and the customer that collects the value of that specific occurrence of the business process. However, the fundamental execution of the process stays the same. It is important to note that this definition of CBPs does not indicate the level of detail of the process ("granularity") or the intensity of the alignment – issues which will be addressed in the next section of this paper.

A CBP may be a highly specialised process requiring very specific knowledge. Equally, it may be a basic and routine process that can easily be automated. The essential characteristic of a CBP is that it has multiple occurrences across government organisations such as ministries, organisations and municipalities. In Figure 3.1, for example, each organisation has processes for "citizen services", "benefits payment", "procurement", etc.

Figure 3.1. Common Business Processes viewed horizontally

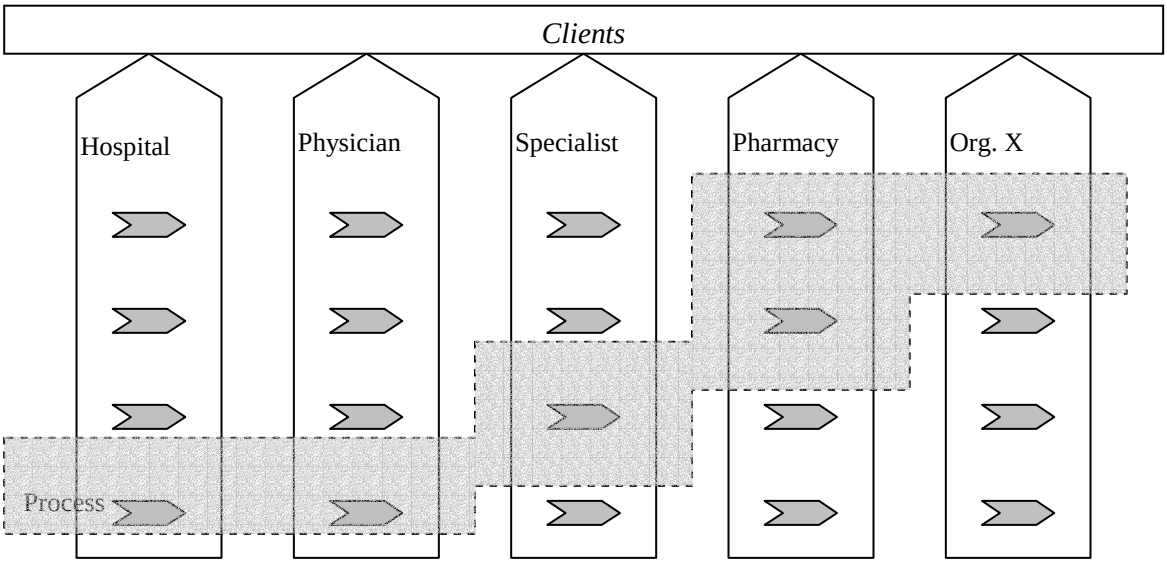


Source: Zenc.

Chain processes

Business processes in which several organisations take charge of different parts of an overall process are, in the context of this chapter, not defined as CBPs, as there is no commonality in the processes making up the delivery chain. For example, in a chain of health organisations that organise a jointly delivered business process as sequential steps, with each organisation having its own steps in the process, there is no commonality between the process of the pharmacy and the physician (Figure 3.2). Whereas CBPs are viewed horizontally and are the focus of this chapter, these processes are viewed vertically.

Figure 3.2 Chain processes viewed vertically



Source: Zenc.

Dimensions of Common Business Processes

CBPs can be analysed by different dimensions. CBPs can be either back office or front office processes and can be primary or secondary processes. CBPs can also be organised in a number of different ways. The first two dimensions concern the type of process that is common, the third dimension concerns the solution that is chosen for a CBP.

Back office/front office

A division of processes into front office processes and back office processes is widely used for (e-) government organisations. The front office covers all the contacts with customers or citizens. The back office covers the organisation's core processes, such as calculating benefits or enforcement of environmental laws. CBPs are present in both types of office. Front office processes are often labelled "services", though service delivery has both front and back office components. An example of a front-office CBP is a shared call centre for answering questions and providing information. Examples of back-office CBPs are shared procurement, shared finance, shared human resource management (HRM) and shared logistics. The element of contact in "service" processes fundamentally distinguishes them from the more production-oriented processes in the back office. This chapter looks at both sorts of processes.

Primary and secondary processes

Business processes may also be categorised as primary or secondary. Primary processes are those directly involved in the organisation's core business (see figure 1.1 in chapter 1: "User-focused E-Government"), and which exist to deliver its principal outputs. Secondary processes support the primary processes and the core business. These processes are to some extent independent of the primary process and may include the following:

- **Buildings** – facilities, plant maintenance and support;
- **Automation/ICT** – automated data processing; front and back office systems;
- **Communication** – public and media affairs;
- **Finance** – financial and accounting systems; payments and receipts processing;
- **Legal** – legal affairs; contracts oversight;
- **Information** – data and knowledge management; archives;
- **Identification/authentication** – identity management;
- **Personnel/organisation** – staff recruitment, development and promotion;
- **Structure and planning** – an organisation's strategic and planning functions.

Combining the two dimensions described above results in a matrix which allows one to classify types of business processes (see table 3.1).

Table 3.1. Dimensions of business processes

	Primary	**Secondary**
Front office	Enterprise Portal	Online recruitment for government jobs
Back office	Calculation of taxes	National Financial Information System (NAFIS-Korea)

Source: Zenc.

Denmark provides an example of a Common Business Process of the primary, front office type. In Denmark, a common portal (www.virk.dk) for enterprises allows many different government agencies to integrate their online contacts with enterprises. The portal functions as a one-stop service for business. Other examples of CBPs of this type are the US government website (www.grants.gov) on which organisations can apply for government grants, or "Profi", the German programme, used by many government agencies to apply and administer for subsidies. An example of a Common Business Process of the secondary, front office type is the online recruitment for government jobs. This may be a portal that may be used by applicants for a job with several government agencies. While hiring civil servants is a necessary function, it is not the primary activity of most Ministries (with the exception of Personnel or Civil Service Ministries). An example of a Common Business Process of the primary, back office type is the calculation of taxes. This is a primary process for the tax office; however it does not involve direct contact with the clients of the organisation. Finally, an example of a secondary, back office CBP is the NAFIS in Korea. NAFIS stands for National Finance Information System and is used as an interconnected and integrated finance-related system for budget planning and allocation. The system is used by more than 7,000 government agencies.

Levels of process analysis

The level of detail at which a process is defined or its "granularity" is also an important element in identifying and organising CBPs. The further a process is broken-down into its component parts the more likely that each part can be generically applied across organisations. An example of this is collecting applications for civil service positions within government or making government procurement catalogues available online. Relatively simple processes are parts of bigger, more complex processes; organising them as CBPs provides support for existing processes, but offers less in the way of efficiency savings. The more complicated a process, the more value is added if it is successfully made into a common business process, but the more difficult it is to do so.

Many government organisations are undertaking essentially the same multi-step activity, but often using diverse processes to achieve the same ends. An example of more complicated processes is processing civil service applications according to the needs and criteria of each ministry or an end-to-end government procurement system. Many governments are seeing the benefits of standardising these processes, supported by standard tools in order to achieve efficiency gains, but they may also meet with resistance as such standardisation requires the reconfiguration or reengineering of the process within every organisation. Some processes may be too complicated to be CBPs, or the result may be too unwieldy to justify the effort. As the process becomes more complicated, there are more and more context- or programme-dependent variables that change the required outputs of the process from one organisation to another, thereby impacting on its susceptibility to becoming a CBP.

Levels of co-operation

Once CBPs are identified, they can be co-ordinated in different ways. The solutions for this co-ordination vary in terms of the level of co-operation between the involved organisations. This is the fourth dimension of CBPs: the level of co-operation of the solution for a CBP. The following five categories, listed in order of increasing intensity of co-operation among participating organisations, provide a means to categorise the organisation of CBPs (see Box 3.2).

Box 3.2 Levels of inter-agency co-operation

1. **Knowledge centre.** Organisations agree to set up a knowledge centre that supports and facilitates knowledge exchange via the CBP. The focus is on information sharing. The organisations still execute the process themselves.

2. **Referential model.** Organisations agree on a "referential model" (a commonly agreed standardised process which provides guidelines, standards, etc.) for the CBP for their own use. The organisations still execute the process themselves.

3. **Shared information technology systems**. Organisations share common databases and/or IT systems in support of their own processes. The degree of shared systems can be decided among participating organisations.

4. **Shared service centre.** Organisations agree on a shared service centre, which executes the actual process or a part of that process. A new organisation is set up in which all the participating organisations have some influence (for example by participating in its governance), or the process is assigned to an existing organisation. The organisations are still legally responsible for the results of the process.

5. **Separate and independent organisation.** The shared service centre becomes an autonomous, legally independent organisation that may be either public or private. It has a normal customer-supplier relationship with participating organisations. Alternatively, market-based solutions can also be provided by the private sector to groups of government organisations contracting collectively with them. In this example, the value of co-operation comes not so much from the single supplier, but from the fact that demand is managed in a co-ordinated fashion to meet common needs.

The four dimensions of CBPs, back office or front office processes, primary or secondary processes, the granularity of the process and the level of co-operation of the solution, are used further on in this chapter to asses the results of the approaches of countries in the identification and organisation of CBPs.

Approaches to Common Business Processes

The approaches of different countries regarding CBPs can be broken down into two parts. The first part is the identification of processes that are common among different government organisations. The second part is the organisation of a solution for an identified Common Business Process. For both parts, a number of different approaches have been identified.

Identification of Common Business Processes

In the identification phase, government discovers that multiple organisations execute more or less the same process. Governments may use different approaches to identify these kind of processes. The approach of a country may differ on a number of dimensions; the context, the methods and the focus.

- *Context.* Does the government have an e-government project and is the search for Common Business Processes an explicit part of it? Is there political awareness of CBPs and are politicians committed to identifying and organising them?

- *Methods.* What methods do e-government organisations use in the process of identification? Most countries have formed an organisation to deal with its e-government programme or assigned the e-government portfolio to an existing organisation. How do these organisations identify CBPs?

- *Focus*. Do governments use a primarily ICT or an organisational perspective when identifying CBPs? Do they focus on primary or secondary, front-office or back-office processes? What criteria are used to decide whether a process is common and is profitable to organise?

In the following sections, the approaches of the countries will be described on these dimensions.

Context: Types of e-government programmes

All OECD countries have some sort of e-government programme. (For those discussed in this chapter, see Box 3.3). Some are based on laws and top-level political commitment, with a vision of how government should change in a changing society. According to such ambitious programmes, governments should change their structure to meet the demands of modern society. For example, government organisations should rearrange tasks and responsibilities, and e-government is seen as a lever to transform government.

Box 3.3. National e-government programmes addressing CBPs

Denmark: The national e-government project

Germany: *BundOnline*

Korea: Korea's e-Government Roadmap

Netherlands: Different Government

New Zealand: New Zealand E-government Strategy

Sweden: Interconnected Government

United States: Federal Enterprise Architecture

Source: country papers

The United States and Korea have this type of e-government programme. In the United States, the Quicksilver Task Force (using the Federal Enterprise Architecture framework) has identified four portfolios that cover the range of opportunities for collaboration on common processes. The four areas are government to citizen (G2C), government to business (G2B), government to government (G2G) and internal efficiency and effectiveness (IE&E). Thus, the whole range of government lines of business is effected.

Other countries have a less ambitious e-government programme. In such countries, e-government is more a method to improve government outcomes within existing structures. Organisations' autonomy is respected. E-government is a facilitator to help existing organisations to improve operations. The Netherlands and Sweden have this type of e-government programme. The Netherlands is using various initiatives to bring government organisations together to facilitate and promote co-operation and knowledge exchange. The decision to act is, however, up to the organisations themselves. This approach can also represent an acknowledgement of the potential of ICT to align agency processes in a virtual fashion, thereby seeing many of the benefits of CBPs without actual structural changes.

Context: Organisations carrying out the national e-government programme

Just as all countries have an e-government programme, all countries have some sort of organisation with a lead or overarching responsibility for carrying out the programme and perhaps for undertaking other e-government initiatives (see Box 3.4 and Table 5.2 in Chapter 5: "E-Government Co-ordination"). The authority of these organisations differs widely. Some have authority to analyse organisations' processes and develop common solutions which the organisations are then obliged to use. In Korea, the Special Committee for e-Government in the Presidential Office may analyse all processes and develop mandatory information systems for government organisations such as federal organisations, but also for provinces and municipalities. In Germany, on the other hand, the e-government organisation is not empowered to impose mandatory use of CBPs; organisations can organise their business processes independently. The policy is to convince organisations by offering solutions that work and bring substantial advantages when applied.

Box 3.4. National organisations for implementing the e-government programme

Denmark: E-Government board with The Digital Taskforce
Germany: *BundOnline* within Ministry of Interior
Korea: Special Committee for e-Government in the Presidential Office
Netherlands: 'Different Government'-programme within Ministry of Interior and ICTU (Programme Office for E-government Initiatives)
New Zealand: The E-government Unit of the State Services Commission
Sweden: *Statskontoret* and the Ministry of Finance
United States: Office of Management and Budget with Federal Enterprise Architecture Program Management Office and Federal CIO Council.

Source: country papers

Context: Political awareness and commitment

The countries examined also vary in terms of their belief in whether e-government requires strong political support, or whether it can be accomplished alone or primarily through administrative mechanisms. The strong political commitment of the United States and Korea is reflected both in laws (*e.g.* the US E-government Act of 2002), and in the activities of their presidents: in the United States, the Presidential Management Agenda includes e-government as a major item, and Korea's Special Committee for e-Government is in the Presidential Office.

The other countries examined show a lesser degree of political involvement in e-government. This does not mean, however, that they lack political awareness. Denmark, for example, has an E-government Board that involves many ministries and other government levels. Germany has meetings on e-government as part of its national *BundOnline* initiative, which involves all ministries. The Netherlands and Sweden have some political commitment to e-government, although this has not resulted in strong action from their political echelons.

Methods: Inclusion of CBPs in the e-government programmeme

Some of the countries examined explicitly identify CBPs as part of their e-government programmeme, while others do not. Those that do are Germany, Korea, the United States and, to a lesser degree, New Zealand. In these countries the e-government programme focuses on identifying commonalities in processes and services. Germany, Korea and the United States draw up actions to identify common processes of different organisations. In New Zealand, the E-government Unit of the State Services Commission has supplied government organisations with an authoring tool for creating metadata records that can be used to identify services and some of their common attributes. This is explicitly the task of organisations themselves. Once identified, organisations are expected to improve the processes.

Denmark, the Netherlands, and Sweden do not explicitly identify CBPs as part of the e-government programme. Their focus is on helping organisations to improve in various ways, including through the elimination of redundancy and duplication. The initiative to identify and act upon CBPs lies with the government organisations themselves.

Methods: Tools for the identification of CBPs

Governments have developed different tools for the identification of potential CBPs. Germany has set up a list of criteria on the basis of which a *BundOnline* service can be selected as a so-called "one for all service" (OfA). When a service fulfils these criteria, it can be selected as an OfA service, which will then be organised for common use. The United States goes even further by using organisations' enterprise architectures to identify CBPs. Each agency is obliged to have an enterprise architecture. Building on the enterprise architecture, the E-government Unit has developed a tool to examine common process candidates from a business perspective. This tool is developed for process owners and stakeholders and

enables them to search for business processes that they share with other organisations. This approach is called the Common Process View (CPV). The CPV is supported by the budget and architecture processes. Organisations and other government organisations are encouraged, but not required, to use this tool.

New Zealand uses yet another tool. The government created a common metadata standard that all organisations use to describe themselves and their services. This allows commonalities to be analysed in a structured form. The New Zealand E-government Unit uses these metadata records to identify which business processes organisations may have in common. When it finds potential CBPs the organisations involved are brought together to see whether there is a case for trying to develop a joint solution for the CBP.

Countries like the Netherlands and Sweden, who do not have a central agency with a large role in the identification of CBPs, did not develop tools for the identification of CBPs.

Focus: Basic dimensions of the identification process

The previous section provided a matrix in which business processes can be plotted. Table 3.2 plots the focus of the countries examined in this chapter onto this two-dimensional scale.

Table 3.2. Processes identified and organised

	Primary	**Secondary**
Front-office	Denmark, Germany, Korea, Netherlands, New Zealand, United States	Denmark, Germany, United States, Korea
Back-office	Denmark, Germany, Korea, Netherlands, Sweden, United States,	Denmark, Germany, Korea, Netherlands, Sweden, United States

Source: OECD country papers

Germany, Korea, and the United States pay attention to all four categories. However, this does not mean that they identify CBPs in all categories. Most CBPs identified are back-office secondary processes. The other countries examined are more diverse, although they also have a strong tendency towards back-office and secondary processes. Much attention is given to infrastructure services, like e-authentication and information transfer mechanisms. New Zealand is an exception with a strong focus on front-office processes.

Focus: Countries' perspectives on CBPs

Because identifying and reorganising CBPs can serve different purposes, countries look at business processes from different perspectives. Some try to see where ICTs can be used to reorganise CBPs to maximise efficiency. Others take a more organisational perspective and try not only to maximise efficiency but also to rethink the structure of services, for example, by identifying CBPs from a customer or user perspective.

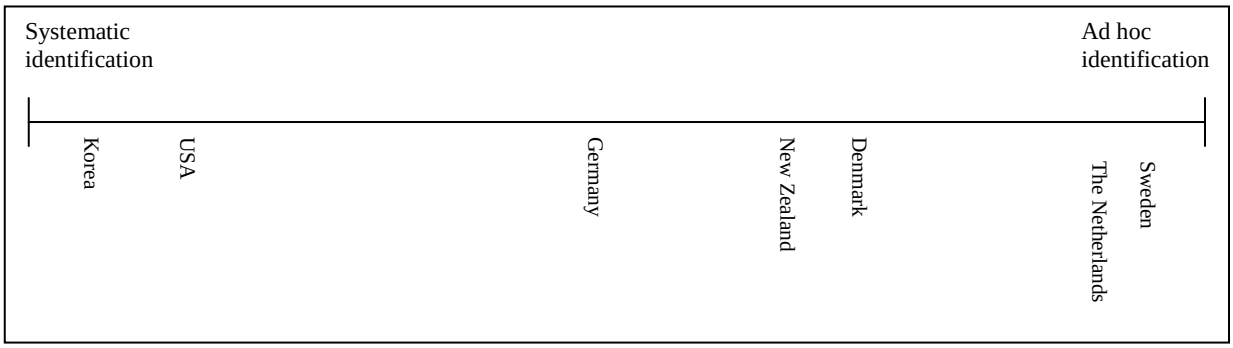
The choice of agency to lead the identification of CBPs and its substantive area of expertise also has an impact on the approach. Initiatives that begin as systems architecture (i.e. a mapping of IT systems, how they relate to each other and how they support business processes and services) will look quite different from those that begin as a service architecture (i.e. a mapping of processes that focuses explicitly on how to deliver sets of related services). While all approaches may eventually converge towards a more global perspective, given the interlinkages between services, IT systems and programme objectives, they are likely to be marked by their origins.

Denmark, Sweden and the Netherlands mainly take the ICT perspective. Germany, Korea and the United States take both the organisational and the technical perspectives. New Zealand's perspective is mainly organisational, focusing specifically on identifying commonalities from the user's perspective.

Approaches to identifying Common Business Processes: systematic and ad hoc

There appear to be two broad approaches for identifying CBPs. The countries that take the ***systematic approach*** have developed an ambitious e-government programme in which the identification of CBPs has high priority. Their e-government organisations have a mandate for action, and political awareness and commitment are high. These countries have developed a structured method for identifying CBPs. Korea, the United States, and to some extent Germany, take this approach (Figure 3.3).

Figure 3.3. Countries' approaches to identification



Source: Zenc.

Countries that take the ***ad hoc approach*** have a less ambitious e-government programme in which CBPs do not have a special or explicit place. While identifying CBPs may be seen as a useful strategy for improving efficiency and effectiveness, the e-government organisation does not have a strong mandate for structural change, and e-government has not been given a high political profile. These countries do not have structured methods for identifying CBPs, which are instead brought to light in informal processes and contacts between government organisations. These countries tend to focus more on infrastructure components, and on back-office secondary processes, because these are much easier to identify and organise. Each country has developed its own method for identifying CBPs.

Table 3.3 summarises the characteristics of the approaches.

Table 3.3. Two approaches to identifying CBPs

	Systematic Approach	Ad Hoc Approach
Context	E-Government programme with far-reaching aims and objectives	E-Government programme with more limited aims and objectives
	Central e-government organisation with high authority	Central e-government organisation with low authority
	Strong political awareness and commitment	Low political profile for e-government
Methods	Strong focus on CBPs in e-government programme	CBPs are not explicitly addressed in e-government programme
	Structured tools for identifying CBPs	CBPs identified in informal processes
Focus	Back office as well as front office, primary as well as secondary processes	Mainly back office, secondary processes
	ICT or organisational perspective	ICT or organisational perspective

The organisation of Common Business Processes

Identification of a CBP is only the beginning of a process. The next step involves the actual organisation of the Common Business Process. This normally starts with the writing of a business case which, if successful, is followed by design, development and implementation of the solution. This section describes these different aspects of CBP organisation and the approaches found in the OECD countries that were examined in detail.

The organisation process starts when a potential CBP is identified and government decides to look at possibilities for developing it. The following aspects are relevant:

- How are *business cases* or action plans drafted?
- Who *decides* whether to develop a solution for a CBP?
- Which organisation *develops* a solution, and how is the process monitored?
- Is the *implementation* of solutions for CBPs mandatory or are organisations free to use them as they like?

Building the business case/action plan

When a business process of government organisations is identified as common, a business case is usually written to demonstrate the advantages of organising the process in a common way. There are different approaches to writing the business case. In Korea, for example, the central agency responsible for the CBP, the Presidential Committee of Government Innovation and Decentralisation, works out how the CBP will be organised. The organisations that have to use the CBP do not have specific authority over this process, although this does not mean they are not consulted.

In other countries, building a business case is the task of the organisations that will use the CBP. These organisations write the business case together, without the intervention of the central e-government organisation, although they may try to obtain a subsidy from central government to set up the CBP. In the Netherlands, for example, different organisations at the operating level identified the need for an authentication service in order to provide services to citizens on the Internet, and they developed an action plan for developing it. The central government – in this case the Ministry of the Interior – only became involved when it was asked by the organisations.

Most countries use a middle course which combines elements of both approaches. In countries that charge a central agency with the identification of CBPs, this agency generally has a strong role in developing a business case. However, it generally also tries to involve other organisations that will have to use the CBP. In Denmark for example, the Digital Task Force and the Ministry of Science, Technology and Innovation, which co-operate closely on subjects like CBPs, build groups of involved organisations for each CBP that establish the business cases. However, a lead agency is always appointed and makes the final decision.

Decision to develop a CBP

When the business case for a CBP is made and shows a potential profit (quantitative or qualitative), or when an action plan is developed, a decision has to be taken to develop a "solution" for the CBP. This includes building a reference model or a prototype or setting up a shared service centre to execute the CBP (see table 3.1). However, the decision to build a solution is taken at different levels of government in different countries.

In some countries, this decision is taken at a high level. For example, in Denmark the E-government Board is formed of representatives of the Danish regions, Local Government Denmark, Copenhagen and Frederiksberg municipalities, and the Ministries of Finance, Science, Technology and Innovation, Economic Affairs and Industry, Interior and Health, Justice and Taxation. The Digital Task Force, responsible for drawing up business cases for potential CBPs, presents proposals to the E-Government Board, which then decides whether to build a solution for the CBP. In Germany, this decision is taken at the level of the initiative BundOnline. In the United States, and especially in Korea, a presidential or multi-agency steering committee takes the decisions.

There are also countries in which the decision to develop a solution for CBPs is taken by the organisations involved. In Sweden and the Netherlands, organisations that decide to build a business case or draw up an action plan for a CBP also decide whether to go on and develop a solution for the CBP. They may try to get some funding from central government organisations, but they are in no way obliged to involve central government.

Developing a solution for a CBP

In most countries, some sort of steering committee or project group is set up to organise the development process. In countries in which the decision to develop a solution for a CBP is taken at a high level, the steering committee is generally selected at this level as well. The most relevant organisations are represented in the committee. Generally, high government officials decide which organisation will take the lead role on the basis of qualifications in the subject area or involvement with the CBP. This organisation often has some authority to make decisions and solve conflicts, but is not allowed to take major decisions, which are taken by high government officials. The committee develops the in-depth business case or action plan, takes decisions on the more practical aspects of the development of a solution, if necessary hires people or firms to build the technical solution, and monitors the progress of the project.

In countries that do not take decisions about CBPs at a high or political level because there tends to be no centralised approach to CBPs, the organisations that are involved in the process of identification and decision usually set up such a committee and arrange by agreement among themselves which organisation will take the lead. However, in the Netherlands as well as in Sweden, a central institution deals with the execution of a share of CBP solutions. These organisations are building components of an information infrastructure such as unique numbers or authentication mechanisms on behalf of the Ministry of Internal Affairs.

Implementing the solution

Once CBP solutions are developed they need to be implemented by the organisations that will use them. These organisations have to adapt their working methods to the CBP. An important issue for the success of CBPs is the number of organisations that use them. For a CBP to deliver the best results, broad participation by organisations (up to and beyond levels identified as necessary in the business case) is necessary.

Different countries take different approaches to make sure that a CBP is used as broadly as possible. Korea takes decisions on CBPs at the highest political level and makes their use mandatory. Korea's e-government law makes CBPs mandatory. For example, it forbids developing the kind of software that has already been developed in other government organisations for executing the same government business process.

At the other end of the spectrum, Sweden and the Netherlands make the use of CBPs completely voluntary. In Sweden, the *Statskontoret* (the Agency for Public Management) has developed certain infrastructural components such as e-authentication services and secure information transfer. The *Statskontoret* identified a need for this kind of service among government organisations and developed

technical solutions for these CBPs which it offers to organisations. These organisations are free to use these CBP services or to develop their own solutions.

Other countries follow some sort of middle course. Most do not go as far as Korea in mandating the use of CBPs, but still do not leave organisations completely free to use CBPs as they like. Most countries examined try to persuade organisations to use developed CBPs by giving them incentives to do so. In the United States, for example, organisations that are stakeholders in a CBP, or that are eventually to work with the CBP, are involved in its development process. They are brought together by the Office of Management and Budget (OMB) on the basis of their enterprise architectures to form a Programmeme Management Office, which is responsible for developing a CBP.

Many countries use the budget process as an incentive for using CBPs. The budget process can be used as both a positive and a negative tool. New Zealand takes a positive approach. Government organisations that come up with good projects that deliver good results are more likely to be given extra funds in the future. In the United States, the budget process requires that all major information technology investments be mapped to the enterprise architecture in order to identify potential CBPs. In Denmark the budget system can also be used as an incentive, for example because of the obligation of organisations to report data to central government.

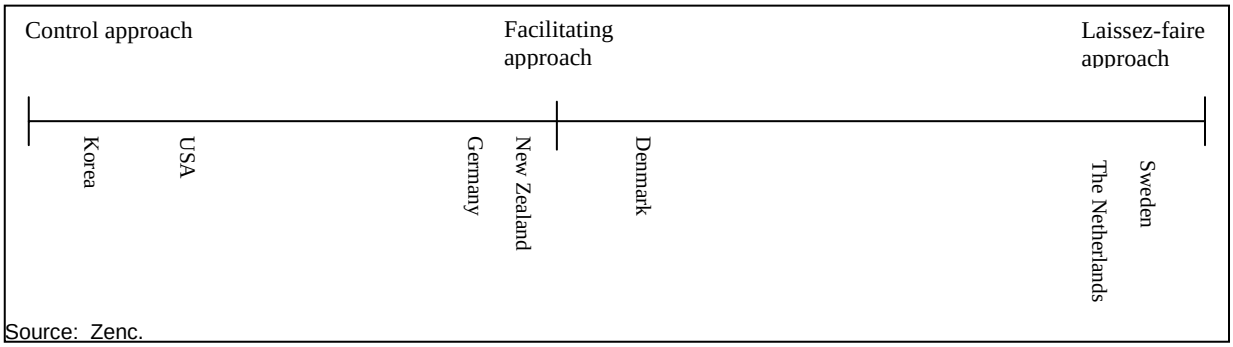
Another way of promoting CBPs is clear communication of the goals of political leaders. When ministers or heads of government make it clear that they are determined to implement CBPs, this is a strong incentive to organisations that hesitate to adopt a CBP. This approach is used in the United States.

The last incentive found in the countries studied is public expectations. In New Zealand, the fact that the public wants the government to operate in an efficient way is used to stimulate the use of CBPs.

The basic approaches to organisation

There are three main approaches to organising CBPs (Figure 3.4). At one extreme is the **control approach** in which one organisation controls the entire organisational phase, primarily from a high administrative and/or political level. It builds the business case, organises steering committees, monitors or develops solutions and finally implements the solution by making it mandatory, often by law. This organisation has a political mandate to oblige organisations to adopt the new CBP. At the other extreme is the ***laissez-faire*** **approach** in which the government leaves the initiative for organising a CBP to organisations, which are free to build a business case, choose the solution they think is useful and decide whether they actually want to use the CBP or their own, unique processes. A “middle course” is represented by the **facilitating approach** in which an organisation at the centre of government tries to influence other organisations to adopt a CBP by proposing various incentives. This approach is more structured than the *laissez-faire* approach, because the central agency is actively involved. However, it is much less constraining than the control approach, because organisations maintain much of their autonomy.

Figure 3.4. Countries' approaches to organisation



Source: Zenc.

Table 3.4. Characteristics of approaches to organisation

	Control Approach	Facilitating approach	Laissez-faire approach
Building the business case	Strong central agency	Central agency in co-operation with involved organisations	Involved organisations
Decision to develop a CBP	High political level	Politicians and involved organisations co-operate	Involved organisations
Developing a solution	Committee appointed by politicians	Politicians and involved organisations co-operate	Committee appointed by involved organisations
Implementing the solution	Mandatory (Sometimes)	Incentives for usage	Optional

Interdependence of approaches to identification and organisation of Common Business Processes

When countries' approaches to identification and organisation are examined together, it is clear that they are interdependent. Countries that take a systematic approach to the identification process (Korea and United States) also take a control approach to the organisation of CBPs. Countries that identify CBPs in an *ad hoc* manner (the Netherlands and Sweden), take a *laissez-faire* approach to organising these processes. Countries that combine elements of the systematic and the *ad hoc* approach to identification (Germany, Denmark and New Zealand) take the facilitation approach to the organisation of CBPs.

Table 3.5. Aproaches to identification and organisation

Identification \ organisation	Control	Facilitating	Laissez-faire
Systematic	Korea, USA	Germany	
Ad Hoc		New Zealand, Denmark	The Netherlands, Sweden

This relationship is perhaps explained by the context for CBPs provided by differing national approaches to e-government. From the data available it appears that, when the CBP identification process is systematic, government has a strong vision for changing government through e-government. To implement this vision, it creates a fairly strong e-government agency at a high level of central government which is in charge of the identification of CBPs, and generally also of the organisation process. It has a mandate to bring organisations together and to oblige them to develop and use a CBP solution. Such governments are very likely to institute an e-government agency with a large mandate.

On the other hand, countries that follow an *ad hoc* identification approach do not feel that a strongly centralised role is the appropriate means to achieve a change through e-government and thus have not formed a strong e-government agency. The central e-government organisations in these countries have a more facilitating role. They generally do not take the initiative to try to identify CBPs, but rather wait until a possible CBP arises through informal contacts or processes within or between other organisations. This e-government agency will probably also has a more passive role in the organisation process. It will wait for the involved organisations, which are organising a solution, to ask for its help. When the organisations successfully develop and implement a CBP solution, the e-government agency does not have a significant role in the process.

However, there are differences between countries within these categories. Not all such e-government organisations are passive. In the CBP identification phase, some that lack a strong mandate for analysing business processes may try to identify CBPs through active discussion with organisations. These organisations are also more active in the organisation phase, in which they are likely to use the facilitating approach. They may also try to develop solutions and offer the organisations involved incentives to adopt them.

Box 3.5 Issues for implementation of CBPs

This chapter focuses on the policy process of Common Business Processes. Managing implementation, however, is also essential for the success of the organisation phase of CBPs. Some implementation issues to keep in mind, in particular under a laissez faire or facilitating approach:

- **Show advantages:** Involved agencies need to be convinced of the usefulness of CBPs. Therefore, it is important to explain the advantages of a CBP. Most countries, for example Denmark, draw up business cases towards this end (see Chapter 4: "The Business Case for E-Government").
- **Start small, scale up:** In general, it is easier to implement a CBP on a small scale and to then scale up the usage of the CBP. The OFA ("one for all") services in Germany follow this principle. One ministry or agency implements a service and then offers it to all other agencies. This way, the service may first be fully developed and tested by a small group of users, before being used by a large group. In the Netherlands, the same principle is used in the development of an authentication service for national, regional and local governments (the DigiD). The service was developed by five execution agencies and tested at a few other organisations, including a municipality and an executing agency. The service is now widely available and is being used by more and more agencies.
- **Clear communication of advantages and results**: The examples of Germany and the Netherlands show that starting small facilitates improved communication to potential users of the advantages and results of CBPs. Demonstrable benefits make it easier to convince potential users to adopt CBPs.
- **Let users participate in the process**: Allowing involved organisations to participate early-on is likely to improve participation and buy-in. Germany has set up advisory boards of users in an early stage of development and implementation of Common Business Processes. These boards allow users to get engaged in the process and to adapt CBPs to user needs. Denmark lets users participate in the process by setting up steering committees with representatives of all involved agencies.
- **Pay attention to culture change**: To make the most extensive use of CBPs, a change in culture is necessary. Organisations have to establish a culture of co-operation instead of a culture of "silo"-thinking.
- **Clear responsibilities, preferably at a high level:** Clear responsibility for a CBP project is one success factor. It may therefore be useful to make someone at a high level of government, for example a Minister, responsible for the project in order to provide political backing and to demonstrate the priority of the project for the government.
- **Manage expectations:** People involved, especially politicians, do not always have a clear understanding of CBPs which can be seen as a highly technical topic. On the one hand, it is important to be clear about the expected advantages and to draw linkages between CBPs and the delivery of a government programme. On the other hand, it is also important to not raise overly high expectations of the outcomes of CBP projects.
- **Redistribute revenues or share the costs:** For many CBPs, different organisations bear the costs and revenues of the project. Organisations that have to invest are frequently not the same as organisations that collect the revenues. Denmark calls this the "sow/harvest" problem. It is important to agree on a redistribution of revenues or a mechanism to share costs.
- **Recognise costs and risks:** Identifying and organising CBPs holds a certain amount of risk and opportunity costs for other types of reform. Organisations will need to understand this in order to overcome resistance to change.

The link between approaches and implementation

This section examines the relationship between the approaches to CBPs and the resulting identified and organised CBPs. It looks first at what types of processes are identified and organised as CBPs, and then examines which solutions countries have implemented and the approaches that they have used.

Types of processes

The section on the conceptualisation of CBPs distinguished four types of CBP along two process dimensions – front or back office, and primary or secondary (Table 3.2). The previous section examined which types of processes different countries have identified and organised. The United States, Korea and Germany have identified and organised CBP of all four types. Denmark has also identified and organised processes of all types, but with a strong focus on secondary and back-office processes. The Netherlands and Sweden focus on back-office secondary processes. New Zealand has a focus on front-office primary processes.

Table 3.6. Processes identified and organised

	Primary	**Secondary**
Front-office	Denmark, Germany, Korea, New Zealand, United States	Denmark, Germany, Korea, United States
Back-office	Denmark, Germany, Korea, Netherlands, Sweden, United States	Denmark, Germany, Korea, Netherlands, Sweden, United States

Source: country papers

All countries except New Zealand have identified and organised primary and secondary back-office processes. It may be concluded that it is relatively easy to identify these processes as common. Secondary back office processes are to some extent independent of the primary processes, and are therefore potentially exchangeable or interchangeable between organisations. All organisations have business processes such as personnel or finance, so that it is perhaps not very difficult to make this commonality clear to government organisations and to act on it. Front-office primary processes seem to be much harder to identify and organise. The United States, Korea, Germany, New Zealand and, to a lesser extent, Denmark have so far succeeded in identifying and organising these kind of processes.

The reason why the United States, Korea and Germany have made progress in all four quadrants appears to be, in part, their use, in varying degrees, of the systematic approach for identification and the control approach for organisation. The systematic approach may be strongest for identifying front-office primary CBPs. When viewed from an all-of-government perspective, such processes may be seen as common to many organisations. Conversely, when viewed from the perspective of an individual organisation, they may seem specific to that organisation. These countries also take a control approach (Germany uses strong incentives instead of mandates) to the organisation of CBPs, which may also explain their achievements with front-office primary processes. Front-office processes are often at the core of an organisation's identity, and they may oppose plans to organise these processes in a common way. Only a control approach (i.e. making use of a CBP mandatory) or a facilitating approach (i.e. making its use very attractive) will ensure that front-office primary processes are organised and used in a common way. It appears that, when a country uses an *ad hoc* approach for identification and a facilitating approach for organisation (*e.g.* the Netherlands and Sweden), primary front-office CBPs are not likely to be identified and organised.

New Zealand's progress in identifying primary front-office processes is explained by the systematic approach it has adopted, under which central government organisations are required by the Cabinet to create metadata records describing their services and to provide them to the State Services Commission for aggregation and presentation through the all-of-government portal. This makes all of these services visible and comparable, allowing commonalities to be identified. The fact that it has not yet developed any common CBP solutions in this area is perhaps due to the lack of any corresponding controlling mandate requiring organisations to develop CBP solutions for any reasons other than their own discretion or volition.

When looking at identifying and organising Common Business Processes, the number of available solutions for CBPs is another indicator of the success of that approach, as well as the profoundness of the created solutions. The information provided for this study, however, was insufficient for a quantitative analysis.

Levels of co-operation of solutions

A third dimension of analysing CBPs involves the level of co-operation required and/or achieved in developing a solution for a CBP. The conceptualisation section identified five levels of co-operation (box 3.2.). The higher the level of co-operation required, the more difficult it is to organise the solution. When a CBP solution requires a high level of co-operation by the organisations involved, the CBP is bound to influence profoundly the processes of organisations, which are likely to have to relinquish some autonomy, lose tasks and therefore resources. In order for highly integrated CBP solutions to work, organisations need to trust other each other to a greater extent for the delivery of their outputs, etc.

Table 3.7 Levels of co-operation of the developed CBPs

Level of co-operation	Countries' Preferred Approach
1. Knowledge Centre	The Netherlands
2. Referential Model	Germany, United States
3. Shared information technology system	Korea, the Netherlands, Denmark, Sweden, the United States
4. Shared Service Centre	The Netherlands, Denmark, Germany, United States
5. Separate and independent organisation	The Netherlands

Germany makes prototypes of CBPs. The CC VBPO, a competence centre specialised in business processes, draws up referential models for business processes that are common to many organisations. The organisations can use these models to organise their own business processes. Because of its ease of use, this kind of solution has a much lower threshold for organisations to adopt.

Most countries observed adopted shared information systems as a common or shared solution, probably because governments currently tend to take an ICT perspective when considering CBPs. These fall in the middle of the range of levels of co-operation, between referential models and shared service centres. Sharing an information system involves adjustments to the business processes of organisations, but does not mean handing over the execution of a process to another organisation, as in the case of a shared service centre. A strong focus on how information systems are structured in support of service delivery may lead to these systems being seen as the key to developing CBP solutions, and opens up new possibilities for virtual integration: process reengineering without major structural changes.

Denmark, Germany and the Netherlands are the only countries that have special organisations for finding solutions for CBPs, the "heaviest" form of co-operation. The execution of a CBP by a special agency presents a high threshold for participation by other organisations because it means that they have to relinquish a task that they previously executed themselves and for which they had employees, systems, buildings, budget, etc. To surrender that for efficiency gains is an enormous step for organisations. Denmark and the Netherlands, in particular, leave much of the initiative for organising CBPs to the organisations concerned. This may lead to fewer CBPs being identified and a slow start but to more in-depth solutions. When the organisations involved have decision-making authority for identifying and organising CBPs, they may develop greater levels of trust. When convinced of the benefits of a CBP solution, they may be more committed to building and using it. Therefore, while a relatively *laissez-faire* approach may lead to slower and fewer identifications of CBPs, it may also result in higher levels of co-

operation among organisations in using the ensuing CBP solutions. In box 3.6 an example of this is described.

Box 3.6 Shared Service Centers for the delivery of a CBP: the Dutch Central Judicial Collection Agency

An example of an independent organisation for the execution of common business processes is the CJIB in the Netherlands. The core business of this organisation is to carry out administrative processes concerning penalties and fines.

The process of organising this Common Business Process started in 1989, when minor traffic violations were shifted from criminal law into administrative law. The goal was to lower the workload of the juridical system. In 1990 the CJIB was set up and took over the execution of the administrative processes of penalties and fines from court of justices and police-departments.

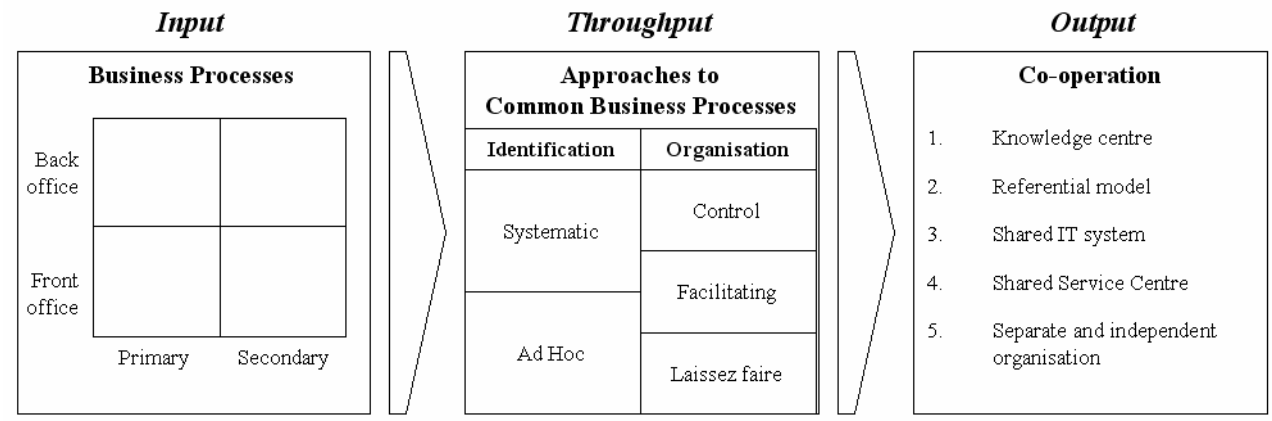
The results were clear: the workload for police and courts of justice decreased by 40 per cent, and within a year, 95 per cent of all fines were being paid (compared to 40 per cent the year before). Soon after the setting up of the CJIB, more and more tasks were delegated to it, such as the collection of criminal law-fines, the collection of compensation-arrangements and the co-ordination of arrest warrants. These are all business processes that were executed by different organisations before the CJIB started doing it centrally.

In 1995, the CJIB became an independent organisation, with only loose ties with the Ministry of Justice. Currently, the CJIB is an organisation with roughly 800 employees. The CJIB shows that it is possible to organise Common Business processes at a high level of co-operation with good results in terms of effectiveness and efficiency. But it also shows that it takes a lot of work (in this case even a completely new law) and a long time.

The concepts combined

In this chapter, a number of concepts are used to describe countries' approaches to Common Business Processes. A framework that combines these concepts can be useful for further research and to describe practices on the subject of Common Business Processes. The following initial framework combines the concepts previously laid out and allows them to be visualized by looking at the *process* of identifying and organising Common Business Processes.

Figure 3.5 A proposed framework for analysing Common Business Process approaches



The process starts with an inventory of possible business processes: the so-called **input-phase**. In the input-phase, the concepts of 'primary/secondary' processes and 'back office/front office' processes may be used to categorise business processes that might be Common Business Processes. In the **throughput-phase**, business processes are identified as CBPs (identification) and are organised as CBPs (organisation). In this phase, the typologies of methods for 'identification' and 'organisation' are useful. Finally, in the **output-phase,** the CBP solution adopts different levels of co-operation.

This proposed framework should be viewed as a starting point for developing more insight into the phenomenon of Common Business Processes. Further research is needed, among other issues, on the

concepts for analysing CBPs (e.g. primary/secondary business processes or the approaches to identification). Additional concepts may be needed to describe the different types of business processes (*input*) and Common Business Processes (*throughput*). Secondly, there may be additional levels of co-operation (*output)* to be identified. Thirdly, special attention is needed for the solutions for CBPs. The levels of co-operation give an indication of the 'strength' or 'depth' of the created relations between the participating organisations. However, this dimension reveals nothing about how many organisations participate (the 'width' of the solution for CBPs) – a very relevant dimension as it makes a big difference for the complexity of the process whether a CBP is identified and organised for three or for 2,000 participating organisations. The empiric basis for this chapter (the set of country papers) was insufficient to provide a meaningful indication of this specific area of Common Business Processes.

Conclusions

Globalisation and technological developments are changing our societies, which are becoming more and more complex, evolving at an ever increasing pace, and becoming increasingly dynamic, notably in terms of their changing needs and their expectations with respect to government. These developments put pressure on governments to increase the effectiveness and quality of their services, while at the same time increasing their efficiency.

Common Business Processes offer one perspective for analysing government operations in search of such improvements. This chapter illustrate how, while perhaps originally brought on from an ICT perspective, CBPs have far reaching consequences for how public administrations work and provide an important tool for the transformation of government. Most OECD countries include a focus on developing CBPs as part of their e-government strategy, and are increasingly trying to identify and organise CBPs.

The concepts of front-office/back-office and primary/secondary processes appear to be quite useful for classifying the types of CBP identified and organised in different countries. Front-office primary processes seem harder to identify and organise than others. Distinguishing the levels of co-operation required for successful implementation of a CBP also appears quite useful, as different approaches require and deliver different levels of co-operation.

It appears that countries use either an *ad hoc* or a systematic approach to identify CBPs. It was not possible to identify institutional factors that may influence countries' choice of approach, but country-specific factors – culture, legislation, public management philosophy and traditions, and politics – may affect their choice. Countries that take a systematic approach have instituted a strong organisation with a powerful mandate to implement this vision. They use structured methods to identify CBPs in all areas, including relatively easy back-office secondary processes as well as "hard to get" front-office primary processes. Those that take an *ad hoc* approach have less powerful organisations for implementing this vision. Perhaps as a result, CBPs are more likely to be identified and organised through informal contacts between organisations. These countries appear more likely to focus on back-office secondary processes.

The three approaches to the organisation of CBPs are control, facilitating and *laissez-faire*. A country's organisational approach is influenced by institutional arrangements. The control approach takes a strict top-down approach. Central government develops a solution and mandates its use by government organisations. This approach leads to a large number of organised CBPs mainly involving medium levels of co-operation (*e.g.* shared information systems). The facilitating approach uses incentives to try to get organisations to identify, develop and use CBP solutions and is an alternative where a control approach is constitutionally impossible. This approach appears to lead to medium numbers of CBPs involving medium levels of co-operation. In the *laissez-faire* approach, central government play a passive role, leaving organisations to do the work and only helping when asked. This approach leads to low numbers of organised CBPs that, interestingly, show the highest levels of co-operation.

Because the present chapter is based on a small number of country reports, it should be read simply as a starting point for further research on the topic of Common Business Processes. It is hoped that the

tentative framework provided can help to focus further efforts to understand the role of CBPs in an e-government strategy. More empirical research is needed in order to test the completeness of the framework proposed here. The variables included in the framework are not the only ones that matter. For example, other contingency factors, such as a country's culture, may influence its approach. It is also reasonable to believe that the variables identified show more variations than were identified in this chapter. For example, approaches in other countries may not fit this framework. There is, in addition, the issue of whether the framework suits all levels of government or only the central level of government.

In addition to research on the completeness of the framework, relationships among the variables require more empirical research. The proposed relationships between institutional factors, approach variables and result variables may be falsified by more empirical data. In particular, the relationship between the chosen approach and the results achieved using that approach should be the subject of empirical research in order to obtain more solid conclusions.

NOTES

7 This Chapter is based on a paper prepared for the OECD by Marco Meesters M.Sc and Pim Jörg M.Sc.. They are advisors and researchers for Zenc, a Dutch consultancy firm specialised in ICT innovations in the public sector (www.zenc.nl).

8 Common Business Processes provide the basic building blocks for service or enterprise architectures which will be discussed further in this chapter.

9 The country reports, entitled "Identifying Common Business Processes" were prepared for the 3rd OECD E-Government Symposium (Cancun, 15-16 March 2004). Experts from participating countries gave short descriptions of their countries' approaches to identifying and organising CBPs and the results achieved. For the present study, the country reports were complemented with information on websites and questionnaires sent to the authors of the country reports. There are some drawbacks to this method. First, the information provided in the country reports sketched only the rough outlines of countries' approaches to CBPs. It is not possible to describe what may be hundreds of processes in 3-4 pages. Second, the information received from country experts was very diverse. Because the authors of these papers hold different positions in their countries, they describe CBPs from different perspectives.

BIBLIOGRAPHY

Davenport, T. H. (1993), Process innovation: reengineering work through information technology, Boston, Massachusetts, Harvard Business School Press.

Hiemstra, J. (2004), Presterende gemeenten, publisher Kluwer B.V., Deventer.

Lijphart, A. (1999), Patterns of Democracies, Government Forms and Performance in Thirty-six Countries, Yale University Press, New Haven and London.

OECD (2004), Country Papers on Common Business Processes, prepared for the third OECD symposium on e-government, 15-16 March, Cancun, Mexico

Zuurmond, A. (2005), Organisational Transformation Through the Internet, Cambridge University Press

CHAPTER 4

THE BUSINESS CASE FOR E-GOVERNMENT[10]

Introduction

E-government is now widely regarded as being fundamental to reform, modernisation and improvement of government. The OECD defines e-government as "the use of information and communication technologies (ICTs), and particularly the Internet, as a tool to achieve better government". However, the real costs of and benefits of e-government have rarely been soundly and systematically evaluated.

During the 'dot.com' boom, e-government enjoyed a healthy level of political and financial support. ICTs and e-government were seen as key tools for modernising public administrations and providing better government. However, the next stage of e-government is likely to require investment in the development of services and systems whose benefits will sometimes be less readily apparent to politicians and policy makers, and to the public.

This means that robust evaluation and monitoring of the costs and benefits of e-government needs to be better incorporated into e-government planning and investment. This is commonly referred as the need for e-government to be supported by a strong 'business case'. Without this, e-government implementers will find it increasingly difficult to obtain support for making the investments required to enable them to achieve the objectives that governments set for them.

This chapter looks at some aspects of how countries can address this issue. The first part of the chapter looks at the impacts of e-government and the studies that have been undertaken to investigate its costs and benefits. It then provides an overview of OECD countries that have evaluated e-government projects and the methods they have adopted. A checklist of key elements of evaluation studies is provided and the strengths and weaknesses of different approaches are reviewed. Finally, an overview of the benefits to government and users of e-government projects is presented.

The business case for e-government: an overview

Why examine the business case for e-government?

The business case for e-government projects has rarely been evaluated or systematically monitored, and OECD countries acknowledge the need for improvement in this area (OECD, 2003). Decision-makers, policy advisers and practitioners need to be better informed about the costs, benefits, risks and outcomes of e-government in order to be able to assess the merits of proposed e-government initiatives and their likely effectiveness in meeting stated objectives, and also to improve their implementation.

In 2003, it was suggested that e-government had enjoyed a healthy level of political and financial support among OECD governments (OECD, 2003, p. 155). Many initiatives, such as the establishment of national Web portals, have had a high profile and support has been easy to find. The next stage of e-government activity is likely to involve more e-government initiatives that develop services and solutions based on the redesign and joining-up of back-office business process and IT systems. This will be more complex and challenging, possibly more costly, and potentially more risky, especially because they will

often require changes that may be quite disruptive of established public sector structures, culture, and management arrangements. Benefits of these initiatives are likely to be less readily apparent to policy makers and the outside observer.

In the face of this, while the priorities of both countries and individual government organisations may differ, the need to better articulate the case for continued investment in e-government drives a need for improved identification, evaluation and monitoring of e-government costs and benefits. Without this, those implementing e-government will find it increasingly difficult to obtain political and public support.

Preparation of robust pre-investment business cases that outline the impacts of e-government initiatives, coupled with sound post-investment evaluation of these impacts, will enable decision-makers to 1) rank and compare proposals for investments in e-government with competing demands for scarce public funds, 2) hold implementers to account for delivering projected benefits within proposed costs and 3) better identify opportunities for benefit from future e-government investments. Overall, successful efforts in this area can assist governments in maximising the benefits of e-government while containing its costs and risks, and in prioritising resource allocation decisions (especially if the approach to evaluation and monitoring is consistent across government).

Impacts of e-government projects

The impacts of e-government are usually divided into two groups: those costs and benefits accruing to government, and those experienced by users. To date, the benefits for government have primarily been seen as relating to gains in efficiency achieved through the application of ICTs by individual agencies, while costs have been seen as those directly related to development and implementation of software applications and IT systems supporting new forms of information or service delivery. However, costs and benefits for employees, investors and other agencies are also important (E-government Workgroup of the Directors General, 2002). User costs and benefits arise for both citizens and businesses. Some observers have suggested that more general costs and benefits to society or the environment might comprise a third group (Rimmer, 2003). An overview of costs and benefits for both government and users is provided in annexes 4.2.1-4.2.4.

Benefits arise at each stage of e-government 'maturity'. The four levels of e-government maturity are:

- Level 1: Information.
- Level 2: Interaction.
- Level 3: Transaction.
- Level 4: Transformation.

(OECD, 2003)

The E-government Workgroup of the Directors General (2002) argues that the benefits of e-government increase as e-government activities progress further along the maturity model towards data sharing and transformation. The OECD (2003) highlights the mass processing tasks that present governments with major opportunities for improving efficiency through application of ICTs. The IAB (2003) notes that process improvements and streamlining achieved by e-government can provide significant savings and/or cost avoidance.

So far, only two countries have attempted to move beyond the analysis of the costs and benefits of individual e-government initiatives. Australia and the United Kingdom have examined the aggregate case for e-government projects by using a consistent methodology (different in each country) to investigate a large number of e-government projects.

In Australia, the National Office for the Information Economy surveyed 38 e-government projects (NOIE, 2003). Every project was expected to improve the quality of service delivery, and 87% of projects also expected to generate some financial benefit for service users. A user survey estimated user cost savings of $14.62AUD per transaction compared to traditional channels. Businesses estimated savings of over $25 AUD per interaction.

NOIE (2003) found that 24 projects claimed cost reductions (or increased revenues). For an estimated investment of $108 million , these 24 projects were expected to achieve cost reductions of $100 million. This represents a benefit/cost ratio of 92.6% (the estimate omits user benefits). Across surveyed projects, including those that had no expectation of generating a financial benefit, the aggregated benefit/cost ratio was 61.1% (again this estimate also omits user benefits).

In a study of 14 'e-government' projects the UK government found that all except one forecast positive returns. Payback periods for projects varied between four months and 11.5 years, with an average of 4.8 years.

Evaluating the economic impact of e-government projects

Several studies have reported results from research evaluating the economic impact of e-government projects (IAB, 2003; NOIE, 2003; OGC, 2003). The range of benefits and returns on investment identified can be seen in Annex 4.1. These studies provide an interesting overview of the magnitude of savings that can be derived from e-government projects.

However, they raise almost as many questions as they answer. Nearly all use different methodologies and their results are presented in different ways. Some provide details about costs, others do not. This makes it difficult to be certain that benefits exceeded costs and that a positive return on investment was realised. The value of these studies would be enhanced if more was known about the methodologies used to calculate costs and benefits.

Annex 4.1 shows that many studies have evaluated the economic impact of e-government projects in the early stages of the e-government maturity model (information and interaction). However, there are fewer evaluations of more advanced projects such as transformation initiatives. Many governments indicate that they are not yet near this stage of e-government, or that evaluation of the limited number of such projects that they have conducted has not yet been undertaken.

The studies that do exist have also emphasised total benefits or cost savings, while the particular beneficiaries of these savings have rarely been identified. For information and interaction projects, the reports have placed greater emphasis on benefits to users, given their visibility. Benefits to users indicated by the studies include 24/7 service delivery, improved convenience, and faster turnaround of service delivery.

Previous impact studies of e-government projects have not differentiated between the maturity level of projects, or the distribution of costs and benefits to users and government. However, the tables in Annex 4.1 suggest that benefits to government from less mature projects appear to be smaller than the benefits from higher level projects. Indeed, UK government studies suggest that as projects move from the information to the transformation level, payback periods on e-government investments decline and net present values rise.

Benchmarking studies

A better understanding of the costs, benefits and beneficiaries of e-government can help policy makers and e-government managers to make e-government more efficient and effective. Benchmarking studies of e-government are regularly undertaken by private sector organisations such as IBM, the Economist Intelligence Unit, Accenture and others. However, these are frequently little more than "bean

counting" exercises that measure the number of services provided on line[11]. These benchmarking studies are limited for two main reasons. First, they focus on the visible interface between government and users, while neglecting the more complex, and often more significant, back-office aspects of e-government.

Second, they take no account of the cost of e-government. A cost-effective e-government strategy would focus on introducing those services that can provide the greatest benefits while also achieving the greatest cost savings. For some countries it may not be cost-effective to provide some services on line, or may only be sensible to do so when sufficient users can be expected to use the e-government service.

Third, these studies often fail to account for the differing national constitutional, legal, political, economic and administrative contexts that influence how, where and when countries implement e-government initiatives. Finally, existing studies tend to focus on the supply of services and neglect service demand and use. They are output rather than outcome-oriented, their methodologies are not internationally agreed, and countries' overall performance is frequently measured on the basis of only a small number of elements of their e-government programmes (OECD, 2003).

One way of overcoming these concerns is to work towards an internationally agreed approach to examining the impacts of e-government that governments may use separately or collectively to self-evaluate their e-government initiatives.

The benefits of evaluation

OECD countries are at different stages in their development of e-government evaluation and monitoring tools and methods. The Dutch and Danish case studies (Box 4.1) show that the benefits of evaluation extend beyond the simple estimation of the costs and benefits or rate of return on an e-government investment. Evaluation can help policy makers to better understand of both the benefits and beneficiaries of e-government projects, and the costs associated with achieving such benefits. They can also be valuable in ensuring the realisation of benefits and project efficiency. Also, more advanced *ex ante* studies often incorporate risk analysis so that the potential impact of things like delays in implementation, unexpected cost-increases or lower levels of service use can be modelled and understood.

It is also important to highlight, as the Dutch example shows, that evaluation methods frequently change and develop in robustness in line with the increasing magnitude of an initiative, or its stage of development. Very detailed and costly evaluation methods are often inappropriate for small projects or for preliminary feasibility studies. The primary benefits of more detailed e-government evaluation include:

- A more robust framework for comparing investment decisions or projects within and between agencies.
- A better understanding of the drivers of project efficiency or factors enhancing return on investment.
- A better understanding of the costs, benefits and beneficiaries of different types of projects.
- A better understanding of whether higher-level projects produce more benefits and/or have greater costs.
- A positive contribution to evaluating the efficiency and effectiveness of e-government programmes.

Box 4.1. Findings from the Dutch and Danish case studies

Netherlands

The Ministries of Transport and Economic Affairs in the Netherlands have worked with Dutch economic research institutes for a number of years to investigate the impact of major infrastructure projects. These projects are known to affect markets throughout the economy and every effect is systematically estimated using cost-benefit analysis. Effects that cannot be expressed in monetary terms are reported separately.

The information produced by cost-benefit analysis is useful at almost every stage of policy preparation. In the early stages of infrastructure projects, decisions are supported through a broad approach to analysis. Before final decisions are taken, a thorough cost-benefit analysis is carried out. The analysis is an iterative process in which quantitative details and improvements are accumulated as research progresses. Risk aversion is incorporated into the analysis by increasing the discount rate, above the usual value of 4%. In this way less weight is given to benefits that lie further in the future.

Denmark

The development and use of business cases and evaluations in the Danish public sector is at an early stage. In the past the development of some government projects was not based on business cases.

The Digital Taskforce and the Ministry of Science, Technology and Innovation are starting to develop suitable tools and a more systematic approach to e-government evaluation. Best practice is being established through cross-sector projects that involve many different organisations. The taskforce has developed a financial business case tool as well as a cost-estimation tool and made it available to the public sector through their homepage (www.e.gov.dk). The reason for the explicit focus on financial information was the urgent need to alter previous methods and establish evidence of the economic benefits in project evaluations.

Towards a methodology for evaluating e-government

Why develop a methodology to evaluate e-government?

The development of a robust common methodology to evaluate and compare benefits and costs of different e-government projects can assist in the development of better practice and more effective e-government. This section provides an overview of evaluation activities undertaken in OECD countries, the different methodologies employed and the common problems encountered. A simple equation with supporting checklists of key items for consideration in the preparation of e-government business cases, or the evaluation of projects has been produced by drawing together key elements of the methodologies used by different countries (see Annex 4.2).

E-government evaluation activity and methods in OECD countries

Nearly half (14) of OECD member countries have evaluated the impact of their e-government projects and policies. Many countries have only begun their evaluation activity in the last two years. Table 4.1 provides an overview of activities in each country.

Table 4.1. E-government evaluation activities in OECD countries
Type(s) of e-government evaluation employed

Country [1]	Active in e-government evaluation	Non-economic assessment methods [2]	Economic assessment methods [2]	Source
Australia	Yes	KPI	NPV, ROI, VA	NOIE (2003)
Austria	Yes	Benchmarking		Federal Chancellery (2004)
Canada	Yes	Capacity check	VA	OECD (2002)
Czech Republic	Yes	Benchmarking		e-Czech (2004)
Denmark	Yes		NPV	e-government workgroup of the Directors General (2002)
Finland	Yes	KPI	CBA	OECD (2003)
Germany	Yes	KPI		Information Society Germany 2006 (2003)
Italy	Yes		CBA	E-mail reply for this study
Japan	Yes			E-mail reply for this study
Netherlands	Yes	KPI		www.elo.nl
New Zealand	Yes	KPI	NPV, Financial analysis	States Services Commission (2003)
Poland	Yes	KPI		ePoland (2003)
United Kingdom	Yes	Benchmarking	BA, NPV, CBA	OGC (2003)
United States	Yes	KPI	ROI, NPV, CBA, IRR, VA	IAB (2003)

1. Evaluation activities for Belgium, France, Greece, Hungary, Iceland, Ireland, Korea, Luxembourg, Mexico, Norway, Portugal, Slovak Republic, Spain, Sweden, Switzerland and Turkey not available.

2. BA = breakeven analysis; CBA = cost benefit analysis; IRR = initial rate of return; KPI = key performance indicators; NPV = net present value; ROI = return on investment; VA = value assessment methods.

Source: Various published studies and responses to OECD requests for information.

Table 4.1 reveals the range of methods used in OECD countries' evaluations of e-government. Most countries appear to begin by developing methodologies that focus on single e-government projects.

Towards a common framework for evaluation

It is possible to develop an approach or methodology for examining e-government in two ways. One is to start from scratch, and the other is to use the common or best features of existing methods. The latter approach is adopted here. An OECD questionnaire used in preparation of this chapter sought the views of those that have evaluated e-government costs and benefits on the technical and practical opportunities and problems associated with the development of robust approaches for undertaking this work.

Based on the questionnaire and the review of existing studies and approaches to e-government evaluation, it was agreed by an OECD expert group that met to discuss this subject that, at the most basic level, the costs and benefits of e-government can be simply represented as:

(Government benefits + User benefits) - (Government cost + User cost) = Cost/benefit impact

Annex 4.2 provides a checklist for unpacking and assessing each of the four elements of the above equation. The equation is applicable to both *ex ante* preparation of business cases for investment in new e-government initiatives, and *ex post* evaluations of the costs and benefits of existing ones. Robust evaluation also requires consideration of risk factors that might cause a project to fail or not reach its full potential. Checklists for evaluating three risk factors – business impact risks, technical risks and change and uncertainty factors – are also provided in Annex 4.2. An *ex-ante* study needs to consider these risk factors in order to avoid or to minimise impact. Only when the predicted benefits outweigh the potential risks should a project commence.

Table 4.2 shows the range of methods used by different countries in their evaluation of e-government. The complexity and comprehensiveness of these methods increases as the table progresses towards value assessment methods. Transaction cost methods provide a relatively quick and easy way to estimate potential cost savings related to e-government projects. The method appears to offer a good compromise between the two, often contradictory, components of any evaluation: rigorous assessment and practical reality. Further details about the transaction cost methodology can be found in Annex 4.3.

Most countries undertaking evaluation have used simple return on investment metrics such as net present value, internal rate of return, savings to investment ratios (see Table 4.1). Such studies tend to focus government costs and benefits, perhaps because they are "controllable" and because it is easier to gather the relevant data.

More complex methodologies developed by countries such as Australia, Finland, the United Kingdom and the United States incorporate methods for estimating costs and benefits to users. The calculation of user costs and benefits (Annexes 4.2.2 and 4.2.4.) is much more complicated owing to problems in producing a monetary or other value for issues such as better service quality or savings of user time.

Table 4.2. E-government evaluation methodologies

Method	Description	Use
Transaction costs	Uses segmentation methods to calculate use and benefits to different user groups	Quick and easy way to estimate potential cost savings from the introduction of e-government
Net present value	A straightforward method that examines monetary values and measures tangible benefits	Relatively straightforward; use when cash flows are private and benefits tangible
Cost benefit analysis	A flexible method that measures tangible and intangible benefits and assesses these against net total cost	Good consideration of all benefits, but can be expensive and time consuming
Cost effectiveness analysis	Focuses on achieving specific goals in relation to marginal costs	Good for considering incremental benefits against specific goals
Portfolio analysis	A complex method that quantifies aggregate risks relative to expected returns for a portfolio of initiatives	Good for consideration of risk, must use a consistent approach across a portfolio
Value assessment	A complex method that captures and measures benefits unaccounted for in traditional ROI calculations	Used by several governments to consider performance against all policy goals

Several governments (such as Australia, Canada, the United Kingdom and the United States) have lengthy documents describing how e-government user costs and benefits can be calculated. These documents deal with technical issues such as valuation techniques, discount rates and additionality.

Many of the evaluation methodologies currently used are based on the *Demand and Value Assessment Model*, the *Enhanced Framework for Management*, the *Value of Investment Methodology* and the *Value Measurement Methodology* used respectively by Australia, Canada, the European Commission and the United States,.

The Australian case study (Box 4.2) describes how and why the value assessment method was developed and implemented in Australia. The purpose of the Australian approach is to define, capture and measure value associated with electronic services unaccounted for in traditional ROI calculations. It also fully accounts for costs, and identifies and considers risk.

Box 4.2. Australia's decision to use the value assessment methodology

The Australian government believes that investment in e-government should deliver tangible returns, whether in the form of real cost reductions, increased efficiency and productivity, or improved services to business and the broader community.

As a first step to measuring the benefit-cost ratio, the Australian Government Information Management Office (AGIMO) developed the Demand and Value Assessment Methodology to assist agencies. The methodology provides a consistent framework for measuring the social and financial benefit-cost ratio and for alignment with broader government and agency objectives for existing and proposed government online programmes. It also provides managers with a framework for determining and then for assessing, on an ongoing basis, the intrinsic worth of online and government online programmes provided as integral components of their overall service delivery strategies.

The components of financial, economic and social benefits flowing from e-government services are documented in a demand and value assessment framework handbook.

All four approaches are slightly different, but nearly all incorporate aspects of traditional business theories and methodologies, as well as newer hybrid approaches (CIO Council, 2002). Important factors for value assessment (Rimmer, 2003) include:

- Economic factors, including agency costs, efficiency and revenue, all provide for a net economic impact.
- Consumer financial value, including user costs, efficiency for users and direct cost savings.
- Social economic value, including increased consumer financial participation in the economy.
- Social factors, including increased education or health outcomes, better access to jobs.
- Whole-of-government benefits that offer increased transparency and accountability.

The New Zealand case study (Box 4.3) demonstrates that value assessment methods can be used to analyse solutions to problems prior to implementation. Their use is not restricted to simple *ex post* studies of impact.

Box 4.3. The *ex-ante* application of the value assessment methodology to authentication

The New Zealand government recognises that to deliver many kinds of government services on line agencies need a way to ensure that these services go to the right person and come from an authentic source. Authentication and safe online transactions are important in achieving many of New Zealand's e-government goals.

An all-of-government approach to authentication has been deemed essential. Owing to the magnitude and complexity of this objective a comprehensive value assessment methodology has been used to investigate the business case for online authentication. The Cabinet established an Authentication Project that has consulted widely with citizens and directors of all government agencies. During a thorough six-month study, the value assessment methodology was used to appraise different solutions and provide the vision, solution and implementation steps required to create an all-of-government approach to authentication.

It would obviously be imprudent to propose a best or generic methodology. Evaluation methods must be selected to match the resources available for evaluation, the magnitude of an initiative, and individual country circumstances. In addition, many countries are developing and adapting their own methodologies. Annex 4.2 provides comprehensive checklists of the costs and benefits examined in the e-government

evaluation studies carried out by OECD countries. However, it would be inappropriate to prescribe a specific methodology for examining these factors.

E-government evaluation: additional problems and opportunities

It is important to consider some of the practical problems that have arisen in evaluation studies, because they highlight issues that need to be considered by those who undertake evaluation at agency, country or international level.

One major challenge relates to treatment of the potential costs and benefits of additional organisational changes that may have to be implemented alongside the direct development of e-government initiatives. This is an important factor that should be considered in both individual and aggregate or comparative evaluations of e-government. E-government initiatives often involve cooperation, coordination and collaboration across service or agency boundaries. This is frequently accompanied by organisational restructuring or business process and IT systems reengineering. It is difficult to break down the allocation of the direct and indirect (or spillover) costs and benefits of such initiatives, either to government or users.

In the United States and the United Kingdom there is evidence that both public and private sector projects that involve this type of change produces greater rewards (*e.g.* higher NPVs), partly due to positive spillover effects (Harris and Katz, 1989; Brynjolfsson and Hitt, 1998; IAB, 2003). However, the adoption of a common evaluation methodology makes it possible to compare projects in which e-government activities have been undertaken in isolation, with those in which accompanying changes (such as restructuring or re-engineering) have also been introduced. This creates an opportunity to identify and leverage opportunities for achieving increased benefits or reduced costs related to the spillover effects of e-government initiatives.

Another challenge which may be important to consider when undertaking e-government evaluations of cross-government projects is how to evaluate and account for costs that are sustained by an agency funding an e-government project and benefits that are diffused across government (sometimes called the "sow/harvest" problem). This issue presents a significant challenge to e-government, as it can impact unevenly on the incentives that government agencies face to involve themselves in multi-organisation e-government initiatives. Finding ways to consistently evaluate these costs and benefits can assist governments in creating optimal incentives for collaborative e-government.

Another opportunity arising from robust evaluation of e-government costs and benefits is that can enhance transparency in government as it highlights where savings (or enhanced revenue) have been achieved by e-government projects and increases the cost of 'dishonest' behaviour (such as obscuring efficiency gains in order to retain savings from e-government projects). Greater transparency in this regard may enable governments to introduce incentives to enhance savings, and methods to regulate the retention of savings by agencies.

Benefits and beneficiaries

E-government evaluation: analysis of benefits and beneficiaries

Many OECD countries contributed reports and data derived from evaluation studies which have been used in the elaboration of this chapter. It was possible to adopt a common approach to analysing the data provided by some OECD countries and thus to compare evaluation results, quantify costs and benefits, and investigate who receives benefits and bears costs.

The UK case study (Box 4.4) demonstrates the value of undertaking aggregate analysis to realise benefits and help define the key drivers for e-government efficiency.

Box 4.4. Undertaking aggregate analysis of the benefits and drivers of e-government

The United Kingdom has undertaken an aggregate review of the business cases for around 30 high-impact e-government services. These services were provided at a variety of levels of sophistication on the OECD maturity model. A common framework for analysis was agreed. A Treasury handbook outlining protocols for evaluation was supplemented by an e-government template, toolkit and guidance notes.

A key objective of the study was to highlight the need to focus on the realisation of benefits. When a business case was completed successfully, it resulted in a high-quality proposal that identified clear and auditable benefits that could be tracked through to their realisation. Performance could then be changed or enhanced to ensure the realisation of benefits. When business cases did not exist (or were undertaken poorly), key performance indicators were rarely identified, no baseline values were collected, no evidence of impact was sought and efficiency and performance remained obscure.

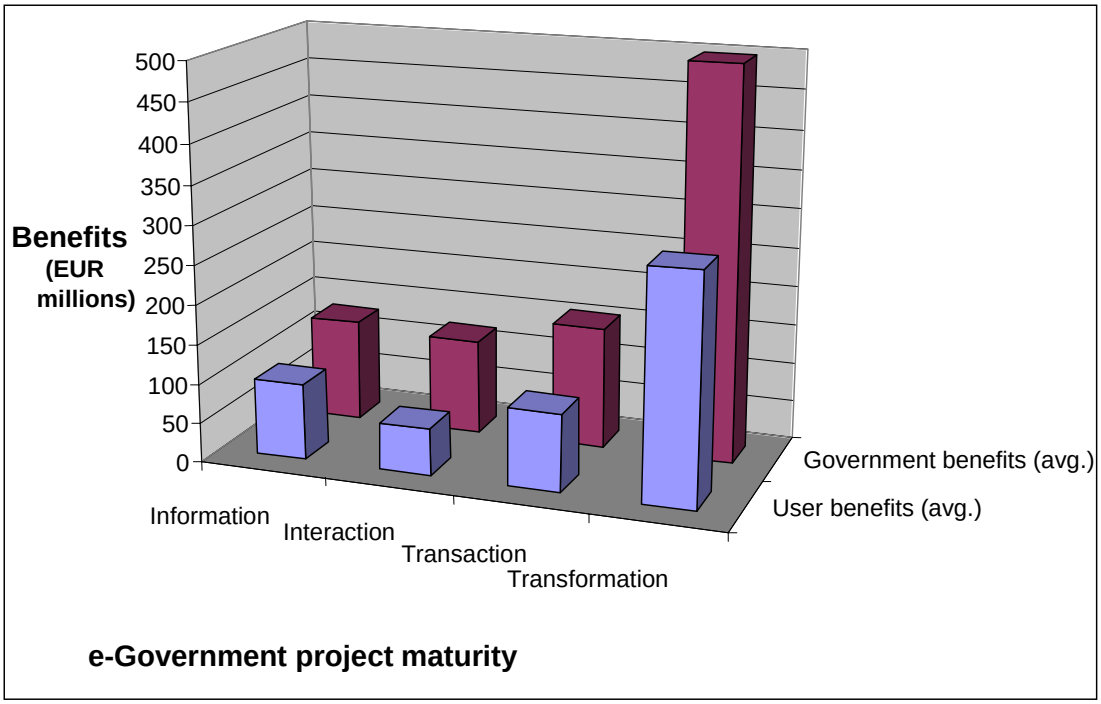
Figure 4.1 shows the magnitude of benefits and beneficiaries derived from a comparison of 28 e-government services using a very thorough cost-benefit plus net present value (NPV) methodology to examine costs and benefits to government and users. The e-government projects were divided into the four levels of the OECD e-government maturity model (information, interaction, transaction and transformation). The projects analysed included citizen and business taxes, benefits applications, company registration, e-voting, driving tests and hospital and doctor appointments.

The average level of benefits for government and users from projects at each level of sophistication are shown in Figure 4.1. Benefits for both groups clearly arise for all projects. However, the average value of benefits for government is greater than for users at all levels of sophistication.

Of the projects compared, those at higher levels of the e-government sophistication model achieved greater benefits more quickly than projects at lower levels. The NPV of transformation projects was more than 100 times greater than that for low-level projects. The average payback period for low-level projects was eight years, compared to only four years for transformation projects. Transformation projects produced benefits more than three times greater for government and users than projects at any of the other three levels of sophistication.

Higher benefits and faster payback periods were thought to arise for higher-level projects because they automated back-office operations and were less dependent on user adoption.

Figure 4.1. The distribution of benefits for users and government for e-government projects at different levels of sophistication



Conclusions

The need for robust methods to examine the benefits of e-government

It has been observed that the next stage of e-government activity is likely to involve the development of lower-profile services, the joining up of back-office activities and IT systems and the integration of e-government programmes across organisations at all levels of government and beyond (OECD, 2003; IAB, 2003). These developments will provide users with "one-stop" sources of government information and services. They should also enable government to operate more efficiently and effectively.

The amount of complexity and change associated with these more advanced e-government developments will be considerable. High up-front costs may make integrating processes, programmes and systems appear uneconomic, while organisational barriers to change present a daunting challenge. Future costs and benefits will be less apparent to policy-makers than even those arising from the limited number of impact studies already completed (OECD, 2003). It is therefore important to highlight the present costs and benefits of e-government, and to develop robust studies of the overall impact of e-government projects.

This chapter has outlined the range of methodologies that OECD countries have used to evaluate e-government projects. Comparison of methods used in many countries has made it possible to develop clear checklists (see Annex 4.2) of the factors that can used for measurement, valuation and risk assessment when developing, comparing or auditing business cases for e-government initiatives. These factors provide a sound basis on which agencies or national governments can develop their own evaluation methods.

Better use of evaluation in e-government will have several benefits, including:

- A robust framework for comparing projects within and among agencies.

- The establishment of auditable figures supporting greater transparency.
- A better understanding of drivers for successful e-government projects.
- A better understanding of the beneficiaries of different types of projects.
- A positive contribution to evaluating the efficiency and effectiveness of e-government programmes.

Finally, using a robust methodology this chapter has shown for the first time that considerable benefits for both government and users arise from e-government projects at the transformation level of e-government, and that these benefits are more significant than those arising from less advanced initiatives The results of this study and future evaluations will be important in providing evidence that the more complex transformational e-government projects that are likely to become more common in future achieve the objective of creating better government.

ANNEX 4.1

BENEFITS FROM E-GOVERNMENT PROJECTS PROVIDING SERVICES AT DIFFERENT LEVELS OF SOPHISTICATION

Four tables show the benefits identified in studies of e-government impact. Results are presented by grouping together e-government projects that focus on each of the four levels (information, interaction, transaction and transformation) of the OECD maturity model.

Table 4.1.1. The impact of information projects

Project	Activity	Economic benefit
Centrelink, Australia	Information service for citizens, started in 2001.	Breakeven over two years. AUD 8.9 million benefit after four years
District of Columbia Business Resource Centre	Business resource centre. Savings by rationalisation of some services.	Saves USD 1.8 million a year
Information Network of Kansas (INK)	State portal of more than 215 000 pages, 90% free, 10% have fees.	Nine years after creation revenue is more than USD 7 million a year.
Iowa Single Contact Repository	Delivers information to the public. Cost USD 277 000	Saves USD 264 000 a year
MyFlorida.com	Search engine that reduces the number of calls to the state's call centre.	Saves USD 1.5 million a year, reduces call centre calls by 1%
New Jersey Portal	Virtual gateway to government information	2.7 million hits per day
North Carolina Security Portal	Gives 24/7 information on ICT security issues to ICT personnel. Cost USD 160 000	Saves USD 2.2 million a year
State of Kansas	Online job listings, enhances job searching, reducing benefit payments.	Saves nearly USD 9 million a year in unemployment compensation
US one-stop for business legal information	Federal government initiative to assist with businesses' legal compliance	Businesses will save at least USD 275 million annually

Table 4.1.2. The Impact of interactive projects

Project	Activity	Economic benefit
Australia: e-tax	Tax returns can be filed on line	AUD 15.5 million in accrued benefits by 2004 over a five-year period
Colorado Secretary of State Business Centre	Provides business-related information and allows online document filing	Saves USD 2 million a year
Hertfordshire County Council, UK: Services Online	Undertakes queries with customers on line instead of face to face	Reduces transaction costs from GBP 4 per transaction to GBP 0.10 per transaction
Kansas State online nursing license renewal	Delivery of services and information to users	Reduced phone calls by 90% over five years
Massachusetts Educator Licensure and Recruitment Initiative	Streamlined the state licensing process	Saves USD 1.6 million a year
Missouri e-grants	Delivery of services and information to the public	86% reduction in processing time; 360% in technical support
Missouri Internet Online Claims Filing	Unemployment insurance claims can be filed on line	Potential savings of USD 61 250 a year
Nebraska's UIConnect	Delivery of services and information to users	Saving USD 361 000 a year to employers and USD 63 000 to government
Singapore: Tax e-filing	Tax returns can be filed on line or over the phone.	Saves SGD 20 million a year
Virginia Employment Commission (VEC)	A USD 250 000 system that enables claimants to key in unemployment insurance information on line.	USD 821 000 operational savings, USD 6.5 million savings for claimants.

Table 4.1.3. The Impact of transaction projects

Project	Activity	Economic benefit
CAL-Buy Online Procurement System, US	State of California's procurement project, saving USD 37 per purchase	Cost savings USD 9.7 million a year
Colorado business centre	Delivery of services and information to businesses	USD 2 million a year to businesses
Consip e-procurement project, Italy	Italian government procurement project. Provides savings of up to 30% on goods	Savings on administrative costs estimated to total ITL 1 500 billion in 2001
eMaryland Marketplace	Procurement project	Saves USD 100 per purchase
GSA Advantage!™, US	Federal government's online acquisition programme	Closed six of eight distribution centres and forward supply points in 2001
Iowa single contact repository	Delivery of services and information to the public	Saving USD 132 000 a year to employers and USD 132 000 to government
OGC, UK: E-tendering	Allows tendering to take place on line	GBP 13 million savings over 4 years. Reduces costs to suppliers by GBP 37 million
ServiceArizona	Allows citizens to register vehicles. Online processing is about USD 4 less than a counter transaction	Saves more than USD 1 million a year

Table 4.1.4. The impact of transformation projects

Project	Activity	Economic benefit
Idaho Paperless Online Personnel and Payroll System	Integrated payroll system costing USD 1.65 million	Saves USD 430 000 a year in administration and another USD 75 000 a year in printing
The Dolphin project, Ohio	Automation of the Ohio Bureau of Workers' Compensation scheme, cost USD 15 million	Saves over USD 120 million a year
Washington State Combined Application programme	Combined the benefit programmes of a few agencies, cost USD 400 000	Saves USD 6.37 million a year
Wisconsin Workers' Compensation Insurers' Web Reports	Enables administrators and insurers to have real-time access to compensation claims	Saves over USD 1.5 million a year

ANNEX 4.2

CHECKLISTS TO EVALUATE THE ECONOMIC CASE FOR E-GOVERNMENT

Chapter 1 provides a simple framework for investigating the economic case for e-government:

(government benefits + user benefits) - (government cost + user cost) = cost/benefit impact

Four checklists (1.A2.1 to 1.A2.4) document the constituent items of the above equation. These items should be considered in any investigation of the costs and benefits for established e-government projects. In addition, checklists for three risk factors – business impact risks, technical risks and change and uncertainty factors – are provided in checklists 4.2.5 – 4.2.7. These should also be included when developing an *ex ante* assessment or business case for future e-government projects. The checklists are adapted from a number of sources, most notably:

- Office of Government Computing (2003), Measuring the Expected Benefits of e-Government
- CIO Council (2003), Value Measuring Methodology: How-to Guide

Finally, the draft checklists were discussed by participants at the OECD Expert Meeting on the Business Case for E-Government, 17 September 2004 in London, who provided considerable input into these final versions.

4.2.1. Checklist of benefits to government

Direct cash benefits

- Greater tax collection, revenue
- Reduced fraud
- Reduced travel costs, field force expenditure
- Reduced publication and distribution costs
- Lower fines to government from international bodies
- Additional revenue from greater use of commercial services and data (*e.g.* use of electoral roll data)
- Additional revenue from newly available services and newly charged-for services
- Reduced need for benefits, *e.g.* through faster job searches
- Reduced costs through the need for reduced physical presence

Efficiency savings (monetisable benefits)

Time savings

- Reduced processing through common standards for data and processes
- Time saving of public servants
- Reduced error rates, re-work, complaints

- Reduced need for multiple collections of data from single customers
- More flexible working hours

Information benefits

- More accurate, up-to-date and cleaner data and more reliable information
- Capacity for greater information sharing across government

Risk benefits

- Improved risk management
- Improved security and fewer security breaches

Future cost avoidance

- Lower costs for future projects through shared infrastructure and valuable knowledge
- Reduced demand for service (through better information provision), *e.g.* health
- Reduced need for future government capacity expansion
- Encouragement of increased take-up of other e-services

Resource efficiency

- Reduced redundancy through integrated systems
- More effective use of existing (e and non-e) infrastructure and reduced capacity wastage

Other non-monetisable benefits

Improved service delivery

- Enhanced customer service
- Improved service consistency and equality
- Improved user satisfaction
- Improved communication
- Greater take-up of entitlements
- Improved reputation and increased user trust and confidence
- Integrated view of customer

Enhancements to policy process

- Enhanced policy alignment and outcomes
- Better information to facilitate policy making

Enhancements to democracy

- Increased user involvement, participation, contribution and transparency

Allows more, greater and new data to be collected

Improved security

4.2.2. Checklist of benefits to users

Monetary benefits

- Price reduction of charged-for service, avoidance of future price increases
- Reduced cost of transmitting information – phone, post, paperless interactions, etc.
- Reduced travel costs
- Reduced associated costs (*e.g.* professional advice, software tools, equipment, etc., predominantly for businesses)
- Revenue generating opportunities for citizens, businesses and intermediaries

Time-based non-monetary benefits

- Reduced user time (hours saved)
- Reduced need for multiple submission of data for different services and events
- Reduced travel time
- Reduced user time (hours saved)

Value-based non-monetary benefits

- Quicker response
  - Reduced application processing time (elapsed time saving)
  - Improved response time to events
  - Improved interactive communication, particularly between government and remote communities
- Improved information
  - More reliable and up-to-date
  - Faster and easier access
  - Transparency (*e.g.* status of "live" applications)
  - Can be live or real time
  - Enhanced democracy and empowerment

- Improved reliability
  - Reduced error rates
  - Greater confidence and certainty of transaction
  - Service consistency
  - Overall reliability
- Choice and convenience
  - Range of access channels – increased choice and ease of access
  - Greater user convenience (24/7 service delivery)
  - Decrease in abandoned transactions and complaints
- Premium service
  - Extra tools and functionality for users
  - Improved customer service
  - Personalised service
  - Service integration

4.2.3. Checklist of costs to government

Market planning and development

- Business planning and options analysis
- Market research
- Due diligence and plan audit
- Tendering

System planning and development

- Hardware
- Software licence fees
- Development support
  - Programme management
  - System engineering architecture design
  - Change management and risk assessment
  - Requirement definition and data architecture
  - Test and evaluation
- Design studies
  - Customer interface and usability
  - Transformation or business process redesign
  - System security

  - User accessibility
  - Data architecture
  - Network architecture
- Other development phase costs
  - Facilities: offices, office equipment, etc.
  - Travel

System acquisition and implementation

- Procurement
  - Hardware
  - Software
  - Customised software
  - Web hosting
- Personnel
  - Additional programme management
  - Internal communications
  - Process redesign
  - System integration
  - System engineering
  - Test and evaluation
  - Data cleaning and conversion
- IT training

System operations and maintenance

- Hardware
  - Maintenance
  - Upgrades and replacement
- Software
  - Maintenance
  - Upgrades
  - Licence fees
- Telecoms network charges
- Operations and management support
  - Programme management
  - Operations

  - Back-up and security
  - IT helpdesk
- On-going training
- On-going monitoring and evaluation
- Other operations and maintenance

Financing costs

Market and process implementation

- Personnel
  - Internal communications
  - Training
  - Redeployment
  - Customer helpdesk
  - Call centres
- Marketing and communications
- Customer inducements and rebates
- Legal advice

4.2.4. Checklist of costs to users

- Direct costs
  - Computer hardware and software
  - Computer operations and maintenance
  - Telecoms and Web access charges
  - IT training and support
  - Digital signature setup
  - Printing forms and information
- Time factors
  - Web search
  - Reading time
  - E-mail and form completion
  - Phone time

4.2.5. Checklist of business impact risks

- *Impact on business processes (includes changed processes)*: Impact that the project will have on the organisation (during development and after implementation).

- *Impact on government services at implementation*: Impact that the project will have outside the organisation, for example on other agencies, the public and businesses during development and after implementation.

- *Impact on other projects and changes*: Degree to which the project is dependent on and connected to other projects and changes.

4.2.6. Checklist of technological risks

- *Technological dependence*: Dependence on new technology or new methods.

- *Degree of innovation*: Extent to which the project involves innovative solutions and staff experience to deal with innovation.

- *Impact and integrity with legacy systems*: Degree to which the project will need to develop interfaces to existing systems and data.

- *Security*: Robustness of physical and technological security controls.

- *Scope of IT supply*: Extent of IT consultant and supplier activity, support and maintenance now and in the future.

4.2.7. Checklist of change and uncertainty factors

Change management	Uncertainty
Culture change required (e.g. working practices)	Inexperience in dealing with third-party suppliers
Leadership direction	Dependence on third-party suppliers
Management resistance	Use of untried methods
Lack of staff experience and inadequate training to accommodate change.	Time constraints and critical deadlines
Lack of motivation	Economic or market changes
Poor communication with appropriate staff	
Lack of responsiveness to change	

ANNEX 4.3

THE TRANSACTION COST METHODOLOGY

The best source of information about the transaction cost methodology is the report by the Office of Government Computing (2003), entitled "Measuring the Expected Benefits of e-Government".

The transaction cost methodology is comprised of three key elements:

1. Calculation of the cost of a traditional process.

2. Calculation of the cost of an e-government process.

3. Forecasting customer take-up.

To calculate the cost of an existing or traditional process it is necessary to:

1. Identify each step of the transaction.

2. Identify the cost associated with processing each step of the transaction.

3. Understand how these costs will fall as the number of transactions using the existing process declines.

4. Using 2 and 3, calculate how the total cost of processing transactions will decrease as the number processed falls.

To calculate the cost of an e-government process it is necessary to:

1. Identify each step of the new process.

2. Identify the cost associated with processing each step of the new process.

3. Understand how these costs will fall as the number of transactions using the new process increases.

4. Using 2 and 3, calculate how the total cost of processing transactions will rise as the transactions processed in this way grows.

By breaking a transaction down into discrete steps, it is possible to estimate the time saved by e-enabling a process. The UK government (OGC, 2003) used this method to assess savings from e-enabling the retirement pension process. The process was broken down into eight transaction steps; for each, estimates were made for the time taken before and after e-enablement (Table 4.3.1.)

Table 4.3.1. Step-by-step time savings for retirement pensions

Transaction step	Step description	Current time (mins.)	e-enabled time (mins.)	Saving (%)
1	Pre-claim activities	32	13	59
2	Build claim	32	16	50
3	Resolve claim issues	25	18	28
4	Award pension	1	0	100
5	Decide	29	15	48
6	Finalise payment	3	1	67
7	Post award action	16	12	25
8	Pay claim	21	20	5
	Total	159	95	40

Source: OGC (2003), "Measuring the Expected Benefits of e-Government", p. 26.

The method acknowledges that users and their requirements are not identical; some applications require more human judgement and intervention. Nevertheless, it is possible to focus on "typical" or "straightforward" transactions. The important thing is to make reasonable assumptions about which transaction elements will, for the majority of claims, be transformed by the introduction of an e-government project.

Having identified transaction elements, it is then possible to estimate the costs of performing each transaction step. Tables 1.A3.2 and 1.A3.3 illustrate how these costs can be calculated.

Table 4.3.2. Example of the cost of an existing process

Cost element	Variability
Postage	GBP 0.25 per transaction. Not required if transaction carried out electronically.
Payment processing	Cheaper processing of payments; saving of GBP 0.10 per transaction.
Staff cost of processing transaction, dealing with enquiries, training, etc.	One processing staff member freed for every 2 000 transactions received electronically. Average saving of GBP 18 000 a year per person
Indirect costs (finance, human resource functions associated with relevant activity, head office overheads)	One administrative staff member freed for every 50 processing staff released. Average saving of GBP 18 000 a year per person
Cost of running legacy systems or other overheads associated with traditional transaction channel.	Total cost of running these systems is saved when old channel is completely switched off. Saving of GBP 4 million a year

Source: OGC (2003), "Measuring the Expected Benefits of e-Government", p. 27.

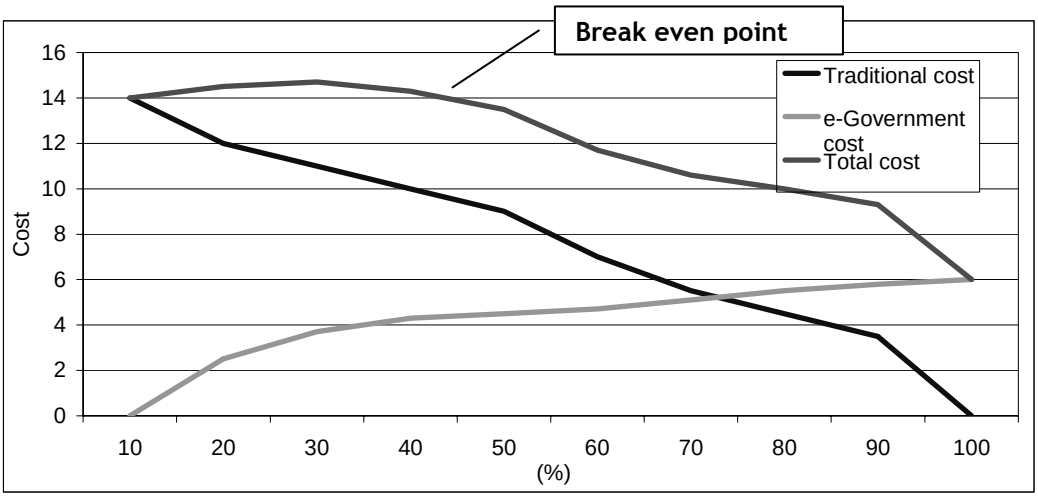
Table 4.3.3. Example of the cost of a new e-government process

Cost element	Variability
Cost of setting up and running IT systems	Fixed cost of GBP 2 million a year regardless of take-up.
Marketing/ raising awareness of new channel	GBP 5 000 a year for first 3 years.
Staff cost of processing transactions and dealing with enquiries, training, etc.	One member of staff required to process every 4 000 transactions.
Indirect costs (finance and human resource functions associated with relevant activity)	One member of administrative staff required for every 50 processing staff.
Security costs (*e.g.* costs of providing digital certificates)	GBP 5 per transaction.

Source: OGC (2003), "Measuring the Expected Benefits of e-Government", p. 27.

To calculate cost savings and the break-even point it is necessary to calculate the cost of running the new e-government project and the existing process at varying take-up levels. Adding the two together and plotting the results enables a break-even point to be calculated (Figure 4.3.1).

Figure 4.3.1. Example of cost savings and break-even calculation



Source: Adapted from OGC (2003), "Measuring the Expected Benefits of e-Government", p. 28.

Figure 4.3.1 provides an example of cost savings based on the percentage (between 0% and 100%) of customers who use the new e-government service. The rate at which users start using a new online service will affect the internal benefits and costs that an e-government project is able to realise (and the benefits derived by users). This will have a major impact on the rate of return or the net present value of an e-government project. Take-up differing substantially from forecasts is one of the biggest risks confronting any e-government project.

For many existing e-government projects, the proportion of customers already using the e-government channel can be known and forecasts of future use can be more robustly calculated. As a result, take-up (on the x axis) in Figure 4.3.1 can be replaced by a time line to plot take-up over time (probably a number of years). Analysis and forecasts of take-up using a time variable make it possible to calculate the rate of return or net present value of an e-government project.

Several countries have developed segmentation methodologies to forecast future use of e-government projects. For each customer segment, data are collected and forecasts are made of the number of people that have access to the channel (*e.g.* Internet, digital TV, mobile phone, etc.) for the e-government service. These data are usually collected by government statistics departments. Data for the proportion of each segment using the e-government service are collected and forecast. Data and forecasts for each segment are then combined to estimate take-up for the entire population.

Take-up trends usually follow an S-shape, with demand picking up slowly at first, accelerating as the bulk of customers adopt the service and then slowing as usage saturates and late adopters finally begin to use the service.

NOTES

10 This chapter is based on a paper prepared by the OECD by Professor Paul Foley, de Montfort University, UK and Shazad Ghani, UK

11 Foley, *Beyond Benchmarking: Investigating the Real Benefits, Beneficiaries and Value of e-Government,* to be published in the journal Public Money and Management, January 2005.

BIBLIOGRAPHY

Access to documents quoted in the bibliography that are in the public domain can be found at www.iecrc.org/businesscase.

Brynjolfsson, E. and Hitt, L. (1998) Beyond the productivity paradox. Communications of the ACM, 41(8), 49-55

Cabinet Office (2000) Successful IT: Modernising Government in Action – A review of major government IT projects (Cabinet Office, London)

Canada Chief Information Officer Branch (2003) An enhanced framework for the management of information technology projects. http:/www.cio-dpi.gc.ca/emf-cag/framework/emf_technology_projects01_e.asp (last updated 16 December 2003, accessed on 13 May 2003)

Cap Gemini Ernst and Young (2004) Online availability of public services: How is Europe progressing? (European Commission; DG Information Society, Brussels)

CIO Council (2003) Value measuring methodology: How to guide (CIO Council, best practices committee, Washington)

Danish Government (2004) The Danish eGovernment Strategy 2004-06: Realising the potential (Digital Task Force, Copenhagen)

eGovernment Workgroup of the Directors General (2002) Value creation in eGovernment projects - An exploratory analysis conducted for the Danish presidency of the eGovernment workgroup of the Directors General (eGovernment Workgroup of the Directors General, Stockholm)

European Information Services (2001) European Commission: Information society in the service of social inclusion. Tech Europe, p106

Foley, P. (2005) The real benefits, beneficiaries and value of eGovernment Public Money and Management 25, 1

Foley, P; Alfonso, X; Fisher, J and Brown, K (2003) Connecting communities: Tackling exclusion (LDA, London)

German Federal Government (2004) BundOnline 2005 http://www.bund.de/Service/English/BundOnline-2005-Model-Projects-.6131.htm (last updated 5 May 2004, accessed on 5 May 2004)

Harris, S.E. and Katz, J.L. (1989) Predicting organizational performance using information technology managerial control ratios. In Proceedings of the Twenty-Second Annual Hawaii International Conference on System Sciences, January 1989 (Computer Society Press, Los Alamitas, CA), 197-204.

HM Treasury (2003) The green book: Appraisal and evaluation in central government (TSO, London)

Intergovernmental Advisory Group (2003) High payoff in electronic government: Measuring the return on eGovernment investments (US General Services Administration, Washington)

Ishaq, A. (2001) On the global digital divide. Finance and Development, 38 (3), pp. 44-47

Katz, J: Rice R and Aspen, P. (2001) The Internet 1995 – 2000. American Behavioural Scientist 45 (3) pp. 405 - 419

Kenyon, S. (2002) Could virtual mobility help to alleviate mobility-related social exclusion? Transportation Research Group, <http://www.trg.soton.ac.uk/vm/> (last updated 14 March 2002, accessed on 13 April 2002)

London Development Agency (2001) London's economic development strategy: Success through diversity (LDA, London)

Millard (2004) Reorganisation of government back-offices for better electronic public services Paper presented at 4th European conference on e-Government. Dublin Castle, Ireland 17-18th June 2004

Ministry of Informatics, Czech Republic (2004) State Information & Communications Policy e-Czech 2006 http://www.micr.cz/dokumenty/default_en.htm (last updated 5 May 2004, accessed on 5 May 2004)

National Office for the Information Economy, Australia (2003) eGovernment Benefits Study (NOIE, Canberra)

OECD (2003) eGovernment Studies: Finland (OECD, Paris)

OECD (2003) The eGovernment Imperative (OECD, Paris)

OECD (2004) The economic impact of ICT: Measurement, evidence and implications (OECD, Paris)

OGC (2003) Measuring the expected benefits of eGovernment (Office of Government Computing, London)

PAT 15 (2000) Closing the digital divide (Cabinet Office, London)

Poland Ministry of Scientific Research and Information Technology (2003) e-Poland: The Strategy for the Development of the Information Society in Poland 2004-2006 (Ministry of Scientific Research and Information Technology, Warsaw)

Ramrayka, L. (2002) Society: Bridging the divide - Susan Scott-Parker, head of the Forum on Disability, The Guardian, pp. 11

Rimmer, J (2003) Measuring the impact and benefits of eGovernment Cisco Public Services Summit, Stockholm; 9th December 2003

Small Business Administration (1999) Management issues in a paperless environment Inspection Report No. 99-06-01 (SBA, Washington)

Sorenson, A. (2001) Promoting public health through electronic media: A challenge for schools of public health. American Journal of Public Health, 91 (8), pp. 1183-1185

Standish Group (2001) Extreme chaos report (Standish Group, West Yarmouth MA)

State Services Commission, NZ (2003) Business case for implementation of a secure electronic shared workspace for government agencies and stakeholders (State Services Commission, EGovernment Unit; Wellington)

Treasury Board of Canada (2003) Connecting with Canadians: Pursuing service transformation (Government On-Line Advisory Panel, Ottawa)

CHAPTER 5

E-GOVERNMENT CO-ORDINATION[12]

Introduction

Achieving the full potential benefits of e-government requires governments to be able to act from a whole-of-government perspective. Yet public administrations in many OECD countries have deep traditions of agency independence, and new public management reforms have also led to disaggregation of the public sector. The advent of e-government has led many countries in a direction of reintegration of some government processes (as described in chapters two and three) and of re-engineering of other processes to incorporate a user-focused and whole-of-government perspective. Even as some processes are coming together, digitalisation has allowed government's interface with users to becoming increasingly "dematerialised", further increasing the need for back office co-ordination in order to assure seamless and responsive service delivery (Dunleavy, 2005).

But there is no "one size fits all" solution to the queston of how best to co-ordinate e-government. While governments share common challenges they are starting from very different points in terms of e-government and administrative development, and they need to find solutions adapted to very different sets of circumstances. This chapter starts by examining the need for co-ordination and then looks at OECD country approaches to the co-ordination of e-government at the national level. It is based largely on reports provided by OECD countries on how they co-ordinate their e-government initiatives in the light of their broader socio-political and historical context of administrative development. The chapter offers operational definitions of centralised and decentralised modes of co-ordination, as well as some possible models for classifying country approaches, so that countries can identify others whose circumstances are most similar to their own and therefore most likely to provide a useful reference point for comparison and lesson sharing. It points to trends in the structure of national bodies for promoting and co-ordinating e-government, and based on the available information, identifies the key actors, their roles and the co-ordination mechanisms available to them. Finally, it suggests directions for additional data collection and analysis.[13]

When is co-ordination needed?

Before describing countries' co-ordination arrangements, it is first useful to consider when co-ordination is needed. Co-ordination should not be viewed as an objective pursued for its own sake, but rather as a means to achieve government objectives. In an e-government context, pressures for a user-focused and seamless approach to relations with citizens and other users of government require both co-operation and collaboration between organisations in government (see box 5.1). When viewed in terms of achieving increased organisational maturity (see box 5.2), as organisations become more mature, they increasingly need to work with other units both inside their own organisation and elsewhere in government. At an early stage of maturity, ICT is an important tool for improving efficiency, but as organisations become more mature (and hence more complex), the role of ICT also evolves to enable inter-organisational linkages, and with it, the need for e-government co-ordination.

Box 5.1 Definition of terms[14]

Co-ordination: Joint or shared information ensured by information flows between organisation. "Co-ordination" implies a particular architecture in the relationship between between organisations (either *centralised* or *peer-to-peer* and either *direct* or *indirect*), but not how the information is used.
Co-operation: Joint intent on the part of individual organisations. "Co-operation" implies joint action, but not their relationship with one another.
Collaboration: Co-operation (joint intent) together with direct peer-to-peer communications between organisations. "Collaboration" implies both joint action and a structured relationship between organisations.

A framework for understanding organisation's needs for co-ordination, co-operation and collaboration

Following the 5 stage organisational maturity model presented in box 5.2, an important step is taken when organisations move from being "system-oriented" to "chain-oriented" in terms of their structure, functioning, skills and capabilities, culture and management. This step involves them in widening their view beyond their own internal organisation and organisational borders to encompass their external environment. Co-operation and collaboration with other organisations in the value-chain is required in order to maximise overall performance and, consequently, the value provided to both customers and taxpayers.

Co-ordination is an important tool for central government to promote co-ordination and collaboration, but, in and of itself, it is insufficient to deliver a user-focused approach to service delivery that exploits the channels that users want and that acts with a minimum of redundancy and duplication.

Box 5.2: E-Government Can Improve Government at Each Stage of Organisational Maturity

Based on the ways in which organisations transform inputs (capital, labour, goods, and information) in order to deliver results supporting their goals, organisations can be classified into five stages of organisational maturity.[15] Elements of this 'organisation' are the arrangement of processes, the necessary labour skills, type of management and financial control. The five stages are:

1) **Activity-based:** In this stage, the organisation focuses on the individual activity. Situations are dealt with in an ad hoc manner, and people think in terms of loose products. The organisation is still a functional hierarchy. There is no solid strategy or policy. ICT tools can increase the efficiency of transactions by simplifying data-entry and improving the client interface.

2) **Process-oriented:** In this stage the organisation attempts to further improve efficiency by focusing on the processes that lead to products. The organisation begins by identifying and standardising, to the extent possible, each step in production, and processes themselves are refined and improved based on evaluation. ICT can promote organisation-wide efficiency by developing a common language for processes, resulting in more modular, interchangeable procedures. This also improves service delivery by facilitating a common look and feel for online government services and ensuring greater ease of communication and transaction across government agencies (interoperability).

3) **System-oriented:** In this stage, the organisation looks at how it can systematically improve itself at all levels. Customer focus is the main focus for strategy and policy, and provides a focal point for organisation of services rather than around departmental structures. The organisation begins to think about the governance arrangements of connections between the various processes. ICT can be used to further improve communication among agencies, and the virtual integration of online and back office processes provides citizens with a seamless government experience.

4): **Chain-oriented:** The organisation strives together with partners in the value-chain to maximize added value. Governance systems are connected with each other in order to promote innovation. Outsourcing of ICT systems allows governments to focus on their core competencies, while public-private partnerships allow the public and private sectors to share the risk of developing new solutions.

5) **Excellence and transformation:** Continuous improvement is embedded in both the organisational structure and the organisational culture. For example, greater customer-empowerment can be achieved when citizens have more control over their relation with government. E-Government at this stage incorporates: 1) a more permeable provider-user interface as citizens and business use online tools to serve themselves; 2) internal and external feedback mechanisms to allow organisations to learn from their experiences and 3) the networking of government organisations with a common set of electronic resources and data to improve responsiveness and a whole-of-government perspective.

Being part of a complex organisational environment will naturally require many agencies to develop higher levels of organisational maturity. This model does not suggest every organisation should strive to get to stage 5. Rather, an organisation's "appropriate" state of development is heavily influenced by the environment in which it operates.

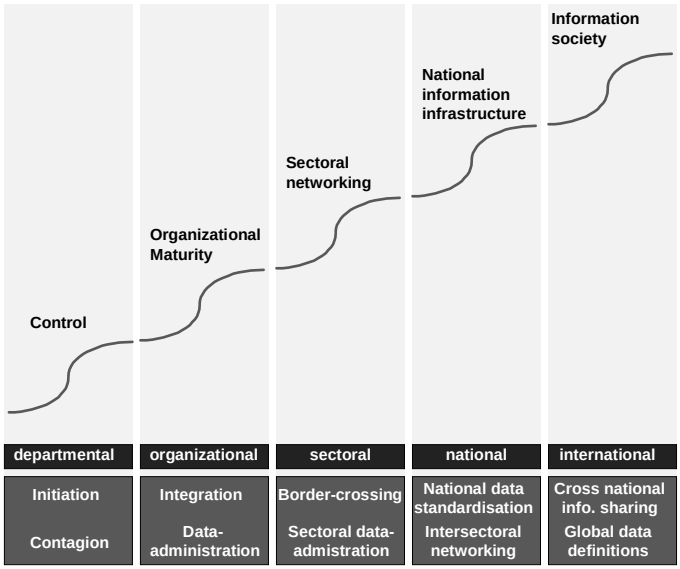
E-government and levels of complexity of information flow

Just as organisations have stages of organisational maturity, the increasing complexity of information flows, and therefore the need for co-ordination, can also be demonstrated in stages. In the early 1970s, in an article in the Harvard Business Review, Richard Nolan introduced a model of stages of electronic data processing (EDP) growth. According to Nolan, the use of ICT took place in six stages. The first three and the last three stages each combined into S-curves. In the first S-curve, growth of ICT use was rapid, but every department within the organisation developed its ICT systems separately. This is called 'island automation' since, being purpose-specific and based on different technical standards, systems cannot be connected, either technically or with regard to their data. The knowledge and expertise of IT staffs also tends to be fragmented at this stage.

The second S-curve is reached only with introduction of organisation-wide information strategy and policy that is aligned with the overall business strategy. A functional architecture and data model tend to become the basis for development of the ICT infrastructure. Standardisation of functionality, data, and technical infrastructure are introduced, potentially enabling the IT department to deliver a higher quality of products, with declining TCO (total cost of ownership).

In the mid 1990s, three additional S-curves were added to this model, in recognition of the fact that organisations were starting to co-operate with regard to their ICTs, either out of choice or necessity (Cavaye e.a, 1998; Zuurmond, 1998). Co-operation mostly starts within a particular sector. Recently, OECD countries' ICT and e-government strategies have been aimed at stimulating the development of more standardised use of ICT throughout all governmental sectors at both national and, increasingly, international levels. In certain areas, international co-operation already exists with regard to shared ICT-components. An early example of this might be the introduction of the ISBN numbers, which make every book with an ISBN traceable. The 10-digit ISDN-system for telephone-numbers, the European standard for banking numbers, or the technical standards for reading smart cards or digital signatures are also examples of this international co-operation. The five stages are visualized in figure 5.1:

Figure 5.1: E-government development leads to increasing complexity of information flows (Nolan+-model)



Source: Zenc.

This model complements the four-stage model presented in *The e-Government Imperative* (OECD, 2003) and by other e-government observers which lays out four levels of complexity of e-government service delivery. The Nolan+ model, however, adds a crucial external dimension. In a rapidly globalising world, electronically-enabled administrations need to look beyond their own boundaries in order to efficiently and effectively deliver both their core (primary) processes and to ensure the secondary processes that support them (see also Chapter 3: *Approaches to Common Business Processes*). Of course, the use of the Nolan+ model should be accompanied by a recognition that the situation of an organisation influences the way it should organise its ICT. In other words, not all organisations need strive to achieve the last stage if it is not relevant to their mandate and circumstances and not called for as part of some overarching government vision or strategy.

Governements can simultaneously be at several different stages of complexity of information flow. In fact, high profile and high budget service areas of public service such as taxation and health seem to consistently be at a relatively advanced stage of e-government development, regardless of the overall development of e-government in a country. This, however, can lead to a seeming dilemma: while a decentralised approach may be the best way to respond to the diverse needs of organisations at different stages of e-government development, it may reduce ability of individual organisations to maintain optimal levels of co-operation and collaboration for their stage of development, as well as limiting organisations' ability to situate their actions within a whole-of-government perspective. From the perspective of central government organisations responsible for overall e-government development, a more centralised approach may promote co-operation and collaboration and a whole-of-government perspective, but may do so at the cost of increased organisational rigidity.

Centralisation or decentralisation?

Whether in regard to e-government or any other aspect of public administration, centralisation is not "better" or "worse" than decentralisation. Central bureaucratic administration "is capable of attaining the highest degree of efficiency and is "…the most rational known means of exercising authority over human beings as it is precise, stable, stringent in discipline, reliable and calculable, and dominates through technical knowledge (Weber, 1968). Decentralised administration, on the other hand, can be crafted in flexible and innovative ways, relieves central congestion by bringing services closer to the intended beneficiaries, thus mitigating the perception of an unresponsive administrative apparatus, and it can lead to improved productivity and morale among staff (Furniss, 1975).

Centralisation is "indispensable to secure the advantages of organisation: co-ordination, expertise, and responsibility", but it also carries many costs (Simon, 1948). Yet decentralisation carries costs as well, and because each seems to offer advantages that the other does not (or put differently, because each has hidden costs), there is a real danger of oscillating between the two. First one decentralises to address the flaws of centralisation (unresponsiveness, stringency, impersonality), only to realise that there are flaws to decentralisation (inefficiency, inequity, lack of productivity), which then triggers a recentralisation (for better performance) which then triggers another decentralisation movement.

While some overarching concepts such as the subsidiarity principle (*i.e*. maintaining responsibility at the lowest possible level) will still govern how governments structure their administrations, centralisation or decentralisation should no longer be a matter of ideology, but rather of trying to achieve the most effective equilibrium to meet a government's objectives, given its context and history.

Once a country finds the institutional arrangement that best suits its needs the next question is what type of approaches it wishes to use to ensure the appropriate level of co-ordination.. The choice of co-ordination model is dependent on the overall institutional arrangement. In other words the governance arrangements of a country's e-government initiative can be described by looking at the three following questions:

What is a country's **institutional arrangement**? (centralisation or decentralisation?)

What a country's **co-ordination approach** (direct or indirect? centralised or peer-to-peer?)

What is a country's **level of control**? (mandatory or voluntary?)

Broad organisational approach to e-government

In an effort to understand what organisational arrangements are being used to meet the co-ordination, co-operation and collaboration challenges for e-government, the OECD asked countries to describe their institutional arrangements for e-government. In response to questions about their "broad organisational approach" to e-government, member countries' responses ranged from what may be called "pure" administrative control, when responsibility is placed under a single, existing ministry without specific responsibility for e-government, to "pure" political control, when control over e-government is located in or near the office of the head of government (Table 5.1). While such a distinction is a bit artificial, it can be an indicator of the approach governments take to introduce e-government-related changes.

Table 5.1. Broad organisational approach to e-government

←More administrative control				More political control→	
1	2	3	4	5	6
Ministry with specific responsibility for IT	Ministry of Finance[1]	Ministry of Interior/ Public Administration[2]	Ministerial board or shared ministerial responsibility	Unit/group created by or in executive office	Minister within executive office
Belgium Czech Republic Italy[3] Poland	Australia Canada Finland Ireland Sweden	Germany Greece Luxembourg Mexico Netherlands New Zealand Norway Spain	Denmark Japan Korea Switzerland	Austria France Hungary Iceland Turkey United Kingdom United States*	Portugal

Note: No information available for Slovakia.

1. Have shared budget/finance and public administration portfolios.
2. Interior (Germany, Greece). Public Administration (Luxembourg, Mexico, Netherlands, New Zealand, Spain, Norway),
3. The Italian Ministry of Innovation and Technology shares some e-government responsibility with the Ministry of Public Administration.

Source : OECD country reports (February 2004), updated through end-2004.

The organisation of e-government touches on arrangement of responsibilities for defining, implementing and monitoring e-government policy. Given that e-government has appeared relatively recently as a national issue, and given the horizontal nature of its impact, many countries have made e-government a specific portfolio to ensure that the national infrastructure is in place, to push lagging agencies, to promote interoperability through common standards or to promote take-up of electronic services. The fact that national e-government portfolios, where they exist, reside in a number of different ministries and/or involve various administrative arrangements implies that e-government does not have a natural "home". In only four of the 30 OECD countries is e-government in a ministry or agency that is explicitly responsible for technological issues (see Table 5.1).

The choice of location of the e-government portfolio may reflect more general tendencies: faced with a new challenge, a given government may have a preference about where it locates responsibility. While both political and administrative control can be wielded to ensure cross-agency co-ordination, placement of e-government responsibility in or near the centre does seem to have at least symbolic value in terms of visibility and as a display of political will. For example, the elevation of e-government to a "Presidential Management Priority" in the United States in 2000 was accompanied by the creation of a political position within the Executive Office of the President with responsibility for e-government policy development and implementation. However, strikingly few countries have ministries or offices solely devoted to information technology (IT) or the information economy, suggesting that e-government efforts are largely integrated into existing administrative and political structures.

Only about half of OECD countries stated unambiguously that their "national approach" was either centralised (Ireland) or decentralised (Finland) (Table 5.2), but even apparently unambiguous answers need to be examined closely. A nation may assert that its approach is "collaborative" (Austria), but its description shows an organisational structure providing for little decision-making autonomy at lower administrative or political levels. Conversely, a nation calling itself "decentralised" (Belgium) indicates a high degree of central co-ordination or oversight on strategy, funding and implementation. A country previously quite decentralised may now be centralising (Portugal), while a nation formerly quite centralised has now decided to move to a decentralised mode (Norway). Explanations may include backlash (relevant for Portugal and Norway?) or have to do with necessary political rhetoric (relevant for Austria and Belgium?).

Table 5.2. Is your national approach more centralised or decentralised?

Centralised	Austria, Greece, Ireland, Japan, Korea, Luxembourg, Poland, Turkey
Centralised policy or strategy decentralised implementation	Czech, Hungary, Iceland, United Kingdom, United States
Both/and, Neither/nor, mixed	Australia, Belgium, Canada, Mexico, New Zealand
Shared planning, decentralised implementation	Denmark, Germany, Portugal, Spain
Decentralised	Finland, Netherlands, Norway, Sweden, Switzerland

Source: OECD country reports, February 2004.

In other words, as many member countries report that their approach has elements of both a centralised and decentralised approach as report "centralised" and "decentralised" combined. The difference between those reporting "decentralised implementation" but "centralised policy or strategy" as opposed to "shared planning" is that "shared planning" means decision-making input from non-central administrative or political sources.

Box 5.3. Representative approaches (countries indicated in italics in Table 5.2)

Austria: Although though decision making appears corporatist and the periphery is to work with the centre in "a co-operative approach", the master plan, roadmap, finance, standards, organisational structure (e-Government Platform, e-Cooperation Board, ICT Board) and implementation (by CIOs in ministries) are centralised and hierarchical.

Ireland: The Information Society Policy Unit develops, co-ordinates and drives the implementation of public policy on Information Society issues; delivery is by Public Services Broker who provides integrated access to all services of government, multiple channel access and data security.

***Czech Republic*:** Policy making and strategy are centralised, project implementation is decentralised; the Ministry of Informatics has responsibility for drafting legislation and policies but its influence on specific projects at governmental, regional and local level is limited; it plays an advisory role in inter-ministerial projects.

***United Kingdom*:** Strategy is co-ordinated centrally, delivery of e-services rests with departments. The role of the e-Envoy is to remove delivery barriers and to provide policies, products and processes "which departments need developed centrally in order to succeed". For local government, central co-ordination is in the Office of the Deputy Prime Minister, but local delivery bodies are responsible for service delivery.

Belgium: Although its approach "cannot be anything else than decentralised," and it requires "permanent co-operation" between political levels and bodies, the fact that a state secretary oversees the Federal Public Service ICT which defines strategy, ensures consistency, helps departments elaborate and implement IT, provides funding, develops and maintains the national infrastructure and co-ordinates all levels of authority through a Co-ordination Group of Departmental ICT Managers who are responsible for service delivery (and that the emphasis is on "co-ordinated planning and programme management") suggests that the self-characterisation is inaccurate.

Canada: Approach is centralised in that a lead agency has responsibility for policy and funding decisions (single platform; integration of services) with the help of a steering committee at deputy minister level; it is decentralised in that individual departments and agencies have to decide how quickly their services will be available on line. It is centralised in terms of cross-government agreement for integrated portals but also because a CIO heads a central agency that administers policies and directives, sets targets, allocates investments and provides the policy framework; it is decentralised in that departments/agencies champion these sites (i.e. they are given the responsibility to see that they succeed).

Denmark: There is a joint board with permanent secretaries of six ministries (together with county and local political representatives), but there is functional division of administration depending on issue (if strategic, then joint board, if non-technical or organisational, then addressed by a Digital Taskforce). There is a strong tradition of local and regional government autonomy, and local government institutions have the responsibility to implement e-government, with linkage secured "by close co-operation, dialogue and agreements, and by the fact that the local government is directly involved in the Joint Board responsible for E-government".

Portugal: The country is in transition from an uncoordinated, decentralised to a collaborative approach and vision ("ICT is a means for better government") involving "centralised policy making and mostly decentralised implementation" with the central help of the Innovation and Knowledge Society Unit "strategically located in the Office of the Minister Adjunct to the Prime Minister's" whose job is to define strategic and operational policy, enforce co-ordination, monitor policy, manage the government portal, etc. Legislative and regulatory barriers are still an obstacle, but there is a focus on "service provision, efficiency gains, transparency and savings".

Netherlands: Approach is decentralised, little central legislation, political mandate or budgetary control, though there is some standardisation of key data and a growing willingness to co-operate between autonomous public bodies.

Norway: Has moved from "centrally driven plans to more laid back central management with agencies and local entities as the driving force. Currently the approach is very decentralised and there remain only a few instances where there is co-ordination." Some co-ordination on database sharing (register information), but also fear of centrally driven development and implementation projects.

Source: OECD country reports, February 2004.

Approaches to Co-ordination

The co-ordination arrangements that accompany and overlay structural arrangements depend on both government objectives and governing styles. The greater the complexity of information flows across government, the more there is a need for co-ordination mechanisms. As noted earlier, however, co-ordination merely sets the framework for collaboration, and, as such, is a necessary, though insufficient condition for collaboration. The mechanisms presented in Table 5.3 are not mutually exclusive, as governments may choose to use multiple approaches as part of their co-ordination strategy.

Table 5.3: Forms of E-Government Co-ordination

	Direct	Indirect
Centralised	National Chief Information Officer (CIO); E-Government Unit	Regulations, frameworks (i.e. enterprise architecture)
Peer-to-Peer	Inter-agency body (i.e. Council of agency CIOs)	Spontaneous information sharing; charters; voluntary agreements and MOUs

Co-ordination agents

Direct co-ordination most often takes the form of a co-ordination body (see box 5.4) or agent. OECD countries were asked whether they had a chief information officer (CIO), a position which has been used by many countries at both the ministry and government-wide level to act as a focal point for e-government implementation and to ensure co-ordination across agencies. Most indicated that they have a national CIO. Of the 13 countries that reported that they did not have a CIO, 11 were unitary governments, though most of these countries had functional equivalents in other forms (task forces, working groups, an IT ministry).

This may indicate that there is a trade-off between having a CIO and sharing responsibility among ministries: most countries reporting they had no CIO are in the middle three columns in Table 5.2.

The CIO can operate at both the organisation level as well as for the government as a whole. His/her role is to bridge the gap between a purely "technical", and oftentimes supply-driven, perspective and the planning and operational concerns of programme offices, in order to ensure the balanced overall perspective needed to effect change. The role of the CIO is also a leadership role. As discussed on the recent OECD E-Government Policy Brief, *"Checklist for E-Government Leaders"*, the role of the leader is essential in maximising the benefits of e-government. In terms of organising for integration, the roles of e-government leaders and co-ordinators include:

- Helping agencies define the service vision and ensuring consultation to determine citizen preferences.
- Selling the vision and bringing in stakeholders (including from the private sector).
- Defining the place of e-government: as part of the information society, as part of public management reform.
- Building coalitions and political support.
- Empowering users to take up new channels.
- Monitoring progress and ensuring accountability.
- Ensuring technological leadership by ensuring interoperability, standards, harmonisation, etc.

CIOs can be either career civil servants or politically appointed. In Western democracies over the course of the 20th century, the once separate roles of politicians and administrators have blurred. At the limit, politicians are still expected to articulate ideals and vision, and administrators are still expected to implement policy, but in the middle – where interests are brokered and policy is actually formulated – politicians and administrators now share responsibility, explicitly in some countries. Even the boundary between policy making and policy implementation is becoming increasingly indistinct as the two parts of the policy cycle experience ever more frequent feedback, interaction and adjustment.

Co-ordination Frameworks

While direct co-ordination mechanisms focus on actors, indirect co-ordination mechanisms focus on the regulations and agreements that structure co-ordination and collaboration. These can be both centralised, in the form of centrally developed frameworks (though often done in consultation with operational ministries and agencies) such as enterprise architecture, or peer-to-peer in the form of agreements that have been developed individually among ministries and agencies to help them to better work together.

Co-ordination frameworks are vital because they show how organisations' individual efforts fit into the overall whole and they reduce the number of *ad hoc* negotiation of issues as they come up, thereby ensuring a more equitable and consistent approach. In its OECD country paper, for example, Australia notes that "successful information sharing and service integration across and between jurisdictions is dependent on mutual agreement to overcoming hurdles that exist in legislation, governance and financial arrangements, as well as business processes".

Box 5.4. Changing e-government portfolios in response to changing needs

In 2004, a number of countries shifted responsibilities for their e-government portfolios. Each change reflects individual countries' needs given the point they have reached in developing e-government. These changes should be viewed as responses to cyclical and strategic policy needs and issues as they develop and implement solutions, rather than as absolute illustrations of "right" or "wrong" approaches. For example, some countries are shifting from more political to more administrative control in order to institutionalise e-government and lock-in the gains they have so far achieved (Portugal, Mexico). Other changes have been driven by an increased focus on e-government service delivery and take-up (Canada, UK) following periods of rapid development. In terms of tie-in with related policy areas, some countries have separated their e-government and information society portfolios (UK, Australia), while others have consolidated the leadership of these portfolios (Norway). Many countries are currently engaging in internal discussions about the impact of e-government on government in general and the consequences that this should have in how initiatives should be structured:

Canada: The responsibility for the Government-on-Line initiative was transferred from the Treasury Board Secretariat to Public Works and Government Services Canada in order to achieve efficiency gains from the integration with the information technology and other services now provided by the department. The CIO will continue to play a challenge role in the Treasury Board Secretariat.

Source: http://pm.gc.ca/eng/accountability.asp

Australia: The Australian Government Information Management Office (AGIMO) was incorporated within the Department of Finance and Administration six months after its creation by the Ministry for Communications, Information Technology and the Arts (DCITA). The focus of this agency was on promoting and co-ordinating the use of new information and communications technology for the delivery of Australian Government programmes and services. It absorbed that portion of the former National Office for the Information Economy (NOIE) which dealt with e-government. NOIE functions relating to broader policy, research and programmes were transferred to the DCITA to form an Office for the Information Economy (OIE) within the Department.

United Kingdom: A new Head of e-Government -- based in the Cabinet Office and reporting the Cabinet Secretary -- was appointed to support the Prime Minister's vision for public service reform. The task of this unit is to focus on ensuring that IT supports the business transformation of government in order to provide better, more efficient, public services. It replaced the previous e-Envoy's office and is responsible for five major tasks:

1. Delivering the existing Cabinet Office Public Service Agreement (PSA) target for electronic service delivery.

2. Defining and driving implementation of a government-wide information systems strategy to support the public sector reform agenda.

3. Defining the architecture, requirements, and standards, and be the intelligent customer, for common government infrastructure and services.

4. Providing leadership and guidance for the government IT community.

5. Acting as the Central Sponsor for Information Assurance.

Source: www.cabinet-office.gov.uk/news/2003/031215_headofegovt.asp.

Norway: A recent government reform (June 2004) transformed the Ministry of Labour and Government Administration into a Ministry of Modernisation, focusing its responsibilities on the public administration portfolio and giving it an explicit role as the co-ordinator of ICT policies across government. The reform, which reallocated strategic resources for ICT and e-government from MTI to the MLGA, focuses on making better use of ICT as a catalyst and tool for government reform. As the restructuring of the MLGA is in progress, full details of the change are needed to analyse its impact on e-government development in Norway.

Portugal: One of the measures of the new government which is prioritising the information society and e-government is to transform the Innovation and Knowledge Society Unit (Unidade de Missão Inovação e Conhecimento - UMIC), which has been responsible for e-government under the Presidency of the Council of Ministers, into a permanent government agency in 2005, under the Minister of State for the Presidency and with the participation of the Ministry of Finance and Public Administration.

Mexico: In 2003, the e-Government and IT Policy Unit was moved from the President's Office for Government Innovation to the newly created Ministry of Public Administration. It is responsible for policy-making and co-ordination regarding e-government.

E-Government Control: making co-ordination mandatory

While centralised co-ordination mechanisms are more likely to be mandatory and peer-to-peer mechanisms more voluntary, this is not always necessarily the case. For example, E-Day 1 and 2, national days established by Denmark's Joint Board of E-government set goals of having all government organisations be able to exchange documents electronically - first among themselves, and then with their users (citizens and businesses). While these objectives were not mandatory, through a combination of marketing, technical assistance and peer pressure the government was able to achieve a compliance rate of 95 percent.

The difficulty of getting government organisations to give up some elements of sovereignty in order to maximise overall returns for government provides a compelling argument for increased control. Those experienced with implementation issues, however, are well aware that mandatory initiatives do not guarantee successful outcomes. Mandatory requirements need to be accompanied by a compelling case (even if it is not in the individual best interest of an organisation), consultation all along the policy development process, a central authority with sufficient enforcement power, and possibly incentives to ease the process of change.

National context and institutional arrangements

One would expect that broader organisational structures and approaches would have a strong influence on e-government structures. The influence of institutional arrangements in democracies can be classified along two dimensions (Lijphart, 1999; see Appendix A): first the *federal-unitary* dimension (see box 5.5) addresses the geographical distribution of power in a country over a continuum. At one extreme is the unitary state in which the central government is much more powerful than local government and can direct the work of local government. At the other extreme is the federal state, which is composed of highly autonomous units; it is characterised by significant decentralisation and much autonomy for provincial, regional and local government.

The second dimension is the *executive-parties* dimension which concerns the way power is shared among institutions at the central level, especially the executive and the legislative. It also offers a continuum between two extremes: the *majoritarian state*, which is characterised by a concentration of power in one-party cabinets that dominate the legislature, and the *consensus democracy*, which is characterised by power sharing in broad, multiparty coalitions, with a greater balance of power between cabinet and legislature.

Box 5.5. Countries' unitary or federal structure plays a role in e-government structural considerations

For ***unitary*** nation-states, it is useful to distinguish between the delegation of administrative implementation and the transfer of political authority. In terms of structural responsibilities, there is a difference between "administrative" and "political" decentralisation:

- *Deconcentration* is administrative decentralisation: a central ministry transfers functions or transmits orders, delegating to lower levels the authority to implement or perhaps even make minor decisions independently. This is a tutelary step, taken partly for efficiency reasons, but it gives only a weak degree of independent authority.
- D*evolution* is political decentralisation: decision-making power itself, as well as the authority to choose, is transferred, typically to regionally elected representative institutions given the ability to generate independent revenue (albeit with power over a restricted range of policy areas). Devolution is a political and "de-tutelary" step, taken partly for equity reasons, requiring new (or altered) political institutions, jurisdictions and attitudes, and giving a strong degree of independent authority.

For ***federal*** nation-states, decision-making autonomy is built into the structure of government. The telling measure of federalism is whether some matters are exclusively part of the competence or authority at a level other than that of the national government. The vertical sharing of decision-making autonomy is ordinarily laid out in a national constitution which eliminates the need to transfer such authority from the centre explicitly.

Multiple levels of decision making do not necessarily imply greater decentralisation. A review of "political decentralisation" in 154 countries found that countries with more sub-national tiers of government are not more likely to decentralise decision-making power, financial or personnel resources or to elect local officials. "On the contrary ... the more tiers of government, the larger the proportion of sub-national officials who were appointed from above" (Treisman, 2002).

Decision-making autonomy

Institutional arrangements can also be measured in terms of a continuum of "decision-making autonomy": from most centralised to most decentralised. Their placement begins from their formally defined political structures, but these are less important than the autonomy they grant. For example, while Austria is formally federal, its constitution grants its *Länder* (federal states) little decision-making autonomy and it thus belongs towards the unitary end, while Spain, a formerly unitary structure, has been devolving autonomy to its regions and thus belongs more toward the federal end. Time of course plays a role in the evolution of these structures.

One can view this continuum in terms of three broad clusters (Table 5.4) defined as most centralised, balanced and most decentralised. These clusters demonstrate that countries can arrive at similar levels of decision-making autonomy, even when they have very different administrative arrangements. For example, the similarity between a unitary France that deconcentrates administrative power and a federal Austria that concentrates political power (col. 2 and 3) and the similarity between a unitary Spain that devolves political power and a federal Canada that concentrates administrative power (col. 5 and 6). It can be argued that as one moves away from the most centralised point on the continuum, power is first deconcentrated administratively, followed by successive levels of political autonomy. The converse is also true: the sub-national political autonomy granted lessens as one moves farther from the most decentralised end, and central administrative guidance increases.[16]

Table 5.4. A "decision-making autonomy" continuum

← More unitary — More federal →

Administrative autonomy increases→

and political autonomy increases →

1	2	3	4	5	6	7
Most centralised		Balanced			Most decentralised	
	Deconcentrated administration	Weak autonomy at sub-national level	Between centre and local	Devolved power to regions	Strong autonomy at sub-national level	
Czech Republic Greece Hungary Ireland Japan Korea Luxembourg New Zealand? Poland Slovakia Turkey	France Italy Portugal	Austria Mexico	Denmark Finland Iceland Netherlands Norway Sweden	United Kingdom Spain	Belgium Canada Germany United States	Australia Switzerland

Source: author

The place that countries inhabit within these continua may influence the chosen approach to e-government in different ways. To some extent, the national approach to e-government matches the basic political structure of the country (*e.g.* Greece or Turkey describe their e-government approach as unitary). But there is no lack of exceptions (*e.g.* federal countries employing centralised or mixed approaches, unitary countries employing decentralised or mixed approaches) and hence much overlap in the middle area. The same can be said with respect to the broad approach used: if one looks at the six countries that describe themselves as more decentralised, they are as likely to locate responsibility in a single ministry as in some form of shared ministerial responsibility or a task force, in other words, they reveal considerable presence in the middle of the spectrum.

A number of OECD countries are not readily classifiable as either centralised or decentralised. On the one hand, their constitutions and their political structures make clear that the national level dominates. On the other, in federal structures, there is often considerable independent political decision-making and administrative authority. For example, Sweden notes that "the national government rules the country, but local government decision-making is exercised by elected assemblies which have the right to levy taxes".

As Table 5.4 shows, the most centralised countries (col. 1 and 2: 14 countries or 47%) far outweigh the most decentralised countries (col. 6 and 7: 6 countries or 20%). In terms of formal structure, OECD countries are therefore predominately centralist (cols. 1, 2, 4, 5), as only 8 of 30 members are not centralised (adding cols. 1, 2, 4, 5 together). Yet in terms of power wielded at sub-national levels (cols. 4-7), nearly half of OECD countries (14) have a decentralised orientation because of their federal structures. On numerical grounds, it may be expected that a majority of OECD countries tend towards centralist administrative solutions, including for e-government, as this is their dominant mode for structuring government. At the same time, it is not surprising that many member states favour decentralist solutions of one kind or another as well.

Box 5.6. Denmark: Ensuring Multiple Perspectives at the Staff Level

The Danish Digital Task Force was established in 2001 with the aim of implementing the e-government strategy across all levels of government. While it is housed by the Ministry of Finance, it seeks to represent multiple perspectives by bringing in employees from various ministries and organisations, including the Association of Regional and Local governments.

In order to ensure that staff maintain the perspective of their home agencies, all staff are on loan to the Digital Task Force (typically for a period of abut 18 months) which has a temporary mandate that expires in 2006.

The impact of institutional arrangements on e-government approaches

When comparing national decision-making structures with e-government arrangements, knowing whether a country is unitary or federal does not seem to be a predictor of its approach to e-government. Conversely, knowing where a country locates responsibility says little about other decision-making autonomy in that country. For example, chapter 3 describes the approaches of seven OECD countries to the identification and organisation of Common Business Processes (CBPs). Whether countries are federal or unitary may explain how they identify CBPs. In a unitary state, the central government can be expected to take the lead in the identification of CBPs. In a federal state, this appears almost unthinkable, as central government has no authority to interfere in the business processes of local government. Therefore, identification of local CBPs can be expected to take place at a local level in a federal state.

On the basis of the country reports, however, the picture is rather ambiguous. For example, New Zealand and Germany, at opposite ends of Lijphart's federal/unitary dimension (Germany, federal; New Zealand, unitary), take a medium-systematic approach to the identification of CBPs. Further analysis suggests that this may be partly explained by the legislative barriers to central government involvement in

local government in New Zealand. The United States, a classic example of a federal state, takes a very systematic approach.

The position of countries on the executive/parties dimension of Lijphart's model seems to be a better predictor of behaviour. Once again looking at the example of Common Business Processes, a country with a strong majoritarian institutional arrangement will probably organise CBPs (once they are identified) in a more forceful way. Top government officials will prescribe how CBPs are to be organised and other, hierarchically lower, organisations will have to follow. Countries that can be classified as consensus democracies will engage in a process of consultation, and the opinions of all actors involved will be sought. Only when all agree on a method will it be implemented. This may also explain why certain countries take a long time to deal with the organisation of CBPs.

The country reports back up this relationship. The United States, for example, in keeping with its two-party "winner takes all" system has chosen to use the control approach to push changes through (though this is a relatively new approach in its e-government initiative). Korea (not included in Lijphart's study) may be seen as a majoritarian country and also takes the control approach. The Netherlands and Sweden take a *laissez-faire* approach that is more consistent with their political culture. A control approach would likely raise a lot of opposition from relevant organisations that enjoy a tradition of autonomy and do not accept "intruders" into their business processes.

However, there are some interesting exceptions. New Zealand, which Lijphart places towards the majoritarian end of the spectrum, takes a facilitating approach, although a control approach would probably be feasible given its political culture. This may indicate that political awareness of the importance of CBPs is low in New Zealand and that the e-government agency has a weak mandate. Alternatively, the influence of legislation on the state sector may offer a feasible explanation.

Germany and Denmark are also interesting exceptions. Both are consensus democracies but take the facilitating approach rather than the *laissez-faire* approach. This may also be due to the political awareness of and commitment to the identification of CBPs. These countries' governments have committed to identifying CBPs in the context of their e-government programmeme. They have mandated ministerial or high-level administrative boards to take decisions on this matter. Moreover, they use incentives to try to influence organisations to adopt CBPs. In these countries' political culture, a control approach would probably raise opposition from organisations. However, owing to the priority given to the organisation of CBPs, governments have chosen a stronger approach than the *laissez-faire* approach.

Structures are influential but not determinant

Existing political and administrative patterns (see Box 5.5) can either slow or speed the adoption of e-government. Unitary governments can devolve decision-making power, but may not do so, and federal nation-states can centralise e-government decisions even as they leave other decisions at lower political levels. However, although countries can certainly choose what works best for them, a degree of "tethering" limits movement: strongly federalised Switzerland will only centralise to the degree to which its decentralised decision-making structures will allow it, and the opposite will be true of strongly unitary Ireland.

A combined approach

Excessive concern over structure tends to focus attention on who has formal responsibility, rather than on the capacity of the overall administration to receive or react to information flows. As "information-processing capacity may increase power or reduce it to the point of paralysis" (Kochen and Deutsch, 1969), understanding such capacity becomes more crucial. As the contacts between organisations of an administration multiply, seeing power as a function of what is done with information (or communication) may simply be more important than formal structure.

In the "silo" (or vertical integration) image of government, information flows, with greater or lesser degrees of viscosity, up and down a hierarchical structure. The "network" image has multiple nodes of greater and lesser importance, and thus more omni-directional flows of information. Not all channels are of equal significance, however. For example, anyone with access to the Internet can obtain a continuous flow of information about current stock prices, and closing stock prices in Tokyo can serve as a guide to opening stock prices in London (and later New York). In contrast, a grain commodities exchange whose primary information about supply and demand is domestic better fits the “silo” image.

E-Government can be thought of as a continuum from static information provision and online presence, to interactivity, to development of dynamic networks that transform agencies (Melitski, 2003) or, alternatively, as a continuum from managerial to consultative to participative models of government (Chadwick and May, 2003). At the managerial end, government provides information to its users hoping that new technology will allow it to do so more cost effectively. Further along the continuum, interactivity is greater, as users can employ the technology to respond, typically to pre-determined matters such as filing taxes on line. As yet, no country has reached the “seamless” end, where top-down meets bottom-up (UN-DPEPA, 2002), and government becomes more transparent and open - a point that some governments may not wish to reach.

A focus on communication – where it comes from, who is involved, and whether that involvement includes decision making – may be a way to address what lies behind centralisation or decentralisation of e-government. To link communication to power it may be necessary not only to understand who participates in policy making and how, but also the direction of communication. To illustrate, two pairs of countries are contrasted: Austria with Switzerland, and Australia with New Zealand.

Austria and Switzerland

In keeping with its strong corporatist orientation, Austria has an e-Government Platform which involves "political representatives of all federal levels, specific Federal Ministers, the business and the social insurance sector and some experts", thus apparently ensuring wide participation. Yet while many stakeholders participate (in a manner not further described), responsibility and thus direction issue from the Federal Chancellery which lays down a roadmap (for common projects, financing, implementation, objectives, etc.) elaborated by an e-Cooperation Board, which is implemented by an ICT board composed of CIOs who ensure "the co-ordination and co-operation of the ministries". True, there is interest in "institutionalised co-operation" with regions and municipalities, but in the absence of indications that this co-operation in fact means decision-making input, the impression is that the direction is downward (or from the centre).

Neighbouring Switzerland, by contrast, relies on decentralised initiatives, strategic projects that are the responsibility of a specific ministry (only some of which even have a CIO), and a "strategy to provide e-services to citizens and businesses ... without changing the political and administrative system", in a system which even constitutionally gives broad authority to the lower levels of government. Even the national portal is a joint project of the Confederation, cantons and municipalities, and standardisation is carried out by an association with representatives from these three political levels, private companies, academia and professional associations. e-Government strategy is not a portfolio "funded and prioritised at a government-wide level" but a list of projects with "no specific responsibility for the review and approval" of such projects at the federal level. True, there is some interest in promoting and evaluating e-government, and there is an agency in the Finance Ministry "responsible for defining IT strategy, architectures and standards" for the federal government, but the pace of e-government "is decided upon at ministry or even agency level" and is thus reminiscent of many other aspects of Swiss public life.

Australia and New Zealand

Australia describes itself as not unitary (and federated rather than federal), with its government agencies "largely devolved", yet with an evident need to co-ordinate and collaborate that was reflected in the creation of the National Office of the Information Economy (NOIE), which was recently replaced by

the Australian Government Information Management Office (AGIMO) which retains responsibility for e-government. There is a single lead ministry (Communications Information Technology and the Arts), augmented by a government forum (the Online Council of Ministers, which includes ministers from each state and territory as well as the president of the local government association) that ensures strong regional representation at the political level. Strategy, however, is provided by an interagency committee (Information Management Strategy Committee – IMSC), co-ordination and promotion of decisions is ensured by the central agency (AGIMO), while working groups at the CIO level work on specific issues of a more technical nature and report to the interagency committee, and implementation is then carried out by individual departments and agencies. Participation is both vertical (Online Council) and horizontal (IMSC, CIO), with direction coming both from the top and from the bottom, or in short, an apparent bi-directional flow of information.

New Zealand, by contrast, pursues what one might call *laissez-faire* centralisation. Matters perceived as "common, generic or foundational to all agencies" (such as interoperability standards) are done in a uniform manner, but agency business is decentralised. e-Government does not merit a separate portfolio (though it is the responsibility of the Minister of State Services) and the Director of the E-government Unit situated in the State Services Commission (SSC) has no authority over how agencies develop or deliver e-government. Yet agencies must consult with the SSC over their alignment with the e-government strategy, and government understands the leveraging potential of "agreed e-government standards". New Zealand characterises its own approach as the "centralised creation of shared 'foundations'" and sees e-government "as an alternative to restructuring". Missing from this, particularly in comparison with Australia, are any intermediary bodies at regional, ministerial or agency level to provide input upwards, leaving the sense that while the centre might like to provide more direction, both the periphery (regions) and agencies remain unfocused (or can only be periodically brought together).

It may be useful to undertake comparisons initially as a contrast between what occurs at the political and what occurs at the administrative level. Thus, countries like Sweden (and New Zealand) permit wide latitude at administrative levels in part because e-government is not a specific policy matter but rather an aspect of reforming public management (restructuring in New Zealand, global policy in Sweden). This gives an unfocused direction even though the country may have a unitary political structure. Put differently: a lack of bottom-up participation in decision making leads to weak centralisation, or at least to a separation between local autonomy and central control. Australia, by contrast, where decisions, strategies and co-ordination at the political level provide guidance downwards, while administrative governance, investment and implementation provide input upwards from various bodies may be characterised as having a bi-directional mode. Countries like Austria pursue unidirectional top-down modes (though there may be some input from both vertical and horizontal levels). These examples, precisely because they seem to go the farthest in their respective directions, can be taken as poles towards which other countries gravitate to various degrees. If one then combines this idea of participation and direction of communication together with the earlier breakdowns, one arrives at a very tentative mapping of approaches to e-government in the OECD (Table 5.5).

Table 5.5. A tentative mapping of the OECD e-government universe

Communication type	**Pole 1** *Uni-directional*	**Pole 2** *Bi-directional*	**Pole 3** *Unfocused*
Exemplar country	Austria	Australia	Sweden
Self-placement of national approach			
Centralised	Greece Ireland Japan Korea Turkey	Luxembourg Poland	
Centralised policy/strategy decentralised implementation	Czech Republic Iceland United Kingdom	Hungary United States	
Neither centralised nor decentralised (or: both/and)	Belgium Canada Mexico		New Zealand?
Shared planning, decentralised implementation		Denmark Germany Portugal Spain	
Decentralised			Finland Netherlands Norway Switzerland

Source: author

Choosing what to co-ordinate: organising for better government

Examining e-government structures can reveal the approach and levers a country has chosen in order to implement e-government. It can also focus attention on areas in which a government feels additional effort is needed, be it in terms of collaboration, common standards or reducing the digital divide.[17] But structure alone does not tell the entire story. It is a valuable exercise to engage in the identification of goals before specifying the means. Yet until now, e-government has been a means whose ends remain hazy. Establishing a government portal and making it possible to pay taxes on line are relatively straightforward technical challenges for providing services to customers. To ask about control and co-ordination is to question the means without first establishing the goal (Is e-government about communication or about accountability? Is it about government or citizen communication or accountability?). The managerial idea that the ends structure the means will not help when the ends remain incompletely defined.

The goal of "better government" provides a framework for countries to focus on their own priorities without dictating what those objectives should be. In attempting to achieve "better government" the critical question is therefore not whether e-government initiatives in OECD countries should be centralised or decentralised, but what elements could be better aligned in order to achieve specific objectives. Chapter 2 ("Multi-channel service delivery") lays out a vision of how common elements or building blocks can enable seamless multi-channel services. As OECD governments seek to transform their administrations, the comparison of e-government structures should focus on the ability of government to deliver these common elements.

The ISBN example raised at the beginning of this chapter underscores the potential for ICT to align certain aspects of programmes or activities across agencies without necessarily integrating them. Standards-based ICT and information management allow government networking to be driven by policy considerations and objectives rather than by the technology itself. It also demonstrates the separation of technical and programme integration. Common technological standards can actually give agencies greater decision-making freedom in terms of how they deliver the programmes and services for which they are responsible.

"Whole of government" does not necessarily mean a "single" perspective, and indeed ICTs offer a range of possibilities for aligning government procedures without structural change. Rather than reorganising department and agency structures and responsibilities, for example, Canada has attempted to achieve seamless service by creating virtual departments around clusters of services for seniors, youth, job seekers, travellers, prospective immigrants, and so on, and new governance structures have been created to span existing departmental and agency structures. Korea has attempted to provide seamless service delivery without reorganising ministry and agency structures and responsibilities – but is developing seamless services through system implementation based on business overflows. For example, in Korea the existing 23 finance-related systems that were operating independently in various government departments have been interconnected and integrated into the National Finance Information System (NAFIS) without reorganizing relevant ministry structures and responsibilities.

The Swedish vantage point is that seamless services are to be delivered within the current organisational framework through co-operation between agencies, rather than a reorganisation of the administration. This is somewhat simplified by the fact that the central administration is relatively small (only 1% of state employees are in core ministries) and non-hierarchical, thereby facilitating co-ordination through existing channels. Similarly, Norway has provided seamless services to business through the establishment of a common channel (Altinn) and procedures for reporting company information to government. This is an example of co-operation between the Brønnøysund Register Centre, the tax authorities, and Statistics Norway in order to simplify the reporting burden placed on companies by government agencies.

Conclusion

Some countries believe that horizontal co-ordination across agencies suffices for a common approach to e-government – and those countries tend to have decentralised approaches to e-government strategy. Decentralised systems have succeeded based on broad guidance and a limited central role. Others believe that horizontal co-ordination is not enough, and government needs to work together as a single organisation to achieve simplified service delivery and greater efficiency. These countries have a more centralised approach to e-government organisation. To be able to work in this way, structural changes are needed, requiring the alignment of budget, regulations, structures and ultimately, the culture of the administration. Such change is difficult, and requires political will that may not exist. Still others believe that virtual re-organisation can achieve the same objectives by providing a co-ordination framework for collaboration. This chapter suggests three conclusions, most clearly at the limits:

- Relatively few countries are comfortable with a strongly unfocused communication approach, and those that adopt it (with the exception of New Zealand) allow considerable decision-making autonomy vertically, horizontally or both.
- Perhaps surprisingly, relatively few countries systematically pursue top-down unidirectional styles of communication with little participation in decision making. Even a country like Hungary, with a history of centralisation, engages in sectoral decentralisation and a dual approach in order to separate government IT from information society issues.
- Whether because of political structures that encourage sub-national decision-making (federally organised countries), or for practical administrative reasons (small administrative structures in

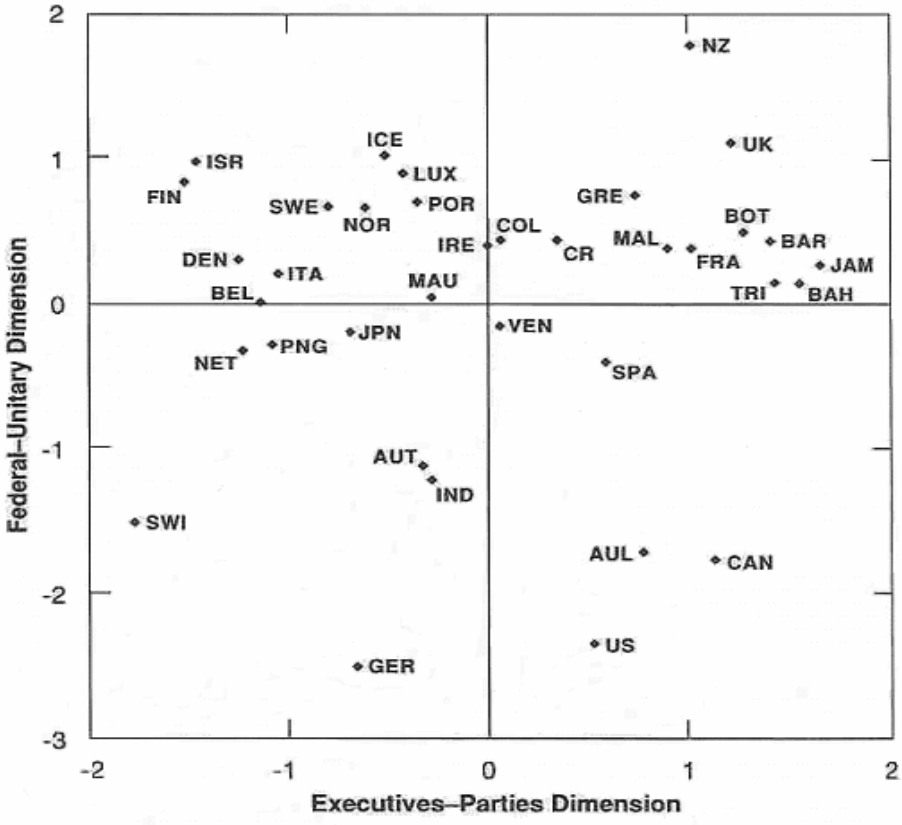
countries with small populations; desire to change highly centralised older structures), or for efficiency reasons (previously fragmented policy making), the predominant trend for e-government decision making in OECD countries is to mix and match communication and decision-making modes. This is true both for the self-reported dimension of centralisation and decentralisation, and for the direction of communication and participation in decision-making.

All OECD governments are mixes of decentralised and centralised elements, whether in delivery systems and levels of government, in public-private arrangements by sector or in implementation (Parsons, 1995). If a government wishes to promote decentralised e-government service delivery by agencies, it may come to realise that without centrally determined standards, separate units will "reinvent the wheel" independently or have horizontal communication problems because different agencies use different technologies. In fact, co-ordinating centrally some aspects of e-government may be an important, and necessary enabler for the effective decentralisation of implementation.

This mix and match approach means that countries that are looking to compare their own e-government approaches with those of their OECD peers can best do so by first placing themselves with respect to dimensions of participation and directionality, and to note the contrasts between those countries whose efforts are towards collaboration or co-operation in decision making (as in more structured Australia or less structured Switzerland) and those in which collaboration either has little effect or only functions for specific, more technical aspects (as in more structured Austria or less structured New Zealand). In fact, if a country is interested in changing its approach, one practical suggestion is to search for a fellow OECD member country with which it shares a number of characteristics and compare what they both are doing in this area.

APPENDIX A

Figure 5.2: Forms of Democracy



Source: Lijphart, 1999.

NOTES

12 This chapter is based on a paper prepared for the OECD by John Bendix of the University of Bamberg, and by materials prepared by Marco Meesters M.Sc and Pim Jörg M.Sc. of Zenc, a Dutch consultancy firm specialised in ICT innovations in the public sector (www.zenc.nl).

13 It is important to remember that this chapter only offers a point-in-time "snapshop" of countries' situation when they received the OECD questionnaire in February 2004 and that it is largely based on self-reported information which uses different categorisations and definitions and leaves some responses open to interpretation. In particular, because definitions were developed after the questionnaire was administered, there may be some discrepancy with the country responses.

14 Adapted from Parunak et al (2002).

15 OECD, adapted from INK model.

16 National placement is tentative but in broad accordance at least on the unitary-federal dimension with suggestions by Lijphart (1999) as well as Lane and Ersson (1999). It is in the middle that the situation is less clear, because a unitary nation-state deconcentrating is providing far less decision-making autonomy (or only providing it administratively) than a unitary nation-state that is devolving (*e.g.* France/Italy deconcentration vs. UK/Spain devolution). Likewise, moving from right to left, a federal nation-state that provides strong political autonomy for its sub-national units is doing so to a far greater degree than one that concentrates a near-tutelary power at the center (*e.g.* Germany/United States vs. Austria/Mexico). The table attempts to account simultaneously for dimensions of strong and weak, politics and administration, and federal and unitary, interweaving and separating at the same time.

17 This approach has its limitations. For example, in the OECD country papers, structures are identified but not mechanisms, the role of various actors is described in ways that do not make clear their participation in co-ordination, and countries include more or less (or no) information about how the current structures came to be. As one example, when one asks about the "primary responsibility" for e-government, one can only establish a nominal location or formal responsibility. Left unanswered is the content of that responsibility, as well as the intent in placing the responsibility there. As a result, one does not know what to conclude from the fact that one country places responsibility for e-government co-ordination in a specific ministry while another emphasises that this responsibility lies in an office close to the country's chief executive.

This ambiguity is not made easier by one country saying its approach to e-government is for a particular body to set policy, the next country saying its equivalent body provides guidance, and the third saying its responsible body co-ordinates strategy. This could well be three ways of saying the same thing – but it could also connote three different things. Even technical terms such as authentication protocols or interoperability may not be the same across countries, so one can begin with the suggestion that a standardised set of functional descriptors in a uniform survey instrument would ease this task of comparison. A key reason this matters is that many countries provide some variant of the answer "centralised policy, decentralised implementation" when asked what their national approach is, and that even though these countries are dissimilar otherwise in their political and administrative structures.

BIBLIOGRAPHY

Chadwick, A. and C. May (2003), “Interaction Between States and Citizen in the Age of the Internet”, *Governance* 16, pp. 271-300.

Dunleavy, P., H. Margetts and S. Bastow (2005), “NPM is Dead – Long Live Digital-Era Governance” (unpublished).

FAA (Federal Aviation Administration) (2003), "Organizational Design for the Terminal Business Service." Available at: www.faa.gov/ats/atb/ATBResources/Library/OrgDesign.htm.

Furniss, Norman. 1975. "Northern Ireland as a Case Study of Decentralization in Unitary States”, World Politics 27 (3), pp. 387-404.

Inglehart, R. and M. Caballo (1997), "Does Latin America Exist? (And is there a Confucian Culture?): A Global Analysis of Cross-Cultural Differences”, PS: Political Science & Politics, Vol. 30 (1), pp. 34-46.

Kochen, M. and K. Deutsch (1969), “Toward a Rational Theory of Decentralization”, American Political Science Review 63 (3), pp. 734-749.

Lane, J. -E. and S. Ersson (1999), Politics and Society in Western Europe, 4th ed., Sage Publications, London.

Lijphart, A. (1999), Patterns of Democracy, Yale University Press, New Haven, CT.

Melitski, J. (2003), "The World of E-government and E-governance”, Available at: www.aspanet.org/solutions/egovworld.html. See also http://newarkwww.rutgers.edu/pubadmin/TPA/TPA-Fall2003/e-govpresentation.ppt.

OECD (2003), “The e-Government Imperative”, OECD, Paris.

Parsons, W. (1995), Public Policy, Edward Elgar, Cheltenham.

Paunak, H. (2002), “Co-X: Defining what Agents Do Together”, Conference on Autonomous Agents & Multiagent Systems 2002, Bologna, Italy.

Roller, E.. (2001), “Die Leistungsfähigkeit der Demokratien. Habilitationsschrift (Politikwissenschaft)”, Freien Universität, Berlin.

Siaroff, A. (1999), "Corporatism in 24 Industrial Democracies: Meaning and Measurement”, European Journal of Political Research 36, pp. 175-205.

Simon, H. (1948), Administrative Behavior, Macmillan, New York.

Treisman, D. (2002), "Defining and Measuring Decentralization: A Global Perspective”. Available at: www.sscnet.ucla.edu/polisci/faculty/treisman/pages/defin.pdf

UN-DPEPA (2002), “Benchmarking E-Government: A Global Perspective”. Available at: www.unpan.org/e-government/Benchmarking%20E-gov%202001.pdf.

Weber, M. (1968), Economy and Society, Vol. 1, G. Roth and C. Wittich, eds., Bedminster Press, New York.

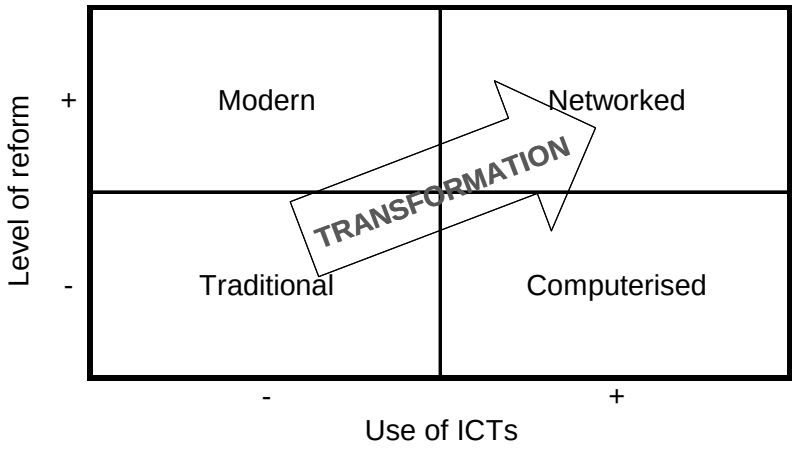
CONCLUSION

Introduction

Today, e-government is being increasingly seen as an enabler for a longer-term transformation of government that goes far beyond online service delivery. However, the introduction of ICT into public administrations does not, in and of itself, automatically lead to better government. The early assumption that putting more services online was always better led many OECD governments in the late 1990s to set numeric targets to put all services online within the first few years of the new millennium. Just as with the burst of the "dot.com bubble", however, e-government practitioners have learned that, without a value proposition, simply putting public information and services online does not automatically draw in new customers (or draw them in the desired numbers), or improve the way in which government does business in either the front or back office. Neither does it automatically increase credibility and trust in government.

In order to achieve transformation, organisations responsible for e-government have realised that the use of ICT in public administration must be accompanied by carefully considered reform and modernisation initiatives. Organisations responsible for broader public management issues, in turn, need to understand the potential of ICT, in order to harness e-government in support of government reforms moving government toward being a better-performing, networked, style of organisation..

Figure 1: Transformation through public sector reform and strategic ICT use



New pressures are requiring governments to base their investment and organisational decisions on evidence of value -- to government, citizens and businesses -- rather than on fixed certainties. Taking a user-focused approach to e-government (chapter 1) can provide a guiding principle for the design and delivery of services. A user-focus approach, however, has major organisational implications for service delivery. For example, multi-channel strategies (chapter 2) can enable a more cost-effective and coherent approach to service delivery through the co-ordinated use of ICT resources across service delivery channels, while enterprise architectures map out common business processes (chapter 3) in order to allow government to find ways to increase their productivity from a government-wide perspective. These approaches are challenging and require a better understanding of the cost and benefits of e-government. E-

government business cases (chapter 4) allow governments to determine and adjust e-government objectives and to hold initiatives accountable and on course. Achieving potential benefits will often require a whole-of-government approach, and governments are structuring their e-government initiatives and putting in place co-ordination mechanisms (chapter 5) that establish cross-linkages within government in order to make it more responsive and to break out of stovepiped ways of working.

Main Findings

This publication focuses on how to translate a vision of user-centred e-government into actual processes and approaches for achieving a more cost-effective administration. The report then looks at what is known to date in terms of e-government costs and benefits. Finally, it compares countries' approaches to co-ordinating e-government in order to achieve a whole-of government perspective.

Chapter 1: User-Focused E-Government

The first chapter looked at how governments can better direct their e-government initiatives in order to focus their efforts on the areas of highest value.

OECD countries agree that moving from a provider to a **user-centric focus** should be a major organising principle for e-government. Putting this into practice is much more difficult. One way to measure whether or not services are user-focused, (especially those being delivered through electronic channels) is to look at their take-up rates; focusing especially on the percentages of users with access to those services that are choosing to use them online.

In general, people see government as complex and unconnected: they do not know where to go for services and they do not often have contact with government. When receiving government services, users want minimum hassle, ease of access, and consistency. Increasing the take-up of an electronic service therefore requires that governments develop a real user **'**value-proposition' that can be used to both drive the design of the service, and to explain the benefits to users. Improving rates of take-up of electronic services demonstrates that their value to users is real, as users will only use them if they perceive that they receive a real benefit and not just because of abstract benefits.

Governments can change people's view of government by integrating users' needs for personalised services into their vision for service delivery. This requires an understanding of two things: first, there is a need to understand that the different roles that users are in when dealing with government (e.g. customer, subject, citizen etc.) have implications for how best to make a service effectively user-focused; second, it is important to recognise that developing user-focused e-government will have an impact not only on how online services are designed and delivered, but also on how their internal structure and operations are defined. To be truly user-focused, services should be organised around a holistic rather than an agency or service-specific view of the user, which requires increased co-ordination and collaboration among government agencies. This has numerous benefits - increasing the accessibility and usability of services, and providing a higher quality of 'experience' for users as well as greater efficiency.

Looking at the experience of OECD countries, elements of successful user-focused e-government can include the following:

- A single "all-of-government" site serving as a one-stop shop for e-government services, or a portal and/or website management policy that achieves similar outcomes.
- A strong "brand" for e-government services, supported by effective marketing campaigns to promote usage.
- An initial focus on areas where there is strong need, high demand, and clear priority for users, so as to provide high value, user-focused services, coupled with efficient use of resources.

- Common navigation and search architectures across all online content and services.
- Robust privacy and security arrangements.

These user-focused services and modes of delivery must be grounded in thorough user research. Constant feedback on usage and satisfaction can improve service development and delivery so that services better match user expectations. They are applicable not only to online services, but to agencies' overall business objectives, so that the organisation as a whole can learn from users' constantly shifting preferences.

But user research has its limits as people do not always know what they want or may not have an opinion on services that they have not yet experienced. The marketing of e-government services involves educating users as to the possibilities proposed by e-government as well as building a memorable brand in the users' mind and establishing trust.

Electronic channels can achieve both quality and programme savings if they increase take-up rates rather than simply enlarging the scope (and cost) of service delivery. A successful user-focus strategy should therefore lead to the migration of users from traditional delivery channels to new electronic channels, thereby creating a critical mass of users as well as achieving savings in traditional channels.

Chapter 2: Multi-Channel Service Delivery

The next chapter looked at one approach to making services more user-focused and efficient by focusing on how ICT can better support all service delivery regardless of the means by which it is delivered.

A **multi-channel service delivery** approach involves making better and more flexible use of the full range of government service delivery channels in a consistent and co-ordinated manner, supported by common back-office information resources and IT systems. By focusing on ICT as a catalyst and enabler for organisational change within government, a multi-channel service delivery perspective breaks with the notion of online services as just another channel among many, and instead increasingly treats information and ICTs as resources common to many or all service channels.

Many of the challenges in the move to multi-channel service delivery are more or less generic to all countries (e.g. service delivery architecture and interoperability). In the 1980s and 1990s, many governments split service design from service delivery in an attempt to make government more effective and efficient. However governments are now seeing that ICT creates opportunities to redesign services as well as deliver them electronically, and are embracing concepts such as integration of services across traditional boundaries, and flexible delivery through multiple channels.

A multi-channel service strategy contributes to the larger task of service innovation. This often requires reintegrating the process of service design (i.e. policy) and service delivery (i.e. operations) that have been separated over the last two decades. In this way, multi-channel service delivery is a key component of a transformation agenda -- it is about optimising the 'e' in government by integrating e-government with older design and delivery approaches.

Service innovation poses great challenges -- it requires agencies and stakeholders to engage and agree on priorities, and for business units and ICT divisions within and across agencies to more closely collaborate. It also requires agencies to reflect on the roles that individuals have as both clients of services and citizens with rights and obligations. Juggling this is a political, not an administrative process.

With the increase in service providers and partners, governments will increasingly feel pressure to integrate their services with those of other public and private agencies. This will require that they implement enterprise architectures or service-delivery architectures -- road maps that organise government processes around organisational functions or service groupings rather than existing organigrams -- supported by appropriate standards and tools which meet emerging requirements for things such as

security, privacy, authentication, and interoperability between the ICT infrastructures, data resources, business processes, services, and delivery channels used by many different organisations.

No government is yet close to reaching the completely seamless service delivery approach that is the ultimate vision of many national e-government visions and strategies, and a range of models of varying degrees of maturity are being used by different countries. But technology is increasingly an important tool for achieving greater integration. ICTs enable organisations to use the same infrastructures to deliver multiple services through multiple channels, leading to collaborative or networked models of service delivery. Channel management is therefore moving from silo to networked service delivery nodes in a more holistic style of government.

Multi-channel service delivery depends on a number of pre-conditions, including: interoperability, a single authoritative source of data and service delivery architectures that provide common policies and frameworks. Other building blocks to assist the development of mature multi-channel approaches are: a common vision for multi-channel service delivery and an appropriate national strategy for service delivery, a service-oriented architecture to guide the way agencies use data and ICT, governance arrangements that support agencies working together to provide multi-channel service delivery and stakeholder engagement to enhance governments' knowledge of their users.

Chapter 3 – Identifying Common Business Processes

The third chapter attempted to evaluate -- and draw lessons from -- the results of countries' efforts to **identify and organise common business processes** (e.g. back office functions such as financial systems and records management, but also front office services such as receiving payments) across government organisations.

While the idea of trying to make government more rational and effective by eliminating redundancy and developing common solutions is not new, ICTs have provided new tools and opportunities to monitor what government does and how it does it, to align standards and to develop common solutions. Most countries include the identification of common business processes as an element of their e-government strategy.

The chapter identified two main approaches for the identification of common business processes: a systematic approach and an ad hoc approach. The systematic approach (for example, the US Federal Enterprise Architecture) tends to be centralised and looks at all government processes. It uses a structured method, like enterprise architecture (e.g. government-wide mappings of functions, services, and business processes and the way ICT and data can support them), which tends to identify common business processes in all areas of government activity.

Countries that use an ad hoc approach (for example the Dutch Different Government initiative) do not feel that a strong central role is the appropriate means to achieve e-government change and therefore have a much weaker organisation for implementing this vision. Common business processes are identified through informal contacts between agencies. These countries identify fewer common business processes and tend to focus on mainly secondary, back office processes, rather than front office services, which are more difficult to aggregate across agencies.

The chapter also identified three approaches to organising common business processes: a control approach, a facilitating approach and a *laissez-faire* approach. Countries where the executive is composed of a single party and/or has relatively more power than the legislature are more likely to use a control approach (strictly top-down), whereas those with a multi-party executive and/or a more even balance of power are more likely to use a *laissez-faire* or a facilitating approach.

The control approach leads to a large number of organised common business processes, mainly with medium levels of cooperation – for example, shared information systems, whereas the *laissez-faire* approach allows agencies to initiate projects, with the central government only helping when asked. This

approach leads to low numbers of organised common business processes, but also results in the highest levels of cooperation among agencies.

The facilitating approach is characterised by the centre of government's attempts to let agencies use common business processes by creating incentives. It leads to medium numbers of common business processes organised, with medium levels of cooperation. This approach is probably the most "top-down" possibility for consensus democracies, because a control-approach is constitutionally impossible.

The *laissez-faire* and facilitating approaches also have the advantage of having to demonstrate to agencies the advantage to them of participating in a common business process before they join. Arguably, this is the main reason for greater coordination in areas where common business processes are identified.

Chapter 4 – Business Case for E-Government

The fourth chapter of this publication looked at how countries are trying to demonstrate the return on investment for e-government by developing methodologies for **measuring and evaluating e-government** (e.g. developing business cases).

E-government can be very costly to implement, and is inherently risky due to both its dependence on ICTs and the accompanying organisational, cultural and business process changes (as described in the first three chapters) that are needed if they are to have proper impact.

Basing e-government investment decisions on robust business cases is of critical importance as they not only provide a justification for e-government investment decision-making at every stage of implementation, but also help to provide criteria for evaluating and managing risk and, ultimately, the success or failure of e-government initiatives.

OECD countries currently utilise a variety of methods to evaluate e-government projects, including both economic and non-economic assessment methods. The fact that so many different methods are used makes it difficult to compare projects from one country to the next.

Despite the differences in methodology, there is consensus that more cost benefit analysis of e-government can help better target scarce funds, build support and political will for e-government and decrease the risk of failure. Current data shows that benefits exist at all four levels of the e-government maturity model (information, interaction, transaction and data sharing / transformation), and that the largest benefits are for transformation initiatives, or those which change the way in which government does business in order to make gains in efficiency and effectiveness. These benefits exist both for users of government, and for government itself.

As noted above, the fact that e-government projects often involve implementation of organisational changes alongside the development and deployment of ICTs, is an important factor that should be considered in any aggregate or comparative investigation of e-government business case or evaluation studies.

Many challenges remain. E-government provides not only benefits to government, citizens and businesses, but also broader benefits to the society as a whole, for example in terms of increased trust in government. These so-called public benefits would help countries argue for more e-government, but they are among the hardest to measure and generally have not been included in current e-government evaluations. Some leading countries are now starting to use methodologies that incorporate these broader benefits and costs.

Chapter 5: E-Government Co-ordination

The last chapter looked at how countries have organised their e-government initiatives in order to achieve some of the anticipated benefits from transformational and cross-cutting services.

Countries' historical, cultural, and administrative contexts play a strongly influential, though not determinant role in how countries organise their e-government efforts. E-government organisational arrangements in OECD countries are generally in keeping with the broad organisational structures and approaches of their national administrations. This is not always the case, however, and there are examples of federal countries employing centralised or mixed approaches as well as unitary countries employing decentralised or mixed approaches.

The widely perceived dichotomy between decentralised and centralised approaches to e-government which has characterised many of the choices that countries have made about how to organise their e-government initiatives often ignores or obscures the fact that the majority of countries are somewhere in the middle, with elements of centralisation and decentralisation coexisting in national e-government arrangements. In fact, the centralisation of some aspects of e-government (e.g. technical standards) can support the decentralisation of other aspects (e.g. local decision-making on program delivery).

The distribution of the e-government portfolio in OECD countries reflects the cross-cutting nature of e-government. Top level responsibility for e-government often resides within the centre of government or within a ministry that has responsibility for broader public administration issues, from which e-government is becoming increasingly hard and/or undesirable to separate. In fact only five countries reported that their e-government initiative was under a ministry explicitly responsible for technological issues.

In order to compare approaches to e-government, OECD countries should not simply look at structures. They should focus on the flow of communication about e-government as a proxy for measuring the "networked" dimension of e-government.

By this framework of analysis, relatively few countries pursue a strictly top-down approach to e-government. The majority engage in a "mix and match" of communication and decision-making modes in support of solutions for providing better public services and enabling efficiency gains.

Key Findings and Next Steps

The old certainties (i.e. "more online services are always better") are today replaced by the more difficult and complex challenges of improving data collection in order to establish a business case for new initiatives and determining user preferences for services that they have not yet experienced. But the stakes are high and tangible in terms of financial savings to government, time and convenience savings for users and increased take-up of online services. In addition to these concrete measures, however, are more general public benefits such as public trust which are less well understood, but key to the legitimacy of government and to the success of e-government.

Responding to these challenges is likely to require organisational change. While efficiency concerns may seem to push in the direction of identifying and organising more and more common processes, this does not necessarily imply greater centralisation. There are many ways to align service delivery and many levels of co-operation. In fact, purely top-down approaches to e-government are relatively rare, and while they may be more effective at identifying common business processes, they do not guarantee a high level of co-operation. A thorough understanding of the cultural and organisational context in which change is taking place can help countries better pick and choose experiences that are most relevant to their own situation.

At what point does organisational change become transformation? Many of the elements of achieving change are the same as those that are part of the modernisation agenda (i.e. performance and change management, the use of market mechanisms), but transformation implies that government agencies need to develop a more holistic view of government and their part in it, thinking and acting beyond traditional organisational and service boundaries in order to be able address the needs and concerns of users of government. In this model, information flows, rather than hierarchies determine how services are

delivered. Processes across government are aligned, interoperable and efficient. Services are tailored to and anticipate the needs of users. And information is secure and reused rather than repetitively collected.

This world does not yet exist, but multi-channel service strategies are beginning to establish service and enterprise architectures that demonstrate the role that ICT can play in enabling better communication across government, increased data exchange and simpler and more efficient use of information regardless of how the information and services are provided. This nodal form of government, supported by changes in culture and attitudes, holds great promise for better government and provides an ideal against which to measure current e-government efforts.

E-Government for Better Government: Key issues

User-Focused E-Government: *How to strengthen user-focus in government?*

- Increasingly, public expectations are for delivery of government services to be organised around users' needs rather than according to government bureaucracies. Governments are trying to meet this expectation. Doing so can also allow improvements in government efficiency and effectiveness.
- Providing user-centred services will require a dynamic relationship between users and government in which the government educates users, markets new services and adjusts services based on user feedback and research.
- Governments must base their e-government initiatives on better research and an understanding of user needs, preferences, and priorities, both in order to deliver services of real value that meet user expectations, and to maximise the benefit of public expenditure on e-government.
- Rates of take-up of electronic services are a good measure of whether the services provide value to users.
- Developing user-focused services has structural implications for government – services should be organised around the users, not government agencies. Few countries have actually made these types of changes so far.

Multi-Channel* Service *Delivery: *How to effectively deliver services through multiple channels?*

- Multi-channel strategies lay out how ICT can be used for the benefit of all government services - regardless of whether they are delivered on- or off-line. A multi-channel service delivery strategy should take into account issues surrounding service accessibility and usability, for example for the disabled, and people affected by the digital divide.
- ICTs facilitate government "service innovation" – major reorganisation of both design and delivery. Service innovation requires that awareness of ICT issues be integrated into the policy development process.
- In some cases, there appears a need to reintegrate service design (policy) and service delivery (operations) based on the understanding that both stages are deeply related and interactive.
- Enterprise and service delivery architectures and interoperability frameworks are critical tools for effective multi-channel delivery. E-government architectures started out as management instruments mainly focused on the ICT side of government. They are now developing into tools that map out the business side of government, and link this to both governance and technology dimensions of government. This requires the participation of programme, policy and budget, as well as IT offices in the design and implementation of service and business architectures.

Identifying Common *Business* Processes: How to achieve collaborative business processes?

- Agency-specific businesses processes can lead to unnecessary duplication. Enterprise and service delivery architectures (i.e. government-wide mappings of functions, services, and business processes and the way ICT and data can support them), and interoperability frameworks (common technical standards allowing disparate data and information systems to be connected together across agency and service boundaries), are key to achieving e-government efficiency and effectiveness goals.
- In order to improve efficiency across government, mechanisms are needed to identify and organise common business processes and to develop solutions that are aligned or shared across agencies.
- More centralised countries tend to use more structured and comprehensive top-down approaches. This may lead to identification of more common business processes, but does not guarantee agency cooperation in implementing and using them.

- Less centralised countries, using more bottom-up approaches, appear to identify fewer common business processes, but may have greater agency cooperation in using any solutions that are developed.

The Business Case for E-Government: *How can e-government initiatives be based on a sound business case?*

- E-government expenditure must be targeted and justified through preparing robust business cases for e-government initiatives. Business cases provide an estimate of the expected costs and benefits of a project and a framework for evaluating realised benefits.
- Business cases also allow for proper assessment of whether expected returns on investment in e-government are being achieved and offer clearer accountability for delivering results.
- Work on the business case for e-government is extending beyond simply looking at benefits to government and users to include more diffuse "public benefits" (i.e. public trust).

E-Government for Better Government: Key issues (Cont/..)

- Current evidence from e-government business cases is that there are benefits at each level of e-government maturity, with the highest benefits arising from transformational e-government initiatives (i.e. initiatives that alter the structure and/or information flows among agencies for better government.)

E-Government Co-ordination: How to organise to best meet new organisational challenges?

- E-government is challenging countries to re-think government organisational structures and processes, but there is no single best way to organise e-government as a whole.
- The need for data, computer systems, and business processes to be able to be linked to each other across agencies (i.e. interoperability) may superficially seem to favour more centralised e-government initiatives, but purely centralised approaches to e-government are not very common as agency buy-in is equally important.
- The centralisation of some aspects of e-government (i.e. technical standards) can in turn allow the decentralisation of other decisions (e.g. how to use ICTs to actually deliver a service).
- The coming concern for governments is not centralisation versus decentralisation. Countries now need to start to organise e-government so that it is fully integrated into the governance and activity of each agency

Following the first wave of e-government implementation, OECD countries are coming to realise that e-government is not something to pursue for its own sake, but rather for the contribution it can make to creating better government. This is a much more complex challenge than simply using ICT for automating government business processes and putting information and services on line. Bringing e-government into the mainstream of efforts to improve government requires an understanding of the costs and benefits of e-government and how ICT relates -- and should relate -- to the rest of government.

Viewed in this light, rather than as a stand alone approach to achieving better government, e-government has clear potential to deliver additional gains in terms of improving the efficiency and effectiveness of government, and transforming both the nature of the services it provides, and the way they are provided, regardless of the channel by which it is delivered. To deliver its full value, e-government must be implemented with this perspective in mind.

This publication lays out many good practices for maximising the benefits of e-government, but more will be needed given that most countries are just beginning to look at the broader impacts of e-government. Some potential areas for additional work include:

- Collecting and developing methodologies for establishing the business case for e-government; analysing good practice and determining what methods can be generalised to other country contexts.
- Developing case studies to show how business case methodologies can be applied in real world situations and to establish a baseline for countries' efforts to date.

- Collecting estimates on savings achieved through the sharing of common business processes. Such estimates would also help to advance measures of government transformation resulting from e-government.
- Developing good practice guidelines for consultation, market research, and feedback mechanisms to enable more user-focused online services.
- Further mapping of the transformation process by identifying *i*) pathways or models for change, *ii*) components of transformation (i.e. multi-channel strategies, data sharing arrangements, back office infrastructures), *iii*) success factors based on country case studies, *iv*) models of inter-organisation governance and *v*) measures of success.

ANNEX A

E-GOVERNMENT STATISTICS

Introduction

There is a growing need for statistical information relating to e-government at international, national and sub-national levels. Yet, as this annex will show, few comparable official statistics pertinent to e-government are currently produced.

The lack of comparable statistics about e-government can be contrasted with official statistics on the information society, an area that has grown rapidly in recent years. As a consequence, an increasing number of countries have produced official statistics on ICT usage by enterprises and households. At the international level, harmonised statistics on ICT usage have been developed under the auspices of the OECD and Eurostat.

In comparison, few official and comparable statistics are produced on the public sector. There are two main reasons for this information gap. First, it is much more difficult to survey the public sector than it is to survey enterprises or individuals. A fundamental problem is to delimit and describe public sector entities. A second is that, given the relative novelty of e-government, reliable and widely accepted definitions of public sector ICT and e-government, and indicators for measuring it within and outside of government, prove elusive. More information about these problems is presented later in this annex.

However, despite the difficulties, some data are available. As well as looking at questions relating to the purpose and availability of e-government statistics, this annex presents (mainly) official statistics that may be useful to e-government policy makers.

Why are statistics important to e-government programmes?

There are three broad areas in which statistics can play an important role in e-government:

- *Design of efficient and effective e-government programmes*: Governments increasingly seek not only to be active in the area of e-government, but also to develop and deliver services that the public values in ways that maximise the effectiveness of public expenditure on e-government. Achieving these effectiveness and efficiency goals through properly designed e-government programmes can be greatly assisted by statistics that give a clear picture of how government is using ICT and of public demand for online information and services.

- *Monitoring and evaluation*: Statistics are needed to monitor progress in meeting national e-government strategies and goals and to evaluate the costs and benefits of current e-government initiatives. Data will also be needed to justify continuation of projects, to argue the case for new expenditure, to allocate ICT funds optimally and to understand the impacts of e-government.

- *Relationship of e-government to wider government activity and goals:* Statistics about e-government relative to other developments in the information society and economy are also needed, including the impact that ICT use in government has on the economy as a whole in terms of public sector productivity and the leadership effect of e-government on other sectors of the economy.

What types of e-government statistics might be useful to governments?

To paint a more complete picture of the achievements and potential of e-government, statistics must do more than measure the online availability of e-government services. It would be helpful to policy makers if there were a wide range of quantitative and qualitative measures of e-government covering:

- Broad measures for national and international benchmarking.
- Demand for, and use of, e-government by citizens, businesses and other sectors of government.
- The extent to which government organisations themselves use ICT and deliver their services electronically.
- The impacts (including the benefits) of e-government.

Broad measures for national/international benchmarking include such indicators as PC and Internet penetration rates, infrastructure development and e-government readiness, number of online services, etc. Many international e-government studies use these broad indicators as a basis for their e-government rankings (*e.g.* Accenture, United Nations). The OECD also gathers statistics of this type.

Some data on the demand for, and use of, e-government by citizens, businesses and other sectors of government are being collected by national statistical agencies (see below). Additionally, the OECD Working Party on Indicators for the Information Society (WPIIS) is developing questions to improve measures of demand for e-government services. This work is being done in collaboration with the OECD e-Government Project and is described below.

Measures from the perspective of government organisations include government expenditure on ICT and use of technology by government organisations to provide services electronically, among other things. These measures, which are collected by only a small number of OECD countries, are discussed later in this annex.

Measures for evaluating the benefits of e-government are very difficult to develop. They include measures of e-government's impact on efficiency, service quality, policy effectiveness and citizen engagement and trust, as well as its impact on economic policy objectives and government reform. The OECD is working on measures of the costs and benefits of e-government (see Chapter 1), and also looks at the benefits of e-government in specific country contexts through the use of e-government peer reviews (see the published review of Finland and forthcoming reviews of Mexico, Norway and Denmark).

This statistical annex focuses on official statistics on the demand for and use of e-government services (by individuals and businesses) and on e-government statistics collected from government organisations themselves.

Measurement challenges for e-government

As mentioned above, it is difficult to measure e-government from the perspective of government organisations. One important reason has been outlined by Denmark (OECD, 2003). Denmark acknowledges a growing need for information on ICT usage in the public sector, yet states that few statistics are produced by national statistical offices because of the "structural complexity" of the government sector. Australia (OECD, 2002) outlined the experiences of the Australian Bureau of Statistics in measuring government use of ICT and highlighted a number of difficulties, including:

- Definition of the scope of the government survey. For instance, should it include government businesses or semi-government organisations? Should it include small units with no employees (for example, committees or boards which are serviced by larger entities)?

- Definition of units and their categorisation to the appropriate tier of government. Should a unit include sub-entities or should all (or some) be distinct units?

- Measurement of the intensity of activities such as the offering of electronic services and their categorisation.

- Heterogeneity of government units and the proportion or counts approach to data on ICT use (whereby data are presented in terms of the proportion or count of entities undertaking a particular activity). This heterogeneity concerns differences in government units (for instance, differences in how ICT functions are organised and changes in organisational structures over time) that make it very difficult to make a valid comparison of proportion or count data across regions, tiers of government and time.

The heterogeneity issue is probably the most difficult challenge when data are presented as proportions or counts of units. It is not an obvious problem for measuring volume information, such as ICT expenditure or ICT employment. Denmark (OECD, 2003) also referred to the heterogeneity problem in cases where ICT management is outsourced or managed by units other than those surveyed. They cite as an example the case of the development of the ICT strategy being separate from acquisition which is, in turn, separate from usage.

In recognition of these statistical difficulties, the OECD's Working Party on Indicators for the Information Society, in collaboration with the OECD e-Government Project, has adopted a demand-side approach to e-government measurement, that is, measuring the use (by businesses and individuals) of electronic services offered by government rather than the supply of those services by government entities.

However, it should be noted that a demand-side approach also raises difficulties. One problem is how to define "government" on questionnaires so that respondents (householders and businesses) have a common understanding of what is meant. A related problem is the differences in the functions of government organisations, however defined, across countries. For instance, in one country, all rail transport might be a function of general government, in another country it might be a responsibility of public or private sector businesses. Another example concerns outsourcing; government in one country might outsource a client service function such as employment agency work, to the private sector while another country retains it as a government function. These structural differences will particularly affect international comparability but may also affect comparability over time within a country.

Available statistics

This section provides a range of mainly official statistics which deal with the broad areas outlined above. They include use of government services by businesses and individuals and government's own use of ICT, including provision of services electronically. The former provide some valuable insights into usage trends for a small number of OECD countries, while the latter, even with obvious limitations in terms of international comparability, provide useful data from the perspective of government entities for several countries (Australia, Canada, Denmark, Finland and Japan). Some important topics, such as the broader impacts of e-government, are not addressed here and cannot, arguably, be dealt with in terms of official statistics.

In the context of the general comments on measurement difficulties, the statistics presented below should be considered indicative.

E-Government demand side statistics

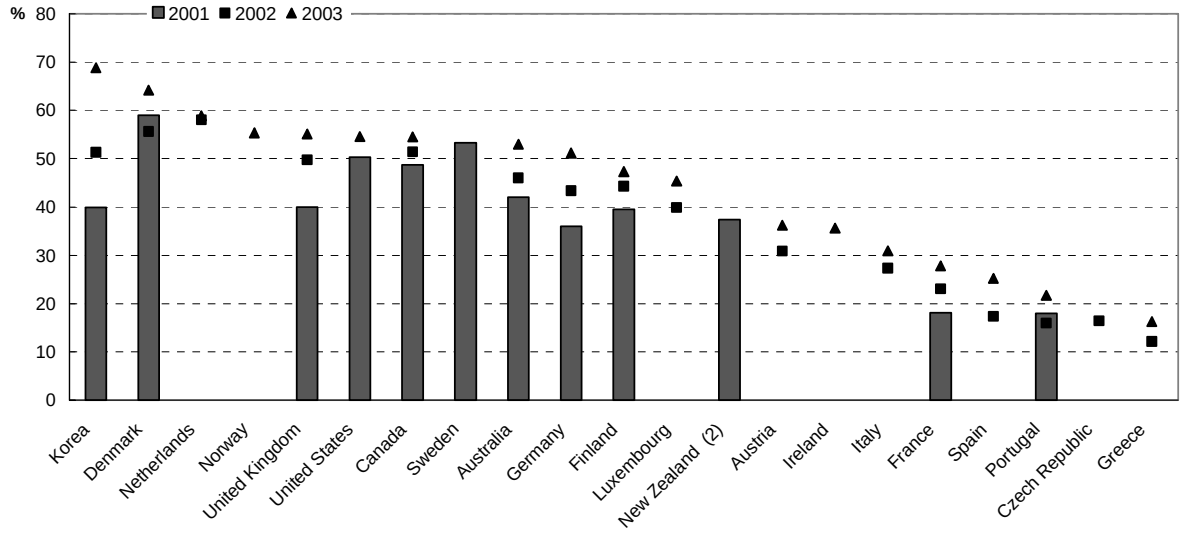
Most OECD countries collect official statistics on use of ICT by households and/or individuals and by businesses. Of these countries, most also collect some activity data on the use of electronic government

services. This section presents available statistics on general diffusion and, where available, use of electronic government services.

General diffusion of the Internet among households in OECD countries

Figure A.1 shows growth in household access to the Internet among OECD countries, with some levelling off apparent for most countries for which there are observations for three years.

Figure A.1. Household access to the Internet1 in selected OECD countries, 2001 to 2003



1. Internet access via any device (desktop computer, portable computer, TV, mobile phone etc.).
2. July 2000 to June 2001.
Source: OECD, ICT database and Eurostat, Community Survey on ICT usage in enterprises, 2002 and 2003, November 2004.

Individuals' use of the Internet to access electronic government services

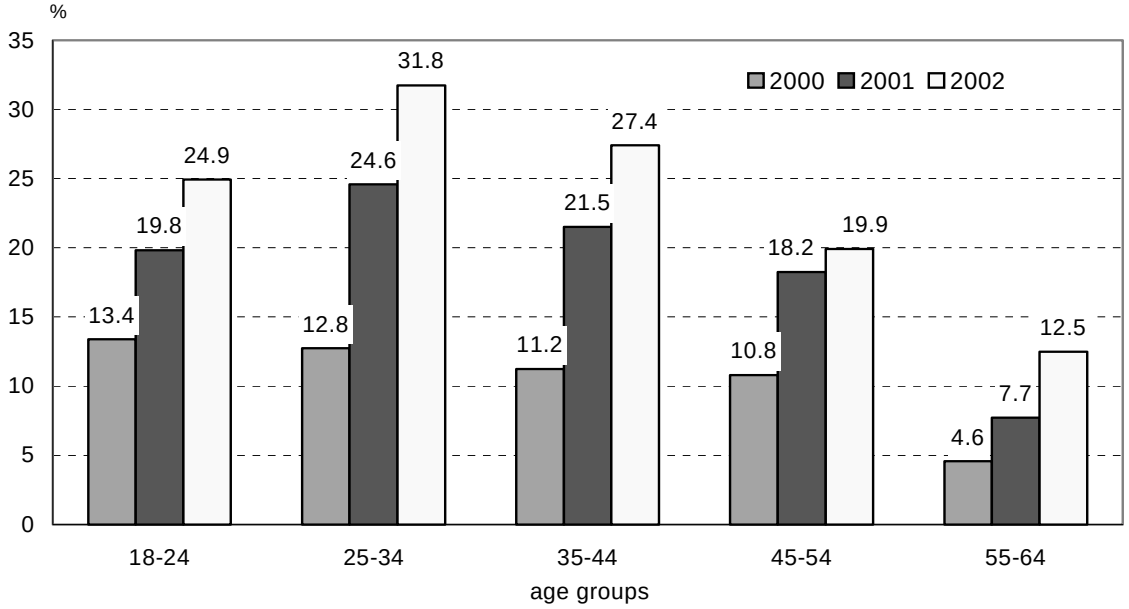
Australia has been collecting time series data in this area since 2000, including details of the type of electronic services accessed by Internet users. Figure A.2 shows use of electronic government services by Internet users of different ages for 2000 to 2002. Figure A.3 gives a gender breakdown for the same period.

The Australian data clearly show increasing use of the Internet to access government services. They also show marked age and gender differences in the propensity to access government services electronically. For 2001 and 2002, those in the age group 25-34 were most likely to access electronic government services, while, for all three years, older users (55-64) were least likely. For all years, males were more likely to access electronic government services than females, though the gap had narrowed by 2002.

More recent data for Australia (Australian Bureau of Statistics, 2004) provide information on access to government services via the Internet by disabled persons and those over 60.

Figure A.2. Proportion of individuals accessing government services via the Internet for private purposes, by age, Australia, 2000 to 2002

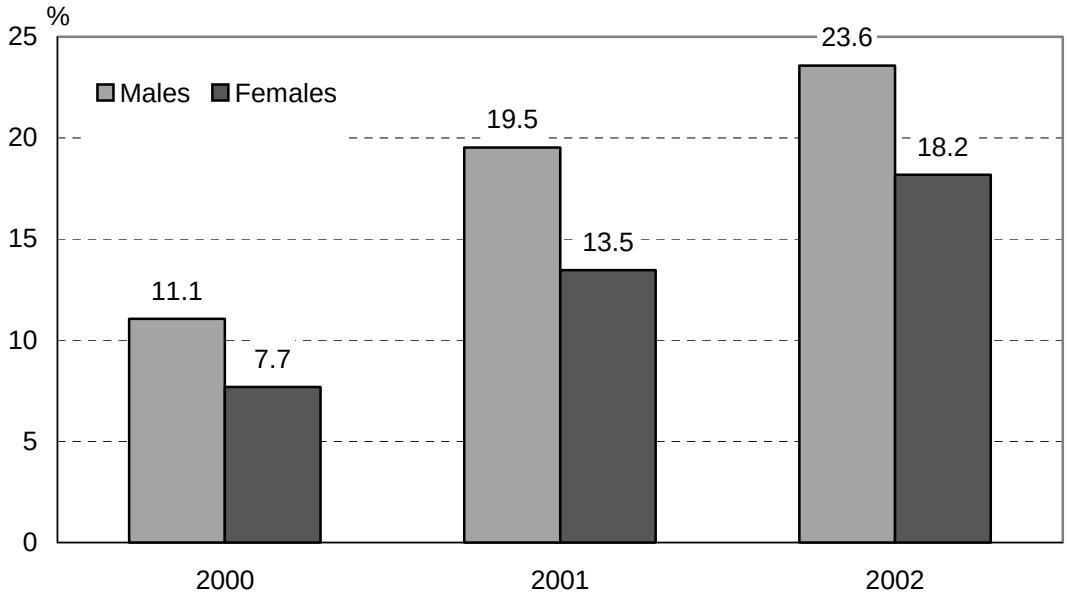
As a proportion of all individuals in each age category



Source: Australian Bureau of Statistics, *Household Use of Information Technology*, 2000, 2001–02, Cat. No. 8146.0.

Figure A.3.Proportion of individuals aged 18 and over accessing government services via the Internet for private purposes, by sex, Australia, 2000 to 2002

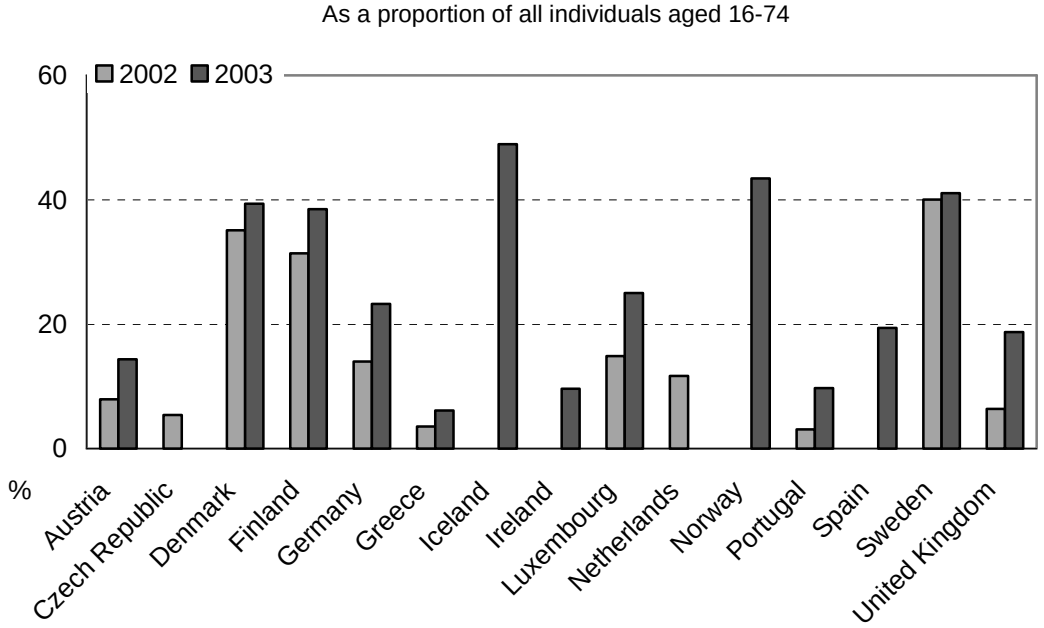
As a proportion of all individuals aged 18 and over



Source: Australian Bureau of Statistics, *Household Use of Information Technology*, 2000, 2001–02, Cat. No. 8146.0.

Eurostat has co-ordinated an annual Community survey of household use of ICT since 2002. The survey collects data on use of electronic government services by individuals by type of service accessed. Figures A.4-A.6 show the types of services accessed in 2002 and 2003 in the countries covered by the Eurostat surveys. The results reveal marked country differences in the propensity of Internet users to access government services electronically. For most countries, they also show an increase between 2002 and 2003 in the proportion of individuals accessing government services electronically.

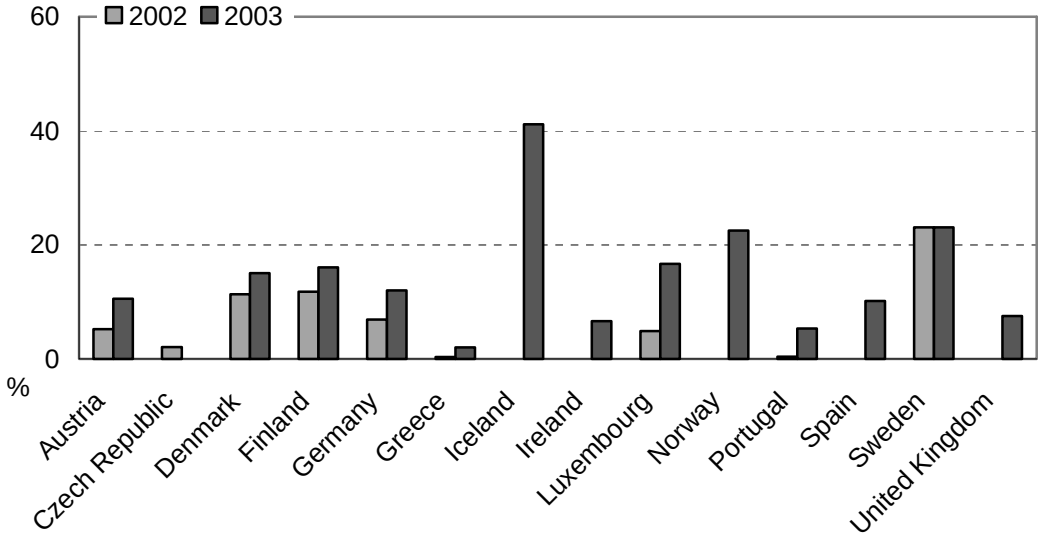
Figure A.4. Proportion of individuals aged 16-74 using the Internet for interaction with public authorities to obtain information, 2002 and 2003



Source: Eurostat, Community Survey on ICT usage in households, 2002 and 2003, October 2004.

Figure A.5. Proportion of individuals aged 16-74 using the Internet for interaction with public authorities to download forms, 2002 and 2003

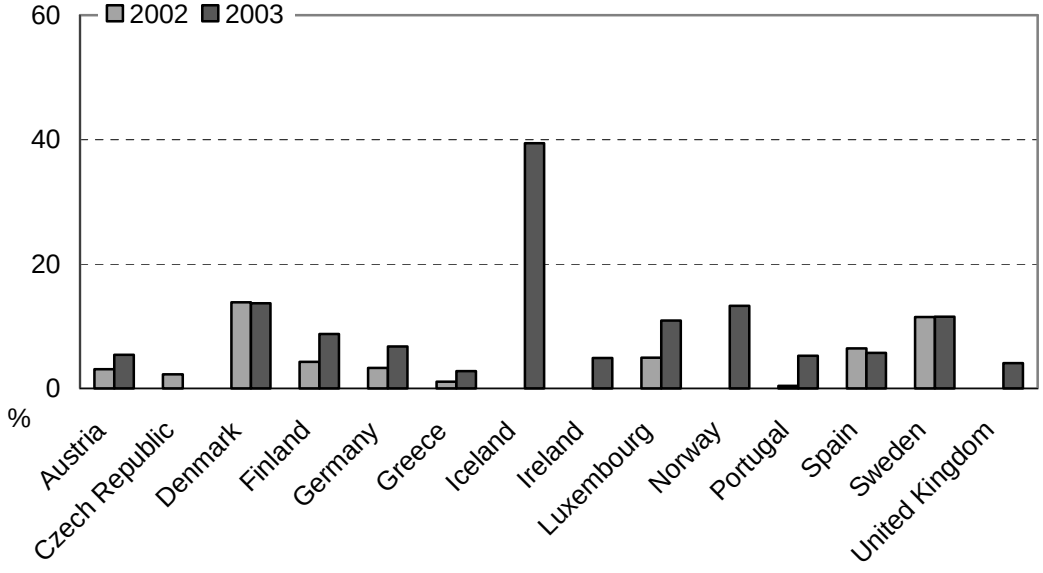
As a proportion of all individuals aged 16-74



Source: Eurostat, Community Survey on ICT usage in households, 2002 and 2003, October 2004.

Figure A.6. Proportion of individuals aged 16-74 using the Internet for interaction with public authorities for returning completed forms, 2002 and 2003

As a proportion of all individuals aged 16-74

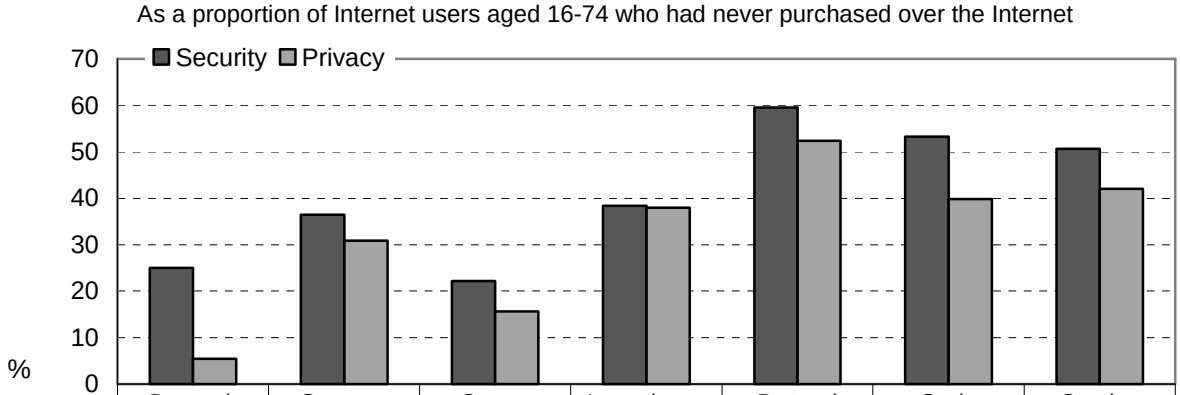


Source: Eurostat, Community Survey on ICT usage in households, 2002 and 2003, October 2004.

It is also of interest to government to obtain information on those barriers to use of ICT which may be influenced by government. Eurostat's survey collects data on the reasons Internet users do not purchase goods or services over the Internet. As Figure A.7 shows, the two barriers over which government might

have some control, *i.e.* security concerns and privacy concerns, are reasonably significant. For most participating countries, the only barriers which are more significant are those indicating lack of interest in Internet purchasing (that is, the individual "prefers to shop in person/likes to see product" or has "no need to purchase over the Internet").

Figure A.7. Proportion of Internet users aged 16-74 reporting security1 and privacy1 concerns as main reasons for not purchasing over the Internet, 2003



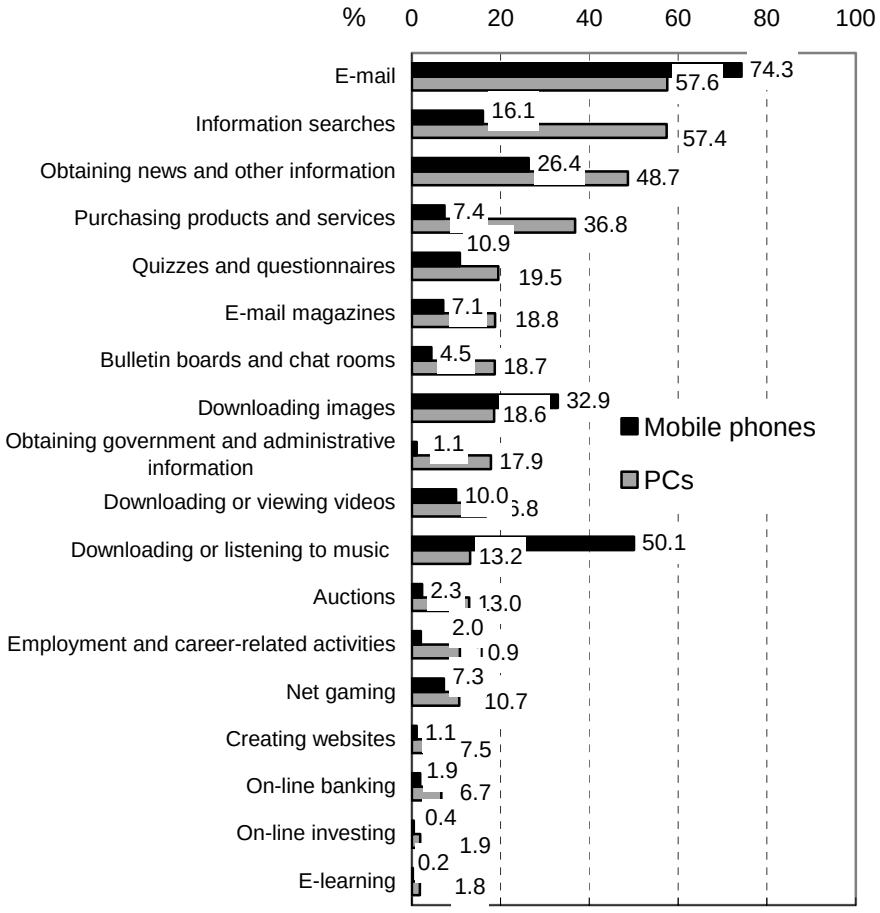
	Denmark	Germany	Greece	Luxembourg	Portugal	Spain	Sweden
Security	25.0	36.5	22.2	38.4	59.5	53.3	50.7
Privacy	5.4	30.9	15.6	38.0	52.4	39.8	42.1

1. Eurostat question wording is "Security concerns/worried about giving credit card details over the Internet" and "Privacy concerns/worried about giving personal details over the Internet".

Source: Eurostat, Community Survey on ICT usage in enterprises, 2002 and 2003, October 2004.

Information from Japan's annual Communications Usage Trend Survey is presented in Figure A.8. It shows that the Internet is little used to obtain information from government organisations compared with its use for other information-gathering activities.

Figure A.8. Purpose1 of Internet use2 by individuals 15 years and older in Japan, 2003



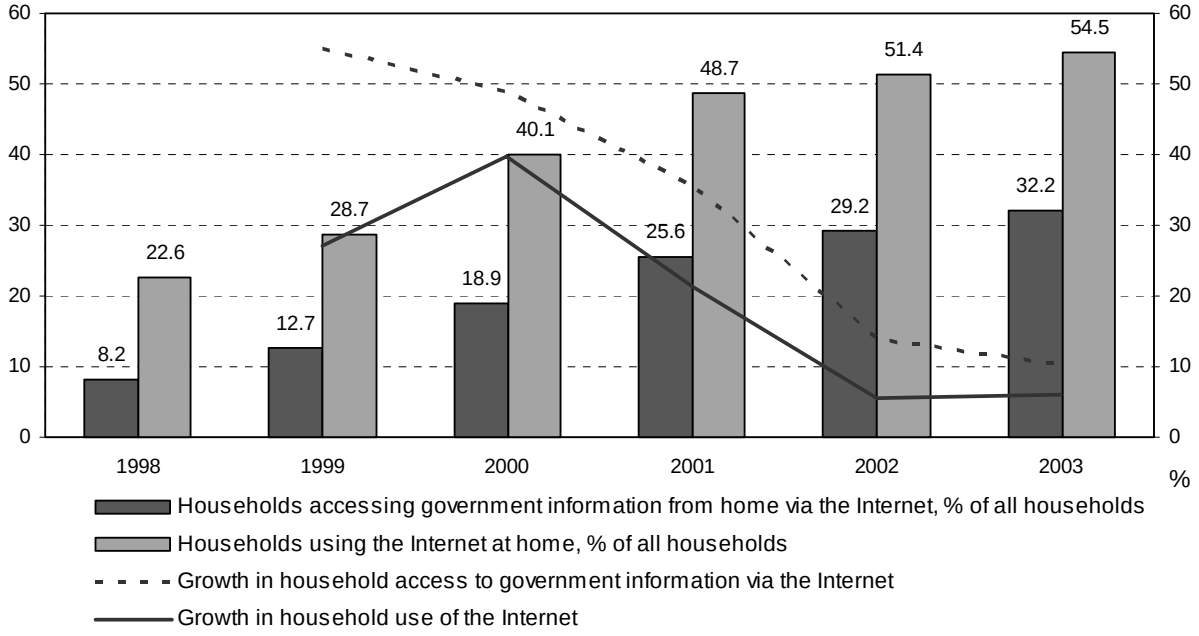
1. Purpose(s) of use by individuals 15 years old and over who have used the Internet in the past year.

2. Includes access by PC and mobile phone.

Source: Ministry of Public Management, Home Affairs, Posts and Telecommunications, Communications Usage Trend Survey, 2003.

Household Internet activity data from Canada are available as a long time series and include data on use of the Internet to access government information. A long time series can be used to show the differences in growth rates between Internet use generally and access to government services specifically. Figure A.9 shows higher historical growth for access to government services than for Internet access more generally. However, growth rates for both have diminished over time and are fairly flat from 2002.

Figure A.9. Growth in Internet use1 and in access to government information via the Internet,1 Canadian households (any member), 1998 to 2003



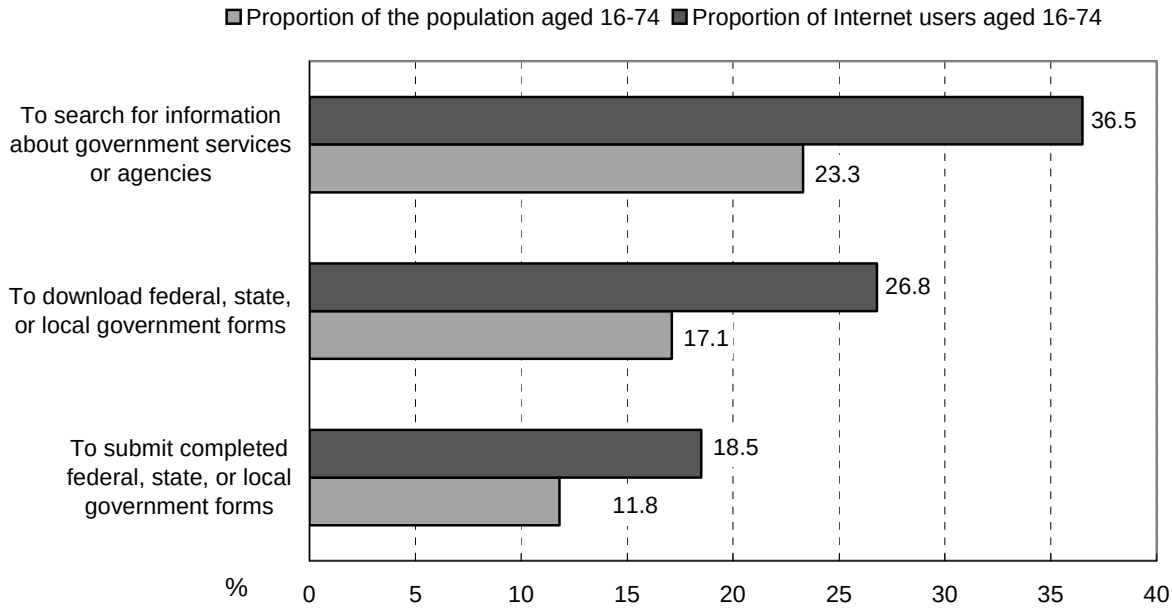
1. Percentage of all households where at least one member aged 15 years or older (of any age) regularly uses the Internet/accesses government information via the Internet at home in a typical month.

Source: Statistics Canada, Household Internet Use Survey, 1998 to 2003.

Some US data are available from the Pew Internet & American Life Project (May 2004), *How Americans Get in Touch with Government.* While these are not official data, they provide valuable insights into e-government demand in the United States. The data are obtained via a telephone-based household survey of about 3 000 households, conducted between June and August 2003. Findings reveal that e-government is not yet the "killer application" among the tools available to citizens for contacting government; the telephone is the preferred means of communication. In fact, of those respondents who had contacted government in the previous 12 months, 42% said they used the telephone while 29% said they visited a government Web site. However, Internet users were much more likely to contact government than non-users (72% of Internet users had contacted the government in the past year compared with 23% of non-Internet users). In total, 77% of Internet users have at some time gone on line to search for information from government agencies or to communicate with them. The report contains details of what Americans do when they deal with government agencies on line, including searching for information from a local, state or federal government Web site and undertaking research involving official government statistics or documents.

The US Bureau of the Census collected household use of ICT data in its October 2003 Computer and Internet Supplement to the Current Population Survey. Of particular interest, the survey included questions on individuals' use of the Internet to access government services. As Figure A.10 shows, the proportion of individuals aged 16-74 accessing particular government services via the Internet in the US compares reasonably well with the equivalent proportions for European countries (see Figures A.4 to A.6).

Figure A.10. Proportion of individuals using the Internet to access government services, US, 2003

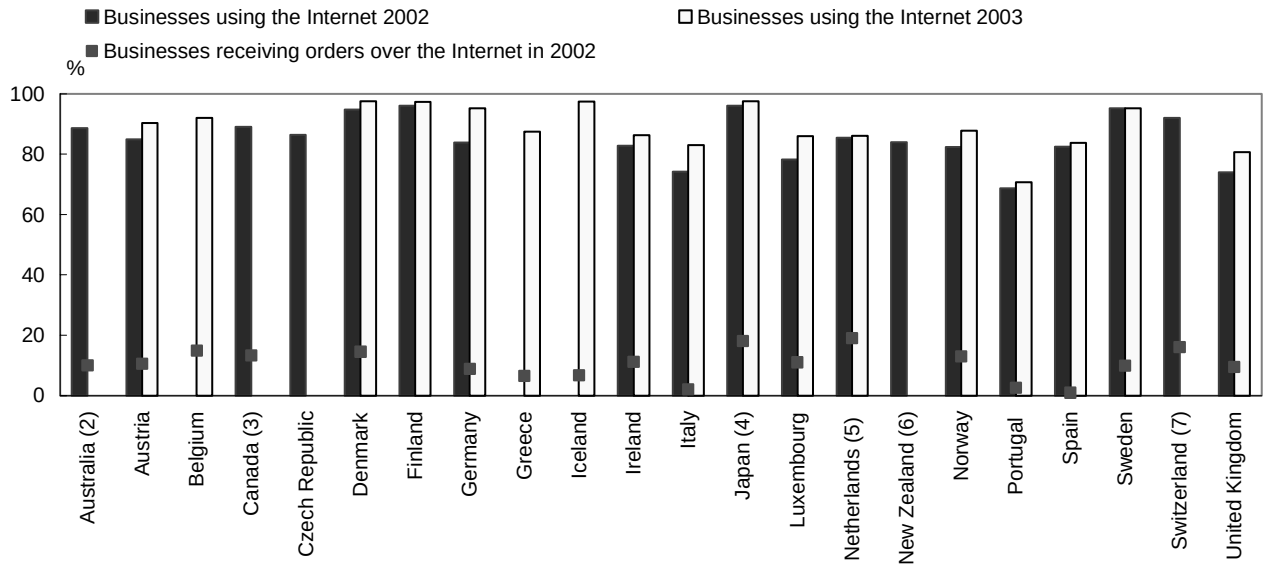


Source: United States Department of Commerce, Economic and Statistics Administration, *A Nation Online: Entering the Broadband Age*, September 2004.

General diffusion of the Internet among businesses in OECD countries

Figure A.11 shows modest growth in business use of the Internet between 2002 and 2003 and relatively limited use of the Internet for receiving orders (selling goods and services).

Figure A.11. Percentage of businesses with ten or more employees using the Internet, 2002 and 2003 or latest available year1



1. In European countries, only enterprises with ten or more employees in the business sector, excluding NACE activity E (electricity, gas and water supply), NACE activity F (construction) and NACE activity J (financial intermediation), are included. The source for these data is the Eurostat Community Survey on enterprise use of ICT. There was a 1 percent threshold for enterprises having received orders via the Internet.

2. Businesses with 10 or more employees. Excludes mining, electricity, gas & water supply, health & community services, cultural and recreational services, and personal and other services.

3. Businesses with 10 or more employees. Excludes agriculture, fishing, hunting and trapping industries, support activities for crop and animal production industries, construction – specialist contractors.

4. Data refer to enterprises with 100 or more employees. Agriculture, forestry, fisheries and mining are excluded.

5. Data refer to Internet and other computer-mediated networks.

6. Data refer to 2001 and include enterprises with ten or more employees in all industries except electricity, gas and water; government administration and defence; and personal and other services.

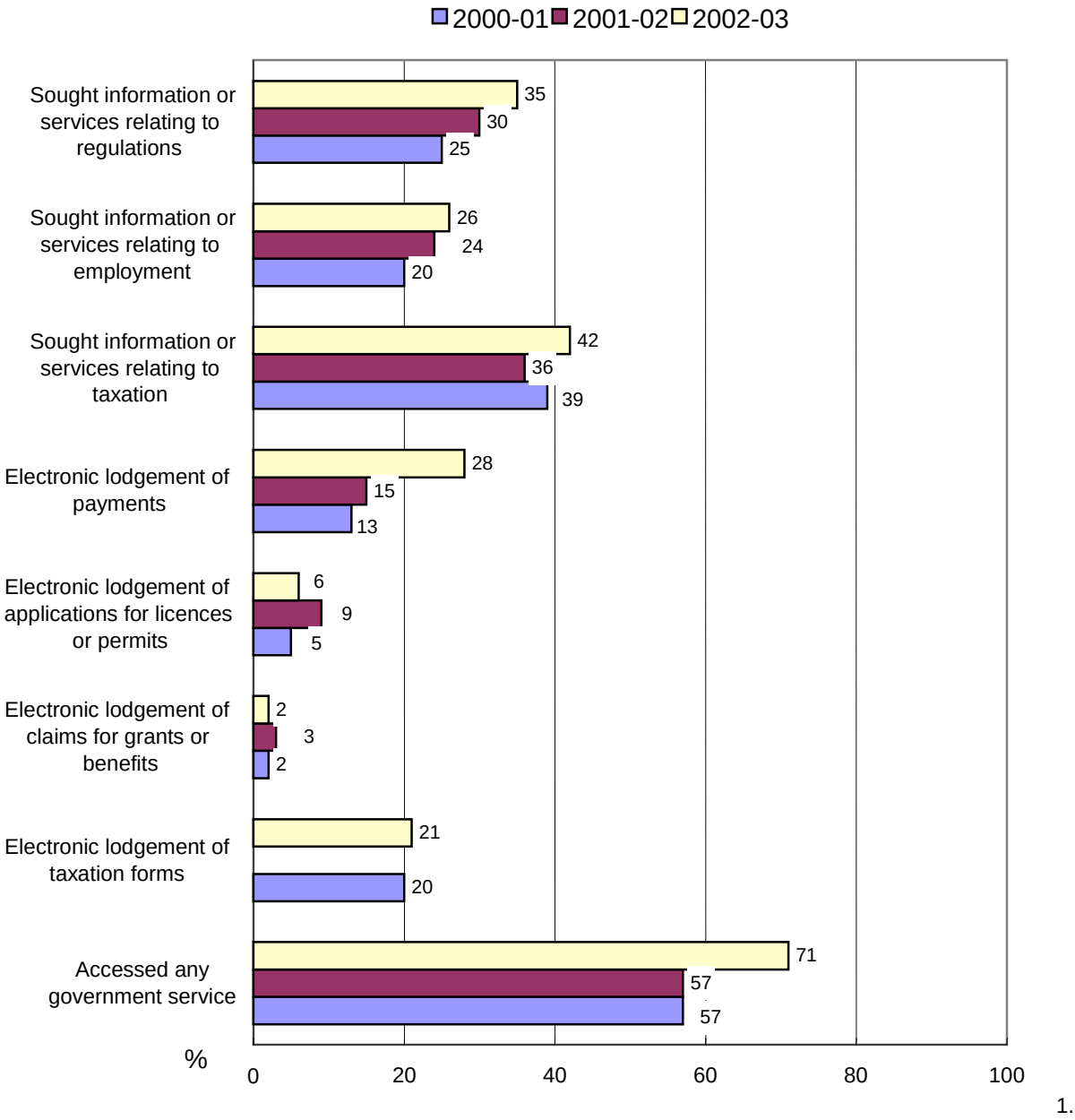
7. Data refer to enterprises with 5 or more employees. Data refer to the manufacturing, construction and services industries. Data for businesses receiving orders over Internet refer to 2001.

Source: OECD, ICT database and Eurostat, Community Survey on ICT usage in enterprises, 2002 and 2003, October 2004.

Use of electronic government services by businesses

The Australian Bureau of Statistics has conducted an annual Business Use of Information Technology since 1999-2000. It collects data on use of electronic government services by the type of service delivered. Data for the last three years are shown in Figure A.12. For most services, they show an increase over time in the incidence of Internet access to government services by businesses using the Internet. The incidence of electronic lodgement of payments to government increased from 15% to 28% of businesses between 2001-02 and 2002-03. For 2002-03, 71% of businesses that used the Internet accessed a government service via the Internet, an increase from 57% in each of the preceding financial years.

Figure A.12. Australian businesses accessing government services,1,2,3 2000-01 to 2002-03



1. Proportions are of businesses using the Internet.

2. Data on electronic lodgement of taxation forms were collected but were not available for publication in 2001-02.

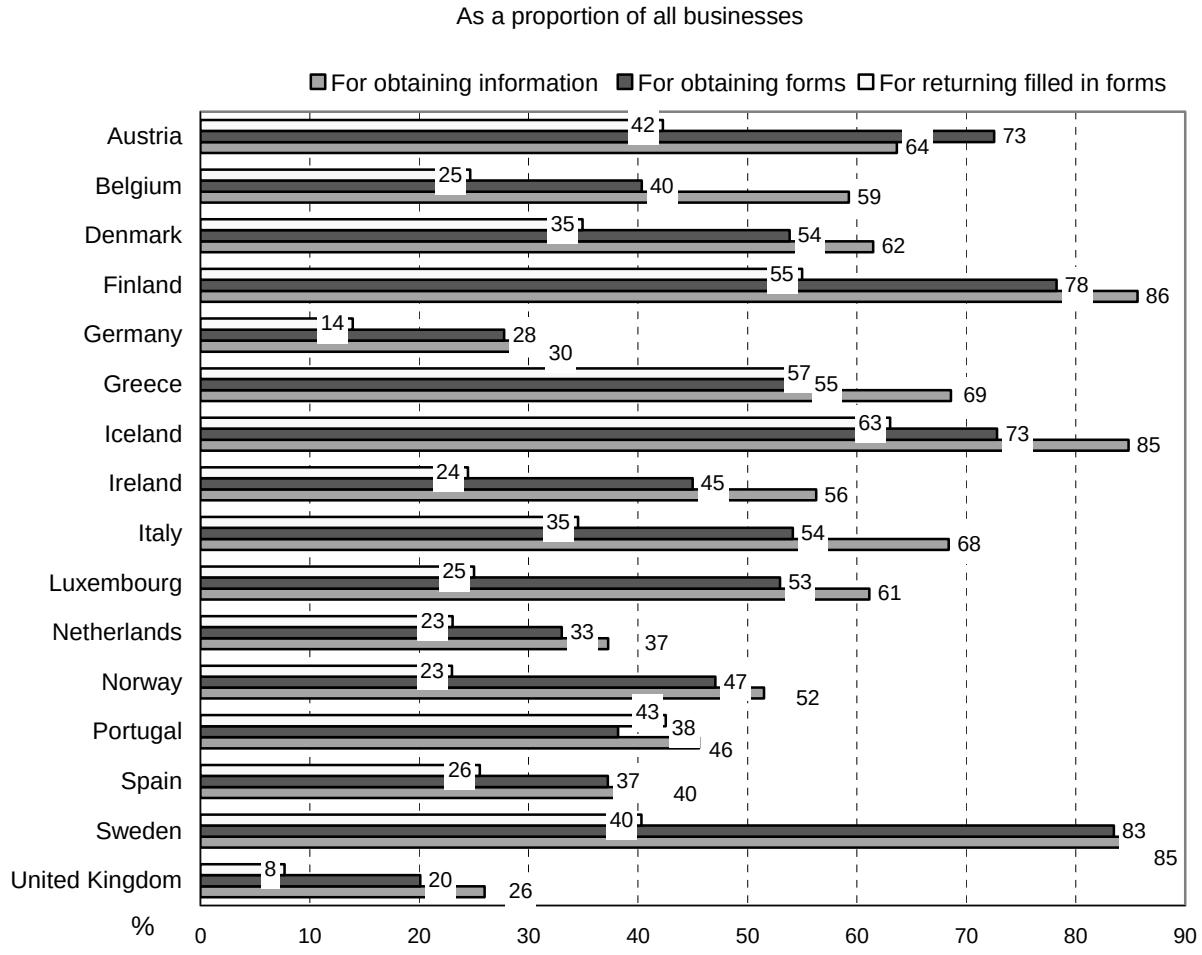
3. Due to changes in the ABS business frame for 2002-03, comparisons between the 2002-03 estimates and previous years should be made with caution.

Source: Australian Bureau of Statistics, *Business Use of Information Technology*, 2000-01 to 2002-03, Cat. No. 8129.0.

Since 2001, Eurostat has co-ordinated an annual Community survey of business use of ICT that requests data on use of electronic government services by businesses by type of service accessed. Figure A.13 shows data for 2003 classified by type of service accessed. For most countries, the most common activity was use of the Internet to obtain information from public authorities, followed by use to obtain forms. Figure A.14 shows a breakdown by business size for use of the Internet to obtain

information. For all countries, smaller enterprises (10-49 employees) were less likely to use the Internet to obtain information from public authorities.

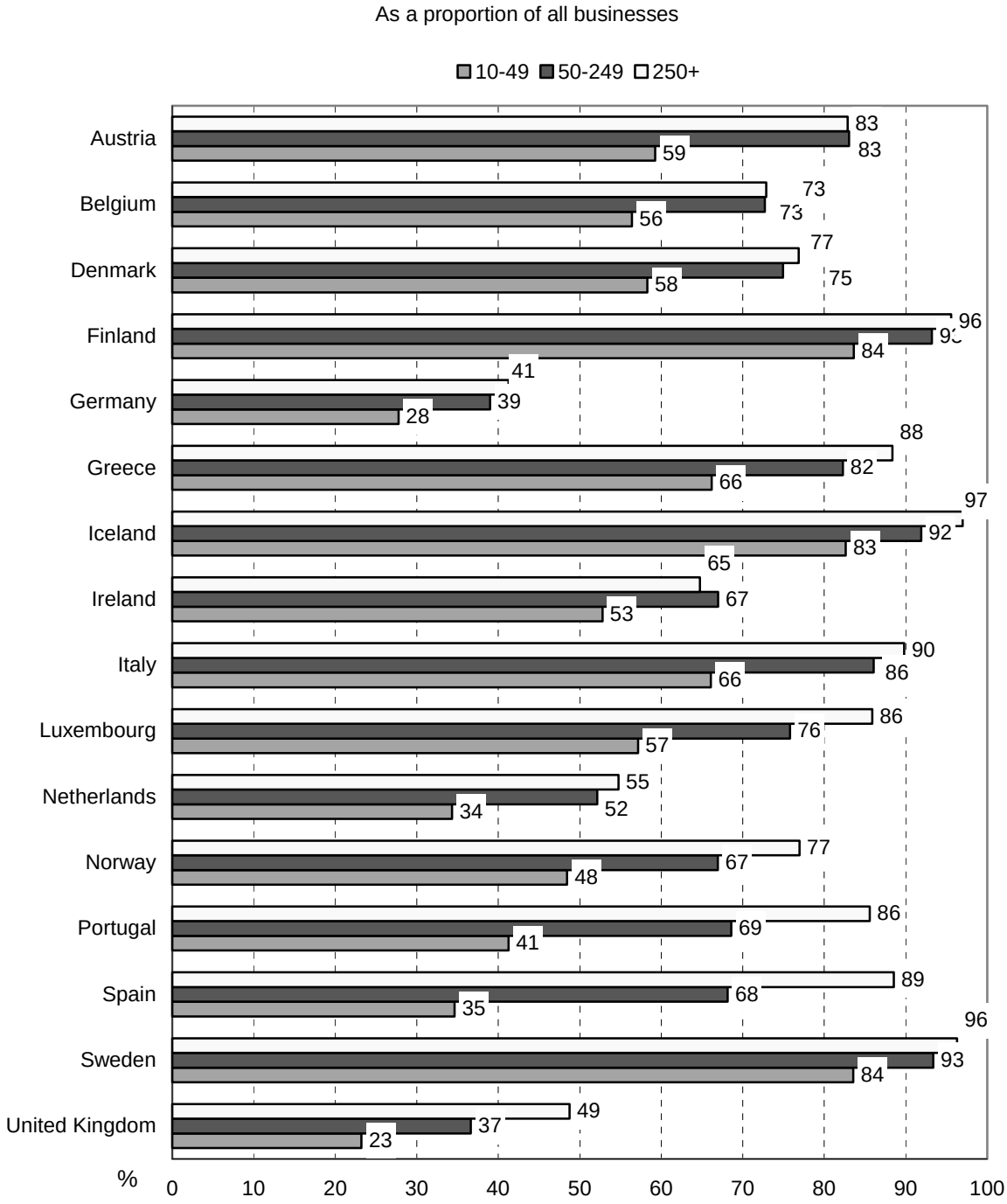
Figure A.13. Proportion of businesses using the Internet for interaction with public authorities,1 2003



1. Only enterprises with 10 or more employees in the business sector, excluding NACE activity J (Financial intermediation).

Source: Eurostat, Community Survey on ICT usage in enterprises, 2003, October 2004.

Figure A.14. Proportion of businesses1 using the Internet for interaction with public authorities to obtain information, by size class, 2003

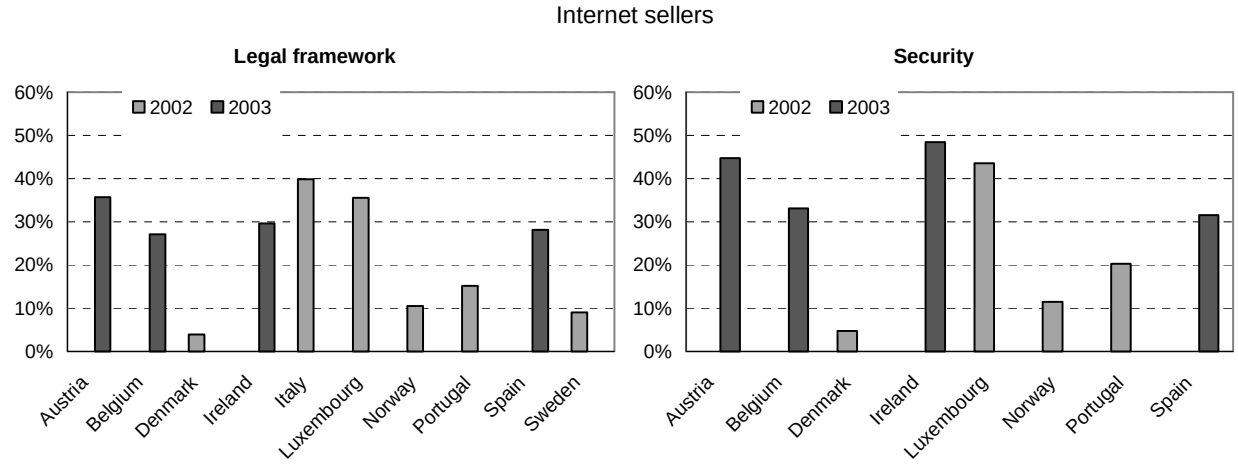


1. Only enterprises with 10 or more employees in the business sector, excluding NACE activity J (Financial intermediation).

Source: Eurostat, Community Survey on ICT usage in enterprises, 2003, October 2004.

As it does for households, Eurostat collects data on barriers to ICT use by business, in this case, problems and barriers related to selling over the Internet. Data on the two barriers likely to be most relevant for government policy are shown in Figures A.15 and A.16. The results are similar for Internet sellers and non-sellers. Both groups are more likely to perceive "Security problems concerning payments" as a very important problem for Internet selling than "Uncertainty concerning legal framework for Internet sales". However, for most countries, the greatest barrier for Internet non-sellers is "Products/services of enterprise not suitable for sales by the Internet".

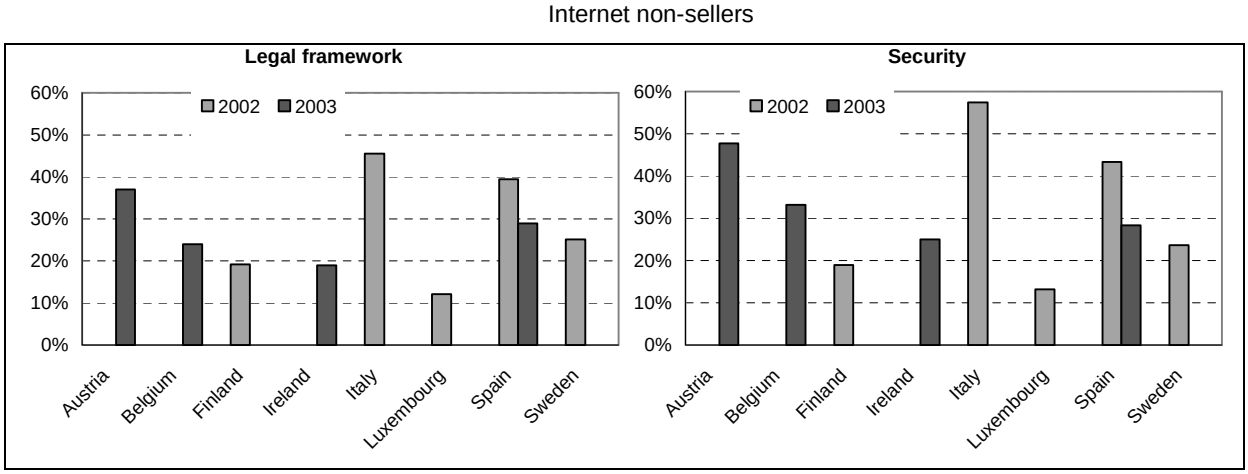
Figure A.15. Proportion of Internet sellers1 reporting that "uncertainty concerning legal framework for Internet sales" and "security problems concerning payments" are very important problems for selling over the Internet, 2002 and 2003



1. Percentage of businesses which sold their products over the Internet (enterprises with 10 or more employees in the business sector, excluding NACE activity J (Financial intermediation)).

Source: Eurostat, Community Survey on ICT usage in enterprises, 2002 and 2003, October 2004.

Figure A.16. Proportion of businesses not selling on the Internet1 reporting that "uncertainty concerning legal framework for Internet sales" and "security problems concerning payments" are very important barriers to selling over the Internet, 2002 and 2003



1. Percentage of businesses which did not sell their products over the Internet (enterprises with 10 or more employees in the business sector, excluding NACE activity J (Financial intermediation)).

Source: Eurostat, Community Survey on ICT usage in enterprises, 2002 and 2003, October 2004.

E-government from the perspective of government

A small number of countries measure ICT activities from the perspective of government entities. This information can provide some useful insights into areas such as ICT expenditure and employment by government (Australia and Finland); use of technology by government organisations (Canada, Finland and Japan); provision of electronic services by government organisations (Denmark, Finland and Japan); and barriers to, and impacts of, the digitisation of government (Denmark).

Government ICT expenditure and employment in Australia and Finland

The Australian Bureau of Statistics conducted government technology surveys in respect of 1993-94, 1997-98, 1999-2000 and 2002-03. For various reasons, including the measurement challenges discussed above, the focus of each survey has been different. The most recent survey, for the financial year 2002-03, was restricted to employment and expenditure data. Some results from this survey are shown in Table A.1. Of interest is the federal government's relatively higher ICT employment and expenditure compared with state/territory and local government (Figure A.17).

Data on ICT expenditure per employee and ratio of ICT to total operating expenses might be useful for benchmarking purposes.

Table A.1. Government ICT employment and expenditure, Australia, 2002-03

Level of government[1]	Number of ICT employees[2]	ICT employment[2] as a share of total employment (%)	ICT operating expenses[3] per employee (AUD)	ICT operating expenses[3] as a share of total operating expenses (%)	ICT capital expenditure[4] per employee (AUD)
Federal departments and agencies	15 016	4.5	9 290	7	3 292
State/territory departments and agencies	13 180	1.4	3 355	4	1 138
Local government organisations	2 536	1.6	3 253	3	1 078
Total	30 733	2.2	4 736	5	1 637

1. The scope of the survey was government departments, offices and bodies engaged in providing services free of charge or at prices significantly below their cost of production plus those non-profit institutions controlled and mainly financed by government. State and federal government organisations (non-education) with employment of fewer than 50 persons were excluded. The impact of this cut-off on final estimates is estimated to be less than 1%. Government education organisations were included in the survey for the first time – universities with federal government and vocational education/schools with state/territory government.

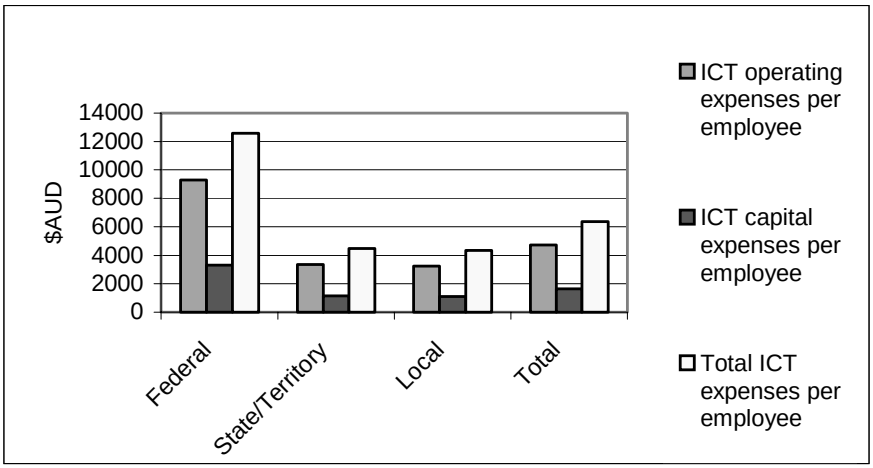
2. ICT employees are those who are predominantly engaged in ICT activities, including IT managers, Web designers, engineers, technicians, administrators, analysts, designers, programmers, testers, controllers and auditors, who provided services to users within the organisation or to external organisations or clients. Excluded are contractors for whom income tax is not deducted, data entry or clerical administrative/secretarial staff, volunteers and workers on unpaid leave.

3. Total selected ICT operating expenses including wages and salaries of ICT staff, cost of telecommunications services, payments to contractors and consultants for ICT services, and the expensed component of outlays on ICT hardware and software.

4. Total selected ICT capital expenditure including the capitalised component of outlays on computer software (including software developed in-house), computers and computer peripherals, and communications equipment.

Source: Australian Bureau of Statistics, Government Technology Survey, 2002-03 (see also ABS Cat. No. 8119.0).

Figure A.17. Government ICT expenditure per employee, Australia, 2002-03



Source: Australian Bureau of Statistics, Government Technology Survey, 2002-03.

Finland has similar data for the central government in its annual *Review on ICT within the Government of Finland* (published in Finnish). Information for 2003 is shown in Table A.2. While the levels of government in the two countries are not comparable in terms of functions, the data do indicate that the ratios IT/ICT employment as a proportion of total and IT/ICT expenses per employee are in the same broad range. A more detailed comparison would require an analysis of the functions of the tiers of government in the two countries and is beyond the scope of this report.

Table A.2. Government[1] IT employment and expenditure, Finland, 2003[2]

	Number of IT employees[3]	IT employment as a percentage of total employment (%)	Total IT expenses[4] per employee (EUR)
Total	4 038	3.2	4 551

1. Government agencies included in the survey were ministries and administrative agencies operating within the government budget (131 organisations in all). Local (municipal) government authorities were excluded but regional offices of central government organisations were included.

2. As at 31 December, 2003.

3. Full-time IT personnel, person-years.

4. Includes operating and capital costs on wages, salaries, rental and leasing costs, purchases of services, hardware and software.

Source: Ministry of Finance, Finland, *Review on ICT within the Government of Finland,* 2003.

Use of technology by private and public sector organisations in Canada

Statistics Canada, in its annual survey of electronic commerce, collects information on ICT usage from both private- and public-sector organisations (excluding local government). Table A.3 and Figures A.18 and A.19 contrast the two sectors in respect of the adoption of information technology. It is evident that in the Canadian public sector, the Internet and Web sites have been almost universally adopted, with 93% of public-sector organisations having a Web site in 2003, up from 88% in 2002. While the use of intranets and extranets is lower (81% and 42% of public sector organisations respectively in 2003), the rates significantly exceed those of the private sector.

As Figure A.19 shows, the incidence of purchasing over the Internet by Canada's public sector is increasing, with 68% of organisations having done so in 2003. This compares with 37% of private sector enterprises.

Table A.3. Use of information technology in Canada's public[1] and private sectors, 2000 to 2003

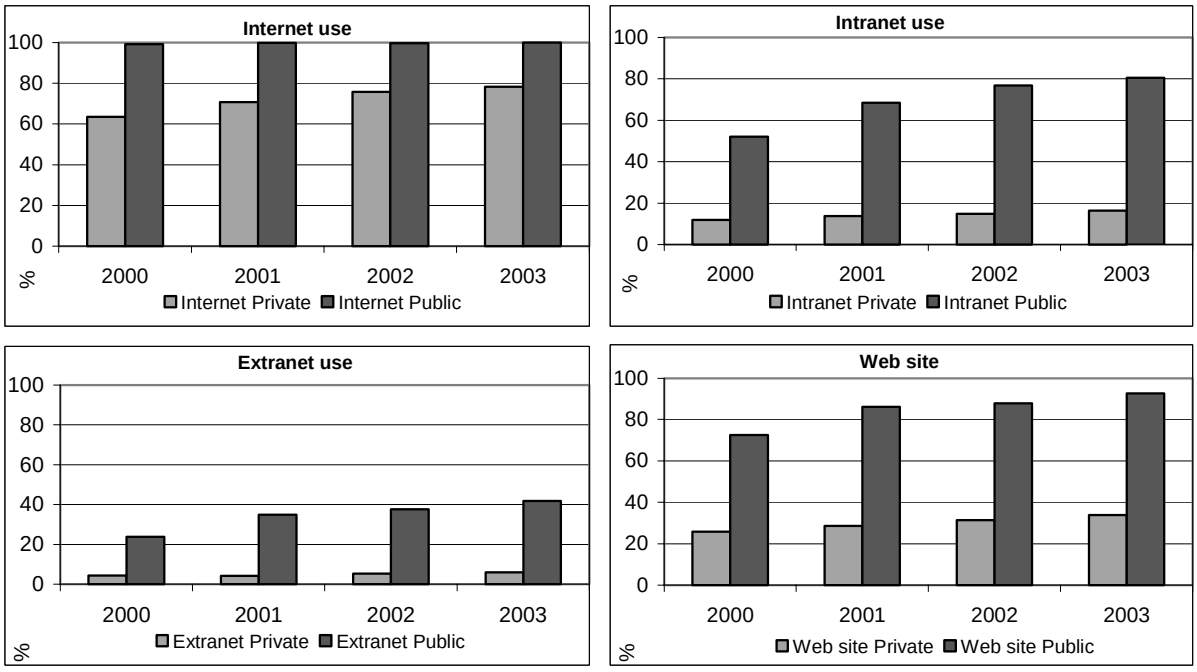
Percentage of organisations using selected technologies

Technology used	Sector	2000	2001	2002	2003
Internet	Private	63	71	76	78
Internet	Public	99	100	100	100
Intranet	Private	12	14	15	16
Intranet	Public	52	69	77	81
Extranet	Private	4	4	5	6
Extranet	Public	24	35	38	42
Web site	Private	26	29	31	34
Web site	Public	73	86	88	93

1. The public sector excludes local government.

Source: Statistics Canada, Electronic Commerce and Technology Use Survey, 2000 to 2003.

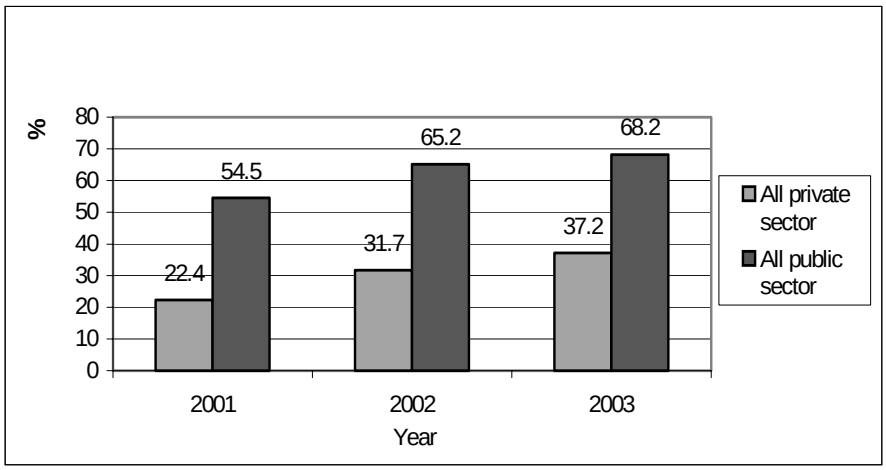
Figure A.18. Use of information technology in Canada's public1 and private sectors, proportion of organisations using various technologies, 2000 to 2003



1. The public sector excludes local government.

Source: Statistics Canada, Electronic Commerce and Technology Use Survey, 2000 to 2003.

Figure A.19. Purchasing over the Internet by Canada's public1 and private sectors: proportion of organisations using the Internet to buy goods or services, 2001 to 2003



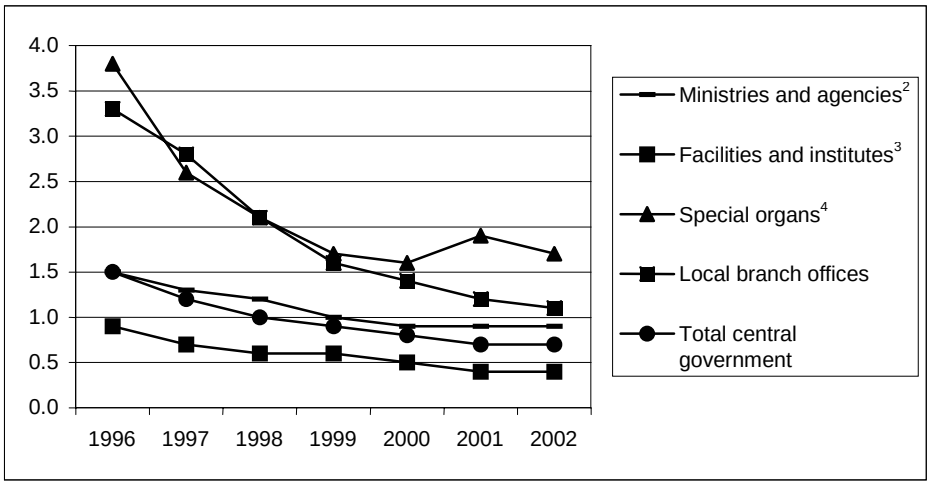
1. The public sector excludes local government.
Source: Statistics Canada, Electronic Commerce and Technology Use Survey, 2001 to 2003.

Statistics Canada (2004) has also compared technological change in the public and private sectors, based on questions asked in the 2000 and 2002 surveys of electronic commerce and technology use. Results indicate that rates of technology adoption in the public sector are similar to those in large private sector enterprises. For more information on ICT use by the public sector in Canada, see Statistics Canada, *Canada's Journey to an Information Society*, Chapter 7, "Governments on the Net", 2003.

Growth of personal computer (PC) use in Japan and Finland

Japan has a long time series of data on the ratio of employees to PCs in central government organisations. As Figure A.20 shows, over the seven-year period from 1996 to 2002, the ratio for all central government organisations (excluding universities) was more than halved, from 1.5 persons per PC in 1996 to 0.7 persons in 2002.

Figure A.20. Number of employees per PC in Japan's central government,1 1996 to 2002



1. Excludes national universities.
2. Includes "bureaus" other than local branch offices of ministries and agencies.
3. "Facilities and Institutes" are organisations such as data processing centres, research institutes, etc.
4. "Special organs" are central organisations not contained in other categories.
Source: Ministry of Public Management, Home Affairs, Posts and Telecommunications, Basic Survey on the Progress of Government IT Use.

Finland obtains similar data from its annual *Review on ICT within the Government of Finland*. The 2003 survey found that the number of employees per workstation in Finnish government organisations (excluding local government) was 0.8. This figure is comparable to Japan's 0.7 persons per PC in 2002. However, as for the Finnish-Australian comparison above, it would be necessary to assess the functions of the tiers of government in the two countries before concluding that the level of PC use is similar for government functions in Japan and Finland.

Provision of electronic services by government organisations in Denmark, Finland and Japan

Statistics Denmark has conducted surveys of Danish government organisations since 2001. The 2002 and 2003 surveys collected data from all three tiers of government – municipal, county and state. Table A.4 shows the incidence of digital delivery of two services for 2002 and 2003.

Table A.4. Digital delivery of services by Danish government organisations[1]
Proportion of units in each category

Clients are able to:		2002 (%)	2003 (%)
Download electronic forms[2]	State	73	79
	County	67	67
	Municipality	93	93
Make online payments	State	8	7
	County	0	0
	Municipality	16	24

1. All government units. Data refer to the proportion of government units in each category.

2. Either by a function on the home page or a direct link to a function on an external site (for example, a joint Web site or portal).

Source: Statistics Denmark, *Den offentlige sektors brug af it*, 2002 and 2003.

Japan, through its (former) Ministry of Public Management, Home Affairs, Posts and Telecommunications, has collected time series data on the number of online administrative procedures accepted by government ministries and agencies. By March 2004, about 13,000 administrative procedures were available online. (Note that an administrative procedure includes applications for licences, registrations etc for which citizens or enterprises have to submit legally required documentation to government offices).

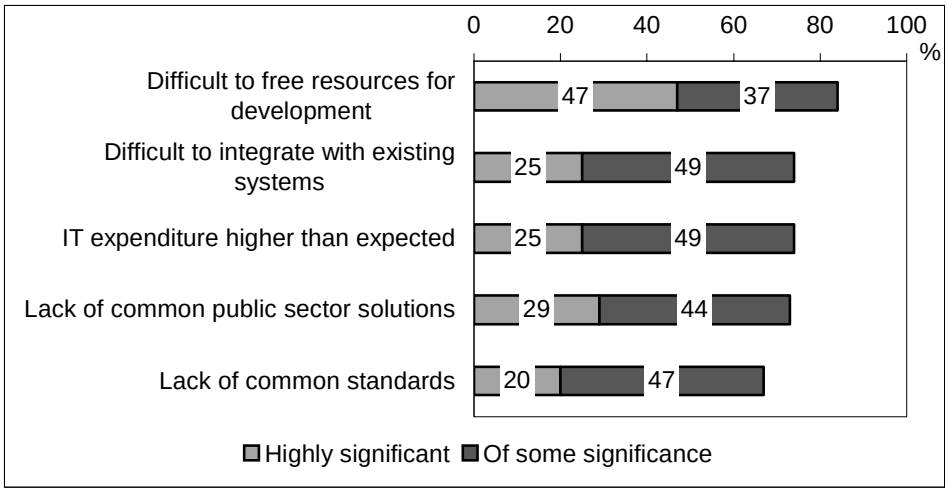
Finland's annual *Review on ICT within the Government of Finland* which covers central government organisations also includes data on this topic. The number of online service projects (defined as a project for developing electronic services) increased from 128 to 228 between 2002 and 2003. This figure is not comparable to that for Japan which refers to online procedures.

Barriers to, and impacts of, the digitisation of government in Denmark

Denmark also collects data on barriers to, and impacts of, e-government. Figure A.21 refers to 2003 data for all levels of government. It can be seen that the main barriers in 2003 were economic (freeing up resources, expenditure higher than expected) and technical (systems integration and standards). While many barriers tend to be country-specific, the Danish experience could, nevertheless, alert other countries to potential cost overruns and IT interoperability problems.

Figure A.21. Denmark's barriers1 to digitisation2, 2003

Percentage of government organisations3 rating barriers as highly significant or of some significance

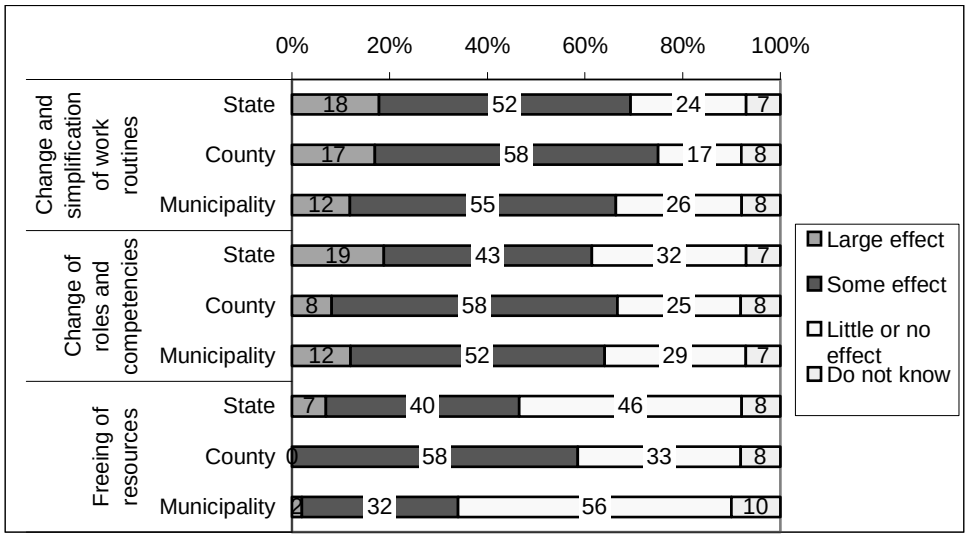


1. Barriers relate to digitisation as well as to ICT usage more generally. Respondents were asked to rate each barrier. Other barriers (not shown) were rated as highly significant by 15% or fewer respondents.
2. Digitisation refers to the use of ICT to computerise manual routines.
3. All government organisations were asked to answer this question; it was not restricted to those not using ICT.

Source: Statistics Denmark, *Den offentlige sektors brug af it*, 2002 and 2003.

Denmark's 2003 survey also collected data on e-government impacts. As Figure A.22 shows, digitisation had the largest impact on work routines (change and simplification) and roles and competencies (change). Interestingly, the least impact was observed on reduction of resources, with a relatively large proportion of units in each category reporting little or no effect.

Figure A.22. Impact1 of digitisation2 on Danish government organisations, 2003



1. Respondents were asked to rate the impact of digitisation on a set of possible outcomes.
2. Digitisation refers to the use of ICT to computerise manual routines.

Source: Statistics Denmark, *Den offentlige sektors brug af it*, 2002 and 2003.

What is being done to improve official statistics in the area of e-government?

As has been shown, many OECD member countries are actively collecting demand-side statistics in the area of e-government. Eurostat has been particularly active in this area, with collection of comparable statistics on business and household use of electronic government services since 2002. Australia and Canada have time series demand-side data for households and Australia has a good time series for business demand. Japan has household data showing the use of computers and mobile phones to obtain information from government using the Internet. The US collected information on individuals' use of the Internet to access government services in both 2001 and 2003.

Several OECD countries collect relevant information from the perspective of government organisations, although there is little comparability among the statistics from those countries.

The OECD's Working Party on Indicators for the Information Society, in collaboration with the OECD e-Government Project, is pursuing a demand-side approach to improving statistics in this area. To this end, it is currently revising the OECD model surveys of household and business use of ICT to include more detailed information on the use of government services by individuals and businesses respectively. It is hoped that by providing a model for collection, both member and non-member countries will start collecting more statistics in this area and, most importantly, will collect statistics that are more internationally comparable. It is expected that revisions to the OECD model surveys will be finalised in 2005.

Correspondence with WPIIS delegates on plans for future work in the area of e-government measurement indicates that there are some initiatives in the pipeline. They include:

- Statistics Canada expects to replace its Household Internet Use Survey by an Individual Internet Use Survey and to significantly expand its collection of e-government related data. The new questionnaire includes additional Internet activities (communication with government organisations and elected officials, e-voting and involvement in online government consultation) and has separate questions on: frequency of use of the Internet to correspond with government organisations to express personal views or concerns; frequency of use of the Internet to access information on government programmes or services; use of the Internet to express opinions relating to government policies, laws, issues, etc.; levels of government dealt with (municipal, provincial, federal); and, barriers to using the Internet to search for government information.

- Denmark, already a frontrunner in measuring e-government, expanded its collection of data from government organisations in 2004 in the following areas: e-learning; e-purchasing (integration with the accounting system and use of digital invoicing); the ICT strategy of the organisation; and, use of open source software (OSS).

- From 2003, the Hungarian Central Statistical Office enhanced its collection of government organisations (state administration and municipalities) to collect questions on ICT usage; IT security; number of online public services with integrated back-office processes; and, public procurement processes that are fully carried out on line. The Hungarian survey also includes questions on computers (number, age, value), ICT training and ICT investment.

- Statistics New Zealand is implementing a four year plan for ICT statistics collection. It is focusing on the Government's own use of ICT and business and household use of electronic government services. The business and household use questionnaires are currently in development and contain questions about use of government Web sites and services during the reference period. A specific Government ICT use survey is planned for implementation in 2006. This will include broadly similar questions to the ICT business use questionnaire, with a number of variations reflecting differences between the sectors.

- Singapore, an observer country in the WPIIS, is beginning to measure public satisfaction with online government services as a means of measuring the effectiveness of e-government in terms of quality of services.

- The Slovak Republic has included a module about ICT on its structural survey of budgetary organisations. The module contains questions on the number of PCs of different types (e.g. those connected to the Internet); the number of employees working with PCs; details of ICT current and capital costs; and, Web site details (whether the organisation has one, the number of visitors, number of forms on the site etc).

- In addition to these country-specific changes, the expansion of the European Community in 2004 has brought more countries into the scope of the Eurostat surveys. As we have seen, these surveys provide good comparative information on the demand for electronic government services by individuals and businesses.

BIBLIOGRAPHY

Australian Bureau of Statistics (2004), *Household Use of Information Technology, Australia*, 2002 and 2003", Cat No. 8146.0, September.

OECD (2002), "Australian Bureau of Statistics paper on experiences in collection of government ICT statistics", DSTI/ICCP/IIS/RD(2002)6, internal working document.

OECD (2003), "ICT usage in the public sector: a Nordic model questionnaire" DSTI/ICCP/IIS/RD(2003)1, internal working document.

Pew Internet & American Life Project (2004), *How Americans Get in Touch with Government*, May.

Statistics Canada (2003), *Canada's Journey to an Information Society*, December.

Statistics Canada (2004), *An Historical Comparison of Technological Change, 1998-2000 and 2000-2002, in the Private and Public Sector*, March.